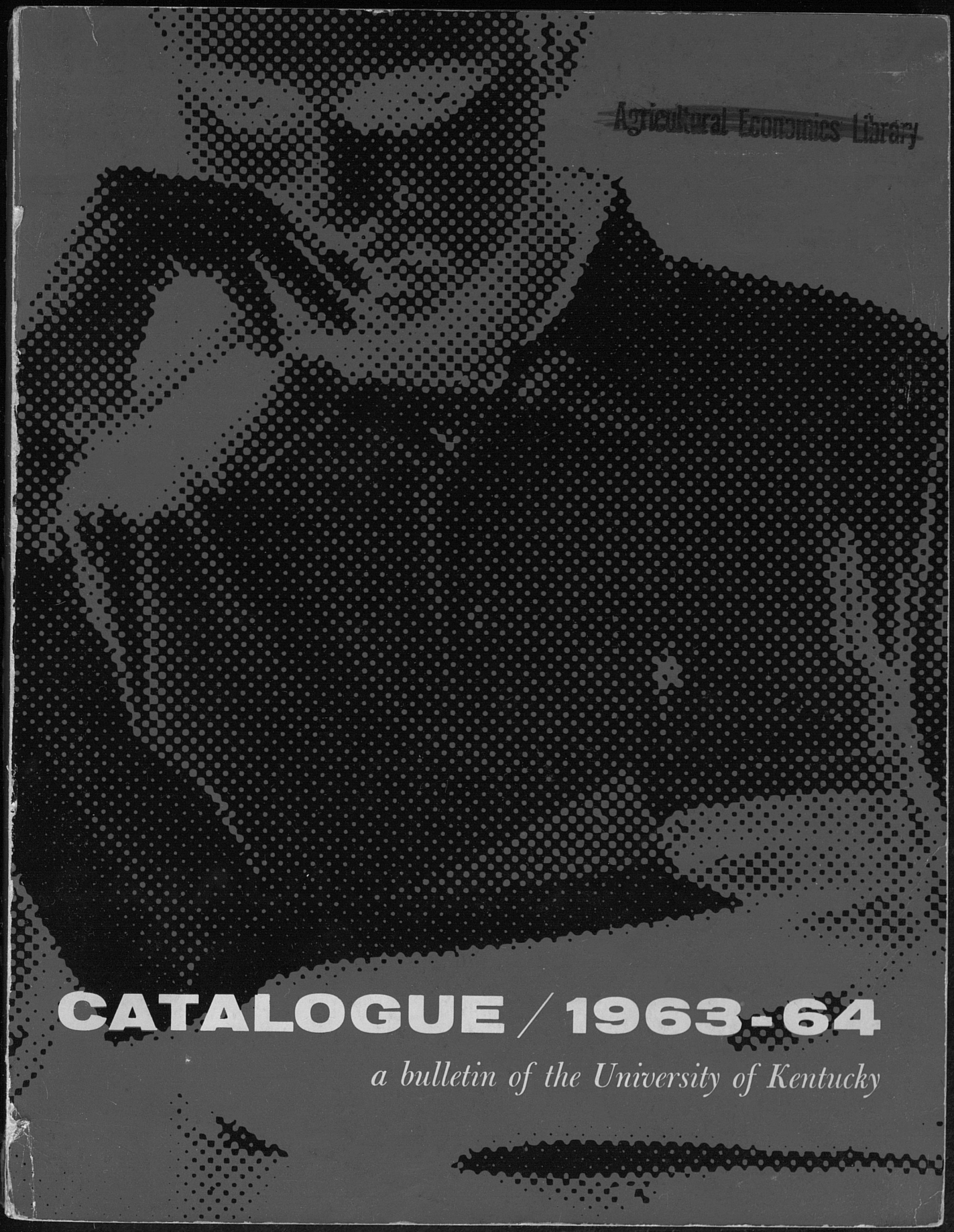
Agricultural Economics Library



CATALOGUE / 1963-64

a bulletin of the University of Kentucky



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VOL. 55 MAY, 1963 NO. 5

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University of Kentucky Catalogue

1963-64

° This publication is a presentation for the 1963-1964 academic year and following summer term. It is expected that some changes will take place during the year and the student using this catalogue should keep this in mind.

CALENDAR

1963 Summer Session

June 14, 15—Friday and Saturday—Orientation and registration

June 17—Monday—Class work begins

June 20—Thursday—Last date one may enter an organized class for the Summer Session

June 27—Thursday—Last date one may drop a course without a grade

July 4—Thursday—Independence Day holiday

July 5, 6—Friday and Saturday—Last days for filing application for August degree in College Dean's office

Aug. 8—Thursday—End of 1963 Summer Session

Aug. 10—Saturday—All grades due in Registrar's Office by 12:00 noon

1963 Fall Semester

Aug. 1—Thursday—Last day to submit application and transcripts to Admissions Office for Fall Semester 1963-64

Sept. 1—Sunday—Dormitories open for Fall Semester

Sept. 3, 4—Tuesday and Wednesday—Classification, registration, and orientation for students not pre-registered

Sept. 5—Thursday—Class work begins

Sept. 9—Monday—Last day to enter an organized class for the Fall Semester

Sept. 16—Monday—Last day to drop a course without a grade

Sept. 17, 18—Tuesday and Wednesday—Last days for filing application for a May degree in College Dean's office

Oct. 26—Saturday—Mid-term grades due in Registrar's Office by 12:00 noon

Nov. 28—Thursday—Thanksgiving holiday

Dec. 2—Monday—Last day to drop a class before final examinations

Dec. 16-21—Monday through Saturday—Final Examinations

Dec. 21—Saturday—End of Fall Semester

Dec. 23—Monday—All grades due in Registrar's Office by 4:00 p.m.

1964 Spring Semester

Jan. 11—Saturday—Advising for all new students

Jan. 13-15—Monday, Tuesday, Wednesday—Registration

Jan. 16—Thursday—Class work begins

Jan. 22—Wednesday—Last day to enter an organized class for the Spring Semester

Jan. 27—Monday—Last day to drop a course without a grade

Jan. 29, 30—Wednesday and Thursday—Last days for filing application for a May degree in College Dean's office

Mar. 9—Monday—Mid-term grades due in Registrar's Office by 12:00 noon

Mar. 14-22—Saturday noon through Sunday—Spring vacation. Class work begins Monday, March 23rd, at 8:00 a.m.

Mar. 28—Saturday—Correspondence and extension grades for graduating seniors due in Registrar's Office by 12:00 noon

Apr. 18—Saturday—Last day to drop a class before final examinations

May 4-9—Monday through Saturday—Final Examinations

May 9—Saturday—End of Spring Semester

May 9—Saturday—Last day to submit application and transcripts to Admissions Office for 1964 Summer Session

May 11—Monday—All grades due in Registrar's Office by 4:00 p.m.

May 16—Saturday—Alumni Day

May 17—Sunday—Baccalaureate Services

May 18—Monday—Ninety-seventh Annual Commencement

June 1-4—Monday through Thursday—4-H Club Week

Summer Session

June 5, 6—Friday and Saturday—Registration

June 8—Monday—Class work begins

June 11—Thursday—Last day to enter an organized class

June 18—Thursday—Last day to drop a course without a grade

June 22, 23—Monday and Tuesday—Last days for filing application for an August degree in College Dean's office

July 4—Saturday—Independence Day holiday

July 31—Friday—End of Summer Session

Aug. 3—Monday—All grades due in Registrar's Office by 4:00 p.m.

CALENDAR

1964 *Fall Semester*

Aug. 1—Saturday—Last day to submit application and transcripts to Admissions Office for Fall Semester 1964-65

Aug. 31—Monday—Dormitories open for Fall Semester

Sept. 1, 2—Tuesday and Wednesday—Classification registration, and orientation for students not pre-registered

Sept. 3—Thursday—Class work begins

Sept. 9—Wednesday—Last day to enter an organized class for the Fall Semester

Sept. 15—Tuesday—Last day to drop a course without a grade

Sept. 16, 17—Wednesday and Thursday—Last days for filing application for a December degree in College Dean's office

Oct. 24—Saturday—Mid-term grades due in Registrar's Office by 12:00 noon

Nov. 26—Thursday—Thanksgiving holiday

Nov. 28—Saturday—Last day to drop a class before final examinations

Dec. 14-19—Monday through Saturday—Final Examinations

Dec. 19—Saturday—End of Fall Semester

Dec. 21—Monday—All grades due in Registrar's Office by 4:00 p.m.

1965 *Spring Semester*

Jan. 9—Saturday—Advising for all new students

Jan. 11-13—Monday, Tuesday, Wednesday—Registration

Jan. 14—Thursday—Class work begins

Jan. 20—Wednesday—Last day to enter an organized class for the Spring Semester

Jan. 25—Monday—Last day to drop a course without a grade

Jan. 27, 28—Wednesday and Thursday—Last days for filing application for a May degree in College Dean's office

Mar. 8—Monday—Mid-term grades due in Registrar's Office by 12:00 noon

Mar. 13-21—Saturday noon through Sunday—Spring vacation. Class work begins Monday, March 22nd, at 8:00 a.m.

Mar. 27—Saturday—Correspondence and extension grades for graduating seniors due in Registrar's Office by 12:00 noon

Apr. 17—Saturday—Last day to drop a class before final examinations

May 3-8—Monday through Saturday—Final Examinations

May 8—Saturday—End of Spring Semester

May 8—Saturday—Last day to submit application and transcripts to Admissions Office for 1965 Summer Session

May 10—Monday—All grades due in Registrar's Office by 4:00 p.m.

May 15—Saturday—Alumni Day

May 16—Sunday—Baccalaureate Services

May 17—Monday—Ninety-eighth Annual Commencement

June 1-4—Tuesday through Friday—4-H Club Week

1963

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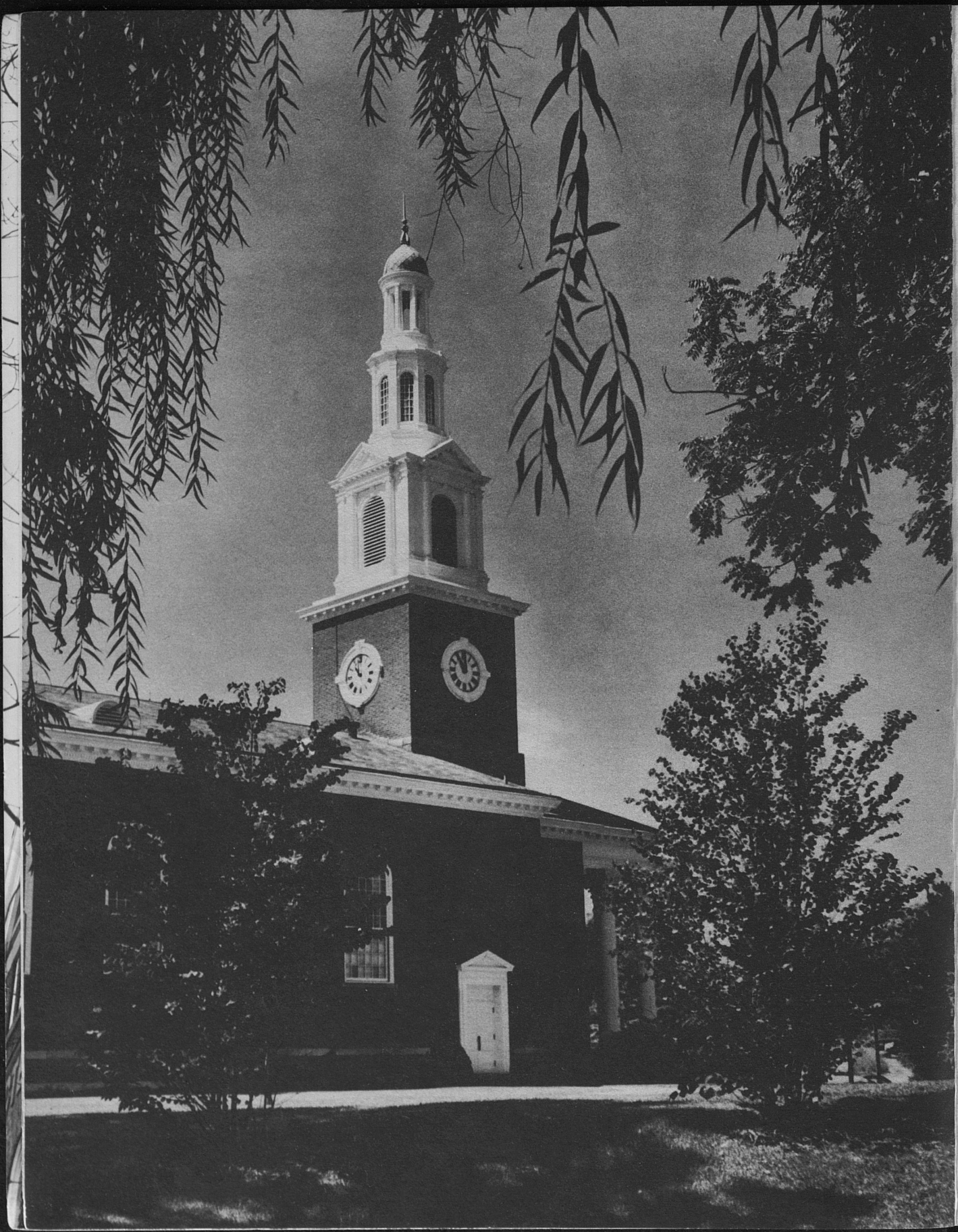
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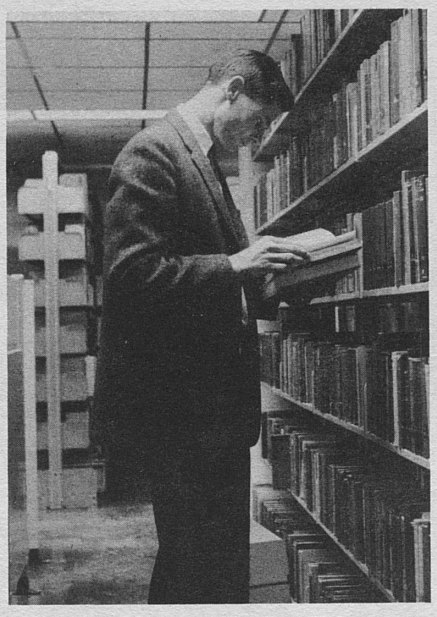
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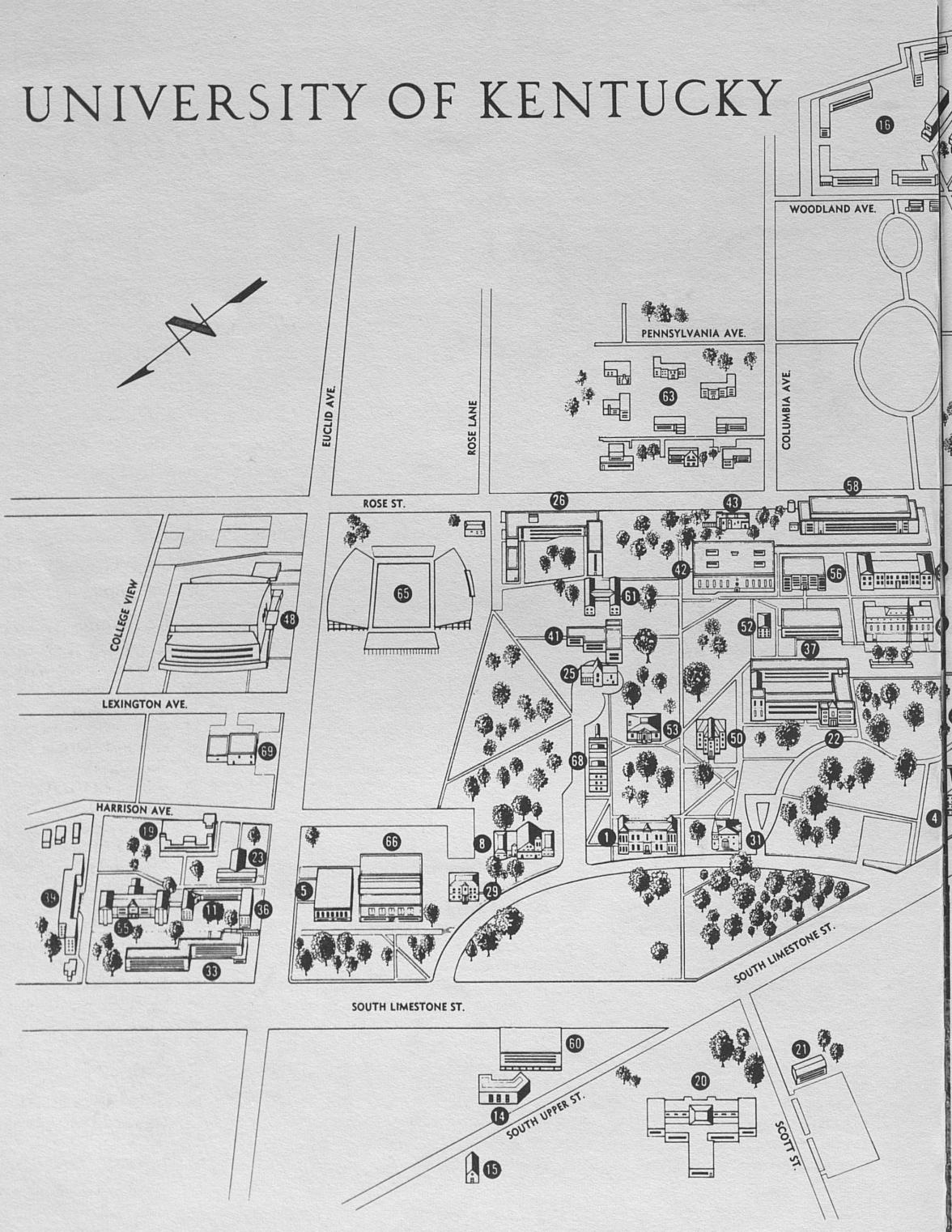


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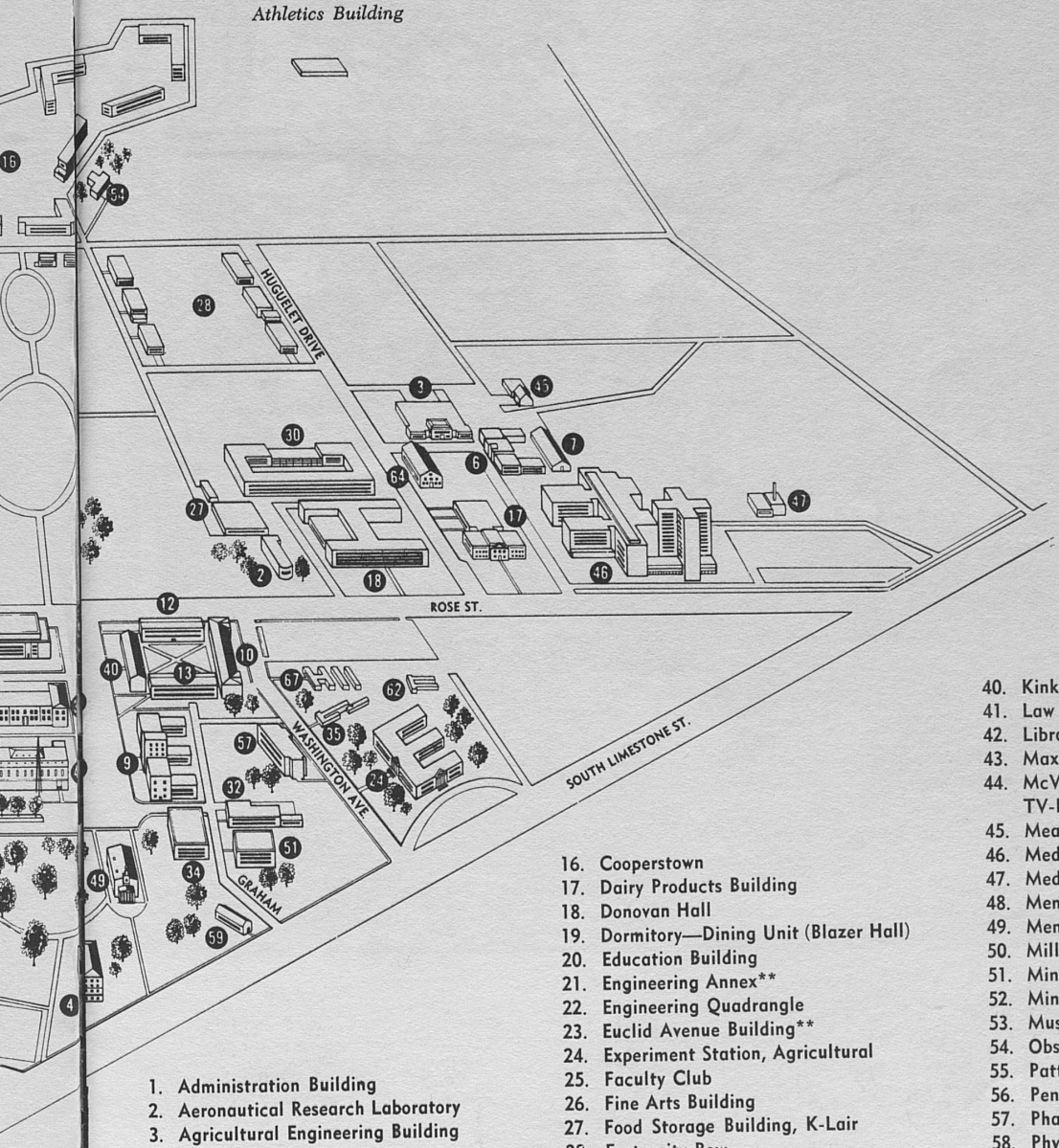


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UNIVERSITY OF KENTUCKY



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1. Administration Building
2. Aeronautical Research Laboratory
3. Agricultural Engineering Building
4. Agriculture Building
5. Alumni Gymnasium
6. Animal Pathology Building
7. Animal Pathology Hospital
8. Barker Hall—Buell Armory
9. Biological Sciences Building
10. Bowman Hall
11. Boyd Hall
12. Bradley Hall
13. Breckinridge Hall
14. Central Heating Plant
15. Coal Research Laboratory
16. Cooperstown
17. Dairy Products Building
18. Donovan Hall
19. Dormitory—Dining Unit (Blazer Hall)
20. Education Building
21. Engineering Annex**
22. Engineering Quadrangle
23. Euclid Avenue Building**
24. Experiment Station, Agricultural
25. Faculty Club
26. Fine Arts Building
27. Food Storage Building, K-Lair
28. Fraternity Row
29. Frazee Hall (Extended Programs, History)
30. Haggin Hall
31. Health Building (Administration Annex)
32. Highway Research Laboratory
33. Holmes Hall
34. Home Economics Building
35. Insectary and Conservatory
36. Jewell Hall
37. Journalism Building
38. Kastle Hall
39. Keeneland Hall
40. Kinkead Hall
41. Law Building
42. Library
43. Maxwell Place (President's home)
44. McVey Hall (English, Mathematics, Radio-TV-Films, Social Work, Computing Center)
45. Meats Laboratory
46. Medical Center
47. Medical Center Heating Plant
48. Memorial Coliseum
49. Memorial Hall
50. Miller Hall (Geology, Modern Languages)
51. Mineral Industries Building
52. Mining Laboratory
53. Museum of Anthropology
54. Observatory
55. Patterson Hall
56. Pence Hall
57. Pharmacy Building
58. Physics-Chemistry Building
59. Psychology Annex**
60. Service Building
61. Social Sciences Building**
62. Small Animal Laboratory
63. Sorority Row
64. Stock Judging Pavilion
65. Stoll Field
66. Student Union Building
67. Tobacco Research Laboratory
68. White Hall (Commerce)
69. "Wildcat" (Bowling-Grill)

** Temporary—to be removed





The Entering Student

A UNIVERSITY BRINGS TOGETHER students with greatly varying geographic, economic, social, political and educational backgrounds. Partly as a result of this, these students have considerably different interests and aims. Some have already decided upon a field of study. Many others have not.

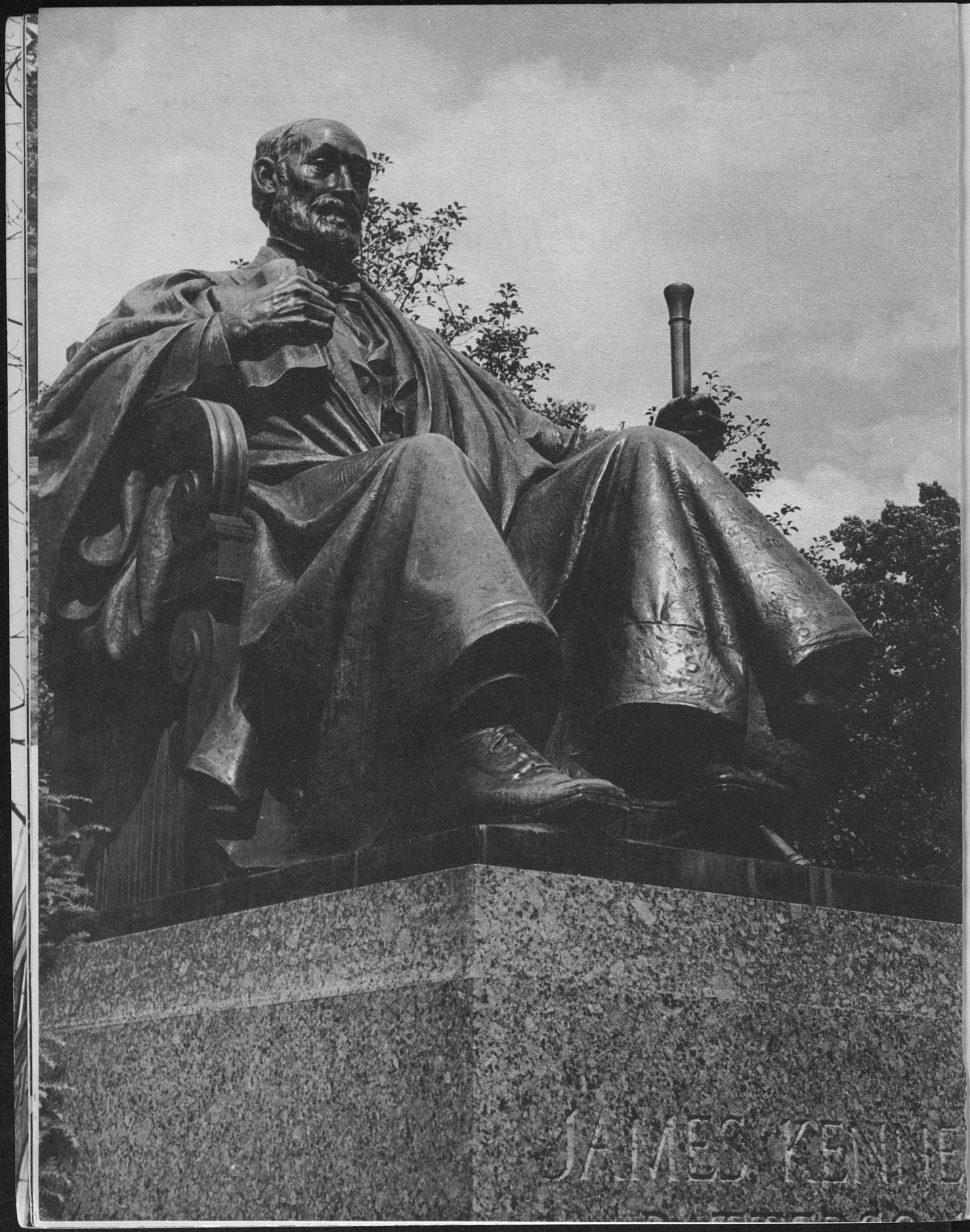
At the University of Kentucky, each student is assigned a faculty member as an advisor. The student's advisor will help him decide upon a program of studies and will explore with him an over-all plan for his work at the University, the choice of a vocation, and graduation requirements. The advisor will be able to provide the student with accurate information concerning the University. He will help the student decide how many courses he should attempt to carry, arrange the hours the classes meet, and approve the schedule.

During the first two years of college, students generally are required to take courses which lead to the understanding of certain fundamental principles, as well as courses in their special areas of interest. Although requirements vary somewhat from college to college, the following statement of lower division requirements for the University's College of Arts and Sciences may be helpful to indicate the areas most generally covered.

ENGLISH COMPOSITION, 6 HOURS
PHYSICAL SCIENCES, 6 HOURS
BIOLOGICAL SCIENCES, 6 HOURS
SOCIAL SCIENCES, 6 HOURS
HUMANITIES, 6 HOURS
FOREIGN LANGUAGE, INTERMEDIATE YEAR, 6 HOURS
PHYSICAL EDUCATION, TWO SEMESTERS
HYGIENE, ONE HOUR

The student who is undecided upon an area of study usually is advised to enroll in classes meeting the lower division requirements of the College of Arts and Sciences, where he will explore several fields. During two years of work in which he comes into contact with a number of specialities he will gain a background that should help him to choose intelligently the field in which he will concentrate.

The student planning to do his college work at the University—whether he is an entering student or one seeking a master's degree or a doctorate—has a large number of areas from which to choose. These are outlined elsewhere in this publication.


JAMES. KEN

The University

A UNIVERSITY IS A GATHERING-PLACE for those who wish to learn. It is a place where new ideas arise and old ones take on new shapes and colors. For a new student it may be different from anything he has ever known, because here he leaves the shelter of home and familiar ways of learning and moves toward a life where he will have the chance to be largely on his own.

It is a place of broad opportunity, where libraries, laboratories, and men of knowledge are gathered in one community to afford him the chance to learn the best that has been discovered and thought and to develop fully his abilities. It is also a place of quiet meditation and shaded walks, of cheering crowds and lively debate, of people of many interests, and, most important, a place where he can mature—mentally, physically, and emotionally.

The search for new knowledge is an unending adventure in which both the faculty and students take part. This seeking results in a continual expansion of information in every field of concern to man while providing and developing leaders. It is thus that higher education carries out its purpose as the chief instrument designed by society to provide the leadership necessary to the upward march of civilization.

On a university campus the student is still taught in the classroom but he is also made more familiar with the other places of learning, particularly the libraries and laboratories, or workshops. He may not have decided upon a field of study during his first years, but as his interests become stable and increase in depth he reaches out more and more on his own. In advanced courses, undergraduate as well as graduate, he may work with a considerable degree of independence from his professor.

Given the opportunities described above, the student at the University of Kentucky should accomplish these things:

He will widen his interests and will develop an inquiring attitude. He will be aware that "to become a man of learning is an enterprise of a lifetime."

He will gain broad knowledge and understanding as well as intensive familiarity with his main field of interest and will become well prepared for the work he has chosen. He will have an appreciation for the finer things of life and will possess a moral purpose.

He will learn to see the relationship between one idea and another and as a consequence will use logic to overcome bias and to exercise restraint.

He will recognize the importance of maintaining physical health and vigor.

He will have the desire to take a responsible part in the society in which he lives.

These are the marks of an educated man—or woman—and it is the aim of the University to assist the student in attaining them.

The Four Functions of the University

In the above statements, emphasis has been placed primarily on the student, because it is he and his parents who will make the greatest use of this book. However, this is only one facet of the University.

The primary responsibility of an institution of higher learning is the betterment of human welfare. When the University of Kentucky elected to be a university as opposed to a liberal arts college or professional school, it was bound by the traditions of American higher education to function in certain ways. Thus, it established itself as a complex institution with both a liberal arts school and a number of professional schools. It committed itself to a broad program of quality research; it embarked upon an extensive program of graduate studies; and it dedicated itself to accumulating and preserving knowledge and to maintaining an atmosphere which would contribute to high intellectual endeavor.

Thus, in accomplishing its social purpose, the University functions in four principal ways. Its major function is as a teaching institution, but it also serves as a center for research, as a service agency, and as a center for the preservation of knowledge. The University has stated its aims in each of these areas as follows:

1. THE TEACHING FUNCTION

Out of the undergraduate colleges and the graduate schools of America should come the greater portion of

the nation's leaders and its better citizens. The curricula of a state university should be so designed and its teachings so directed that the state and the nation will have more men and women of intellectual interest and achievements; men and women possessing character, ideas, ingenuity, moral responsibility, and general competence; men and women who can provide the knowledge and technical skills to cope with a national and world situation growing ever more complex and difficult.

2. THE RESEARCH FUNCTION

It is the business of a state university to advance the frontiers of knowledge in all areas of concern to modern society. Much research, in other words, should be done with no compulsion other than the urge to see beyond the present borders of man's knowing.

On the other hand, the research program of a state university, and particularly a land-grant institution, cannot ignore the contemporary requirements of state and nation. Rather, the program should be effectively correlated with non-university research and it should seek solutions to the acute problems of society whether they are economic, technological, social, cultural, or moral.

3. THE EXTENDED SERVICES FUNCTION

In the main, the University is characterized by a concern for the life about it and by a zeal for service to the people whom it represents and who lend it support. The state university has found that it cannot have the desired impact on society unless its teaching is extended beyond the campus classroom, unless its research is in some measure translated into economic and social improvements, and unless its leadership and example elevate the cultural and moral tone of the nearer and farther communities in which it has its setting.

4. THE LIBRARY AND MUSEUM FUNCTION

Without an adequate library collection, a university would find it impossible properly to perform its teaching and research functions. For this reason alone the maintenance of libraries would be proper university purpose. But over and above the requirements of teaching and research, the university has an obligation to join with other agencies in the preservation of the books and other material evidences of the achievements of civilization.

DIVISIONS AND BUREAUS

In contributing to the welfare of the state through research, experimentation, and public service, all departments make important contributions. In addition, certain divisions and bureaus have been established specifically for these purposes. Included in this group are the Experiment Station and the Extension Division of the College of Agriculture and Home Economics, the Bureau of Business Research, the Bureau of Government Research, the Bureau of School Service, the University and Educational Archives, the University Placement Service, the University of Kentucky Press, Radio, Television, and Films Studios, the Home Study Program, the Extension Class Program, the Evening Class Program, the University Centers, the Audio Visual Services, the Department of Public Relations, the Engineering Experiment Station, the Kentucky Geological Survey, the Kentucky Research Foundation, the Child Guidance Service, the Industrial Psychological Service, the Social Research Consultation Service, the University Hospital and related services, the Bureau of Community Service (Sociology), the Computing Center, Conferences and Institutes, and the Office of School Relations.

History

Almost a century ago the miracle of public higher education was mainly a dream. Among the eloquent spokesmen of that dream was John B. Bowman, first regent of the Agricultural and Mechanical College of Kentucky University, who said in 1865:

> *"I want to build up a people's institution, a great free university, eventually open and accessible to the poorest boy in the land, who may come and receive an education practical and suitable for any business or profession in life. I want to cheapen this whole matter of education, so that, under the broad and expansive influences of our republican institutions, and our advancing civilization, it may run free, as our great rivers, and bless the coming millions.*
>
> *"Hitherto, our colleges and universities have been accessible only to the few, such are the expenses attending them. We therefore want a university with all the colleges attached, giving education of the highest order to all classes. We want ample grounds and buildings and libraries, and apparatus, and museums and endowments, and prize funds, and professors of great heads and hearts, men of faith and energy. Indeed we want everything which will make this institution eventually equal to any on this continent. Why should we not have them? I think we can."*

Bowman's statement was made in the year the University of Kentucky was established. Today the institution is among the ninety-three state universities and land-grant institutions in America which are the fulfillment of this dream.

The school was started as part of Kentucky University under a cooperative plan authorized by the legislature. In 1878, when the people of Kentucky decided to establish a state institution of higher learning, the College of Agriculture and Mechanic Arts was separated from Kentucky University and re-established on land given by Lexington and Fayette County. To provide a separate campus for the new institution, the city of

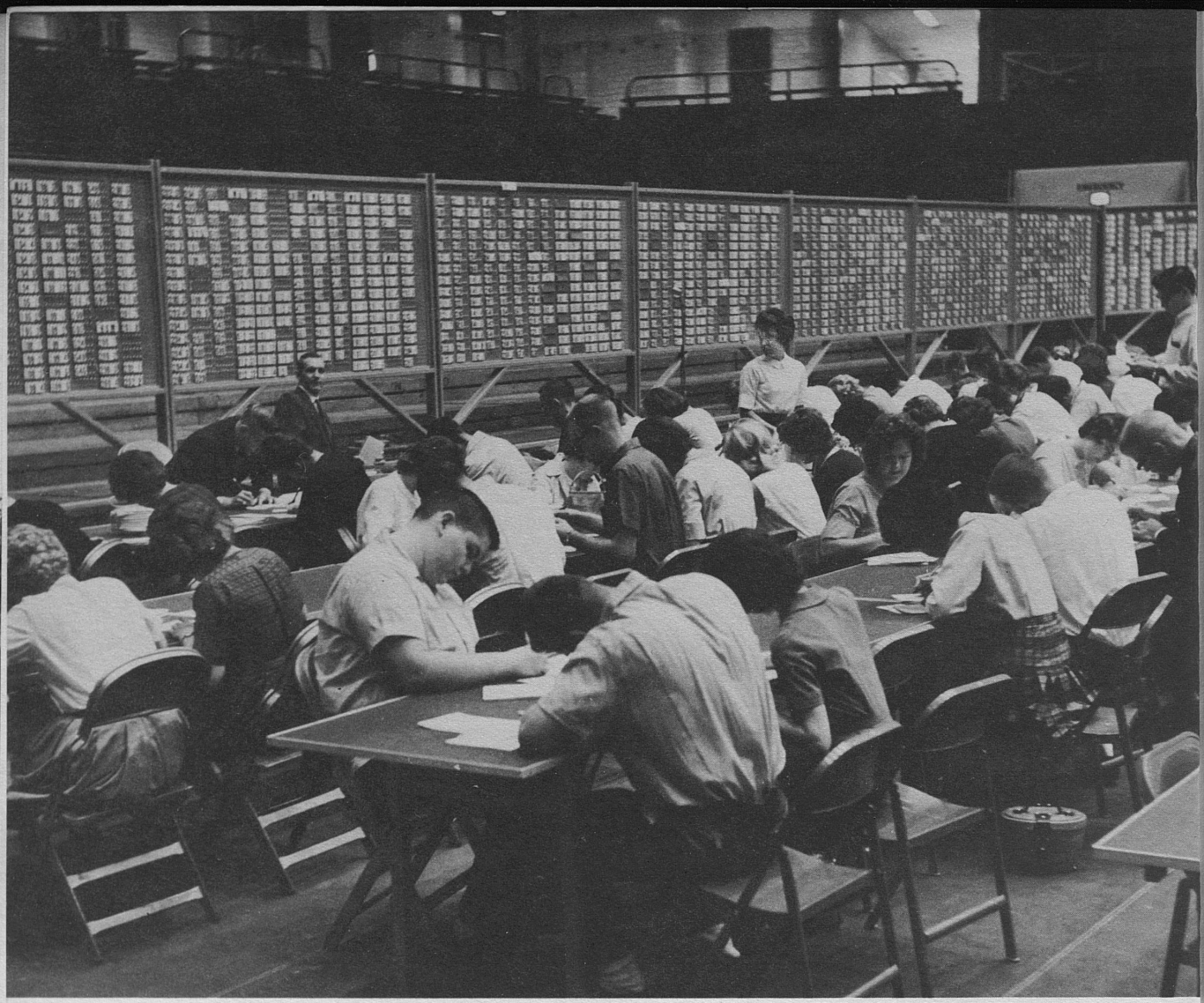
Lexington had donated its 50-acre fairground and park which, during the Civil War, had been utilized as a bivouac area for Union troops. Lexington and Fayette County contributed $60,000 for the construction of buildings, and President James K. Patterson, whose service to the institution began in 1869, used his personal savings to supplement the building fund. Thirty years later the legislature changed the name of the institution to the State University of Kentucky and gave it additional financial support. In 1916 the name was changed to the University of Kentucky.

In the more than fourscore years that have passed since its establishment as a separate state institution, the University of Kentucky has had only five presidents. Their periods of service have been as follows:

JAMES K. PATTERSON, 1878-1910
HENRY S. BARKER, 1910-1917
FRANK L. McVEY, 1917-1940
HERMAN L. DONOVAN, 1941-1956
FRANK G. DICKEY, 1956-1963

Before 1878, while it was a division of Kentucky University, the institution was presided over by John A. Williams and Joseph Desha Pickett. Bowman preceded them as regent of the parent institution.

The University presently consists of ten colleges, a division of Extended Programs, and a Graduate School.





Fields of Study

THE UNIVERSITY OFFERS WORK in many fields. The student has an opportunity for specialization and the pursuit of particular interests in 10 colleges, a Graduate School, and a division of Extended Programs.

For instructional purposes, the University is organized into the College of Arts and Sciences, College of Agriculture and Home Economics, College of Engineering, College of Law, College of Education, College of Commerce, College of Pharmacy, College of Medicine, College of Nursing, College of Dentistry, Graduate School, and Extended Programs. Instruction is given in each college or school through two semesters of approximately eighteen weeks each except in the College of Medicine, which has somewhat longer terms. A summer session of about eight weeks is offered in most colleges. The colleges are:

Arts & Sciences

Within this college it is possible to major in any one of 27 departments and two schools or in a topical field covering more than one department.

The fields are: aerospace science; anthropology; art; botany; chemistry; classics (Hebrew, Greek, Latin, Arabic); economics; English, speech, and dramtic arts; geography; geology; history; hygiene and public health; library science; mathematics and astronomy; microbiology and medical technology; military science and tactics; modern foreign language and literatures (French, German, Italian, Russian, Spanish, Japanese); music; philosophy; physical education; physics; political science; psychology; radio, television, and films; School of Diplomacy and International Commerce; School of Journalism; social work; sociology; and zoology. Rather than one of the above, a student may have a topical major or a major in another college. The areas of study listed above have been grouped into four divisions: humanities; social studies; physical sciences; and biological sciences.

Agriculture & Home Economics

Students in agriculture may select any one of the following curricula: agricultural economics, agricultural engineering, agricultural extension, vocational agriculture, agronomy, animal science, dairy science, dairy manufacturing, poultry science, horticulture, ornamental horticulture and rural sociology. There are pre-professional programs for students who plan to study forestry, veterinary medicine, or theology. All students, other than those in the pre-professional programs, will follow a basic curriculum for the first two years. By the end of this sophomore year a student is expected to choose between the program in agricultural technology, agricultural science, and agricultural business.

Students in the School of Home Economics may select any one of the following curricula: general home economics, child development and family living, food and equipment demonstration, clothing, costume design, textiles and interior decoration, home economics extension, institution management, or vocational home economics.

College of Engineering

In the College of Engineering the student may pursue any one of the following curricula: a general curriculum in agricultural engineering, a general curriculum in architecture, a general curriculum in chemical engineering, a general curriculum in civil engineering, a general curriculum in electrical engineering, a general curriculum in mechanical engineering, a curriculum in metallurgical engineering, and a curriculum in mining engineering.

College of Law

In the College of Law the student may complete a six-year program leading to the degree of Bachelor of Laws or he may complete a six-year program leading to the degrees of Bachelor of Arts and Bachelor of Laws.

College of Education

The College of Education grants the degree of Bachelor of Arts in Education to students who are enrolled in the College of Education, who have completed their majors and minors in approved teaching

fields, and who have completed their requirements in professional education. Students who complete the curriculum for elementary teachers also are eligible for this degree.

College of Commerce

The programs of study in the College of Commerce include a general-business curriculum, an economics curriculum, an industrial-administration curriculum, a marketing and advertising curriculum, a secretarial curriculum, accounting curriculum, banking and finance curriculum, and personnel management curriculum. The large amount of elective work allowed in some of the curricula makes it possible to combine a business program with other professional fields or with groups of liberal arts courses.

College of Pharmacy

In the College of Pharmacy a five-year curriculum is offered, leading to the degree of Bachelor of Science in Pharmacy.

College of Medicine

The College of Medicine offers a four year curriculum leading to the degree of Doctor of Medicine. Post doctoral training at the intern and residency level is also provided.

College of Nursing

The College of Nursing will grant the degree of Bachelor of Science in Nursing to students who successfully complete the prescribed program provided by this College. Graduates of approved hospital schools of nursing may qualify for this degree by successfully completing the requirements not fulfilled by previous education.

College of Dentistry

The College of Dentistry, opened in the fall of 1962, offers a four-year curriculum leading to the D.D.S. degree. Additional training through post-doctoral programs, which prepare students for clinical specialties within dentistry and provide opportunities for basic research, have also been developed.

Extended Programs

Through Extended Programs, the University makes its instructional and research facilities available to the citizens of the state. These programs include University Centers at Covington, Ashland, Fort Knox, Cumberland, and Henderson, extension classes in many communities, adult evening classes, home study courses by correspondence, and workshops and conferences for business and professional groups. Graduate classes taught by University faculty members are offered at the Centers by extension. Extended Programs also provides music services for schools and communities, and an annual program of high school drama, speech, and music festivals.

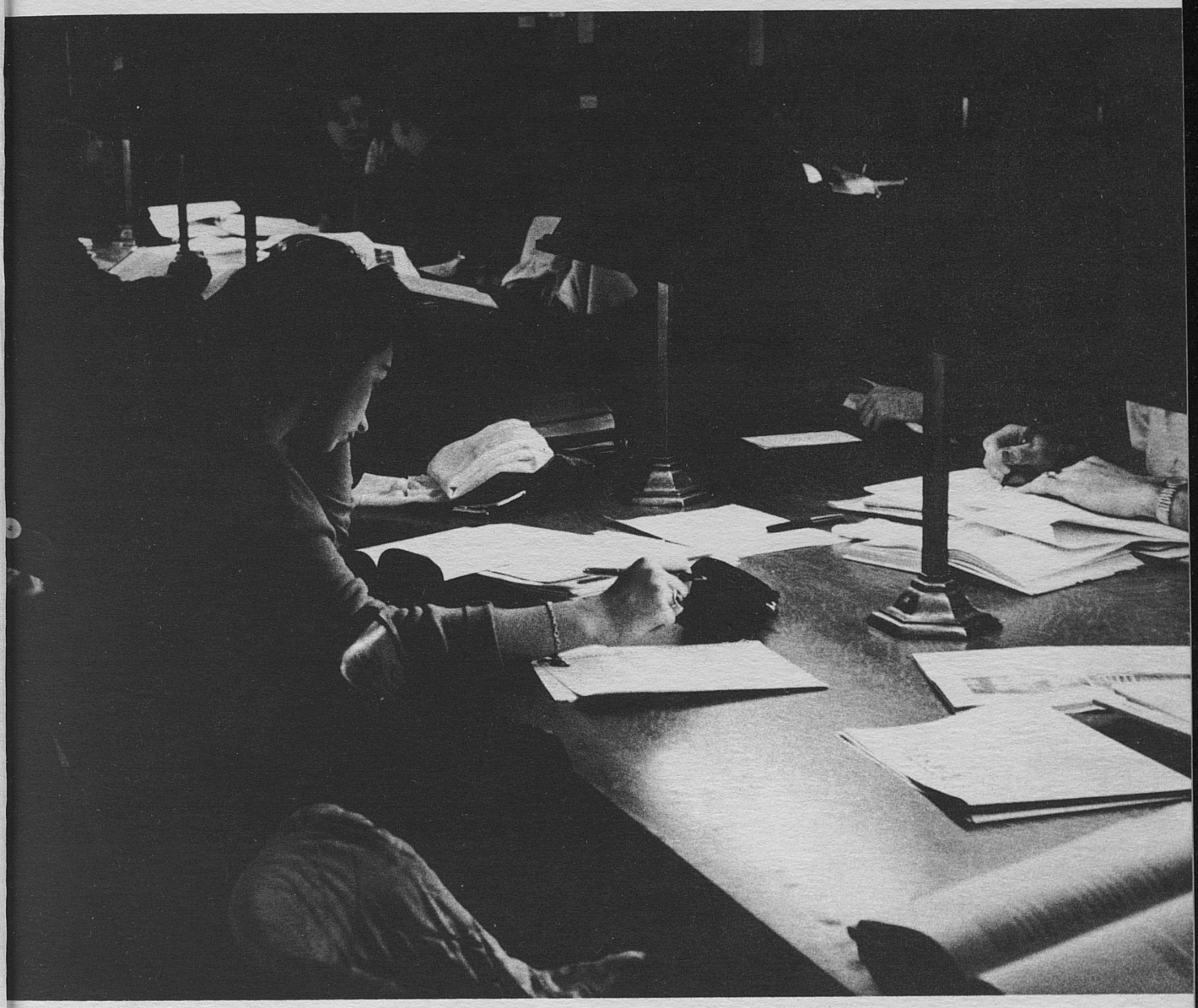
Graduate School

Graduate courses are available in all colleges and departments. The degree of Doctor of Philosophy is offered with major work in the following departments: agricultural economics, animal science, biochemistry, biology, chemistry, dairy science, diplomacy and international commerce, education, economics, English, guidance and counseling, history, mathematics, microbiology, physics, physiology, psychology, political science, and in the combined fields of sociology and rural sociology. Minor work may be carried in most departments offering graduate courses. The Doctor of Education and Doctor of Engineering degrees are also offered.

Degrees

The University offers the following degrees:

BACHELOR OF ARCHITECTURE
BACHELOR OF ARTS
BACHELOR OF ARTS IN EDUCATION
BACHELOR OF ARTS IN JOURNALISM
BACHELOR OF LAWS
BACHELOR OF MUSIC
BACHELOR OF SCIENCE
BACHELOR OF SCIENCE IN AGRICULTURE
BACHELOR OF SCIENCE IN AGRICULTURAL ENGINEERING
BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING
BACHELOR OF SCIENCE IN CIVIL ENGINEERING
BACHELOR OF SCIENCE IN COMMERCE
BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING
BACHELOR OF SCIENCE IN HOME ECONOMICS
BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING
BACHELOR OF SCIENCE IN MEDICAL TECHNOLOGY
BACHELOR OF SCIENCE IN METALLURGICAL ENGINEERING
BACHELOR OF SCIENCE IN MINING ENGINEERING
BACHELOR OF SCIENCE IN NURSING
BACHELOR OF SCIENCE IN PHARMACY
MASTER OF ARTS
MASTER OF ARTS IN EDUCATION
MASTER OF BUSINESS ADMINISTRATION
MASTER OF MUSIC
MASTER OF SCIENCE
MASTER OF SCIENCE IN AGRICULTURE
MASTER OF SCIENCE IN AGRICULTURAL ENGINEERING
MASTER OF SCIENCE IN CIVIL ENGINEERING
MASTER OF SCIENCE IN EDUCATION
MASTER OF SCIENCE IN ELECTRICAL ENGINEERING
MASTER OF SCIENCE IN HOME ECONOMICS
MASTER OF SCIENCE IN LIBRARY SCIENCE
MASTER OF SCIENCE IN MECHANICAL ENGINEERING
MASTER OF SCIENCE IN METALLURGICAL ENGINEERING
MASTER OF SCIENCE IN MINING ENGINEERING
MASTER OF SCIENCE IN NUCLEAR ENGINEERING
MASTER OF SCIENCE IN PUBLIC HEALTH
CHEMICAL ENGINEER
CIVIL ENGINEER
ELECTRICAL ENGINEER
MECHANICAL ENGINEER
METALLURGICAL ENGINEER
MINING ENGINEER
SPECIALIST IN EDUCATION
DOCTOR OF EDUCATION
DOCTOR OF DENTAL SCIENCE
DOCTOR OF ENGINEERING
DOCTOR OF MEDICINE
DOCTOR OF PHILOSOPHY




WARNING

Entering the University

A STUDENT INTERESTED IN ATTENDING the University of Kentucky may wish to visit the campus before he begins college work. Such visits are encouraged, and each student is invited to bring his parents. Arrangements may be made for the student to talk with a faculty advisor, his college dean, the admissions officer, and a housing representative. Many times, student frustrations and academic discouragement are avoided by the more careful planning resulting from consultations with University officials. While a careful study of the University catalogue is beneficial, the spirit of the University may be more advantageously gathered from discussions with the faculty, students already in residence, and various administrative officials.

The Office of the Dean of Admissions is located in the Administration Annex, and the dean is available to meet personally with prospective students and their parents. In order to avoid unnecessary waiting it is suggested that the student write requesting an interview on a specific date. Arrangements will be made ahead of time for conferences with appropriate faculty members and college deans if requested. In his letter the student should indicate his broad areas of academic interest.

Upon arriving on the campus for a visit, the student may come to the Administration Annex for information and directions. High school groups may arrange for guided tours of the campus by contacting the University's Department of Public Relations, Room 205, Administration Building.

For many persons, a visit is not practical or possible. To help acquaint them with the University a number of printed materials have been prepared, including bulletins on each college. The bulletins describe the aims of each college and the fields of study it offers. A list of publications and sources of information appears in the back of this catalogue.

Requirements for Admission

All students should make application to the University at the earliest possible date. All applications, including those for readmission, must be received in the Office of the Dean of Admissions 30 days prior to the opening of the term in which the student desires to enroll. There is no fee required for the submission of an application for admission. If the student decides not to enroll in the University after making application he is requested to notify the admissions office of the fact. Because the University does not require an application fee, applications submitted after the 30-day deadline cannot be considered until the following semester. In addition to the preceding requirement there are certain specific requirements.

FRESHMEN

Kentucky residents seeking to enter the University as freshmen must have graduated from an accredited high school with a minimum of 15 units of acceptable high school work and must have the recommendation of their high school principal. They must also submit the results of a scholastic aptitude test at the time of application. Examples of tests which may be used for this purpose are American College Test, Scholastic Aptitude Test of the College Entrance Examination Board, or a similar type of national standardized test. The family physician of a student seeking to enter the University must complete and return a physical examination report on a form which the University will furnish the student after he makes application for admission.

Out-of-state residents seeking to enter the University as freshmen must meet the same requirements as Kentucky residents except that the results of the American College Test must be submitted before admission can be approved. The student ranking in the lower fifty per cent of his class will be denied admission unless a review of all the available evidence gives reasonable assurance that he can meet the minimum academic requirements of the University.

ADVANCED STANDING

Students with previous college work must have a cumulative grade point average of 2.0 (C) or better, and be eligible to return to the last college attended. Previous college work cannot be ignored regardless of the circumstances. Their family physician must com-

plete and return a physical examination report like the one described above for freshmen.

Graduate, professional. Graduate students and students entering the professional colleges should consult the section of this catalogue describing the college they plan to enter.

Admission from high school with advanced standing. A number of high schools give the College Entrance Board Advanced Placement Examinations. Students who take these should have them forwarded to the admissions office. Advanced credit is awarded on the basis of the student's performance on each examination he takes.

EXCEPTIONS

In some cases, persons may be admitted to the University without meeting all the general requirements. The cases are presented below:

Unusual ability. Students with unusual ability may be admitted before graduation from high school in certain instances. These students must pass a special examination and be recommended by their high school teachers as having ability to start carrying college work immediately. Persons seeking detailed information on the program should write to the Dean of Admissions.

Special student. A person may be admitted as a special student if he does not have a high school diploma, is at least 21 years old, and is fully prepared to do the work required.

Non-degree students. Persons who desire University instruction without wishing to become degree candidates may be admitted as non-degree students.

Admission Procedure

The following steps are involved in admission to the University:

1. The student should write to the Dean of Admissions for an application blank, stating whether he is entering from high school, another college, or applying for readmission. The proper admission forms will be sent to him.
2. The high school principal must complete the Secondary School Record form and return it to the admissions office. In the case of students entering with advanced standing an official transcript from each college attended must be forwarded to the admissions office. Courses in progress should be listed even though grades are not available.
3. After receiving the application blank and other forms, the admissions office will notify the student about his admission status. He will be sent an enrollment permit when his admission is approved.
4. All students entering the University in the Fall Semester are requested to visit the campus during the summer preceding it to register for their Fall classes. Students who have applied for admission will be notified when to report to the campus. Fees may be paid during the summer visit if convenient to the student.

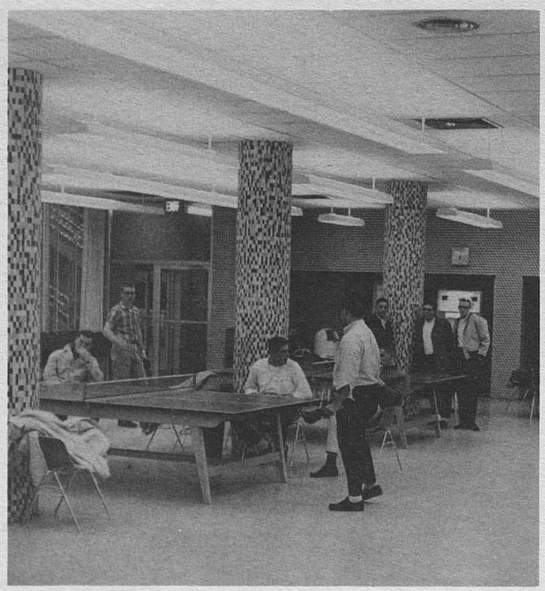
1964 Admission Procedure

Beginning with the freshman class for Fall, 1964, all applicants for admission as freshmen will be required to take the American College Testing (ACT) examination and have the results submitted to the University of Kentucky as part of their admission credentials. The ACT examinations are given at many testing centers throughout Kentucky and the nation. The student should ask his high school principal or counselor, or write to the University Admissions Office, for information.

The University of Kentucky invites, and indeed urges all prospective freshmen to apply for admission as early as possible in the senior high school year, or even during the preceding summer.








KEENELAND HALL



Living Accommodations

A RESIDENCE HALL contributes to a student's development in personal and social growth by providing satisfactory living conditions. Scholarship is emphasized in the University's residence units, and the student also learns the give-and-take pattern of group living.

Meals or snacks are available to the students at a number of cafeterias and grills on the campus. In most cases students pay for their meals along with their rooms.

The general health of the students is also a matter of concern to the University and it provides a health service facility, operated by a professional staff. The residence hall, dining, and health service accommodations are described below.

Residence Halls for Men

The University operates six residence halls for men. All male freshmen, sophomores, and juniors are required to reside in the residence halls when accommodations are available. Students in these classes desiring to live outside the residence halls must have special permission of the Dean of Men unless they are married, permanent residents of Lexington, or commuting from their permanent residence outside the city.

All students living in men's residence halls are provided two meals per day in Donovan Hall cafeteria Monday through Saturday. The cost is included in the fees for room and board. These students may take their other meals where they wish.

FRATERNITY HOUSES

Nineteen national fraternities, accommodating 672 students in residence, have chapter houses on or near the University campus.

Residence Halls for Women

The University maintains six large residence halls and three small residence units for women. All undergraduate women are required to live in the residence halls unless they live in town with relatives or in a sorority house. Only upperclasswomen are given the latter privilege.

Cooperative houses, in which students may reduce expenses by working, are assigned by special application. The students are assigned to residence units according to classification and date of application. Patterson, Boyd, Jewell, and Holmes Halls are freshman residence halls. Sophomores, juniors, and seniors are assigned to Keeneland Hall and Blazer Hall. All women students living in residence will have three meals each day (with the exception of Sunday night supper) in the Blazer Hall dining room. Dillard House is a semi-cooperative house in which girls assume some housekeeping responsibilities. Room and board exceptions are the academic holidays.

COOPERATIVE HOUSES

The University maintains two cooperative houses accommodating 34 women. Applications for these houses should be made to the Dean of Women. Applicants are selected by the Cooperative House Committee on the basis of scholastic records and recommendations. Students living in these houses must maintain a high scholastic average. Each student who will live in a cooperative house must make an advance $50 down payment, which covers rent for the semester. Cost of board varies with the price of food, but the approximate cost to each student is $27 per month. The cooperative houses are managed, operated, and maintained by the students who live there.

SORORITY HOUSES

Twelve national sororities, accommodating approximately 480 students in residence, have chapter houses on the University campus.

Applications and Payments

Applications for housing are attached to the forms for admission which are obtained from the Dean of Admissions. Information on housing may be obtained from the Director of Housing, Office of the Dean of Men, or from the Office of the Dean of Women. The students pay the first installment on their room and meals at the time they return the application. Dormitory assignments are made by priority, based on the date the completed application and initial housing

payment are received in the Offices of the Dean of Men or Dean of Women.

The balance for the semester is due on the date of registration unless the students elect to use the partial payment plan described on their application forms. This plan permits them to pay the balance in three equal installments.

Early Applications

Students are urged to apply for University admission and housing at the end of six semesters of high school work and prior to entering their senior year. Although the initial housing payment should accompany the application, those applying during this early period *may* defer this payment until January 1 of the calendar year they will enter the University. *Housing priority is not established until the initial housing payment is received.*

CANCELLATIONS

A room reservation for either the men's or women's residence halls may be cancelled and the first installment refunded if notification of the cancellation is received by the Dean of Men or the Dean of Women one calendar month before the first day of the opening of the freshman residence halls, or if application for admission is rejected. After that date the amount forfeited is determined by the date of cancellation.

Housing for Married Students

The University operates two new housing projects for married students to accommodate 450 families in 237 efficiency and 213 one-bedroom apartments. The efficiency apartments rent for $69 and $73 per month, the one-bedroom apartments for $82 and $86 per month. Rentals include furnishings adequate to basic living, utilities and maintenance.

To apply for a housing unit, communicate with the Director of Housing, Office of the Dean of Men for general information and an application blank. A $25 deposit is required with the application in order to establish priority. Generally, although the University may make exceptions in emergency cases, full-time, married male students of the University and their immediate families have first priority for the apartments. The University may change rental rates at any time it is deemed necessary to the welfare of the projects.

Dining Facilities

The Student Union Commons, Men's Dormitory Cafeteria, University Hospital Cafeteria, Student Union Grill, Wildcat Lanes Grill, Dormitory Grill, and the K-Lair Grill are operated as service enterprises by the University to provide dining facilities for students, faculty, staff members and guests. The new central dining unit, Blazer Hall Cafeteria, serves all students living in the Women's Residence Halls. Their guests are welcome.

The Student Union Commons is open seven days a week except during vacations and holidays, and serves three meals daily except Sunday, when only breakfast and noon meals are served. The cafeteria is equipped to provide special services for students, faculty and staff members, and educational and religious groups for teas, receptions, parties, luncheons, banquets, and dinners.

The Men's Dormitory Cafeteria, located in Donovan Hall, serves the students living in all men's residence halls at the breakfast and dinner hours. The noon meal is served to students, faculty, staff, and their guests. The unit is closed on Sunday.

The K-Lair grill on Hilltop Avenue near Haggin Hall is available to all students and faculty all days of the week.

The University School Cafeteria serves the training school students of the College of Education. Lunch only is served.

Meals are also served at fraternity and sorority houses.

University Health Service

The University recognizes a special obligation to help students with health problems. The University Health Service is responsible for helping students when they are ill, for controlling communicable diseases among the students and staff, and for providing aid and advice in maintaining the healthfulness of the general University community. All students are required to submit a University of Kentucky Health Report form when they apply for admission to the University.

The University Health Service program provides medical care sufficient for most of the illnesses which occur among students. The Health Service is now located in the University Medical Center where such resources as the Central Laboratory and X-ray Department can help meet student needs. Outpatient, or office, care is available on the main floor of the Ambulant Wing while bed care is available within the University Hospital.

All full-time students are required to pay a Student Activities Fee which includes a Health Service fee of $5 per semester. Part-time students may become eligible for the Health Service program by paying the same Student Activities Fee.



EXPENSES

Registration and Special Fees

(Effective September, 1963)

Fall and Spring Semesters	*Kentucky Residents*		*Non-Residents*	
	Registration Fee	*Special Fee*	*Registration Fee*	*Special Fee*
		per semester		
Full-time Students:*				
All colleges except Law, Medicine, and Dentistry	$ 81.75	$28.25	$231.75	$28.25
College of Law	86.75	28.25	241.75	28.25
Colleges of Medicine and Dentistry**	151.50***	56.50***	351.50***	56.50***
Summer Session		(per full year)		(per full year)
Full-time Students				
All colleges except Law and Medicine	45.00	12.50	115.00	12.50
College of Law	48.00	12.50	120.00	12.50

Part-time Students, Regular or Summer Terms

	Per Semester Hour	
All undergraduate colleges except Law	$ 9.50	$23.00
College of Law	$15.00	$37.00
Graduate School	$13.00	$31.00

* The figures for each College listed above include everything except additional fees for certain courses in Applied Music, Chemistry, Engineering, English, Geology, and Physical Education. These fees are outlined under the heading "Additional Fees and Deposits."

** These are yearly fees, payable in advance or by installments. After making the $50 advance payment, students may make payments on the first day of September, November, February, and April.

*** Does not include special medical and/or dental fee of $320 for resident and $570 for non-resident.

Housing Costs

(Effective June, 1963)

Men:	Per Semester
Haggin Hall	$295*
Donovan	$295*
Men's Quadrangle	$295*
Women:	
Patterson, Boyd, Jewell, Keeneland, Holmes and Blazer Halls	$365**
Dillard House (semi-cooperative)	$305**

Married Students:	Per Month	
	Cooperstown	Shawneetown
Efficiency Apartments	$69****	$73****
One Bedroom Apartments	$82****	$86****

Men:	*****Summer Term
Double Rooms	$70
Women:	
Single Rooms	$85-95***
Double Rooms	$70-80***

* Includes room and two meals daily, Monday through Saturday.

** Includes room and three meals daily except Sunday night supper.

*** The higher figure is for air-conditioned accommodations.

**** Includes adequate basic furnishings, utilities, and maintenance.

***** Meals are not included in the housing costs for summer students.

Personal Expenses

(Not payable to the University)

Books and Supplies. Range from $30 up, depending on the student's schedule of classes for the semester.

Dry Cleaning. Both men and women students make their own arrangements for dry cleaning. The cost is comparable to that in any city.

Laundry. Laundry facilities for personal items are provided in the residence halls. Information concerning bed linen and towel service is provided upon request by the Office of Dean of Women and the Director of Housing, Office of the Dean of Men. Subscription to this service is voluntary.

Personal Living Expenses other than the above vary according to the habits of the individual student.

Expenses & Financial Aid

FEES AT THE UNIVERSITY vary according to the privileges granted and the place of home residence of the student—whether a resident of Kentucky or of another state or country. For the fees indicated the full-time student receives class instruction, health and infirmary service, admission to athletics contests and to Central Kentucky Concert-Lecture programs, use of the Library and Student Union Building, a discount on admissions to the Guignol Theatre, and a subscription to *The Kentucky Kernel*, the student newspaper. Fees may change from time to time.

DEFINITION OF RESIDENT STUDENT FOR FEE ASSESSMENT

The following rules, adopted by the Board of Trustees, are applied to determine a student's eligibility for the fees assessed Kentucky residents. This determination is made at the time of initial enrollment at the University and shall not thereafter be changed except as provided below.

A student under twenty-one years of age is eligible to register at the University as a resident of Kentucky if his parent or legal guardian has maintained continuous residence in the Commonwealth for twelve months immediately preceding his original enrollment in the University. No person shall be considered to have gained residence in the Commonwealth while a student unless or until his parent or legal guardian moves into the Commonwealth and acquires residence. If a student is registered as a resident of the Commonwealth and his parent or legal guardian thereafter moves out of the Commonwealth, the student will become a non-resident at the beginning of his next enrollment. If the parents have different domiciles, the domicile of the parent who has legal custody of the student's person shall be considered the domicile of the student.

A student twenty-one years of age or older is eligible to register at the University as a resident if he has maintained continuous residence in the Commonwealth for twelve months immediately preceding the date of his original enrollment, exclusive of any time spent in attendance at any institution of higher learning. An adult student registered as a non-resident upon his original entrance to the University cannot generally thereafter acquire resident status.

An adult student from out of state who seeks residence status must assume the burden of proving conclusively that he has been a resident of the Commonwealth the requisite time with the present intention of making his permanent home in this state. In general, it is assumed that the intent to remain indefinitely in the Commonwealth is evidenced not only by what a person states but what a person has actually done. Normally, persons with intent to establish residence will be expected to have done all those things which a person customarily does when establishing a permanent residence, some of which are: obtaining full time employment, establishing a home, buying property, filing tax returns, transferring or establishing church membership, affiliating with local organizations, and the various other things which give evidence of intent to remain indefinitely within the Commonwealth.

The Non-resident Fees Committee has been authorized by the Board of Trustees to consider changes in resident status based on the above criteria. Application for change of residence classification should be made to the Dean of Admissions, who, as Chairman of the Non-resident Fees Committee, will present each case to the Committee.

IDENTIFICATION CARDS

A personal identification card is issued to each student who has paid the full fee for a semester. It includes his photograph and personal description and certifies that he has enrolled and paid his fees. It entitles the student to admission to all athletic contests on the campus and to the concert-lecture series. It must be kept throughout the semester. A part-time student may pay the additional student activities fee of $28.25 and obtain an ID card. If a card is lost through no fault of the student it may be replaced, but a fee of $5.00 will be charged. Application for replacement of an ID card should be made at the Registrar's Office.

Scholarships & Fellowships

To the greatest extent possible, financial assistance is rendered worthy students through scholarships and fellowships. In some cases aid in the form of scholarships

Additional Fees & Deposits

FEES

Additional fees for certain courses and activities will be charged, as follows:

Applied Music:

$25.00 per semester for one course for 1 credit (or non-credit)
50.00 per semester for one course for 2 credits (or non-credit)
50.00 for 2 or more courses (credit or non-credit)
5.25 per semester for each half-hour lesson per week for each student in Applied Music who is not regularly enrolled in the University. This is in addition to the usual charge for individual lessons.

Engineering Activities:

$1.50 per semester and $1.00 per summer session, charged all students enrolling in the College of Engineering

Engineering Co-operative Fee:

5.00 per semester registration fee, applicable to students working off campus.

English:

.15 per week for books obtained from English rental library for English 101, 102, 105 and 106
$2.50 voice recording fee for students in English 181 or English 288

Geology:

$50.00 per course for summer field work in Geology 120, 121, and 524, 525
5.00 per course for field work in Geology 220, 112, 113, and 520-523
2.50 for field work in Geology 221
.75 per course for field work in Geology 104, 105, 100, and 200

Physical Education:

$ 2.00 per semester for locker fee for Activity Course
28.00 per semester for horseback riding
4.00 per semester for locker fee for swimming
35.00 per inter-session for P.E. 281. (Includes room and board at Camp Robinson.)

Correspondence and Extension Courses

$10.00 per semester hour for correspondence courses.
$10.00 per semester hour for Kentucky students and $15.00 per semester for out-of-state students for undergraduate extension classes.
$11.00 per semester hour for Kentucky students and $20.00 per semester hour for out-of-state students for graduate extension classes.

Auditors

All auditors are charged the same fee that they would pay for credit.

Graduation and Special Privileges

Candidates for the bachelor's degree will be charged a graduation fee of $9.00. This will cover the rental of cap and gown, the cost of *The Kentuckian*, diploma fee, and other necessary expenses. Candidates for the Specialist in Education degree will be charged a fee of $10.00. Candidates for the masters' degree will be charged a fee of $20.00, and for the doctorate $25.00. This is in addition to a deposit of $50.00 for dissertation publication. These fees will cover the items listed above, with the exception of *The Kentuckian*, and in addition the candidate will be presented with the hood. Graduation fees are payable not later than one month preceding the date the degrees are to be granted.

Late Registrations

Students entering the University after the regular registration periods will be charged an additional fee of $5.

DEPOSITS

Chemistry:

A breakage deposit of $8.00 is charged students enrolling in any course in Chemistry.

Deposit for Military Uniform

Each student taking military science or air science makes a deposit of $10.00. This deposit is retained by the University from year to year until the student finishes his military or air science activities or the student permanently leaves the University. This deposit is then returned after clothing and equipment account has been verified for any loss or damage.

Deposit for University Band

Each member of the University Band is required to make a deposit of $10.00. The deposit is returned after all equipment has been checked in at the close of the school year.

See statement on financial delinquencies in section on "Working Toward a Degree."

or fellowships is limited to students enrolled in a particular college or department. In other cases it is available to any qualified student. A number of prizes and awards are offered to students who do exceptional work, usually in a particular department or college.

Inquiries concerning scholarships and other awards should be addressed to the Director, School Relations.

Graduate Assistantships

Graduate assistantships are available in most departments and involve participation in teaching, research, or administrative work. Maximum stipends available for this work are $200 per month for students working on the masters degree and $250 per month for students working on the doctorate. In most cases the student must carry a lighter than normal course load. Persons interested in assistantships should contact the head of the department in which they plan to work.

Loans

The University of Kentucky participates in the National Defense Education Act Loan Program. A fund consisting of Federal contributions and University matching monies enables the Student Loan Fund Committee to grant loans to many worthy students needing financial assistance.

A student desiring a loan must demonstrate to the committee the need for a loan and the ability to do acceptable college work. The amount of the loan is determined primarily by the needs and resources of the student. However, by the terms of the Act, the loan for one year must not exceed $1000 and the aggregate over a number of years can not exceed $5000.

Interest does not accrue and payments are not required while a borrower is a full-time student and one year immediately following. The interest rate is 3 per cent per year, but does not begin to accrue until the beginning of the second year a borrower ceases to be a full-time student. The first payment is ordinarily scheduled to become due at the end of the second year a borrower is out of school and the next nine are scheduled over the next nine years.

Students who enter public school teaching may have up to 50 per cent of their loans cancelled at the rate of 10 per cent for each year of full-time teaching.

Students who wish to pursue a college education but who are hesitant because of financial difficulties, are encouraged to inquire into the availability of a loan. No collateral or co-signers are required. It should be repeated that the student's need and ability are the primary considerations.

Further information regarding student loans is available from high school principals, counselors and the Chairman, Student Loan Fund Committee, University of Kentucky.

Part-Time Work

Through the University YMCA, the Dean of Women and the Dean of Men, the University attempts to find part-time work for students who need to support themselves partially. But in most cases students earn only enough for incidentals. The bulk of the student's expenses usually must come from some other source.

Students work as newspaper carriers, drive delivery trucks, clerk in stores, work in offices, and hold various other jobs. On the campus, a number of departments use students as part-time secretaries and hire students for other types of work. The pay scale varies from job to job but ranges upward from 75 cents an hour on campus to considerably more than that for students with special skills.

There is very keen competition for jobs and the student who has had no experience must show considerable industry to find employment. In any case, he should not attempt to support himself completely. Since there is a necessary period of adjustment for the new student, he should come prepared to meet his expenses in full for at least his first semester. The student who is to be partly self-supporting may seek help from his advisor in adjusting his study load so that his employment will not prevent him from obtaining the greatest benefit from his courses.

Veterans' Benefits

The University Counseling Service coordinates veteran affairs between the University and the Veterans Administration. The veteran should report to the University Counseling Service, Room 204, Administration Building, which has been designated as the receiving center for veterans wishing to enter or re-enter the University of Kentucky. Here the applicant will be given information about applying for federal benefits and general guidance with respect to vocational opportunities, courses of study, etc. From this office he will be referred for further assistance to other persons as his individual needs indicate.

WHAT TO BRING

1. The credentials necessary for admission to the University as described in the section on Admission to the University in this Bulletin.

2. A Certificate for Education and Training, Public Law 550, or a letter indicating eligibility under Public Laws 610 or 894. (No payment for subsistence may be made until a certificate has been filed with the University.) The veteran should obtain his certificate from the Veterans' Administration as soon as possible after he decides to enter the University of Kentucky. Transfer students should request a change of place of training prior to registration.

3. Sufficient personal funds to provide subsistence for two months, since that time, or sometimes longer,

is required to establish eligibility and start subsistence payments.

PUBLIC LAWS 610, 894, AND 550

Under Public Laws 610 and 894 provision has been made for vocational education or training to overcome handicaps suffered as a result of service-connected disabilities. In order to qualify for such rehabilitation aid, the veteran must have sustained an injury or other disability which will qualify him for a pension or disability compensation. A veteran who is interested in applying for educational benefits under Public Law 610 or 894 should seek information from the nearest office of the Veterans' Administration prior to the date for enrollment at the University.

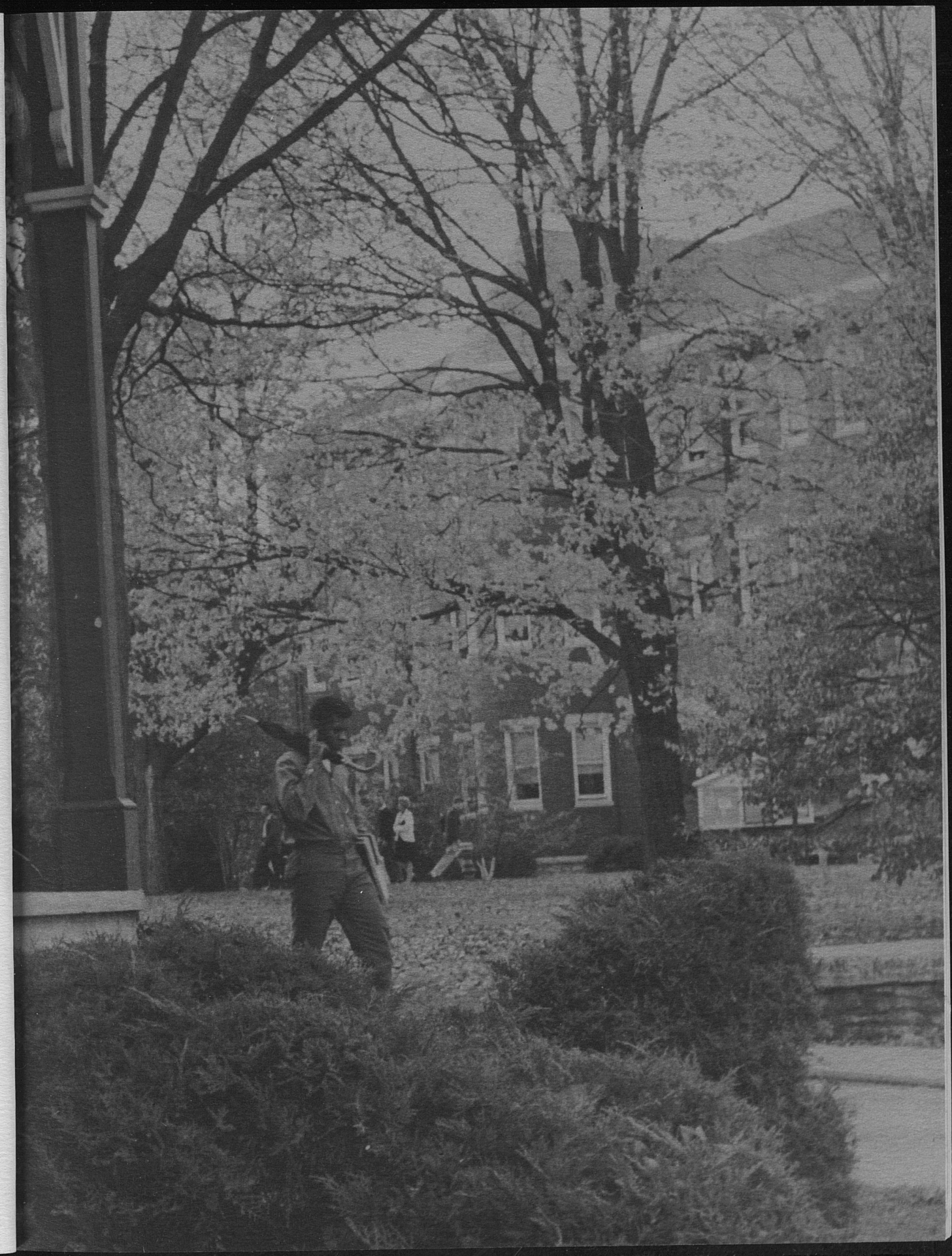
Public Law 550 (Korean GI Bill) provides educational benefits for honorably discharged veterans who have served a minimum of 90 days in the armed forces after June 27, 1950. Veterans who entered the Armed Forces after January 31, 1955, are not eligible.

Veterans who plan to enter the University of Kentucky under Public Law 550 (Korean GI Bill) should apply to their nearest V.A. Office for a Certificate of Education and Training. This should be done prior to registration date at the University of Kentucky. The Certificate of Education and Training is evidence of entitlement to educational benefits under Public Law 550. It should be presented to the University Counseling Service at the time of enrollment. Since Public Law 550 provides that all benefits be paid directly to the veteran, the veteran must arrange for payment of his own fees just as any non-veteran would do.

CHILDREN OF KENTUCKY WAR VETERANS EDUCATIONAL PROGRAM

Under the provisions of KRS 164.505 and 164.515 certain children of Kentucky war veterans are eligible for assistance from the Commonwealth of Kentucky. All persons eligible under this program must, in addition to meeting the requirements for admission, submit with the application for admission, or at least 30 days prior to the beginning of the term for which assistance is requested, the necessary documents establishing their eligibility under this program.

Generally, children of Kentuckians who were killed in military action or permanently and totally disabled in wartime military service are eligible for exemption from the payment of the registration fee. This exemption does not include activity fees, special fees or additional fees which are charged for certain courses. The activity fee for all students is approximately $28.25 a semester and $12.50 for a summer term for full time students. The activity fee covers admission to athletic contests and cultural programs, student newspaper subscription, Student Congress membership, etc.




M O R I A L

Working Toward a Degree

THE STUDENT PURSUING A COLLEGE DEGREE must fulfill a number of requirements specified by the University. These concern such things as the number of courses he will take and the pattern they should follow, the amount of time he must spend in full-time work, his grades, and his conduct. Explanations of these requirements are presented in the following paragraphs.

Student Load

The normal maximum load to be carried during any semester by a student in an undergraduate college (including residence, correspondence, and extension courses) is 19 credit hours or the amount specified in the curriculum for the particular semester, whichever is larger.

The normal maximum load for the summer session is nine credit hours. Two short courses of four weeks or less in length, or one short course of four weeks or less in length and two full term courses (except when the two full term courses do not exceed a total of three credit hours) shall not be carried concurrently.

The minimum load for a full-time student in an undergraduate college is 12 credit hours in a semester and six credit hours in the summer session.

A student who has attained a grade point average of 3.0 on a load of at least 15 credit hours for the preceding semester, or a beginning freshman who ranks in the upper 25 per cent on the University classification tests, may be permitted by the dean of his college to carry as many as 22 credit hours (10 credit hours for the summer session).

A student on academic probation shall not take more than 14 credit hours in a semester or more than seven credit hours in the summer session.

The professional colleges and the Graduate School may set lower maximum loads which are consistent with their degree requirements.

A student may be registered simultaneously at the University and at another educational institution only with the approval of the dean of the University college in which he is registered. The credit hours obtained at the other institution will be considered a part of his maximum load. If the simultaneous registration has not been authorized, the transfer of credit from the other institution may be denied.

Grading System

The University grading system uses a series of letters, to which are assigned grade point values. The system is based neither on an absolute numerical system nor on a distribution curve, but on the following descriptions.

Grade A represents exceptionally high achievement as a result of aptitude, effort, and intellectual initiative. It is valued at four grade points for each credit hour.

Grade B represents a high achievement as a result of ability and effort. It is valued at three grade points for each credit hour.

Grade C represents ordinary achievement, the minimum expected of a college student. It is valued at two grade points for each credit hour.

Grade D represents the minimum passing grade. It is valued at one grade point for each credit hour.

Grade E represents unsatisfactory performance and indicates failure in the course. It is valued at zero credit hours and zero grade point. A student receiving this grade can obtain credit in the course only by repeating the entire work of the course in class. In rare cases in which undue hardship is involved in repeating the work in class, the dean of the student's college may approve repeating the work by correspondence.

Grade I—incomplete—may be given when part of the work of the course remains undone at the time that grades are due. The grade I, for undergraduates, must be removed within one month after the student re-enters the University, unless the dean of his college grants an extension of time. A grade of I not removed within this period will be changed to a grade of E by the Registrar, who will notify the instructor concerned. The grade I, for graduate students, must be removed within one calendar year of the close of the term in which the grade was assigned, unless the Dean of the Graduate School grants an extension of time.

Grade S—satisfactory work in progress—may be recorded for students in courses consisting of research, independent work, or seminars, if at the end of a semester the student, because of the nature or size of the project, has been unable to complete the course.

Grade W—withdrew passing—may be given if the student was doing satisfactory work at the time of his official withdrawal. No grade will be recorded for a student who officially withdraws or is dropped from a class during the first ten class days of a semester or the summer session. Students who withdraw after these dates or who are dropped from class shall be given a grade of E if their work is unsatisfactory or if their withdrawal is not official.

GRADE POINT AVERAGE

The grade point average is the ratio of the number of points gained to the number of credit hours attempted. As stated above, an A counts four points for each credit hour carried, a B counts three points, a C two, and a D one. Thus, a student would earn 12 quality points for an A in a three-hour course and four quality points for a C in a two-hour course. To figure his overall standing, he would add all his quality points and divide this by the number of hours carried. The over all grade point average for the two courses cited above would be 16/5 or 3.2. Courses in which grades of W, S, and I have been given are ignored, but a grade of E is included even though it counts as zero credit hours in fulfilling the requirements for a degree.

Other Regulations

Entrance Examination. All new students, other than those entering the Graduate School, are required to take the University classification tests and such physical examinations as the University may require.

Acceptable Standards in English. Instructors in all courses are expected to call attention to and to penalize for errors in English usage on the part of a student, and to require rewriting of papers which do not meet acceptable standards of English.

Financial Delinquency. A student who is delinquent in his financial obligations to the University, to any department or division of it, or to any University organization, shall not be allowed to register for the next term, to transfer his credits to another school, or to graduate from the University, provided that such obligation shall not include fines and penalties assessed against the student by other than University officers.

Special Examinations. A student regularly enrolled in the University may be given a special examination for credit for material mastered outside of formal instruction, provided the request for the examination is approved by the Registrar, the dean of his college, and the head of the department concerned. Application must be made in writing to the Registrar.

A student who has failed a course may not take a special examination to remove the failure, nor may a student take an examination for credit in an audited course.

Academic Probation, Dropping for Low Scholarship, Re-admission

UNDERGRADUATE COLLEGES

The following students shall be placed on academic probation:

1. The student who, during either of his first two semesters, fails to attain a grade point average of 2.0;
2. The student who, at the end of his third semester or any subsequent semester or term, fails to have a cumulative grade point average of 2.0;
3. The student who is re-admitted after being dropped from the University for academic reasons.

A student on academic probation shall be removed from probation at the end of a semester or term if he has achieved a grade point average of 2.0 and has a cumulative grade point average of 2.0.

A student, who, during his first semester, demonstrates that he cannot or will not do satisfactory work may be dropped upon recommendation of the dean of the college in which he has been registered.

The following students shall be dropped from the University:

1. The student who, after his first two semesters, has failed to achieve a grade point average of 2.0 for at least one of the semesters;
2. The student who, after his first three semesters, has failed to achieve a grade point average of 2.0 for at least two of the semesters;
3. The student on academic probation because of a low cumulative grade point average who fails to attain a cumulative grade point average of 2.0 after one semester on probation.

A student who has been dropped shall normally be re-admitted only after two semesters have passed and after he has presented evidence to indicate that he can and will do satisfactory work if readmitted. He must apply for readmission at least 30 days before the beginning of the semester in which he plans to enroll. He shall, however, have the right to appeal for waiving the two semester requirement on the grounds of exceptional hardship.

If a student is readmitted, he shall be required to achieve a grade point average of 2.0 for the first semester after readmission, and he shall further be required to bring his cumulative grade point average up to 2.0 by the end of the second semester after readmission, or be dropped from the University.

PROFESSIONAL COLLEGES

Pharmacy. Definition: Pharmacy Standing is the overall grade point average for all professional and non-professional work accomplished subsequent to admission to the Professional Curriculum.

1. Any student who fails to achieve a pharmacy standing of 2.0 at the end of any semester shall be dropped from the University or placed on academic probation.
2. Any student who fails to achieve a pharmacy standing of 1.5 at the end of any semester shall have his record reviewed by the College of Pharmacy faculty and may be dropped from the University without a preliminary probationary semester.
3. Any student who, at the end of his first probationary semester, fails to have achieved a semester standing of 2.0 at the end of this semester shall be dropped from the University.
4. Any student who, at the end of his first probationary semester, achieves a 2.0 standing for that semester but fails to bring his pharmacy standing up to 2.0 will be continued on probation or be dropped from the University.
5. Any student who, at the end of his second consecutive probationary semester, fails to have achieved a 2.0 pharmacy standing shall be dropped from the University.
6. A student who has been dropped for academic deficiency may be readmitted on probation according to University regulations except that his academic requirements will be those outlined in items 3, 4, and 5 above.
7. Any student who, regardless of pharmacy standing, fails to have achieved a 2.0 standing for 2 consecutive semesters may be placed on probation.

Law. Any student who fails to make a numerical average of 60 during a semester will have his academic record evaluated by the law faculty and may be dropped from the University or placed on probation as the facts warrant. A student on probation who fails to make a numerical average of 60 in the probationary semester will be dropped from the University unless there are extenuating circumstances acceptable to the law faculty. A student who fails to make the following designated cumulative numerical average shall be dropped from the University unless he has made a grade point average of 60 for the semester just completed.

55 at the end of the one semester of Law
58 at the end of two semesters of Law
59 at the end of three semesters of Law
60 at the end of four semesters of Law

A student who has been dropped from the college will not be recommended by the Dean for re-admission to the college of Law until he has remained out of the college for a semester and a Summer Session and has received favorable consideration by the law faculty of a written petition stating good reasons why he can do satisfactory academic work.

ALL UNDERGRADUATE AND PROFESSIONAL COLLEGES

The dean of each college shall submit to the Office of the Registrar a complete list of students placed upon academic probation or dropped from the University within two weeks after the dean has received the grade reports from the registrar at the close of the semester or term.

A student who is on academic probation may not be employed by any department or college of the University. This shall not prevent any department or college from establishing higher standards for student employment.

A student who is on academic probation shall not be allowed:

1. To serve as an officer or committee member in any campus organization;
2. To participate in any University extra-curricular activity or in the activity of any University organization if the participation involves the expenditure of an appreciable amount of time.

At any time the dean of a college in which a student is enrolled may declare the student ineligible because of failure in current class work; at any time the dean of women or the dean of men may declare a student ineligible whose participation in an activity is judged to be detrimental to the student, the organization, or the University.

Students shall be removed from probation only on the basis of residence work at the University of Kentucky. Usually part-time work shall not be considered unless the student has been placed on probation because of unsatisfactory performance as a part-time student.

Re-admission of a student who has been dropped from the University shall be upon recommendation of the dean of the college in which the student is to be registered. However, the student shall have the right to appeal for a review of his case by the Scholarship and Attendance Committee of the University.

A student who has been dropped a second time shall not be re-admitted to the University.

Each student shall be presented with a copy of the rules that deal with probation, dropping for low scholarship and re-admission. He shall be responsible for being familiar with these rules and with their relationship to his situation.

Graduation

To be eligible for any degree, a student must have completed the requirements as approved by the University faculty. The student must file an application for a degree with the dean of his college within two weeks after the beginning of the semester or summer session in which he expects to complete his work.

RESIDENCE REQUIREMENT

Residence—a requirement for a degree which specifies the minimum period during which a student must be registered on the main campus—is intended to provide an adequate contact with the University and its faculty for each student who is awarded a degree.

For an undergraduate degree, regardless of the length of time the student has attended the University, a minimum of 30 of the last 36 credits presented for the degree must be completed in residence. This rule may be waived for veterans, provided they present at least 30 credits of residence work.

Not more than 32 credits required for an undergraduate degree and not more than one-half of the requirements for a major may be gained by extension or correspondence. Under certain conditions, up to six credit hours and nine weeks of residence required for a master's degree may be satisfied by extension work taught by University instructors. No credit will be given in the Graduate School or in the professional colleges for correspondence courses.

Credit for work while registered at a University Center shall be limited to freshman and sophomore courses. The maximum credit acceptable from University Centers toward an undergraduate degree is 67 credit hours. This maximum is to be reduced by any credit hours earned while registered as a freshman or sophmore on the Lexington campus or else where.

COMMENCEMENT HONORS

The bachelor's degree with honors in the student's major subject will be conferred upon the student who, in addition to having completed the requirements for the degree, shall have high standing in his major subject, passed with distinction a thorough comprehensive examination in his major subject, and been recommended by the faculty of the department in which his major work was done and by the dean of his college.

A student who attains a grade point average of 3.6 or higher for at least three years of work at the University (excepting extension and correspondence study) shall be graduated "With High Distinction." A student who attains a grade point average of 3.4 to 3.6 shall be graduated "With Distinction."

A student with a minimum of two but less than three years of residence work shall receive the appropriate Commencement honors if he attains a grade point average of 0.2 greater than those specified for three years of residence work.

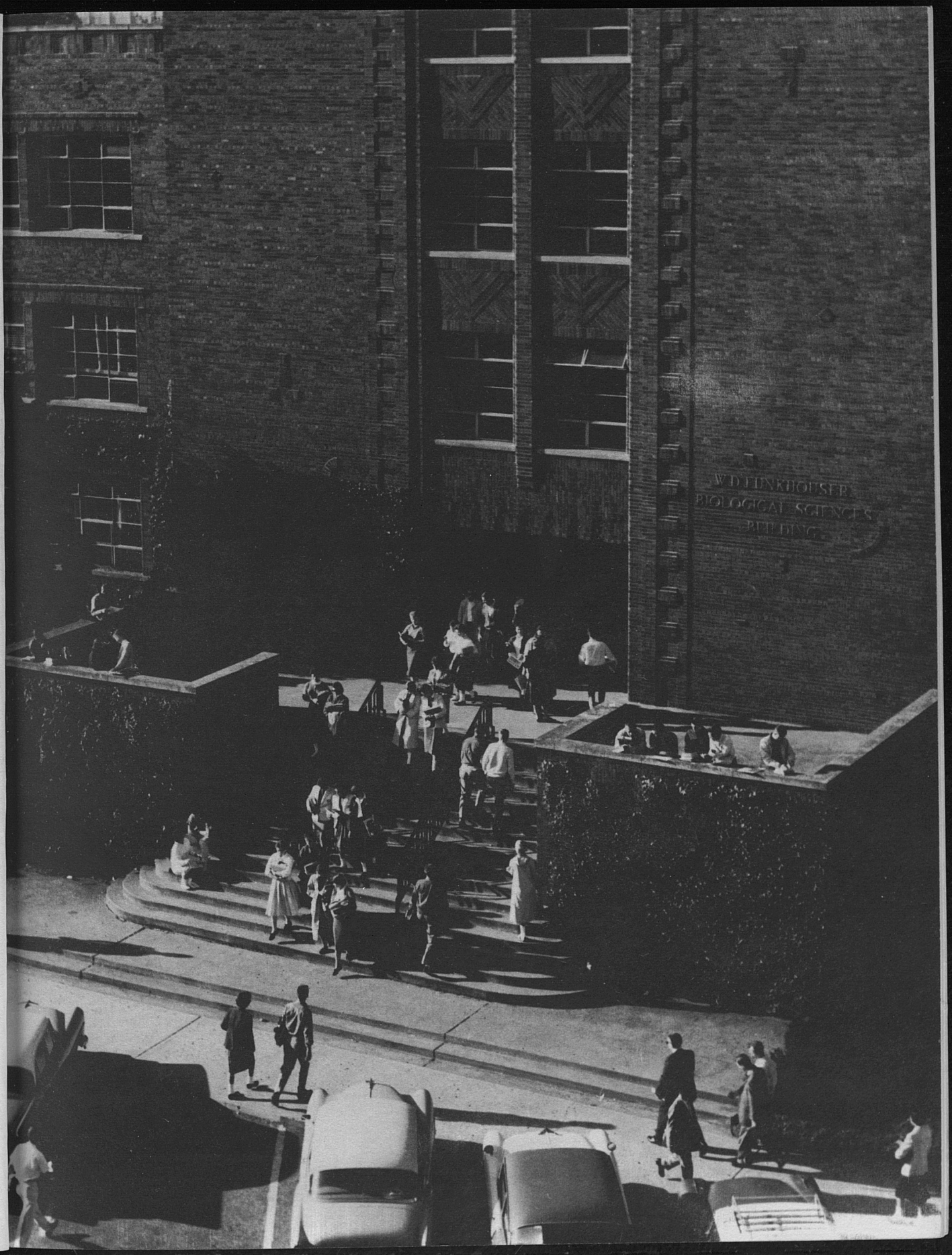
The degree with honors from a professional college shall be based solely upon work done in the professional college.

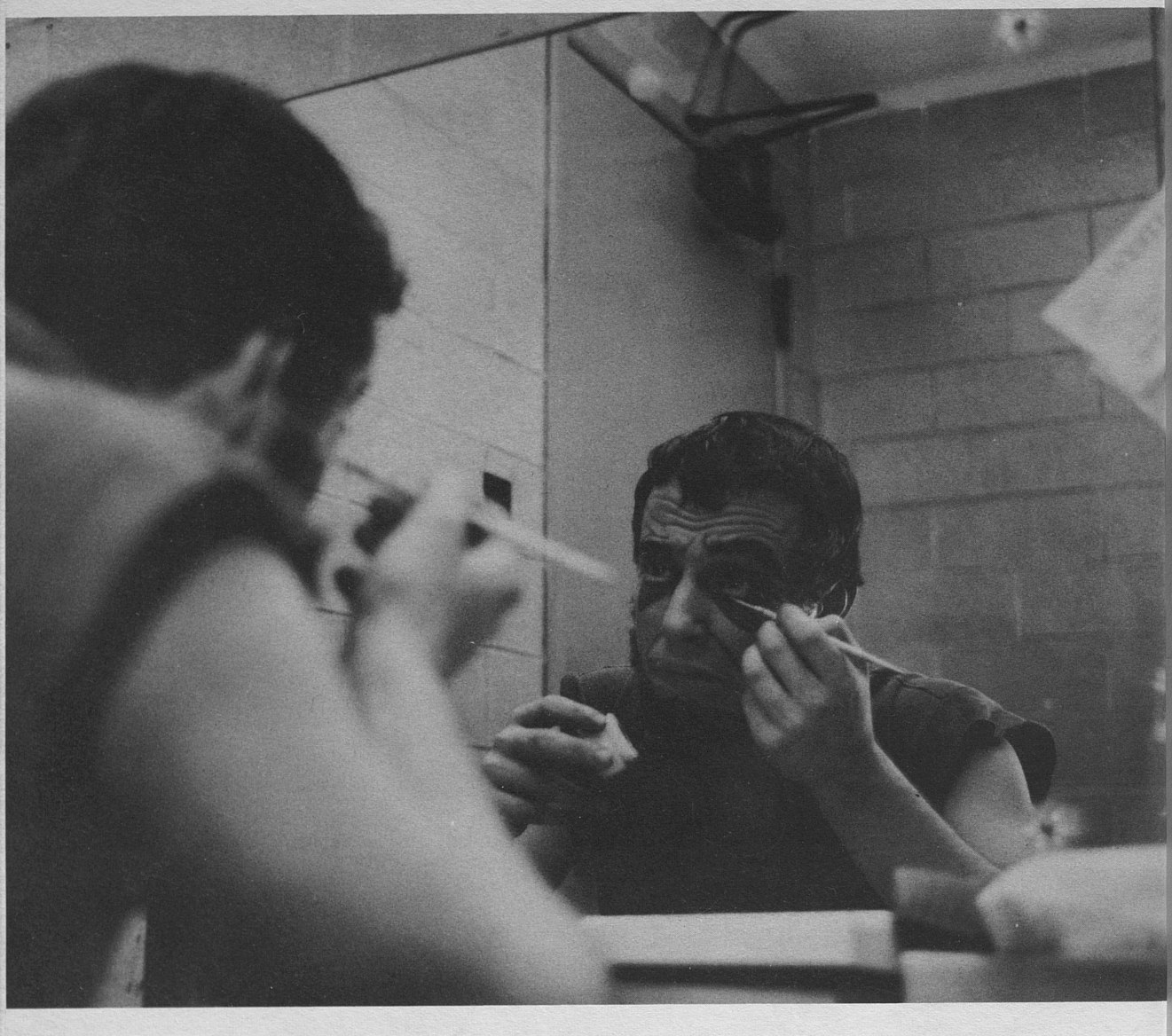
Student Discipline and Control

The University expects all students to hold to the strictest standards of honesty and to conduct themselves in a seemly manner, bearing in mind that their conduct determines in a large measure their reputation and that of the institution.

STUDENT MOTOR VEHICLES

All students registered as freshmen and sophomores at the University, regardless of the number of years they have attended college, and all students on academic or disciplinary probation are forbidden to possess and operate motor vehicles while attending the University unless given special permission by the Dean of Men. This regulation applies to the University environment including the campus, the city of Lexington, and the greater Fayette County area. Students in the above categories must not bring motor vehicles to the University at any time without permission. All upperclass students who bring motor vehicles to this area must register them in the Office of the Dean of Men at the beginning of each term.


W.D. FUNKHOUSER
BIOLOGICAL SCIENCES
BUILDING



Special Opportunities

THE STUDENT ATTENDING the University of Kentucky is expected to develop not only through his work in the classroom, but also through daily contact with other persons of many interests, through frequent reading in the University libraries, by attending some of the many fine lectures and concerts presented on campus, and by taking part in student activities. Some of the opportunities open to the student are described in this section.

Libraries

The University of Kentucky libraries house approximately a million volumes, ranking them among the largest in the South and Midwest. The libraries contain extensive collections of source materials—both printed and manuscript—in many fields, including complete runs of most major scientific journals and many others. Among the collections are a broad range of materials on Kentucky and Ohio Valley history, the works of numerous modern authors, tobacco literature, and the papers of such public figures as Alben W. Barkley, A. O. Stanley, and Jouett Shouse, which provide a detailed picture of twentieth century American political life.

A new addition to the main library doubles the size of the building and permits greater use of the facilities.

The University libraries regularly receive approximately 7,000 periodicals and are a depository for all U. S. Government publications.

Most of the books and research materials are housed in these areas of the Margaret I. King Library on the Lexington campus:

Periodical and Newspaper Reading Room—Current periodicals and newspapers, including Kentucky newspapers and some of the major indexes.

Reserved Book Reading Room—Books of required or recommended reading in the University courses.

Reference Room—Indexes and other reference works, such as encyclopedias, atlases, and bibliographies, to assist students in using library materials.

General Card Catalogue—List of all books, and other materials in University libraries, filed by author, title, and subject matter in one alphabet.

Circulation Department—In charge of books and bound periodicals available for general circulation or reference.

Special Collections—Manuscripts and other items of research value, especially in the field of Southern and Midwestern history, and microfilms, microcards, rare books, typographical materials, Kentucky music.

University and Educational Archives—Manuscript and printed material of various offices, colleges, departments and organizations of the University of Kentucky. Material on other educational institutions and Kentucky Dead of World War II and Korean War.

In addition to the Margaret I. King Library, the facilities of the University include small, highly selective collections for use of undergraduates at University centers and the following collegiate, divisional, and departmental libraries: Agricultural Experiment Station, Architecture, Art and Music, Biological Sciences, Chemistry and Physics, Education, Engineering, Geology, Home Economics, Horticulture, Law, Library Annex, Library Science, Mathematics, Medical Center, and Pharmacy.

The University of Kentucky is a member of the Midwest Interlibrary Center in Chicago, and the three million volumes of this institution are available to graduate students and faculty members.

The collection of books, periodicals, films, maps, and manuscripts in the University Libraries has been selected for the purpose of aiding the educational program of the University in teaching, in research, and in the promotion of general culture. In addition to serving the University faculty, students and staff, the libraries are available to residents of Fayette county and members of the University of Kentucky Library Associates. Other readers may request the use of books through interlibrary loans. A complete photographic laboratory makes it possible for scholars who live at a distance and graduate students not in residence to take full advantage of unique source materials in the University Libraries. Orders for microfilm, photoprints, and photostats should be addressed to the Photographic Service, University of Kentucky Libraries, Lexington, Kentucky.

Guidance in the use of the library is provided by means of a Library Guide, available at the Circulation

and Reference Desks, and through individual instruction by a staff of trained librarians. Citizens who need the assistance of the library staff in any problem may write to the Reference Librarian, University of Kentucky, Lexington.

Cultural Opportunities & Student Activities

CENTRAL KENTUCKY CONCERT AND LECTURE SERIES

Programs in the Central Kentucky Concert and Lecture Series are arranged through the cooperation of the University with the Central Kentucky Concert Association and the Lexington Public Forum and are open to all students who have paid the full-time fee.

SPECIAL LECTURES

The University presents a number of other lectures throughout the school year. Among these are the presentations in the Blazer Lecture Series, sponsored by Mr. and Mrs. Paul G. Blazer of Ashland. A number of departments, such as English and Zoology, sponsor departmental series of lectures and films. Some of the presentations by the several organizations are highly specialized and appeal to a limited audience. Others are of general interest and attract members of the student body, and faculty, and the general public.

MUSICALES

Sunday afternoon musical programs are arranged for the enjoyment of the students, faculty, and friends of the University. There is no admission charge.

UNIVERSITY ART GALLERY

A series of changing exhibitions is presented each year in the University Art Gallery under the direction of the Department of Art. These exhibitions include paintings, drawings, prints, photography, and sculpture by major masters of the past and present, work by contemporary artists of the region, and an Annual Student Exhibition.

DRAMATICS

Each year the Guignol Theatre presents a series of plays in which students, faculty, and others interested in dramatics may participate.

OTHER OPPORTUNITIES

The Y.M.C.A. and Y.W.C.A. sponsor a series of informal discussions in the Student Union, the men's dormitories, the women's dormitories, and in the various fraternities and sororities. The Cosmopolitan Club, composed of students and faculty from foreign countries and the United States, seeks to promote international good will and world brotherhood through social, educational and cultural programs. Departmental clubs add effectively to the cultural life of the University.

The University has its own FM station (91,300 megacycles), carrying the call letters WBKY. Students taking courses in Radio, Television and Films, and others of demonstrated talents, are permitted to gain actual broadcasting experience by filling positions on this station. From the WBKY studios, programs are also broadcast to WHAS, Louisville, the Lexington commercial stations, and other outlets.

RELIGIOUS LIFE

Through the existence of student groups representing most major branches of Jewish and Christian Faiths, spiritual growth may be nourished. The activities of these groups are coordinated through the Interfaith Council. Most student religious groups furnish trained personnel who may act as counselors and who are actively interested in the students' lives.

STUDENT ACTIVITIES

Many opportunities are given to the student to take part in various activities outside of his college studies. He may work on the daily student newspaper, *The Kentucky Kernel*, work on other student publications, or fill a position on the University's FM radio station, WBKY. He may take part in student government or, if he is interested in dramatics, he has the opportunity of taking part in plays presented in a real theatre and under competent direction. He may plan and participate in various recreational, social, and cultural activities by becoming a member of one of the Student Union Interest Groups. The Department of Physical Education conducts an extensive system of Intramurals for all men and women students. The former member of the Hi-Y Club or of the Y-Teens finds a welcome in the University Y.M.C.A. or Y.W.C.A. The student can enter into the management of various enterprises, participate in debating and in oratorical contests, take part in athletics, become a member of the orchestra, band, or glee club, and go to social affairs sponsored by the University and by various organizations. There is opportunity at the University for the student to exercise his many interests not only in hard work with his studies but in activities which bring him in contact with his fellow students.

FRATERNITIES AND SORORITIES

Nineteen national fraternities and 12 national sororities maintain chapters at the University of Kentucky.

The Honors Program

The University of Kentucky feels an obligation to provide teaching and facilities for study for students of different abilities. The University accepts as part of that obligation the nurture of gifted students. They stimulate other students and members of the faculty

and will contribute to the intellectual leadership in the state and nation.

The main purpose of the Honors Program is to help attract students of unusual ability and achievement to the University and help provide them with suitable opportunities for intellectual advancement. The faculty and the administration hope that the effects of the Honors Program will in time touch many—students and faculty—and thus help spread the love of learning.

The Honors Program is conceived to be essentially a challenge to outstanding students and an opportunity for them to find and to assume responsibilities commensurate with their talents. Honors students are chosen not only because they are superior students but also because they have chosen to prove they are superior students.

The heart of the Honors Program is the opportunity to develop individually, each according to his talents and interests with inspiration and encouragement from association with other Honors students and Faculty members.

Honors students are selected on the basis of College Qualification Tests, the ACT, and other examinations, high school records and recommendations, and interviews. A very small group is selected. The selected students must want to work hard in a difficult and competitive program of studies without expecting immediate material awards. The program probably will appeal only to those good students who want a challenge to match their talents, a chance to stretch their minds, a place to meet other bright students and interested professors, and to make friends with them.

Honors students begin their studies in the freshman year in the college of their choice. They meet in some special classes and in a weekly discussion session but also attend classes with other students in the University. They may substitute advanced courses for some of the beginning courses to satisfy curriculum requirements. They are encouraged to proceed to independent study and creative work as soon as they are ready. They have access to an Honors Reading Room in the library and to a room in the Faculty Club quarters.

To graduate with Honors, students must have an average of 3.5 or better, satisfy the requirements of their college and the Honors Program committee, write an acceptable thesis or essay, take the Graduate Record Examination, and in some departments pass with distinction a comprehensive written and oral examination. Students who fulfill these requirements will have stated on their diplomas and official transcripts that they were graduated in the University Honors Program.

Perhaps the most important part of the program is the feature most difficult to put into words. It is in part the growth of friendship among people with a common bond—love of learning. It is in part stimulation to work hard in an environment of friendly competition. It is in part a sense of being on a worthwhile quest. It is in part awareness that bright students need not be lonely students. It is in part a feeling that bright students are not odd. It is in part personal satisfaction derived from reading and discussing and thinking and learning for fun, beyond thought of academic credits.

Although the Honors Program is not intended to be primarily a program of rewards and distinctions for talented students, rewards will inevitably come to those students who by their achievements earn them. Among the rewards will be satisfaction, friendships, prestige, opportunity for graduate scholarships, and opportunity for better positions after graduation.

In addition to other scholarships for which participants in the program may be eligible, several competitive scholarships of two hundred dollars each have been established by the Lexington Rotary Club Scholarship Fund for some of the freshmen in the Honors Program.

The Honors Program is under the guidance of a director and a committee of twelve faculty members representing all undergraduate colleges. The committee invites inquiry about the program from high school seniors and college freshmen and sophomores. Application forms may be obtained from the Honors Program Director, Room 2, Fine Arts Building, University of Kentucky, Lexington.

Student Services

THE DEANS OF MEN AND WOMEN

The Dean of Men and the Dean of Women assist students with their problems and aid them in their adjustment to college life. Their offices serve as a general clearing house for matters pertaining to the welfare of all students.

COUNSELING AND TESTING SERVICES

The services of the University Counseling and Testing Services are available to all students enrolled in the University. In addition, high school students seeking help in planning a college program may utilize these services. There are no fees for testing or counseling.

The University Counseling Service has a staff of trained counselors for the purpose of helping students. Some typical student concerns are: ineffective study skills and habits, need for improved reading skills, difficulty in adjusting to the college environment, lack of a specific field of interest, vocational planning, inadequate interpersonal relations, feelings of depression, emotional insecurity, and more specific problems of a personal nature.

Testing facilities are available upon referral from the Counseling Service. Tests of intelligence, aptitude, achievement, personality, interest, study skills, and many others may be used, if the student wishes, to aid him

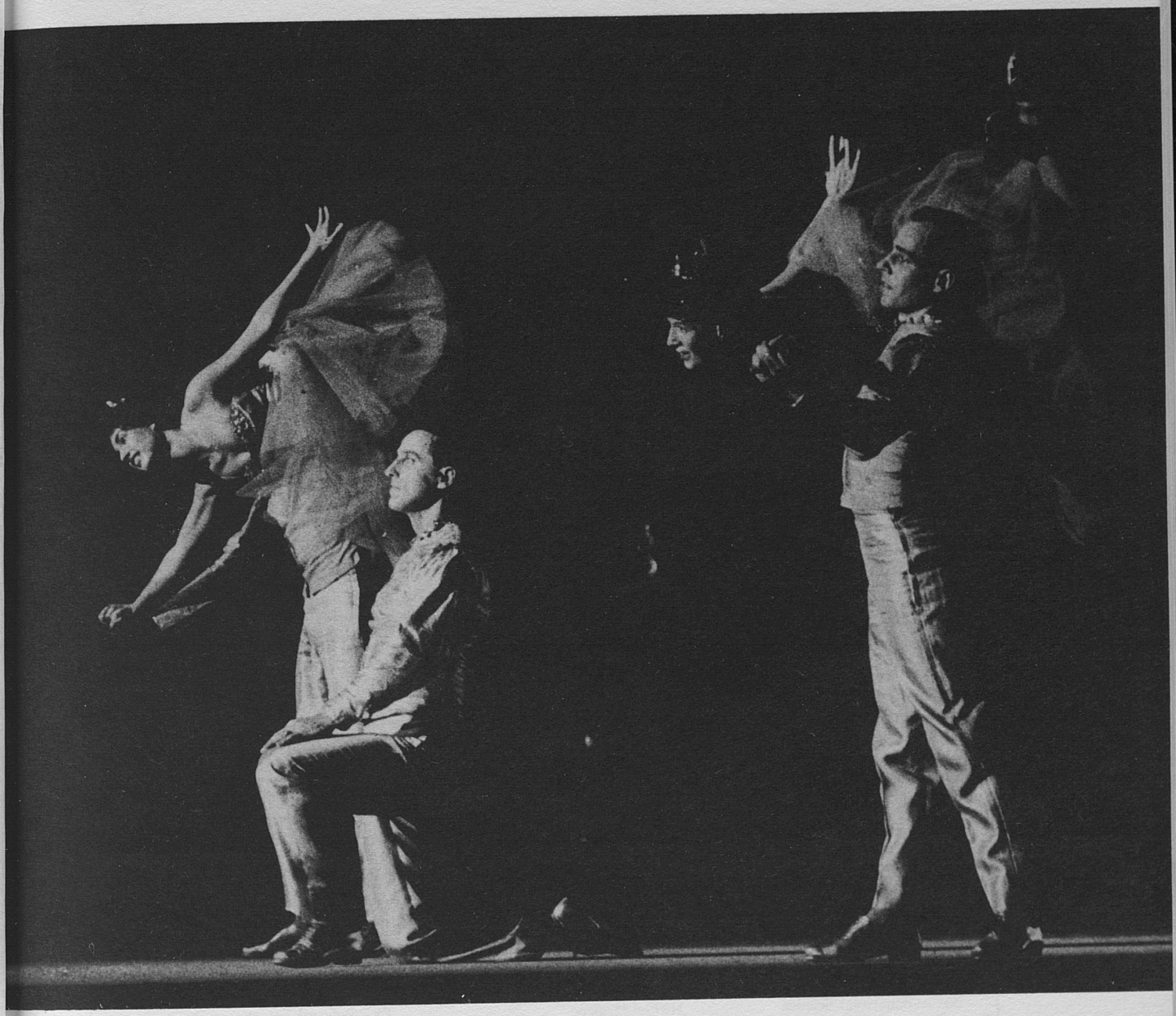
in understanding himself and increasing his efficiency.

Counseling services are also available to staff and faculty. All interviews are confidential.

The University Counseling Service is located in Room 204 Administration Building. Appointments may be made by calling Extension 3394 or 3395.

The University Testing Service, Room 303 Administration Building, acts as a testing center for the administration of various standardized tests, e.g., Graduate Record Examination, Medical College Admissions Test, National Teachers Examination and the like. All placement and classification tests administered to new and transfer students are given under the supervision of this office. The registration of entering students is not complete until the student has taken the required entrance test battery.

The University Testing Service is authorized by the Kentucky Association of Colleges and Secondary Schools to operate the Kentucky Cooperative Counseling and Testing Service.



COURSE NUMBERING SYSTEM

01 to 99—Non-credit and/or non-degree courses
100 to 199—Open to freshmen; undergraduate credit only
200 to 299—Sophomore classification required; undergraduate credit only
300 to 399—Junior classification required; undergraduate credit only
400 to 499—Junior classification required; undergraduate credit; graduate credit for non-majors only
500 to 599—Junior classification required; undergraduate and graduate credit
600 to 799—Graduate classification required

Courses may be approved for variable credits.

Repeated registration in a course may be allowed if the course description carries the statement: "May be repeated to a maximum of ..... credits."

Number in parenthesis indicates the number of credit hours allowed for the course. "I, II, and S" indicate the fall semester, spring semester, and summer session, respectively.

ABBREVIATIONS

The University of Kentucky has recently established a standardized set of abbreviations for its academic departments. These new abbreviations have been included in a number of course descriptions (especially those of new courses) while the old, informal types (e.g. "agr. engineer.") have been retained for the majority of descriptions. In subsequent catalogues, the standardized abbreviations alone will be used.

Standardized Departmental Abbreviations
(alphabetical by abbreviation)

AEC—Agricultural Economics
AEN—Agricultural Engineering
AEX—Agricultural Extension
AGE—Agricultural Entomology
AGR—Agronomy
ANA—Anatomy
ANT—Anthropology
APY—Animal Pathology
ARC—Architecture
ART—Art
AS—Aerospace Science
ASC—Animal Science
BOT—Botany
BCH—Biochemistry
BSC—Behavioral Science
CE—Civil Engineering
CHE—Chemistry
CL—Classics
CM—Community Medicine
CME—Chemical Engineering
COM—Commerce
CON—Conjoint
DEN—Dentistry
DIP—Diplomacy
DS—Dairy Science
ECO—Economics
EDU—Education
EE—Electrical Engineering
EMC—Engineering Mechanics
ENG—English
FOR—Forestry
GEN—General Agriculture
GEO—Geography
GLY—Geology
HE—Home Economics
HIS—History
HON—Honors
HOR—Horticulture
HUM—Humanities
HYG—Hygiene
JOU—Journalism
LAW—Law
LS—Library Science
MA—Mathematics and Astronomy
MB—Microbiology
ME—Mechanical Engineering
MED—Medicine
MET—Metallurgical Engineering
MFL—Modern Foreign Languages
MIN—Mining Engineering
MM—Materia Medica
MS—Military Science
MUS—Music
NUR—Nursing
OBG—Obstetrics and Gynecology
PAT—Pathology
PCH—Pharmaceutical Chemistry
PE—Physical Education
PED—Pediatrics
PGY—Physiology
PHA—Pharmacology
PHI—Philosophy
PHR—Pharmacy
PHY—Physics
PS—Political Science
PSC—Psychiatry
PSY—Psychology
PTY—Poultry Science
RAD—Radiology
RTF—Radio, TV, & Films
RS—Rural Sociology
SOC—Sociology
SUR—Surgery
SW—Social Work
ZOO—Zoology

THE COLLEGES





Arts & Sciences

THE AIM OF THE COLLEGE OF ARTS AND SCIENCES is to train the individual student as thoroughly as possible in the four years in the directions of his interests and powers, in order that he may lead a happy and useful life and contribute his share of leadership in social, intellectual, economic, and political advancement.

The College strives to attain its purpose by imparting knowledge and by training the student in the proper methods of acquiring and using knowledge, to the end that he may be broadly informed and skilled in the solution of problems, and that he may develop habits of self-reliance, initiative, judgment, and those inner resources that lead to self-mastery and happiness.

The distinctive character of the College is that it insists on an acquaintanceship with the main fields of intellectual interest and, in addition, as deep a knowledge as possible in the time allotted in some one special field. While all students are trained along lines useful in various vocations, the College emphasizes preparation *for* vocations rather than *in* them by the building of a well-rounded life, rich in interest, resourceful, capable of continuous growth and of adaptation to times and circumstances.

The College of Arts and Sciences embraces 27 departments and two schools: Aerospace Science; Anthropology; Art; Botany; Chemistry; Classics; Economics; English, Speech and Dramatic Arts; Geography; Geology; History; Hygiene and Public Health; Library Science; Mathematics and Astronomy; Microbiology; Military Science and Tactics; Modern Foreign Languages and Literatures; Music; Philosophy; Physical Education; Physics; Political Science; Psychology; Radio, Television and Films; Social Work; Sociology; Zoology; the School of Journalism; and the William Andrew Patterson School of Diplomacy and International Commerce. These have been grouped into four divisions: Humanities; Social Studies; Physical Sciences; and Biological Sciences.

Admission. Requirements for admission to the College of Arts and Sciences, as a freshman, or with advanced standing, or as a special student, are the same as those outlined on preceding pages for the University. The College, however, recommends strongly that the student present for admission two units of mathematics.

Freshman Advisors. Every student entering the college is assigned an academic advisor. The assignment is made on the basis of the student's interests and achievement. To minimize the possibility of the academic advisor's considering the new freshman as a major, heads of departments are not appointed as freshman advisors except where absolutely necessary. The dean of the college appoints the academic advisors annually.

The advisor makes out the student's course of study on the basis of information supplied by the Dean's office and by the advisee. He must be consulted before any changes are made in the schedule of classes the student is taking. The advisor in general holds personal conferences with each advisee, and makes recommendations to the proper university official with reference to living conditions, class schedules, etc. A freshman may upon the recommendation of the advisor be permitted to carry above a normal academic load.

Sophomore and Upper Division Advisers. The Dean of the college appoints a professor in the department in which the student is doing his major work to act as the student's advisor. The advisor must approve the student's schedule of classes prior to the placement of the student in the various courses.

Probation Students. Students placed on academic probation by the Dean of the college are urged to utilize the services of the University Counseling Office. The parent is notified at the beginning of the probation period. During the semester the student is interviewed and every attempt is made to determine his difficulty. The attitude of the college toward probation students is that they need assistance and with the co-operation of the parents the college attempts to fulfill this need.

Courses. The College offers courses designed to meet the needs of various classes of students. They may be listed under the following heads:

1. General cultural courses with majors and concentration fields, leading to the degree of A.B. or B.S.
2. Professional courses leading to special degrees in journalism, in music, and in medical technology.

Martin Marshall White, M.A., Ph.D., is Dean of the College of Arts and Sciences.

3. Professional courses in which the general requirements for the A.B. and B.S. degrees are fulfilled.

4. Preprofessional courses meeting the requirements for admission to professional schools.

5. Combined courses, by means of which students may save a year or more in gaining both the A.B. or B.S. and a degree in law, medicine, dentistry, forestry, or engineering.

6. Graduate courses leading to the master's and the doctor's degrees in the graduate school.

Degrees. The College offers courses leading to the following degrees: Bachelor of Arts, Bachelor of Science, Bachelor of Arts in Journalism, Bachelor of Music, and Bachelor of Science in Medical Technology. In all cases the student is responsible for the meeting of the requirements for graduation.

THE DEGREE OF BACHELOR OF ARTS

For the degree of Bachelor of Arts the student is required to gain a total of 128 credits (exclusive of the required physical education) and 256 points; that is, a standing of 2.0. With the required physical education, a student is required to complete 130 credits and 260 points. The normal load per semester is 16 credits except while the student is completing the physical education requirement. In the departments of Classics, Anthropology, Art, Botany, Economics, Geology, Journalism, Modern Foreign Languages, Music, Philosophy, Physical Education, Psychology, Radio, Television and Films, Social Work, and Zoology, he must pass a final comprehensive examination on his major subject. The Political Science department requires a senior thesis. A Topical Major is required to write a comprehensive paper in the senior year.

THE DEGREE OF BACHELOR OF SCIENCE

The degree of Bachelor of Science will, if preferred, be granted under the same conditions as govern the degree of Bachelor of Arts, provided that the student has gained at least 60 credits in science (biological and physical).

The detailed conditions are as follows:

The Lower Division

GENERAL REQUIREMENTS

English, first and second semesters, freshman year, 6 credits.

Foreign Languages—Twelve semester hours in one language, the first nine of which may be waived. The final semester of the intermediate year of the languages must be taken in residence. (Arabic, French, German, Greek, Hebrew, Italian, Latin, Japanese, Russian, Spanish.)

General Hygiene, 1 credit.

Physical Education, 2 credits.

GROUP REQUIREMENTS

Humanities, sophomore year, 6 credits.

Social Studies, freshman or sophomore year, 6 credits. (Anthropology, Economics, Geography, History, Political Science, Sociology.)

Physical Sciences, freshman or sophomore year, 6 credits. (Astronomy, Chemistry, Geology, Mathematics, Physics.)

Biological Sciences, freshman or sophomore year, 6 credits. (Anthropology, Botany, Anatomy and Physiology, Microbiology, Psychology, Zoology.)

WAYS IN WHICH THE GROUP REQUIREMENTS MAY BE SATISFIED

1. *The Humanities.* All lower division students will be required to complete a series of three introductory courses in the Humanities (for a total of six credits) to be chosen in any combination of three from the following courses, except that one, and only one, shall be either Humanities 203 or 204. (Each of these courses will carry two credits.)

   Humanities 200, Classicism: Graeco-Roman; Modern European.
   Humanities 201, The Renaissance; Romanticism.
   Humanities 202, Realism and Naturalism; the Contemporary.
   Humanities 203, Art; The Renaissance to the Present.
   Humanities 204, Music; The Renaissance to the Present.

2. *The Social Studies.* The student is permitted to choose any two of the following courses, to satisfy the group requirement in the social studies:

   History 108, 109, History of the U.S.; 104, 105, Modern Europe; Political Science 151, American Government; Anthropology 153, Sociology 153, 154, or Geography 153, 154, Societies Around the World; Anthropology 121, Introduction to Cultural Anthropology; Sociology 151, Introductory Sociology; Economics 251, 252, Principles of Economics.

3. *The Biological Sciences.** Any two of the following courses will satisfy the biological science requirement: Anthropology 100; Botany 101 or 125, 103; Microbiology 100, 102, 200; Psychology 100; Zoology 100.

4. *The Physical Sciences.** Students will be permitted to take work in either one or two departments in order to satisfy the physical science group requirement. The student may choose six or more credits from the following courses: Astronomy 191, 192; Chemistry 102, 104, 110, 112; Geology 104, 105, 110 with 104 or 105, 100, 112, 113 with 100, 214; Mathematics 101, 111, 112, 113; Physics 211, 213, 231, 232, 241, 242, 151, 152.

RULES AND PROCEDURES

1. Superior Students: Entering freshmen, in the upper twenty-five per cent of the classification scale, as determined by University of Kentucky classification tests, may substitute other courses in the groups for those courses which are set up especially to satisfy group requirements. Other students, with a standing of 3.0, may be granted the same privilege.

2. The requirements in whole or in part for English, for General Hygiene, and for any of the Groups under Section II, may be satisfied without credit by passing a departmental proficiency examination.

* 6 of the 12 credits in the biological and physical sciences requirement must be in laboratory courses.

3. A student deficient in English, as indicated by the freshman tests, is advised to take English 1 (with no credit) in his first semester, and the regular freshman English course in his second and third semesters, or whenever he has satisfactorily removed the deficiency.

The Upper Division

JUNIOR AND SENIOR YEARS

The student is required to gain at least 40 credits in a Field of Concentration. These 40 credits are to be elected subject to the approval of his advisor and the dean of the college, and must be in courses not open to freshmen. Courses outside of the formal field of concentration may be included in the required 40 credits on approval of the advisor and the dean. If the student elects a generically related field he is required to gain at least 15 of his required 40 credits in a department which he chooses as his major. At least 14 credits in the field of concentration must be outside the major department. The college recognizes two types of Fields of Concentration:

1. Fields consisting of departmentally or generically related courses.
2. Fields consisting of topically related courses.

GENERICALLY RELATED FIELDS

The college recognizes four general fields of generically related subject matter:

1. LITERATURE, PHILOSOPHY, AND THE ARTS

This field includes Classics; Art; English, Speech, and Dramatics; Journalism; Library Science; Modern Foreign Languages and Literatures; Music, Philosophy; and Radio, Television and Films.

2. SOCIAL STUDIES

This field includes Anthropology, Archaeology, Commerce, Diplomacy and International Commerce, Economics, Education, Geography, History, Law, Philosophy, Political Science, Psychology (social phases), Social Work, and Sociology.

3. PHYSICAL SCIENCES

This field includes Aerospace Science, Chemistry, Engineering, Geology, Mathematics, Astronomy, Military Science, and Physics.

4. BIOLOGICAL SCIENCES

This field includes Anatomy, Physiology, Agriculture (biological phases), Anthropology (biological phases), Botany, Chemistry (biological phases), Hygiene, Public Health, Microbiology, Physical Education, Psychology (biological phases), and Zoology.

The dean and head of the major department will appoint an advisor for each student of the Upper Division. This advisor is to have general oversight of the student's work and especially of the content of the field of concentration.

During the last semester of the sophomore year, the student's program of concentration is to be worked out for the entire two years by the student and his advisor, and when approved by advisor and dean is filed in the dean's office and constitutes a part of the student's requirements for graduation. Alterations in this plan may be made if they are approved by the advisor and the dean.

A minimum of 6 credits is required as a prerequisite for a major in any department. As a general rule the prerequisites are to be acquired while the student is registered in the Lower Division.

In order to avoid working a hardship upon students who wish to secure teachers' certificates, it is provided that, if necessary, 6 credits in Education may be included in the 40 credits of the concentration field, in fields other than Social Studies.

A student electing a combination course in Arts and Medicine, Dentistry, Law, Forestry, or Engineering, is required to complete twenty credits in his concentration field, before transferring to the professional school.

TOPICALLY RELATED FIELDS

If a student has an interest which does not fall into one of the four regular fields of concentration, he may select a topic for concentration instead of a departmental major and choose his 40 hours of course work from any of the fields. Examples of such topics are: "Scientific Secretaryship," "Contemporary American Culture," and "Costume Design and Merchandising." The 40 hours of courses in the field must contribute to the topic and cannot be chosen from courses open to freshmen.

Students interested in a topical major will be referred by the Dean to the chairman of the committee in charge and this committee will aid the student in making out his upper division plan sheet.

To pursue a topical major the student must have earned a minimum academic standing of 2.5 during the freshman and sophomore years and must have the approval of the committee on topical majors which will require, as a rule, completion of the lower division group requirements as a prerequisite. The writing of a comprehensive paper is required in the senior year.

TUTORIAL WORK AND COMPREHENSIVE EXAMINATIONS

Students majoring in the departments of Anatomy and Physiology, Classics, Anthropology, Art, Botany, Economics, Geology, Journalism, Modern Foreign Languages, Music, Philosophy, Physical Education, Psychology, Radio, Social Work, and Zoology will be required to schedule tutorial or seminar courses as specified by their major departments and to take final comprehensive examinations covering their major work. Passing the comprehensive examinations is a prerequisite for graduation for major students in these departments. If a student fails to graduate because of failure in this examination, he may be given another examination when his major department is satisfied that he has made sufficient additional preparation.

A.B. OR B.S. WITH DEPARTMENT HONORS

The degree of A.B. or B.S. with Honors in the student's major subject will be conferred upon the student who, in addition to having completed the requirements for the degree, shall have (1) attained high standing in his major subject (2) passed with distinction a thorough, comprehensive examination in his major subject (3) been recommended for the said degree by the faculty of the department in which his major work was done. Students majoring in those departments

° 6 of the 12 credits in the biological and physical sciences requirement must be in laboratory courses.

that require the final comprehensive examination are automatically candidates for department honors.

INDEPENDENT WORK COURSES

A junior or senior, if his particular excellence in the department warrants it, may, with the approval of his major professor and dean, register for an independent work course in his major subject. A standing of 3.0 in the major is also required. Such a course is characterized by special assignments for study, weekly or bi-weekly conferences, reports, and semester papers of some sustained effort. Credit for such courses may be granted to undergraduates to an amount of not more than 12 credits. At the end of the semester a written report of the work in such a course, or a paper representing part of the work must be read before the staff of the department. A copy of this paper must be filed in the office of the head of the department concerned.

Independent work courses are defined by their larger scope, wider content, advanced point of view, and by a more rigorous demand of reading, writing, and thinking.

CLASSIFICATION IN FOREIGN LANGUAGES

a. The student who offers two high school units of a foreign language should register for the first semester of the intermediate course. Students who have had more than 2½ high school units should register for the second semester of the intermediate course.

b. No student whose native language is other than English, and who has had formal instruction in schools of his own country, may be permitted to take elementary, intermediate, or conversation courses in that language.

ELECTIVES IN OTHER COLLEGES

The student is permitted to elect and count toward graduation courses in the other colleges of the University, not to exceed 30 credits. Credits in the other colleges gained during the junior and senior years may, if not open to freshmen, be counted on major and field requirements. However, election of law courses by Arts and Sciences students is limited by the following regulations:

Students having the major part of their work in law must in all cases register in the College of Law.

Seniors registered in the College of Arts and Sciences, and by reason thereof carrying at least one-half of their work therein, may take as many as 8 credit hours of law during a semester selected from the following courses: Contracts, Torts, Agency, Crimes, Property I and II, Constitutional Law, Taxation, Municipal Corporations, Public Utilities, and such other law courses as the Dean of the College of Law may approve.

Students registered in this college who are not seniors may take work in the College of Law only on securing the consent of the Dean of the College of Law.

Students taking the combined six-year Arts-Law course must, before taking up law subjects, complete the first three years of Arts and Sciences work including all subjects required for the degree in this College.

RESIDENCE REQUIREMENTS

A minimum of 30 of the last 36 credits presented for the degree must be completed in residence at the University. In the College of Arts and Sciences the last 30 credits must be completed while registered in the college.

EXTENSION AND SPECIAL EXAMINATION

A maximum of 32 credits, taken by extension, special examination, or both, may be counted toward the baccalaureate. Not more than half of the credits required for the major may be gained by extension, special examination, or both.

COMBINED COURSES IN ARTS AND LAW, ARTS AND MEDICINE, ARTS AND DENTISTRY, ARTS AND FORESTRY, AND ARTS AND ENGINEERING

A student may combine his courses in Arts and Sciences and Law, Medicine, Dentistry, Forestry, or Engineering, gaining the A.B. or B.S. degree after three years in this college and one or more years in the professional school.

1. He must gain at least 98 credits in Arts and Sciences subjects, with a standing of 2.0 or more, before transferring to the professional school. For Arts-Law or Arts-Engineering he should have 100 credits plus physical education, with a standing of 2.3 on all work attempted, before transferring to either Law College or Engineering College.*

2. He must have met the specified requirements of the College of Arts and sciences (except hygiene, in Arts-Medicine) and have gained at least 20 credits in his field of concentration before transferring to the professional school.

3. He must have been registered in the College of Arts and Sciences for at least one full year, immediately preceding the completion of his Arts and Sciences requirements, and must have gained at least 30 credits in Arts and Sciences subjects in this college.

4. He must spend at least one year in a College of Law approved by the Association of American Law Schools, or in an accredited Medical School, an accredited College of Dentistry as rated by the Dental Educational Council of America, an accredited school of Forestry, or an engineering school approved by the Engineers' Council for Professional Development.

5. He must in his professional courses secure sufficient credits to bring his total in the Arts and the professional work up to 128 credits exclusive of the required Physical Education, and must secure a standing of at least 2.0, or its equivalent, in the professional work. Professional courses duplicating Arts and Sciences courses, or duplicating courses elected in other colleges of the University by the student while registered in the College of Arts and Sciences, will not be counted in the total.

PRE-MEDICAL COURSES

The College of Arts and Sciences offers work preparatory for the study of medicine in compliance with the minimum entrance requirements of the American Medical Association and the Association of American Medical Colleges. However, most medical schools require considerably more than these minimum requirements.

* If a student enters the College of Law with only 98 credits he must complete 30 credits while in Law before he can receive the A.B. degree.

MINIMUM REQUIREMENTS FOR ENTRANCE TO MEDICAL SCHOOLS

1 year English Composition
1 year Biology with laboratory
1 year Physics with laboratory
2 years Chemistry including
(a) General Chemistry (c) Quantitative Analysis
(b) Qualitative Analysis (d) Organic Chemistry
Electives sufficient for Junior classification

The student may pursue a combination Arts-Medicine curriculum, spending three years at the University before transferring to medical school and obtaining the A.B. or B.S. degree after the first year's work in medical school.

The student who completes a four years' course of study and thereby obtains his degree will have time to meet the requirements for entrance to all medical schools. Opportunity is thus afforded for a broader background in the natural sciences, social studies, and humanities, which will be of advantage both in medical school and in later life. The student may elect any field of concentration and may major in any department of the field which he desires.

The number of students applying annually for admission to medical colleges exceeds the number which can be admitted. Boards of admission consequently fill their quotas from those who are best prepared, or who have had three or four years of college work, or even a college degree. Furthermore, these boards seldom select a student who does not have a satisfactory standing, regardless of the number of years spent in college.

RECOMMENDATION FOR PROSPECTIVE MEDICAL STUDENTS

1. Consider the study of medicine only if you have a serious desire to do so, and if you are capable of demonstrating this by successfully and satisfactorily completing your college courses. An applicant for entrance to medical school should have at least a 2.5 standing.

2. Rather early in your academic career, try to determine to what medical school or schools you will make application. Then, inform yourself as to the specific requirements and desires of these schools and try to conform to them. In order to do this it is advisable for you to write the Dean of the medical school or meet with him in an interview.

3. The College of Arts and Sciences has a faculty committee, known as the "Premedical Advisory and Recommendation Committee," the purpose of which is to advise prospective medical students and ultimately to recommend them for entrance to medical schools. When you enroll, you will be assigned by the Dean to a member of this committee who will be your advisor and with whom you should consult early and frequently in your premedical work. This committee collectively passes upon you as an applicant to medical school. Only the recommendation of this committee carries the endorsement of the University.

RECOMMENDED COURSES PREPARATORY TO THE STUDY OF MEDICINE°

Chem. 110, Gen. Chem.	5
Zool. 100, Gen. Zool.	4
Math. 111, Coll. Algebra	3
English 101, Fresh. Comp.	3

Freshman Year

First Semester	Crs.
Mil. or Aerospace Sci., or elective	2
Physical Education	1
Second Semester	
Chem. 112, Gen. Chem.	5
Bot. 101, Gen. Botany	4
Math. 112, Pl. Trig.	3
English 102, Fresh. Comp.	3
Mil. or Aerospace Sci., or elective	2
Physical Education	1

Sophomore Year

First Semester	Crs.
Econ. 251, Principles of Economic	3
German or French	3
†Chem. 230, Org. Chem. or	
†Chem. 226, Anal. Chem.	5
Humanities	2
Physics 211, Gen. Phys.	5
Mil. or Aerospace Sci., or elective	2
Second Semester	
Econ. 252, Principles of Economics	3
German or French	3
‡Chem. 232, Org. Chem.	5
Physics 213, Gen. Phys.	5
Mil. or Aerospace Sci., or elective	2
Humanities	4

UPPER DIVISION

The student in his junior and senior years will proceed to complete the group and field requirements and the additional specific requirements demanded by the medical school to which he will apply for admission. He should consult both his major professor and his pre-medical advisor.

PRE-DENTAL CURRICULUM

Students who wish to take up the study of dentistry are advised to follow the two years' Pre-Medical curriculum which more than meets the pre-dental requirements specified by the Dental Education Council of America. With the two years' curriculum, entrance may be gained to all accredited dental schools with the exception of a very few which require three years of preparatory work. A combination Arts-Dental curriculum which is similar to that of Arts-Medicine may be followed.

PRE-MINISTERIAL, PRE-THEOLOGICAL, AND PRE-RELIGIOUS EDUCATION

Students planning to enter the ministry or the field of religious education should consult the advisor to pre-ministerial students, who will plan with them their schedule for the first year and help them in the choice of their major department after the first year.

° Students who plan to spend more than two years in the University may extend the required subjects into the third or fourth years and thus make room for Social Studies and other courses in the Lower Division.

Two years of Foreign Language in college are recommended, or the equivalent in high school, although a few medical schools require none or only one year. If the student is a candidate for the A.B. or B.S., and if he has entered college before February 1958, he may fulfill the Foreign Language Requirement for the Degree by passing a basic achievement examination in a foreign language or by passing both semesters of a second year language. Students entering after February 1958 will fulfill this requirement by taking two years of some foreign language.

Math. 111 and 112 are advised and should be taken sometime during the freshman year.

† Choice depending on length of preparatory course desired.

‡ Some medical schools require only an abbreviated course in Organic Chemistry.

°° It is strongly recommended that more mathematics (especially M&A 113) be taken.

All accredited theological seminaries require a degree for entrance. The American Association of Theological Schools recommends a curriculum including English (12-16 credits); Philosophy (6-12 credits); Bible or Religion (4-6 credits); History (6-12 credits); Psychology (2-3 credits; Foreign Language—one or more of the following: Latin, Greek, Hebrew, French, German (12-16 credits); Physical or Biological Sciences (4-6 credits); Social Sciences—two or more of the following: Economics, Sociology, Political Science, Social Psychology, Education (4-6 credits).

PRE-LAW COURSES

Three years of college credit (exclusive of certain specified courses) with a minimum standing of 2.3 on all work attempted normally will be required for admission to the College of Law. Students expecting to enter the College of Law later are advised to lay special emphasis on English, history, economics, political science, and psychology and should read carefully admission requirements of the College of Law.

Many students now complete their work for a bachelor's degree before enrolling in the College of Law. Such students usually major in Political Science or History though no specific field is required. All Pre-law majors should design their study program so as to fulfill Arts and Sciences requirements. They are thus assured of the broad background required by the College of Law and at the same time are taking a necessary step toward a bachelor's degree in Arts and Sciences. Pre-law advisors will stress this point to their advisees.

PRE-PHARMACY

The equivalent of two years of liberal arts and basic sciences is required for admission to the professional program. This pre-professional training is offered in the College of Arts and Sciences.

MINIMUM REQUIREMENTS FOR ADMISSION TO THE COLLEGE OF PHARMACY

1 year English Composition
1 year Biology with laboratory (General Botany, General Zoology)
1 year Mathematics (Algebra, Trigonometry)
1 year Physics with laboratory
Chemistry,
(a) General Inorganic, including qualitative analysis
(b) Quantitative Analysis
Electives sufficient to total 67 hours (Junior classification).
The electives are chosen from such areas as—

Ancient and Modern Languages	History
Anthropology	Humanities
Art	Mathematics
Commerce	Music
Economics	Philosophy
Education	Psychology
English and Speech	Sociology
Geography	

Total Semester hours of credit required, 67.

It is recommended that the student distribute his electives among several disciplines, rather than concentrate in any particular area.

All students must demonstrate a minimum proficiency in typing, must offer it as an elective, or must be concurrently registered in an elementary typing course to be eligible to begin the professional course.

Admission to the College of Pharmacy is limited to sixty students.

RECOMMENDED COURSES PREPARATORY TO THE STUDY OF PHARMACY

First Year

Course	Cr.
Chem. 110—General Chemistry	5
Eng. 101—English Composition	3
Bot. 101—General Botany	4
Math. 101—College Algebra, or Math. 111—College Algebra	3
Military or Aerospace Science, or Elective	2
Physical Education	1
	18
Chem. 112—General Chemistry	5
Eng. 102—English Composition	3
Zool. 100—Principles of Animal Biology	4
Math. 112—Trigonometry	3
Military or Aerospace Science, or Elective	2
Physical Education	1
	18

Second Year

Physics 211—General Physics	5
Chem. 226—Analytical Chemistry	5
Military or Aerospace Science, or Elective	2
Electives	5
	17
Physics 213—General Physics	5
Economics 251—Principles of Economics	3
Mib. 200—Principles of Bacteriology	4
Military or Aerospace Science, or Elective	2
Electives	3
	17

ARTS-FORESTRY DEGREE

The University of Kentucky offers a program in forestry in cooperation with the School of Forestry of Duke University. Upon successful completion of a five year coordinated course of study, a student will have earned the Bachelor of Science degree from the University of Kentucky and the professional degree of Master of Forestry from the Duke School of Forestry.

A student electing to pursue this curriculum spends the first three years in residence at the University of Kentucky. Here he obtains a sound education in the humanities and other liberal arts in addition to the sciences basic to forestry. Such an education does more than prepare a student for his later professional training; it offers him an opportunity to develop friendships with students in many fields, expand his interests, broaden his perspective, and fully develop his potentialities.

The student devotes the last two years of his program to the professional forestry curriculum of his choice at the Duke School of Forestry. Since Duke offers forestry courses only to senior and graduate students, the student from the University of Kentucky finds himself associating with a mature student body. He is well prepared for further personal and professional development.

Candidates for the forestry program should indicate to the Dean of the college that they wish to apply for the Liberal

Arts-Forestry curriculum. Admission to the college is granted under the same conditions as for other curricula. At the end of the first semester of the third year the college will recommend qualified students for admission to the Duke School of Forestry. Each recommendation will be accompanied by the student's application for admission and a transcript of his academic record at the University of Kentucky. No application need be made to the School of Forestry prior to this time.

THE PREPARATION OF TEACHERS

Students of the College of Arts and Sciences may, by electing courses in the College of Education, qualify for teachers' certificates from the State Department of Education. For specific information concerning courses consult the statement of the College of Education.

AEROSPACE SCIENCE

FACULTY

Professor: Richard Carleton Waring Boys (B.S., United States Military Academy, 1935), HEAD. *Assistant Professors:* Robert Wilson Bailey (B.S., Central Michigan, 1941), John P. Braddy (M.B.A., Chicago, 1958), Arthur Maurice Burton (B.S., Maryland, 1958), Nathan B. Durham, Jr. (B.S., California, 1957), Robert W. Harman (B.S., Denver, 1949), Kindred Henry Muse (A.B., Texas Christian, 1948), Paul Joseph Schuler (M.B.A., George Washington, 1955), Robert Dee Sither (M.A., Kentucky, 1955), John Thistlewood, Jr. (B.S., Illinois, 1940), John L. Wilson (M.A., Southeastern State College, Oklahoma).

THE AIR FORCE RESERVE OFFICERS TRAINING CORPS

The University of Kentucky maintains a unit of the senior division of the Air Force Reserve Officers' Training Corps in conformity with the provisions of the National Defense Act of 1916, as amended.

Object. The object of the Air Force Reserve Officers' Training Corps is to provide systematic military training at civil educational institutions for the purpose of qualifying selected students of such institutions as reserve officers in the United States Air Force. This object is attained by employing methods which fit men physically, mentally, and morally for pursuits of peace as well as for duties as leaders in the defense forces of the nation in an emergency.

Educational Aim. The course of study is designed to give the student training which will be as valuable to him in his industrial or professional career as it would be should the nation call upon him to act as a leader in its defense forces.

General Policy. The policy adopted by the Department of the Air Force to carry out the provisions of the Act of Congress of June 3, 1916, as amended, is to qualify students for positions of leadership in time of national emergency and to inculcate in them a respect for lawful authority, and to teach the fundamentals of the military profession and aerospace science.

The primary purpose of all training is the development of character, leadership, and good citizenship; character through high standards of honor and integrity, leadership through the acquisition and use of knowledge, good citizenship through the idea of service as the real measurement of accomplishment and success.

The Air Force Reserve Officers' Training Corps curriculum is applicable to all students regardless of their field of academic study and is designed to produce junior officers possessing qualities and attributes essential to their progressive development in the Air Force Reserve and the Air National Guard.

Aerospace Science courses are open to women students with approval of academic advisors and college deans concerned.

The Aerospace Science Department offers two programs leading to a Bachelor of Arts or Bachelor of Science degree with a major in Aerospace Science. In addition to general admission requirements, candidates must possess to a high degree the intellectual, physical and moral attributes desired in an officer of the armed services.

Uniform Equipment. Government uniforms and equipment are furnished the University for issue to students in the basic course without cost to the individual. Each student is required to make a deposit of $10.00 with the Business Office of the University to cover the cost of any lost or damaged articles. If nothing is lost or damaged, the entire sum is refunded to the student when he completes the course or leaves school.

Students formally enrolled in AS III, The Advanced Course, will receive an Air Force uniform. This uniform is tailored to individual measurements. Students successfully completing the advanced course, Air Force ROTC, upon commissioning, will be permitted to retain these uniforms as personal property.

Subsistence. Advanced course, AFROTC enrollees receive an allowance of 90 cents a day for subsistence in lieu of rations.

Basic Course. The Department of Aerospace Science offers a two year basic course. The basic course may be selected by all freshmen and sophomores who are citizens of the United States, over 14 years of age, and who conform to the physical requirements as prescribed by the Department of Air Force for units of the Air Force Reserve Officers' Training Corps. (The basic course may also be taken in Military Science.)

Advanced Course. The elective and competitive advanced course of two years, including attendance at one Summer Training Unit for all students and the Flight Training Program for qualified personnel is offered to students who have been recommended by the President of the University and the Professor of Aerospace Science for further training. Recommendations for this course will be limited to those students who have manifested special interest and demonstrated ability during the basic course, and who desire to pursue the course to completion, with a view to qualifying for a commission in the Air Force Reserve.

Reserve officers on active duty in the Air Force may compete for commissions in the Regular Air Force. Those who desire pilot or other technical training are permitted to train in grade as officers rather than as cadets.

Course Descriptions

AIR FORCE ROTC BASIC COURSE

First Year

101,102 *Aerospace Science, I, ROTC.* (2 ea.)
A general survey of aerospace power designed to provide the student with an understanding of the elements of aerospace power and basic aeronautical science. Leadership Laboratory. Three hours per week.

Second Year

201,202 *Aerospace Science II, ROTC.* (2 ea.)
Introduction to the fundamentals of aerospace weapon systems in the USAF. The course concludes with a look into the future providing some fundamentals of astronautics. A continuation of the basic Leadership Laboratory program and introduction to the advanced program. Three hours per week. Prereq: 101, 102.

ADVANCED COURSE, AIR FORCE ROTC

A summer training period at a regular Air Force base will be required of all students as part of this course.

Third Year

301,302 *Aerospace Science III, ROTC.* (3 ea.)
Command and Staff functions and relationships; communication skills; principles and techniques of teaching; problem-solving techniques; decision making and command; military law, courts and boards; principles of leadership and management. Leadership Laboratory. Five hours per week. Prereq: Basic course or equivalent.

303 *AFROTC Summer Training Unit.* (0) S
Familiarization flying, field exercises, individual weapons, USAF base activities and equipment, and Air Base problems. Prereq: AS 301, 302.

Fourth Year

313 *AFROTC Flight Instruction Program.* (2)
Weather; navigation; introduction to international relations; military aspects of world political geography; briefing for commissioned service. Leadership Laboratory. Five hours per week. Prereq: 301, 302. Category 1 Aerospace Science 301, 302.

313(41) *AFROTC Flight Instruction Program.* (2)
Approximately 36 hours of aerial flight instruction, five hours of classroom instruction on Federal Aviation Agency Regulations. Prereq: Category I Aerospace Science 301, 302; Senior standing; major and 3.0 standing in Aerospace.

395 *Independent Work* (2-6 crs.)
A study of an advanced problem on subject area in aeronautical science under the guidance of a departmental staff member. One discussion per week; term paper required. Prereq: AS 101, 102, 201, 202, 301, 302; Senior standing; major and 3.0 standing in Aerospace Science.

AGRICULTURE

A student in the College of Arts and Sciences may elect toward the A.B. or B.S. degree a total of 30 credits from other colleges of the University.

ANATOMY

See listing under College of Medicine

ANTHROPOLOGY

FACULTY

Professors: Frank J. Essene (Ph.D., California, 1947), HEAD. Douglas Wright Schwartz (Ph.D., Yale, 1955), Charles Ernest Snow (Ph.D., Harvard, 1938), William Snyder Webb (M.S., Kentucky, 1902), special assignment. *Associate Professor:* Marion Pearsall (Ph.D., California, 1950). *Assistant Professor:* John Edward Barrows (Ed.D., Kentucky, 1959), Kenneth Edward Harper (Ph.D., Kentucky, 1959). *Instructor:* Donald Lee Hochstrasser (M.A., Kentucky, 1954).

Anthropology is the study of Man in all his aspects, past and present. It must concern itself with anything that concerns Man, and thus it synthesizes the materials of a large number of separate studies and disciplines in both the social and biological sciences. Basically, anthropology is divided into (1) Physical Anthropology, which deals with man's origin, evolution, and growth, the relationships of races, and man's physical response to his total environment; and (2) Cultural Anthropology, which includes prehistory (or archaeology), and ethnology (or social anthropology), the study of the culture of various societies. Attention has been directed chiefly toward "primitive" peoples, in the attempt to learn how such aspects of man's behavior as religion, language, social controls, and economic activities have developed and interacted on each other. But "civilized" groups, as well, are studied with the broad viewpoint and emphasis on understanding the total scope of man's life.

While many of the Department's advanced courses are planned for students interested in professional training, the introductory courses Anthropology 100 and 121 should be of much wider interest. They survey the entire field, and show the relations between all the facets of human activity throughout man's long occupation of the earth. These courses emphasize the essential unity of mankind and furnish a basis for further work in many different fields of the social and biological sciences. In addition, properly qualified students in other departments will find the advanced courses sufficiently broad in scope to be of value to them. Anthropology 526, Culture and Personality, is of particular interest to Psychology majors.

Students who intend to major in Anthropology should know that advanced degrees are required by nearly all institutions that hire professional anthropologists. The best positions go to persons with the doctoral degree but many with only a master's degree are being hired as so many colleges are adding Anthropology to their curricula. Properly qualified anthropologists presently have a wide variety of employment possibilities, not only in teaching or research, but in the many practical applications of this field.

The Museum of Anthropology has a series of public exhibits on the pre-history of Kentucky and a number of study exhibits which are correlated with the teaching program. In addition, the extensive collections of artifacts and skeletal remains from prehistoric sites in Kentucky provide varied opportunities for advanced research problems, especially in archaeology and physical anthropology.

Upper Division Requirements

Requirements in the Field of Concentration: Forty credits of advanced work in any related fields during the sophomore, junior and senior years, including the major work.

Requirements for a Major. Prerequisites: Anthropology 100 and 121; Anthropology, Sociology, or Geography 153. *Required:* A minimum of 24 credits of advanced work includ-

ing Anthropology 582 repeated once, and at least one course in each subdivision of Anthropology, namely, in ethnology, archaeology, and physical anthropology; plus a comprehensive examination in the Senior year.

Course Descriptions

100 *Introduction to Physical Anthropology.* (3) I, II, S
Meets Biological Sciences requirements. An outline of the biological aspects of man. Demonstration lectures on man's origin and development, the primates, fossil man, races, race mixture, human biology, and growth. *Snow.*

101 *Osteometric Techniques.* (1) I, II, S
An elementary laboratory study of the skulls of primates, fossil man and modern race populations; morphological measurements and classification techniques. Prereq: Anthro. 100 or concurrent. *Snow.*

121 *Introduction to Cultural Anthropology.* (3) I, II, S
Meets Social Studies requirements. Archaeological remains of prehistoric man and the arts, industries, social organization, languages, and religions of modern primitive peoples. *Essene, Schwartz.*

153 *Societies Around the World.* (3) I, II
Meets Social Studies requirements. Comparative study of Eskimo, Navajo, and Baganda as preliterate, primitive societies in difficult environments. Same as Geography and Sociology 153. *Staff.*

200 *Anthropometry.* (2) I, S
A laboratory course teaching the technique of measuring and describing the human body and skeleton from anatomical landmarks with emphasis upon the practical application to human engineering. *Snow.*

221 *Primitive Inventions.* (3) I
Ancient and modern inventions of primitive peoples. Theoretical approach combined with handling and manufacturing artifacts. *Essene.*

383 *Special Problems.* (2) I, II, S
Designed for upper division students who undertake minor research problems in archaeology, ethnology and physical anthropology in regular consultation with the instructor. May be repeated 3 times. *Staff.*

402 *Human Identification.* (2) II
A systematic and detailed study of human morphology (bones and soft parts) for purposes of identification. Two hours laboratory, one hour lecture per week. *Snow.*

500 *Physical Anthropology.* (4) II
A lecture-laboratory course on the biological nature of man. The fields of the primates, fossil man, races, race mixture, constitutional anthropology and human growth with supplementary laboratory exercises will be covered. Prereq: Anthro. 100 or 3 hours in any other Biol. Sci. *Snow.*

501 *Human Ancestry.* (4) I
A lecture-laboratory course on human origins and the fossil remains of Pleistocene man throughout the world. The lineage, formation, and inter-breeding of modern racial groups will be stressed. Prereq: Anthro. 500 or special permission. *Snow.*

510 *History of Anthropological Theory.* (3)
Description and analysis of significant anthropological ideas in their historical context; the growth of the theoretical concepts in physical anthropology, archaeology and ethnology. *Schwartz.*

515 *Descriptive Linguistics: Phonemics.* (3)
An investigation of speech-sounds and systems of speech-sounds. Also, attention to both speech and writing as communication systems. (Same as English 515.) Prereq: consent of instructor. *Faust.*

516 *Descriptive Linguistics: Morphemics.* (3)
An explanation of some of the ways speech-sounds are put together in patterns so as to form languages. (Same as English 516.) Prereq: consent of instructor. *Faust.*

521 *Ethnology of the New World.* (3) II
Cultures and physical types of the American Indians during and after white settlement. (Northwestern North America is not included.) *Essene.*

522 *North Pacific Coast Cultures.* (3) I
Ethnology of the maritime peoples of western North America and Northeast Asia. Cultural connections between America and Asia will be stressed. *Essene.*

523 *Ethnology of Oceania.* (3) I
A survey of the various cultures to be found on the islands of the Pacific Ocean. Both aboriginal and modern acculturated societies will be considered. *Essene.*

524 *Mythology.* (3) II
The unwritten literature of primitive peoples. Themes, diffusion, style, literary devices, and function of myths. *Essene.*

525 *Applied Anthropology.* (3) II
Application of anthropological methods to contemporary practical problems such as acculturation, colonial administration, intercultural education, and race relations. *Essene.*

526 *Culture and Personality.* (3) I
The cultural basis of personality. Personal character considered as the result of culturally fostered patterns. The ideal personality in several selected societies. (Also listed as Sociology 526.)

533 *Social Anthropology.* (3) II
History and theory of social anthropology with special emphasis on the comparative approach to analysis of structure, function, and change in social and cultural systems. Prereq: Consent of instructor. Same as Sociology 533. *Pearsall.*

541 *Archaeological Theory and Method.* (3) II
The concepts and aims of archaeology, its history as a scientific discipline and its present role in the social sciences. Attention to basic principles in field work and to recent advances. *Schwartz.*

542 *North American Archaeology.* (3) I
Origin and growth of prehistoric American Indian cultures north of Mexico as revealed by archaeological data. *Schwartz.*

543 Beginnings of Civilization (3) I
Prehistory of the Near East, the earliest evidences of agriculture, pastoralism, pottery, smelting, writing, law codes, irrigation, astronomy, kingships, building of stone, priesthood, temples, coined money. *Schwartz.*

544 *Diffusion of Civilization.* (3) II
Prehistory of the Far East, Europe, and Negro Africa and ethnology of primitive tribes in these areas. The spread of Near Eastern civilization provided the basis for higher culture developments. Prereq: Anthro. 543 or equivalent course on the Near East. *Essene.*

545 *Archaeology of Kentucky.* (3) II, S
A rapid survey of the more important prehistoric cultures found in North America and the sequence of cultures found in Kentucky to the time of the white settlers. *Schwartz.*

546 *Prehistoric Meso-America and Peru.* (3) I
An intensive study of the native American civilizations, their origins, development, and achievements. *Schwartz.*

547 *Cultures of the Southwestern United States.* (3) II
Development of sedentary and nomadic Indian peoples, from earliest times to the present. Emphasis on Puebloan, Mogollon, and Hohokam archaeology and continuity with modern Indians. *Schwartz.*

561 *Anthropology: Man and His Works.* (3) I, S
Survey of the major fields of anthropology, physical, prehistory, and ethnology and a guide to source material. Designed for students not contemplating further work in anthropology. *Staff.*

581 *Independent Work in Anthropology.* (2) I, II, S
Prereq: Major and a standing of 3.0 in the dept. May be repeated 3 times. *Staff.*

582 *Tutorial Seminar.* (3) I, II, S
Anthropological methods and theory. May be repeated three times. Prereq: Major in anthropology. *Staff.*

768 *Thesis.* (0) I, II, S
Residence credit for the master's degree. May be repeated once.

770 *Seminar.* (2) I, II, S
Intensive work in particular fields of anthropology. All students during a given semester will be assigned related phases of the same problem. Designed primarily for students working toward a master's degree in anthropology. May be repeated once. *Staff.*

790 *Research Problems in Anthropology.* (3) I, II, S
Intensive study in the fields of Physical Anthropology, Archaeology and Ethnology with qualified staff members. Term papers required. May be repeated three times. *Staff.*

ART

FACULTY

Professors: Richard Borden Freeman (A.M., Harvard, 1934), HEAD. Clifford Amyx (M.A., Kentucky, 1943), C. Raymond Barnhart (M.A., Ohio State, 1936), Edward Warder Rannells (M.A., Chicago, 1942). *Associate Professor:* Donald J. McIntosh (M.F.A., Yale, 1961). *Assistant Professors:* Anne Worthington Callihan (A.B., Ashland, 1900), special assignment. Adolfo Doddoli (Mat. Art., Liceo Artistico, Florence, Italy, 1956), Anne G. Green (M.A., Columbia, 1945), Frederic M. Thursz (M.A., Columbia, 1954). *Instructors:* Janis Karlis Sternbergs (M.A., Latvian Art Academy, 1932).

As a department within the College of Arts and Sciences, the Department of Art is concerned that its majors shall have a liberal education. Hence, all students in art are grounded in the accepted foundations of a liberal education: science, social studies, language and the humanities. This kind of education should result in a command of ideas and a mastery of skills which will afford graduates the possibility of creative action through life. A departmental faculty of professional artists and scholars is dedicated to these purposes.

The University of Kentucky has one of the best equipped fine arts buildings in the country. There are modern studios for creative work in drawing, painting, printmaking, sculpture and the crafts; classrooms and conference rooms for the critical study of art; a large study collection of photographs and facsimile reproductions; an adequate collection of slides; an excellent fine arts library; and an art gallery which in size, design, and lighting is entirely suited to show the most important national circulating exhibitions of original works of art.

The Department offers two separate majors: (1) a straight art major for those wishing a liberal arts education built around the study of art, and (2) a combined art and education major for prospective teachers of art in the public schools.

1. *The Art Major* provides for a balanced program of studio classes for creative work in painting, sculpture, printmaking, etc., with, at the same time, lecture and conference courses in the history, criticism, and philosophy of art. These two types of experience complement one another in the study of art, and a synthesis is made in a senior seminar. Since some students demonstrate an aptitude for scholarly research, others for creative studio work, these difference are recognized in a system of independent-work courses where the qualified student may have separate and individual instruction.

Students with professional intentions in the Applied Arts (Industrial Design, Interior Design, Advertising Design and Illustration, etc.) will find that the basic courses offered by the Department of Art constitute excellent preparation for advanced work in these fields. In addition, appropriate electives can be chosen from courses given by other departments and colleges.

2. *The Art-Education Major* has been developed in cooperation with the College of Education. Students graduating with a major in art-education are fully qualified to teach art in the elementary schools. Teaching in the secondary schools usually calls for work beyond the A.B. degree, and the present tendency is to require the M.A. degree which again includes studies in both art and education.

The Graduate Program in Art for the M.A. degree allows for emphasis in any one of three broad fields: (1) creative work in painting, sculpture, constructive design, printmaking, etc.; (2) critical studies and research in art, comparative studies in art, music, literature, etc.; (3) research and planning in art-education. In each case a written thesis is required. And in all cases the masters' candidates continue to balance their course work between studio classes for creative work and classes in the history of art, criticism and aesthetics.

Upper Division Requirements

Requirements in the Field of Concentration: 40 credits in advanced work in the field of Literature, Philosophy, and the Arts, including the Major work.

Requirements for a Major in Art. Prerequisites: Art 100, 101, 110, 130, 200, 201, 210, and 236 or 237. *Required:* A minimum of 26 credits of advanced work in Art, including courses 500, 509, 12 credits in studio courses, 9 credits in the history and theory of art; and a comprehensive examination in the senior year.

Requirements for a Major in Art Education. (College of Arts and Sciences) *Prerequisites:* Art 100, 101, 110, 130, 200, 201, 210 and 237. *Required:* 15 credits in advanced studio courses, including Art 330, 236, 242, 310, 312 and 336, 9 credits in public school art, including Art 170, 172 and 577, 10 credits in history and theory of art, including Art 564 and one more history course, 500 and 509, 4 credits to be chosen within one of the studio areas; and 22 credits in Education, including Education 202, 325, 342, 440 or 444, and 450.

Course Descriptions

GENERAL COURSES

100,101 *Orientation in Art.* (1 ea.) I, II
Introduction to the major forms of visual art, with detailed study and analysis of original works of art. Discussions, studio and gallery presentations, art films, etc. Required of and open only to prospective majors in art.

105 *Forms of Art.* (2) I, II, S
Evolution of forms in art; style; relation of styles to cultural context. *Green.*

500 *Criticism of Art.* (3) I
History and theory of criticism in the visual arts. Contemporary problems in criticism. Analyses, interpretations, evaluations. *Amyx.*

509 *Seminar in Art.* (1) I, II
Current problems in art; correlations of theory and practice; discussions and reports. For seniors and graduates majoring in art. The seminar is prerequisite to the comprehensive examination. May be repeated for a total of 4 credits.

592 *Aesthetics.* (3) II
Problems of method in aesthetics; major types of aesthetic theory. Aesthetic materials of the arts, in literature, music, and the space arts. Form and types of form. Meaning in the arts. Interrelations of the arts. (Same as Philosophy 592.)

768 *Residence Credit for Master's Degree.* (0)
May be repeated once. *Staff.*

DRAWING, PAINTING AND PRINTMAKING

110 *Beginning Drawing and Painting.* (2) I, II, S
Basic concepts and procedures in drawing and painting. Media: pencil, charcoal, ink, casein and watercolor. Four studio hours; one hour, criticism. *Staff.*

112,113 *Descriptive Drawing.* (2 ea.) I, II
A course designed for students majoring in the sciences and engineering. Descriptive drawing, freehand perspective, technical problems in rendering and illustration. Pencil, pen and ink, charcoal and watercolor. Six studio hours. *Sternbergs.*

115 *Painting. (For non-art majors)* (2) I, II, S
A general studio course for students not intending to major in art. Study of color, form and space as expressive elements in the making of pictures. Instruction in various media. Six studio hours. May be repeated once for a total of 4 credits. *Sternbergs.*

210 *Intermediate Drawing and Painting.* (2) I
Creative representation based upon analytic study of natural forms. Figure, still life and landscape. Media: charcoal, ink, casein and watercolor. Four studio hours; one hour, criticism. Prereq: 110. *Thursz.*

310,311 *Intermediate Painting.* (3 ea.) I, II, S
Principles of pictorial structure and composition. Still life and landscape. Medium: oil. Nine studio hours. Prereq: 210. *Staff.*

312,313 *Printmaking.* (2 ea.) I, II
Technical instruction in printmaking processes: lithography, etching, wood cut. Six studio hours. Prereq: 210. *Sternbergs.*

395 *Independent Work: Painting, Printmaking.* (3)
Individual work in drawing, painting and printmaking. Prereq: Major and a standing of 3.0 in the department. May be repeated twice for a total of 9 credits. *Staff.*

510 *Advanced Painting.* (3) I, II, S
Individual development in creative painting. May be repeated twice for a total of 9 credits. Prereq: 311. *Thursz.*

615 *Traditional and Experimental Media in Painting.* (3) I, II, S
A survey of historical and contemporary procedures and materials with sustained problems in mural and easel painting. Preparation of grounds and consideration of permanency in pigments, vehicles and supports. Prereq: 3 credits in advanced painting and consent of the instructor. *Staff.*

783 *Problems in Painting and Printmaking.* (3) I, II, S
Sustained individual problems in drawing, painting and printmaking. Prereq: 12 credits in upper division studio work and consent of the instructor. May be repeated twice for a total of 9 credits. *Staff.*

SCULPTURE, CERAMICS AND DESIGN

130 *Basic Design.* (2) I, II, S
Training in basic design skills. Creative construction in common materials; logical development of unified forms. *Barnhart, Green, Doddoli.*

236 *Beginning Sculpture.* (2) II
Wood carving. Problems of sculptural form and composition. Prereq: 110, 130. *Barnhart, Doddoli.*

237 *Beginning Sculpture.* (2) II
Clay modeling. Problems of sculptural form and composition. Prereq: 110, 130. *Green.*

242 *Graphic Design.* (2) I, S
Basic training in the design of printing; lettering; layouts and presentation. Six studio hours. Prereq: 110 or 112. *Sternbergs.*

243 *Graphic Design.* (2) II, S
Continuation of 242. Problems in the design of posters; illustration, etc. Six studio hours. Prereq: 242. *Barnhart.*

247 *Art in Advertising.* (2) I
Advertising as a problem in vision and expression; its relation to art forms and concepts. Four studio hours and weekly problems. Prereq: Junior standing in Commerce, Journalism, or Art. *Barnhart.*

330 *Advanced Sculpture and Design.* (3) I
Special problems in one field or aspect of design. Intensive analysis and sustained creative work in a chosen problem. Six hours studio work. Prereq: Art 130 and 236 or 237. *Barnhart, Doddoli.*

336,337 *Ceramics.* (3 ea.) I
The design, construction, glazing and firing of pottery. Nine hours studio work. Prereq: 130 and 237 or consent of instructor. *Green.*

397 *Independent Work: Sculpture, Ceramics and Design.* (3) I, II
Individual research and experimental work in technical and theoretical problems of design. May be repeated twice for a maximum of 9 credits. Prereq: Major and a standing of 3.0 in the department. *Staff.*

780 *Problems in Sculpture, Ceramics and Design.* (3) I, II, S
Sustained individual problems and experimental work in the technical and theoretical problems of design. Prereq: 12 credits in upper division studio work and consent of instructor. May be repeated twice for a total of 9 credits. *Staff.*

HISTORY OF ART

200 *Art History Survey: Primitive to Medieval Art.* (2) I
A survey of the major art forms from primitive through ancient and medieval periods. Emphasis on the development of major styles. Required of prospective majors in art. *Staff.*

201 *Art History Survey: Renaissance to Modern Art.* (2) II
Continuation of 200. A survey of major styles and of major artists from the early Renaissance to the present. Required of prospective majors in art. *Staff.*

252 *History of Architecture.* (2) I
A survey of architectural developments from ancient times through the 18th century. Analysis of Classical, Medieval, Renaissance, and Baroque styles.

253 *History of Architecture.* (2) II
A study of architecture in the 19th and 20th centuries. *Rannells.*

399 *Independent Work: History, Criticism.* (3) I, II, S
Individual research: history, criticism, aesthetics, etc. Prereq: Major and a standing of 3.0 in the department. May be repeated to a maximum of 9 credits. *Staff.*

554 *Ancient Art.* (3) I
The art of the ancient cultures of the Mediterranean and West-Asian world through Greek and Roman times. Emphasis on classical art.

556 *Medieval Art.* (3) I
The art of Byzantium and the Near East and of the Latin and Germanic cultures in the West; Romanesque and Gothic Art in Northern Europe. Emphasis upon Christian Art. *Rannells.*

558 *Renaissance Art in Italy.* (3) I
The arts of the Renaissance in Italy from the late middle ages through the sixteenth century. Italian humanism; analyses of style; study of individual masters. *Amyx.*

559 *Renaissance Art in Northern Europe.* (2) II
The arts of the Renaissance and Reformation outside Italy from the late middle ages through the sixteenth century. Northern humanism; analyses of style; study of individual masters.

560 *Baroque Art.* (3) II
The arts of the Reformation and Counter-Reformation in Europe from the mid-sixteenth century in Italy through the eighteenth century in France and Germany. The Baroque and Rococo styles; study of individual masters. *Amyx.*

562 *Nineteenth Century Art.* (3) I
The arts in Europe and America from the mid-eighteenth century through the nineteenth century. Consideration of social and economic changes in relation to art; study of individual artists. *Amyx, Rannells.*

563 *Art in America.* (2) II
A survey of American architecture, sculpture, painting, illustration, handicrafts, industrial design, etc., from Colonial times to the present. *Amyx.*

564 *Twentieth Century Art.* (3) II
The arts of the twentieth century in Europe and the Americas. Consideration of social and technological changes in relation to art; study of individual artists. *Amyx, Thursz.*

664 *Studies in Contemporary Art.* (3) II
Intensive study of the content of selected 19th and 20th century works. Emphasis, according to works chosen, upon parallels with contemporary theory and procedure in the sciences, psychology and philosophy; consideration of psychology, mathematical and social theory. Prereq: 564 and 500 or 592.

781 *Problems in Art History and Criticism.* (3) I, II, S
Sustained individual research and interpretation in history, criticism, aesthetics. Prereq: 12 hours in art history and criticism and the consent of the instructor. May be repeated twice for a total of 9 credits. *Staff.*

ART EDUCATION

170 *Public School Art.* (3) I, II, S
Essentials of public school art. The development of vision and art in the child; the major forms of two-dimensional art. Creative problems in drawing and painting. For students in elementary education. Two hours lecture-discussion; four studio hours. *McIntosh.*

172 *Public School Art.* (3) I, II, S
Continuation of Art 170. Emphasis on the three-dimensional forms of art, and the relation of art to visual environment. Creative problems in sculpture and design. For students in elementary education. Two hours lecture-discussion; four studio hours. Prereq: Art 170. *McIntosh.*

379 *Art Education Workshop.* (1) S
Creative problems, lectures and discussion in public school art. Primarily for in-service teachers. Thirty class hours. Prereq: Art 170.

575 *Art in Elementary Schools.* (2) S
An advanced course for in-service teachers in elementary schools. Programs of instruction related to the development levels of vision and expression in the child. Lectures, conferences, studio work, and reports.

577 *Art in Secondary Schools.* (3) S
Art for teachers in secondary schools. The literature of art education. Courses of study. Teaching materials. Lectures, conferences, and reports. *Rannells, Amyx, and McIntosh.*

670 *School and Community Art.* (3) I, S
Analyses of the social function of art; organization of school and community programs in art; case studies of existing programs. Emphasis on relation of school programs to community needs. Prereq: Art 564, 575 or 577; Sociology 220; Education 732 or 661; or consent of the instructor. *Amyx.*

BIOLOGY

Biology 101 and 102 will be taught at the University centers only. Students expecting to transfer to the Lexington campus should be warned that it would be unwise to take Biology 101 without following it by Biology 102. The equivalent cannot be obtained by following Biology 101 with Zoology 100 or Botany 101.

Course Descriptions

101 *Biology.* (4)
An elementary course concerned with a study of plant and animal organisms, including man, and designed to serve both the major and non-major in an understanding of biological principles and processes. Two lectures and two laboratories per week.

102 *Biology.* (4)
A continuation of Biology 101. Two lectures and two laboratories per week. Prereq: Biology 101.

BOTANY

FACULTY

Distinguished Professor: Herbert Parkes Riley (Ph.D., Princeton, 1931), HEAD. *Research Professor:* Frank Theodore McFarland (Ph.D., Wisconsin, 1921), special assignment). *Associate Professors:* Edward Tankard Browne, Jr. (Ph.D., North Carolina, 1957), Carl Ernest Henrickson (Ph.D., Ohio State, 1950), Berthus Boston McInteer (Ph.D., Ohio State, 1932), special assignment. *Assistant Professor:* Jasper Henry Barkdoll Garner (Ph.D., Iowa, 1954). *Instructor:* John C. Warden (A.B., B.S., Chicago, 1955).

The elementary courses of the Department of Botany are designed to give the general student a knowledge of the basic principles of plant life, to show him the relation of plants to man, and to give him a better understanding of his environment. These courses are fundamental to students of agriculture, forestry, and pharmacy and will satisfy part of the premedical requirements of most medical schools. The advanced courses lead to an undergraduate major in botany with emphasis upon morphology, classification, physiology, and cytogenetics and should be of interest to students of applied botanical sciences.

Upper Division Requirements

Requirements in the Field of Concentration: Forty credits of advanced work in the field of Biological Sciences including the major work.

Requirements for a Major. Prerequisites: Botany 101 and 103 or equivalents. *Required:* A minimum of twenty credits of advanced work in Botany and the passing of a comprehensive examination.

Course Descriptions

101 *General Botany.* (4) I, II
Principles of botany. Cells and tissues; the structure and physiology of the root, stem, and leaf; reproduction in flowering plants. Two lectures and two two-hour lab periods per week. *Staff.*

103 *Plant Kingdom.* (3) II
Structure, life cycles, and biological relationships of typical lower plants and gymnosperms. Two lectures and one two-hour lab period per week. Prereq: Botany 101 or 125. *Warden.*

125 *General Plant Biology.* (3) I, II, S
The principles underlying the structure, physiology and reproduction of flowering plants. Three lectures per week. *Henrickson.*

201 *Local Flora.* (4) II, S

The identification and recognition of the vascular plants primarily of Kentucky, including an introduction to the use of manuals, herbarium, field study, and the principles of taxonomy. Two lectures and two two-hour labs per week. Prereq: Botany 101 or 125. *Browne.*

219 *Dendrology.* (2) I, II

Primarily a field course in which a student is taught how to identify and recognize trees by their bark, bud and leaf characters. Summer and winter conditions studied. Two lectures per week. Prereq: Botany 101 or 125. *Browne.*

240 *The Origin of Cultivated Plants.* (3) II

Archaeological, historical, and biological evidence for the place and time of origin of many plants useful to man and the relation of these plants to ancient centers of civilization. Three lectures per week. *Riley.*

400 *Fundamentals of Biology for Secondary School Teachers.* (4)

A course designed to aid the teacher in the selection of subject matter and in the presentation of modern biology to high school students. Lectures, discussions, laboratories, ten hours per week. Prereq: Employment as high school teacher. (Same as Zoology 400.)

402 *Advanced Topics in Biology for Secondary School Teachers.* (4)

A treatment of selected topics from the point of view of modern developments designed to aid the high school teacher to keep abreast of changes in theory and practice; to increase his knowledge of subject matter, and to provide better motivation for his students. Lectures, discussions, and demonstrations, eight hours per week. Prereq: Employment as high school teacher and consent of instructor.

501 *Plant Physiology.* (3-5)

Basic principles of plant physiology; the physiological processes of green plants and the effect of the environment on these processes. Prereq: Bot. 101 or 125, Chem. 112 or 104 or equiv. *Henrickson.*

506 *Special Problems.* (3) I, II

Independent work in some phase of advanced Botany. May be repeated three times. Prereq: consent of instructor. *Staff.*

507 *Morphology of Algae.* (3) I

The economic value of algae and the structure and life histories of representative forms of the various groups. Three two-hour lab periods per week. Prereq: Six credits of botany. *Warden.*

513 *Ecology.* (4) I

The interrelations that exist between plants and their environment. Three lectures and one two-hour lab period per week. Prereq: Six credits of Botany. *Warden.*

515 *Seminar.* (1) I, II

Readings and reports on special topics. Required of all senior botany majors. May be repeated once. *Staff.*

521 *Anatomy of Vascular Plants.* (4) II

The nature and origin of primary and secondary tissues and their distribution in plant organs; the use of anatomical information in phylogeny, ecology, pathology and other research areas. Two lectures and two two-hour lab periods per week. Prereq: Six credits in Botany. *Warden.*

524 *Mycology.* (4) I

The structure, relations, and physiology of the fungi and their relations with and effects on other plants and animals. Two lecture-discussions and two two-hour lab periods per week. Prereq: Botany 101 or its equivalent. *Garner.*

526 *Advanced Mycology.* (4) II

Detailed examination of the structure and physiology of specific groups of fungi. Two lecture-discussions and two two-hour lab periods per week. Prereq: Botany 524 or its equivalent and consent of instructor. *Garner.*

528 *Plant Cytology.* (4) I

The structure of plant cells; mitosis and meiosis. Two lectures and four hours lab per week. Prereq: 3 credits in the Biological Sciences. *Riley.*

530 *Introduction to Heredity.* (3) II

The principles of heredity and their physical basis. Three lectures per week. Prereq: 3 credits in the Biological Sciences. *Riley.*

532 *Genes and Their Action.* (3) II

The nature and action of genes. Physiological genetics. Three lectures per week. Prereq: Botany 530 or equivalent. *Riley.*

534 *Cytogenetics.* (3) II

Cytological and genetic evidence for the chromosome theory. Chromosome aberrations and their importance in heredity and evolution. Three lectures per week. Given in alternate years. Prereq: Botany 528 and 530 or equivalent. *Riley.*

541 *Plant Pathology.* (3)

Significance, nature, causes, and methods of control of plant diseases. Lectures and discussion, two hours; lab, two hours. Prereq: Botany 101. (Same as Agronomy 541.) *Chapman.*

551 *Taxonomy of Vascular Plants.* (4) II

A study of the principles and practices of taxonomy and a detailed consideration of the families of vascular plants. Two lectures and two two-hour labs per week, including field trips. Prereq: Botany 101 and 103. *Browne.*

560 *Plant Microtechnique.* (3) II

The principal methods used in the preservation and preparation of plant materials for microscopic examination; basic microscopy; techniques for measurement and illustration. Six hours of laboratory per week. Prereq: Botany 101 or 125. *Browne.*

701 *Advanced Plant Physiology.* (4)

A study of metabolism, mineral nutrition and hormones in green plants. The physiology of growth and development. Lecture and discussions, three hours; lab, two hours. Prereq: Chem. 236 or 432; Bot. 501 or consent of instructor. *Henrickson.*

735 *Biosystematics.* (3) I

Principles in the application of data from the fields of ecology, genetics, cytology, morphology, phytogeography, and physiology to the solution of taxonomic problems. Two lectures and one two-hour lab per week.

738 *Radiation Genetics.* (4)

Types of ionizing radiations and their effects on the hereditary mechanism; the induction of gene mutations and chromosomal aberrations by radiation. Two lectures or discussions and four hours lab per week. Prereq: Bot. 528 and 530 or equivalent. *Riley.*

770 *Seminar.* (1)

Reports and discussions on various topics in botany. One hour. May be repeated five times for a total of six hours. *Staff.*

790 *Research in Plant Morphology.* (4)

Graduate students prepared for independent work will be assigned to investigations in anatomy, histology, or special morphology of plants. May be repeated twice for a maximum of 12 credits. *Warden.*

791 *Research in Mycology.* (4)

Those desiring to carry on investigations in mycology should have had Botany 524 or the equivalent. Suitable work will be suggested to students desiring to enter this field. May be repeated twice for a maximum of 12 credits. *Garner.*

792 *Research in Plant Physiology.* (4)

Graduate students with adequate preparation in plant physiology, physics, and chemistry may carry on independent investigations in plant physiology. May be repeated twice for a maximum of 12 credits. *Henrickson.*

793 *Research in Systematic Botany.* (4)

Graduate students may carry on independent work in systematic botany. May be repeated twice for a maximum of 12 credits. *Browne.*

794 *Research in Cytogenetics.* (4)

Independent investigations in cytogenetics and radiation genetics. In connection with his investigations, the student will be expected to master the literature and present a report. May be repeated twice for a maximum of 12 credits. *Riley.*

768 *Residence Credit for the Master's Degree.* (0)

May be repeated once. *Staff.*

769 *Residence Credit for the Doctor's Degree.* (0)

May be repeated indefinitely. *Staff.*

CHEMISTRY

FACULTY

Distinguished Professor: Lyle Ramsay Dawson (Ph.D., Iowa, 1935), HEAD. *Professors:* Ellis Vincent Brown (Ph.D., Iowa State, 1936), Hartley Clayton Eckstrom (Ph.D., Iowa, 1937), Ellwood Meacham Hammaker (Ph.D., Rutgers, 1940), Jacob Robert Meadow (Ph.D., Johns Hopkins, 1933), Paul Gregory Sears (Ph.D., Kentucky, 1953), Walter Thomas Smith, Jr. (Ph.D., Indiana, 1946), William Frederick Wagner (Ph.D., Illinois, 1947). *Associate Professors:* Rodney Elmer Black (Ph.D., Wisconsin, 1942), John Miles Patterson (Ph.D., Northwestern, 1953), William K. Plucknett (Ph.D., Iowa State, 1942). *Assistant Professors:* James Edward Douglass (Ph.D., Texas, 1959), William Donald Ehmann (Ph.D., Carnegie Institute of Technology, 1957), Donald Edgar Sands (Ph.D., Cornell, 1955), Stanford Lee Smith (Ph.D., Iowa State, 1961).

The Department of Chemistry offers training leading to the Bachelor of Science degree with a major in chemistry and the Bachelor of Arts degree with a major in chemistry.

Commercial subjects combined with training in this department constitute preparation for technical salesmen, technical service men, liaison agents between laboratory and plant, or secretaries in scientific or industrial laboratories. Persons majoring in chemistry may choose library techniques as electives with the expectation of becoming technical librarians.

By including certain courses in Education in the requirements for the A.B. degree, the student may become well prepared for teaching science and mathematics in the high school.

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF SCIENCE WITH CHEMISTRY AS A MAJOR

Freshman Year

First Semester	Crs.
English 101	3
Chem. 110, Gen. Chem.	5
Math. 111, Coll. Alg.	3
Hygiene 109	2
Chem. 001	0
Military or Aerospace Sci. or elective	2
Physical Education	1
	16

Second Semester	Crs.
English 102	3
Chemistry 112, Gen. Chem.	5
Math. 112, Trig.	3
Social Studies	3
Chem. 002	0
Military or Aerospace Sci. or elective	2
Physical Education	1
	17

Sophomore Year

First Semester	
Chemistry 220, Anal. Chem.	5
Math. 113, Anal. & Calc. I	3
Biological Science	3
Social Studies	3
Chem. 003	0
Military or Aerospace Sci. or elective	2
	16

Second Semester	
Chem. 222, Anal. Chem.	5
Math. 211, Anal. & Calc. II	4
Biological Science	3
Humanities	2
Elective	2
Chem. 004	0
Military or Aerospace Sci. or elective	2
	18

Junior Year

First Semester	
Chem. 430, Organic	5
Math. 212, Anal. & Calc. III	4
Physics 231	3
Physics 241	2
MFL 121, German	3
Chem. 005	0
	17

Second Semester	
Chem. 432, Organic	5
Physics 232	3
Physics 242	2
MFL 122, German	3
English 181, Publ. Spkg.	3
Humanities	2
Chem. 006	0
	18

Senior Year

First Semester	
Chem. 510, Adv. Inorg.	3
Chem. 532, Qual. Org. Anal.	3
Chem. 440, Physical	3
Chem. 441, Phys. Lab.	2
MFL 225, Chem. German	3
Humanities	2
Elective	2
Chem. 007	0
	18

Second Semester	
Chem. 520, Radiochem.	2
Chem. 442, Physical	3
Chem. 443, Phys. Lab.	2
Chem. 572, Seminar	1
Chem. 582, Chem. Lit.	1
MFL 226, Chem. German	3
English 203, Comp. for Tech. Stud.	3
Elective	3
Chem. 008	0
	18

Note: A student who is planning for graduate study should complete one year of French or Russian.

Lower Division Requirements

Freshman and Sophomore Years: For a major in chemistry the lower division requirements of the College of Arts and Sciences must be fulfilled.

Upper Division Requirements

Registration of juniors and seniors as majors in the Department of Chemistry is restricted to students having a grade-point average of 2.0 or higher in all chemistry courses.

Students transferring into the curriculum leading to the A.B. degree above the sophomore level must have an overall average of 2.5 or higher.

REQUIREMENTS FOR THE DEGREE, A.B. WITH A MAJOR IN CHEMISTRY

Requirements in the Field of Concentration: Forty credits in courses not open to freshmen in the combined fields of physical and biological sciences including the major field. A maximum of six hours of education may be included in satisfying this requirement.

Requirements for a Major. Prerequisites: Chemistry 110, 112, 226 or 220, Mathematics 113. *Required:* Chemistry 430, 432, 444 or 440, 441, 442, 443, 570; Physics 211, 213 or 231, 232, 241, 242, and sufficient additional courses in physical and biological sciences to satisfy the requirements in the field of concentration.

REQUIREMENTS FOR THE DEGREE, B.S. WITH A MAJOR IN CHEMISTRY

Requirements in the Field of Concentration: Forty credits of advanced work in the field of physical sciences, including the major work.

Requirements for a Major. See curriculum leading to the degree of Bachelor of Science with a major in chemistry.

Course Descriptions

001 *The Chemical Profession* (Freshmen). (0) I

002 *The Chemical Profession* (Freshmen). (0) II

003 *The Chemical Profession* (Sophomores). (0) I

004 *The Chemical Profession* (Sophomores). (0) II

005 *The Chemical Profession* (Juniors). (0) I

006 *The Chemical Profession* (Juniors). (0) II

007 *The Chemical Profession* (Seniors). (0) I

008 *The Chemical Profession* (Seniors). (0) II

Discussions and lectures on various aspects of the chemical profession. Required of all students majoring in chemistry who expect to enter either industrial work or academic work in chemistry. May be repeated indefinitely. *Staff.*

100 *Chemistry for Nurses.* (4) I, II

This course deals with those general principles of chemistry which give the necessary foundation for practical work in nutrition, materia medica, and other subjects. Lecture and recitation, three hours; lab, two hours. A terminal course. *Patterson.*

102,104 *Elementary General Chemistry.* (4 ea.) I, II, S

This course is primarily for students in the Colleges of Agriculture and Home Economics and Nursing and other students who want to obtain an understanding of the fundamentals of chemistry. Lectures and recitations, three hours; lab, 2 hours. Prereq: Proficiency in arithmetic and elementary algebra. *Staff.*

106,108 *General Chemistry for Engineers.* (4 ea.) I, II, S

Subject matter similar to 110 and 112, except that topics of importance to engineers are given special emphasis. Lectures and recitations, three hours; lab, two hours. Prereq: Proficiency in arithmetic and algebra. *Staff.*

110,112 *General College Chemistry.* (5 ea.) I, II, S

Chemistry of the non-metallic elements and the metals including a brief study of the qualitative analysis scheme for the metallic ions. Lectures and recitations, three hours; lab, four hours. Prereq: Proficiency in arithmetic and algebra. *Staff.*

220,222 *Analytical Chemistry.* (5 ea.) I, II

Fundamental course in qualitative and quantitative analysis including theories and calculations. Lectures, two hours; lab, six hours. Prereq: Chem. 110, 108 or 104. *Wagner.*

226 *Analytical Chemistry.* (5) I, II, S

An introduction to the theory and practice of qualitative analysis and the general principles and methods of quantitative analysis. Lectures, two hours; lab, six hours. Prereq: Chem. 112, 108 or 104. *Hammaker.*

230,232 *Organic Chemistry.* (5 ea.) I, II, S

A systematic study of organic compounds. Lectures and recitations, three hours; lab, six hours. Prereq: Chem. 112 or 108. *Smith.*

236 *Organic Chemistry.* (4) I, II, S

An elementary course for non-professional students. Lectures and recitations, three hours; lab, two hours. Prereq: Chem. 112, 108 or 104. *Patterson.*

395 *Independent Work in Chemistry.* (1-2) I, II, S

May be repeated for a total of four credits. Prereq: Major and a standing of 3.0 in the Department. *Staff.*

402,404 *Orientation in Modern Chemistry for Teachers.* (3 ea.) S

A review of the fundamentals of Chemistry and a study of recent developments. The relation of chemistry to various aspects of modern life is considered. Lectures and discussions in the classroom or by Continental Classroom television broadcasts. Prereq: Employment as high school science teacher. *Staff.*

406 *Fundamentals of Chemistry for High School Teachers.* (4) S

A course to aid the teacher in the selection of subject matter and in the presentation of modern chemistry to high school students. Lectures, discussions, six hours. Lab, six hours. Prereq: Employment as high school teacher.

430,432 *Organic Chemistry.* (4 or 5 ea.) I, II, S

A systematic study of organic compounds. Lectures and recitations, three hours; lab, six hours. Prereq: Chem. 112 or 108. *Smith.*

440,442 *Physical Chemistry.* (3 ea.) I, II

The fundamental principles of chemistry are studied with emphasis upon the application of these in the correlation of natural phenomena. Lectures and recitations, three hours. Prereq: Analytical Chemistry, Mathematics 212, Physics 232, and 242. *Sears.*

441,443 *Physical Chemistry Laboratory.* (2 ea.) I, II

Laboratory studies in physical Chemistry to accompany 440, 442. Six hours. *Black.*

444 *Physical Chemistry.* (5) II

For students in Agriculture and in the Biological Sciences. Lectures and recitations, three hours. Lab, six hours. Prereq: Chem. 112 or 104, and 236, 237; Physics 213, and Mathematics 113.

446,448 *Physical Chemistry for Engineers.* (4 ea.) I, II
The principles of physical chemistry are studied with applications of these in mining and metallurgical engineering. Lectures and recitations, three hours. Prereq: Chem. 226, 227; Mathematics 212; Physics 232 and 242.

506 *Advanced Topics in Chemistry for High School Teachers.* (4) S
A course in selected topics and modern developments to enhance the competence of the high school teacher. Lectures and discussion, twelve hours; lab, six hours. Prereq: Employment as a high school teacher and consent of instructor.

510 *Advanced Inorganic Chemistry.* (3) I
A systematic course in inorganic chemistry with especial emphasis upon the preparation and reactions of various types of compounds. Lectures and recitations, three hours. Prereq: Quantitative analysis and organic chemistry. *Sears.*

520 *Elementary Radiochemistry.* (2) II, S
An introduction to the use of radionuclides in chemistry. Topics include principles of radioactive decay, interaction of radiations with matter, detection, hot-atom chemistry and specific applications. Lectures and lab, four hours. Prereq: Chem. 226 or equiv. *Ehmann.*

522 *Instrumental Analysis.* (3) II, S
The applications of microscopic, colorimetric, spectrophotometric, polarographic, and electrometric methods. Lecture, one hour; lab, six hours. Prereq: Chem. 222. *Wagner.*

532 *Qualitative Organic Analysis.* (3) I, S
A systematic study of the separation and identification of organic compounds. Lecture, one hour; lab, six hours. Prereq: Chem. 432 or 232. *Staff.*

535 *Synthetic Organic Chemistry.* (3) II, S
A critical comparison of preparation methods accompanied by laboratory work and reports. Lab, nine hours. Prereq: Chem. 432 or 232. *Smith.*

542 *Chemical Thermodynamics.* (3) II
Principles and applications of chemical thermodynamics. Lectures, three hours. Prereq: Chem. 442. *Eckstrom.*

544 *Colloid Chemistry.* (2) II
Lectures, recitations, and assigned readings on the chemistry of colloids. Lectures and recitations, two hours. Prereq: Chem. 442. *Black.*

550,552 *Physiological Chemistry.* (4 ea.) I, II
A study of the chemistry of living processes. Lectures and recitations, three hours; lab, three hours. Prereq: Chem. 112 or 104, 220 and 432. *Smith.*

570,572 *Seminar.* (0, 1) I, II
Reports and discussions on recent research and current chemical literature. Required of all seniors. Attendance at the seminar for two semesters is required before the one hour of credit is earned. *Staff.*

582 *Chemical Literature.* (1) I
Training in the use of chemical literature. One hour per week. Prereq: Junior or Senior standing. *Black.*

583 *Laboratory Arts.* (2) I, II
The fabrication of chemical apparatus of glass, metal, and plastics. Prereq: Major in the Department of Chemistry with Junior or Senior standing. *Eckstrom.*

616 *Radiochemistry.* (2) I
An advanced study of nuclear chemistry and radiochemistry. Lectures, two hours. Prereq: Chem. 442, 443, 520. *Ehmann.*

622 *Quantitative Organic Analysis.* (3) II
A study of the determination of elements and functional groups in organic compounds. Lecture, one hour; lab, six hours. Prereq: Chem. 522, 523, 442.

625 *Optical Methods of Analysis.* (3) I
An intensive study of the theory and applications of the following methods: emission spectroscopy, x-ray diffraction, and absorption spectrophotometry. Lectures and laboratory, seven hours. Prereq: Chem. 522 and 442.

628 *Principles of Analytic Chemistry.* (3) II
An advanced study of the theory and practice of quantitative analysis. Lectures and discussions, three hours. Prereq: Chem. 442. *Hammaker.*

630,632 *Synthesis of Organic Compounds.* (2 ea.) I, II
A thorough study of the types of reactions used in organic synthesis with emphasis on the conditions and reagents that can be used. Lectures, two hours. Prereq: Chem. 432. *Smith.*

634 *The Electronic Theory as Applied to Organic Reactions.* (2) I
A study of the modern viewpoints of valence and their application to the interpretation of organic reactions. Lectures, two hours. Prereq: Chem. 432 and 442. *Patterson.*

636 *Stereoisomerism of Carbon Compounds.* (3) II
Optical isomerism; polarimetry; stereochemistry of biphenyls and related compounds; cistrans isomerism; and stereochemistry of the sugars. Lectures, three hours. Prereq: Chem. 432. *Smith.*

638 *Principles of Organic Chemistry.* (4) I
A general survey of the field of organic chemistry. Lectures, four hours. Prereq: Chem. 432 or equivalent. *Brown.*

644 *Phase Rule.* (2) II
Lectures and assigned readings on the theory and applications of the phase rule. Lectures, two hours. Prereq: Chem. 442 and 443. *Eckstrom.*

646 *Chemical Kinetics.* (3)
Studies of chemical reactions from the standpoint of velocity and mechanism. Lectures, three hours. Prereq: Chem. 442 and 443. *Plucknett.*

648 *Principles of Physical Chemistry.* (4) I
An advanced course dealing with the fundamental principles of physical chemistry. Prereq: College physics, integral calculus, and one course in physical chemistry. *Eckstrom.*

710 *Topics in Inorganic Chemistry.* (2) II
The chemistry of the rare earths and other less common elements. Selected topics dealing with recent advances in the field. Lectures, two hours. Prereq: Chem. 510. *Sears.*

714 *Non-Aqueous Solutions.* (2) II
A study of the properties of non-aqueous solutions and reactions in non-aqueous media. Lectures, two hours. Prereq: Chem. 442 and 443. *Sears.*

720 *Advanced Instrumental Analysis.* (3) I
The theory and applications of the following methods to chemical analysis: chromatography, solvent extraction, ion-exchange, infra-red spectroscopy, coulometry and non-aqueous titrimetry. Lectures and laboratory, seven hours. Prereq: Chemistry 522, 523, 442.

726 *Topics in Analytical Chemistry.* (2) I
Selected topics which may include nuclear magnetic resonance, mass spectrometry, x-ray diffraction and spectroscopy, microscopy, and recent advances in analytical chemistry. Lectures, two hours. Prereq: Chemistry 522, 523, 442.

732 *Molecular Rearrangements.* (2)
A study of the various mechanisms which have been proposed for reactions which produce change in the structural arrangement of the molecule. Lectures, two hours. Prereq: Chem. 634.

734 *Heterocyclic Compounds.* (2)
Occurrence, preparation, and properties of cyclic compounds containing oxygen, sulfur, and nitrogen. Lectures, two hours. Prereq: Chem. 432.

736,738 *Topics in Organic Chemistry.* (2 ea.) I, II
Selected topics which may include heterocyclic organic compounds, natural and synthetic dyes, carbohydrates, nitrogen compounds, and other recent advances in the field of organic chemistry. Lectures, two hours. Prereq: Chem. 432. *Staff.*

740 *Electrochemistry.* (3) I
Modern theories of solutions. Applications of electrochemical methods in determining the properties of solutions. Polarization. Electrolysis. Equilibrium in solutions of electrolytes. Lectures, three hours. Prereq: Chem. 442 and 443. *Staff.*

742 *Quantum Chemistry.* (2)
An introduction to quantum mechanics with emphasis on the aspects closely related to chemistry. Prereq: Chem. 442 and 443. *Plucknett.*

744 *Statistical Thermodynamics.* (2)
The study of chemical thermodynamics from the viewpoint of the statistical treatment of systems rather than from the empirical classical approach. Prereq: Chem. 542 and differential equations. *Plucknett.*

746,748 *Topics in Physical Chemistry.* (2 ea.)
Selected topics which may include photochemistry, structure of crystals, molecular spectra, nature of the chemical bond, and other recent advances in the field of physical chemistry. Lectures, two hours. Prereq: Chem. 442 and 443 and Mathematics 431 and 531. *Staff.*

768 *Residence Credit for the Master's Degree.* (0)
1 to 9 weeks residence.
May be repeated. Maximum of six weeks can be applied toward master's degree with thesis. *Staff.*

769 *Residence Credit for the Doctor's Degree.* (0)
1 to 18 weeks residence.
May be repeated indefinitely.

776,778 *Graduate Seminar.* (1 ea.) I, II
Reports and discussions on recent research and current literature. Required of all graduate students. *Staff.*

780 *Individual Work in Chemistry.* (1-5) I, II, S
Selected library and laboratory problems in conformance with the student's interest will be attacked and pursued under the direction of a suitable staff member who is proficient in the area under investigation.

790 *Research in Chemistry.* (1-5) I, II, S
Work may be taken in the following fields, subject to the approval of the Departmental Graduate Committee: Analytical Chemistry, Industrial Chemistry, Inorganic Chemistry, Organic Chemistry, or Physical Chemistry. May be repeated indefinitely.

CLASSICS

FACULTY

Professors: Richmond Y. Hathorn (Ph.D., Columbia, 1950), HEAD. Jonah W. D. Skiles (Ph.D., Chicago, 1938), on leave. Wilbert L. Carr (LL.D., Drake, 1937), visiting. *Associate Professor:* Leon Zolondek (Ph.D., Chicago, 1957). *Assistant Professors:* Warren James Castle (Ph.D., Wisconsin, 1953), Thomas H. Corcoran (Ph.D., Northwestern, 1957). *Instructor:* Odessa L. Ofstad (M.A., Kentucky, 1961).

The courses and curricula are concerned with the Classical, the Semitic, and the Middle Eastern fields. The languages concerned are Latin, Greek, Hebrew, and Arabic. The curricula are planned to meet the needs of the following:

1. Students who are going to teach Latin or Greek or Hebrew or Arabic or who are going to do graduate work or research in Classical languages, Semitic languages, ancient history, archaeology, Middle Eastern studies, Medieval studies, or linguistics.

2. Students who wish to get a general liberal education without preparing for any specific vocation. The broadest possible educationally sound program will be permitted.

3. Students who intend to enter the ministry, the missionary field, or the field of religious education and wish to take an undergraduate major in the area of Latin, Greek, Hebrew, Arabic, or ancient civilization, or wish merely to learn to read the Greek New Testament or the Hebrew Old Testament. Majors will be allowed the widest possible choice of electives.

4. Students who want for the work of their major department a background in the foundations of Western civilization through courses in Greek, Latin, Hebrew, Arabic, or ancient civilization.

5. Students who wish, through Greek and Latin, to build the background of their English vocabulary for use in the learned professions (law, medicine, teaching, the ministry, etc.) or in literary or public work.

6. Students who want to fulfill through Greek or Latin or Hebrew or Arabic the foreign language requirement or course requirements.

The student, in working out his major, may place emphasis on Greek, or on Latin, or on Classical civilization, or on Hebrew and Hebraic civilization, or on Arabic and Middle Eastern studies, or on a combination of these. To this end, five majors are offered: Latin, Greek, Classical Civilization, Hebrew and Hebraic Civilization, Arabic and Middle Eastern civilization, or a combination of these.

Upper Division Requirements

Requirements in the Field of Concentration: 40 credits of advanced work, including the major work and such other courses as may be approved by the advisor as being useful to the student.

Requirements for a Major. Prerequisites: Six semester credits of Latin or Greek or Hebrew or Arabic. *Required:* A minimum of 15 credits of advanced work in Classics; Tutorial Seminar; comprehensive examination in the senior year.

Note—A student who presents high school credit in Latin, Greek, Hebrew, or Arabic has the option of enrolling in a beginning college course for college credit or in an advanced course. The Head of the Department will advise the student as to his correct placement. In either situation, the student receives college credit.

Course Descriptions

LATIN

101 *Beginning Latin.* (3) I, II, S
Emphasis on learning to read simple Latin, with attention to the basic elements of Latin grammar. Much attention to English words derived from Latin and to a basic understanding of Roman civilization. Vocabulary building.

102 *Elementary Latin Reading.* (3) I, II, S
Selections relating to Roman life and literature, including selections from Caesar's *Gallic War.* Emphasis on learning to read Latin. Prereq: A. L. 101 or one year of high school Latin.

107,108 *Latin Conversation and Composition.* (1 ea.)
Practice in the oral and written use of the language. Primarily designed to be taken concurrently with 101 and 102.

203 *Intermediate Latin.* (3) I
Selections from Cicero, showing the orator, statesman, and humanist. Selections from Ovid's *Metamorphoses* studied as myths and short stories and from other writers. Prereq: CL 102 or two years of high school Latin.

204 *Intermediate Latin.* (3) II
Selections from the *Aeneid* studied as a masterpiece of epic poetry and as a product of the Augustan Age. The influence of the *Aeneid* on Western Literature. Prereq: CL 102 or two years of high school Latin.

205 *Latin Prose Selections.* (3) II, S
Selections from Livy's *History, Cicero's de Senectute,* and such other prose as may meet the needs of the class. Prereq: Three years of high school Latin or three semesters of college Latin or consent of instructor.

206 *Horace.* (3) I
Selections to show the poetic genius and the thought of the poet. Prereq: Three years of high school Latin or three semesters of college Latin or consent of instructor.

209,210 *Selections from Latin Literature.* (3 ea.) I, II
An author or authors or selections will be used to develop both the student's ability to read Latin and his acquaintance with classical ideas. Prereq: Three years of high school Latin or three semesters of college Latin or consent of instructor.

217 *Medieval Latin.* (3) I
Selections of prose and poetry down to the Renaissance. Introduction to the thought and life of the Middle Ages. Prereq: Three years of high school Latin or three semesters of college Latin or consent of instructor.

218 *Plautus.* (3) II
Selected plays of Plautus. Lectures on Greek and Roman comedy. Introduction to the comedy of manners. Prereq: Three years of high school Latin or three semesters of college Latin or consent of instructor.

509,510 *Latin Literature.* (3 ea.) I, II, S
Courses in various authors, periods, or types to suit the need of the class. Prereq: Twelve semester hours of Latin, or the equivalent, and permission of the instructor.

511,512 *Studies in Roman Philology.* (3 ea.) I, II, S
Courses to meet the needs of students in various areas of Roman philology, e.g., in Latin literature, in Roman civilization, in Latin linguistics, etc. Prereq: Consent of instructor.

514,515 *Latin Composition.* (1 ea.) I, II, S
The writing of Latin prose of moderate difficulty. Prereq: CL 203 or consent of instructor.

521 *Roman Civilization.* (2) II, S
Special reference to the relation to modern life. Topics in literature, art, philosophy, and religion, as well as in political history. No knowledge of Latin necessary.

530 *The Teaching of Latin.* (3) I, II, S
The place of Latin and the classical humanities in general education. Objectives, materials, and methods. The reading approach to learning Latin. Evaluation of textbooks and other materials. Prereq: Junior or senior standing in Latin.

GREEK

150 *Beginning Greek.* (3) I
The basic elements of Greek grammar. Emphasis on learning to read Greek, but attention will be given to some understanding of Greek civilization. Vocabulary building.

151 *Elementary Greek Reading.* (3) II
Reading from the easier Greek authors to introduce Greek literature and to give facility in reading Greek. Prereq: A.L. 150.

157 *Greek Conversation and Composition.* (1)
Practice in the oral and written use of the language. Primarily designed to be taken concurrently with 150.

235 *Greek Mythology.* (2) I, II, S
The Greek myths studied both from the standpoint of their meaning to the Greeks and Romans and from the standpoint of their use in later literature and in everyday life. No knowledge of Latin or Greek required.

252,253 *Selections from Greek Writers.* (3 ea.) I, II, S
Selections from various writers, such as Xenophon, Herodotus, Plutarch, or from various periods of Greek literature, including the *Koine.* Prereq: CL 151 or consent of instructor.

254 *Homer.* (3) I
Readings to give some idea of the greatness of the *Iliad* and the *Odyssey* as epics and some idea of their place in the background of Greek literature and of Western literature as a whole. Prereq: CL 151 or consent of instructor.

255 *Plato.* (3) II
Selections, with an attempt to evaluate Plato's philosophy in its relation to both ancient and modern thought. Prereq: CL 151 or consent of instructor.

258 *Greek Conversation and Composition.* (1)
Practice in the oral and written use of the language. Primarily designed to be taken concurrently with 251.

364,365 *Greek Composition.* (1 ea.) I, II, S
The writing of Greek of moderate difficulty. Prereq: CL 151 or consent of instructor.

520 *Greek Civilization.* (2) II, S
Special reference to relation to modern life. Emphasis placed on literature, art, philosophy, and religion, rather than on political history. No knowledge of Greek necessary.

556 *Greek Tragedy.* (3) I
Selected plays from Aeschylus, Sophocles, and Euripides. Lectures on Greek tragedy and its effects on the Western World. Prereq: CL 254 or 255 or consent of instructor.

559 *Greek Comedy.* (3) II
Selected plays of Aristophanes. Lectures on Greek comedy and its effect on the Western World. Prereq: CL 556 or consent of instructor.

561,562 *Studies in Greek Philology.* (3 ea.) I, II, S
Courses to meet the needs of students in various areas of Greek Philology, e.g., in Greek literature, in Greek civilization, in Greek linguistics, etc. Prereq: Consent of instructor. *Staff.*

652 *The Greek of the New Testament.* (3) I, II, S
Class and/or individual work. Reading or research in the vocabulary and syntax of the Koine, in the text of the New Testament, and in other fields. Prereq: Two years of college Greek or consent of instructor.

HEBREW

170 *Beginning Hebrew.* (3) I, II, S
Emphasis on learning to read simple Biblical Hebrew prose, with attention to the basic elements of Hebrew grammar.

271 *Elementary Hebrew Reading.* (3) I, II, S
Selections from the prose portions of the Hebrew Old Testament. Emphasis on learning to read Hebrew. Prereq: CL 170 or the equivalent.

272,273 *Selections from the Hebrew Old Testament.* (3 ea.) I, II
Selections of prose and/or poetry to develop ability in reading Hebrew and an increased understanding of Hebrew thought. Prereq: CL 271 or the equivalent.

278,279 *Hebrew Conversation and Composition.* (1 ea.) I, II
Practice in the use of the language. Primarily for those wishing to improve aural-oral ability, but also for those wishing to have additional practice in the reading and writing of the language. Prereq: Consent of the instructor.

324,325 *Hebrew Civilization.* (3 ea.) I, II, S
Special reference to relation to Western Civilization. Emphasis on literature, thought, and religion rather than on political history. The student may concentrate his reading in any of these fields. Given in English, no knowledge of Hebrew necessary.

574 *Isaiah.* (3) I
Selections with attention to the literary, historical, and general cultural background. Prereq: 273 or consent of instructor.

575 *The Psalms.* (3) II

Selections with attention to poetic form and to historical and general cultural background. Prereq: 273 or consent of instructor.

576,577 *Studies in Semitic Philology.* (3 ea.) I, II

Courses to meet the needs of students in various areas of Semitic Philology, e.g., in literature, in civilization, in linguistics, etc. Prereq: Consent of instructor.

ARABIC

140 *Beginning Arabic.* (3) I, II, S

Emphasis on learning to read simple Arabic, with attention to the basic elements of Arabic grammar. Some attention to Islamic civilization.

147 *Arabic Conversation and Composition.* (1) I

Practice in the use of the language. Primarily for those wishing to improve aural-oral ability, but also for those wishing to have additional practice in the reading and writing of the language.

241 *Elementary Arabic Reading.* (3) II

Selections from various prose sources. Prereq: 140. *Zolondek.*

242,243 *Intermediate Arabic: Selections from Classical Arabic Authors.* (3 ea.)

Selections from the Classic Arabic Period with such writers as Ibn Outaybah, Ibn abd-ai Rabblhi, and other writers of the Ninth and Tenth Centuries, A.D. Prereq: CL 248.

248 *Arabic Conversation and Composition.* (1) II

Practice in the use of the language. Prereq: 140.

CLASSICS AND SEMITICS IN GENERAL

131 *Medical Terminology from Greek and Latin.* (3) II

Latin and Greek roots, prefixes, and suffixes as found in medical terminology. Primarily for pre-medical, pre-dental, pre-nursing and pre-veterinary students, but others will be admitted for help in vocabulary building.

326,327 *Middle Eastern Literature in English Translation.* (3 ea.) I, II

Selections from various genres to give the student a basic understanding of Middle Eastern Literature. The material will be drawn from Hebraic, Arabic, Persian, Syriac, Egyptian, Akkadian, Sumerian, Turkish and Hittite sources. Given in English. No knowledge of any Middle Eastern language necessary.

395,396 *Tutorial Seminar.* (1 ea.) I, II, S

Conferences, readings, and reports in preparation for the comprehensive examination. Required of all senior majors in Ancient Languages and Literatures.

522 *Greek Literature in English Translation: Homer to Xenophon.* (3) I, II, S

Extensive reading in the most important works. Discussion of the significance of the works in their own and later times to the present. No knowledge of Greek necessary.

523 *Greek Literature in English Translation: Plato to Procopius.* (3) I, II, S

Extensive reading and discussion as in 522.

580 *Independent Work in Ancient Languages.* (3) I, II, S

Courses to meet the needs of the students will be arranged in various areas of classical philology, e.g., in Greek or Latin writers, in classical civilization, in Greek or Latin linguistics, in various areas of Semitics, etc. May be repeated to a maximum of 24 credits. Prereq: Major and a standing of 3.0 in dept.

632 *Comparative Greek and Latin Grammar.* (3) I, II, S

Studies or research in comparative linguistics, historical syntax, semantics, and other aspects of linguistics in the Greek and Latin area. Prereq: Necessary command of the language involved.

633 *Intensive Study of an Author.* (3) I, II, S

Studies or research in the works of an author (Plato, Aristotle, Lucretius, Caesar, Ovid, or Horace): with due regard to his sources, milieu, purposes, technique, language, and influence on later periods. Prereq: Necessary command of language involved.

636 *Intensive Study of a Period.* (3) I, II, S

Studies or research in a period of significance (Age of Pericles, Hellenistic Age, Ciceronian Age, Augustan Age, Silver Age, Christian Latin, or Medieval Latin): with emphasis on literary, social, and linguistic trends, with consideration of sources, and of influence on later periods. Prereq: Necessary command of languages involved.

637 *Intensive Study of a Literary Genre.* (3) I, II, S

Studies or research in a genre (epic, tragedy, comedy, satire, history, or the novel): from its beginnings in the ancient world and throughout its development in the ancient world, with some attention to its effect on later periods. Prereq: Necessary command of the languages involved.

638 *The Transmission of Classical Texts.* (3)

Preservation and transmission of Greek and Latin texts. Introduction to epigraphy and palaeography. Introduction to the history of classical scholarship. Prereq: Reading knowledge of Greek and Latin.

768 *Residence Credit for Master's Degree.* (0)

May be repeated once.

790 *Research in the Teaching of Classical Languages.* (3) I, II, S

Problems in the teaching of Latin and/or Greek in secondary and/or higher education. Objectives, methods, preparation of materials, development of curricula, or the history of the field. Prereq: CL 530 or the equivalent.

ECONOMICS

Students wishing to major in economics from the social science approach may register in the College of Arts and Sciences. This program will enable the graduate to enter many fields of governmental and private employment. Opportunities for service include the general field of economic research and many specialties such as taxation, labor relations, finance, and statistics.

The student wishing to major in economics will be guided by an advisor in the economics department of the College of Commerce.

Upper Division Requirements

Requirements in the Field of Concentration: Forty credits of advanced work in the field of social studies, including the major work.

Requirements for a Major. Prerequisites: Economics 251 and 252. *Required:* A minimum of 18 credits of advanced work in Economics, including Economics 402, 504, 505, and 515. Tutorial course 396 must be taken in the senior year to prepare for the required comprehensive examination.

List of Courses. Courses that may be used to satisfy the over-all requirements are described under the College of Commerce and include the following: 251 and 252—Principles of Economics; 402—Labor Economics; 503— Transportation; 504—Public Finance; 505—Money and Banking; 507—Statistical Method; 516—Business Cycles; 515—Intermediate Economic Analysis; 524—State and Local Taxation; 525—Economic Development; 527—International Economics; 530—Labor Legislation; 534—Advanced Economic History

of the United States; 550—Advanced Business and Economic Statistics; 554—Urban Real Estate; 555—Industrial Relations; 560—Business Combinations; 565—Comparative Economic Systems; 566—Personnel Problems; 579—Collective Bargaining; 396—Tutorial Work in Economics; 386—Economic Research; 590—Introduction to Mathematical Economics.

EDUCATION

A student in the College of Arts and Sciences may elect toward the A.B. or B.S. degree a total of 30 credits from other colleges of the University.

ENGINEERING

A student in the College of Arts and Sciences may elect toward the A.B. or B.S. degree a total of 30 credits from other colleges of the University.

ENGLISH, SPEECH, & DRAMATIC ARTS

FACULTY

Professors: William Smith Ward (Ph.D., Duke, 1943), Gifford Blyton (Ph.D., Ohio State, 1941), George K. Brady (Ph.D., Illinois, 1922), Arthur Louis Cooke (Ph.D., Michigan, 1942), George Patterson Faust (Ph.D., Princeton, 1932), Arthur Keister Moore (Ph.D., Vanderbilt, 1943), Hill Shine (Ph.D., North Carolina, 1932), Thomas Bradley Stroup (Ph.D., North Carolina, 1933). *Associate Professors*: Jacob Henry Adler (Ph.D., Harvard, 1951), Wallace Neal Briggs (M.A., Kentucky, 1945), John Levi Cutler (Ph.D., Ohio State, 1949), Robert O. Evans (Ph.D., Florida, 1954), Maurice A. Hatch (Ph.D., Cornell, 1948), Robert Durene Jacobs (Ph.D., Johns Hopkins, 1953), William Hugh Jansen (Ph.D., Indiana, 1948), Mary Ellen Rickey (Ph.D., Florida, 1955), J. Reid Sterrett (Ph.D., Wisconsin, 1941). *Assistant Professors*: Michael E. Adelstein (Ph.D., Michigan, 1958), William Fitch Axton (Ph.D., Princeton, 1961), Ben W. Black (Ph.D., Michigan, 1953), Alfred L. Crabb, Jr. (M.A., Peabody, 1941), Leila Gott Harris (M.A., Kentucky, 1945), J. W. Patterson (Ph.D., Oklahoma, 1960), Lolo Lemme Smith (M.F.A., Western Reserve, 1955), Lizette O. Van Gelder (M.A., Syracuse, 1944), Robert Lee White (Ph.D., Minnesota, 1960). *Instructors:* Peter Lederman Arons (Ph.D., Yale, 1962), Harold Frank Branam (B.A., Leeds, 1961), Henry Butler Chapin (M.A., New Mexico, 1961), Yerger Hunt Clifton (Ph.D., Trinity College, Dublin, 1962), Charles Frederick Dickens (M.F.A., Western Reserve, 1957), Walter McGehee Hooper (M.A., North Carolina, 1956), William Lee McAdams (Ph.D., Rice, 1962), William John McMurray (Ph.D., New Mexico, 1961), William Towner Morgan (M.A., Minnesota, 1961), Edward Arthur Morin, Jr. (M.A., Chicago, 1958), Adrienne Auslander Munich (M.A., Yale, 1961), Jean Gardner Pival (M.A., Kentucky, 1962), Robert Joseph Ray (Ph.D., Texas, 1962), Susan N. Richards (M.A., Washington, 1961), Virginia Marie Scheff (M.A., Marshall, 1957), Dorothy Upton Seyler (M.A., Columbia, 1960), Margaret Allen Thornton (M.A., Indiana, 1962), James Bruce Vermazen (M.A., Chicago, 1962).

Though many of the courses in the Department are planned to fit the needs of other departments and colleges, most of them are designed to meet the undergraduate and graduate needs of those who may wish to specialize in English, Speech, and the Dramatic Arts.

The majority of students who take English courses do so either because they expect to teach English in high school or college, or because of the personal satisfaction that they derive from great books. A few take English because it provides a good background for an editorial career, or that of professional book reviewer, dramatic or literary critic, or author of imaginative literature. And others take language, speech, and dramatic arts courses because they need to learn the accurate, precise use of language; need speech experience as a part of their preparation for such professions as law, the ministry, teaching, and salesmanship; or training in drama and theatre leading to a career in little theatre work, dramatic criticism, and in a few cases in professional acting.

The Department offers training in language study; English, American, and comparative literature; creative writing; speech; and the dramatic arts. Course work leading to the A.B. and M.A. degrees is available in most of these areas and to the Ph.D. in English language and literature.

REQUIREMENTS FOR A MAJOR

1. English: *Prerequisites:* 101-2 or 105-6; 221, and 222.
2. Speech: *Prerequisites:* 101-2 or 105-6; 161; 181; 285.
3. Dramatic Arts: *Prerequisites:* 101-2 or 105-6; 191 or 192 (or both); 291; and 6 hours from 161, 221, 222, 251, 252.

Required for an English major: A minimum of 24 additional credits of advanced work in English, Speech, and Dramatic Arts, as set forth in the departmental statement of requirements.

Required for Speech and Dramatic Arts majors: A minimum of 24 additional credits of advanced work in Speech, Dramatic Arts, and English, as set forth in the departmental statement of requirements.

Requirements in Field of Concentration. Forty credits (in courses not open to freshmen) in the field of Literature, Philosophy, History, and the Arts, including the major work.

Course Descriptions

1 *Sub-Freshman Composition.* (0)
A course for students inadequately prepared for English 101. Frequent short writing assignments; work in grammar and mechanics as needed. Freshmen are advised to enter the course on the basis of (1) classification tests or (2) first papers written in English 101. *Staff.*

3 *English for Foreign Students.* (0)
A course for foreign students inadequately prepared to do the work required in English 101. The course is designed to help the student achieve a basic proficiency in oral and written communication in English.

5 *Remedial English for Remanded Students.* (0)
Instruction (normally on a tutorial basis) for upperclassmen who have been referred to the department because of their poor work in English. The student is excused from the course upon proof of proficiency. *Staff.*

101 *Freshman Composition.* (3)
A course designed to teach students to develop and express their ideas in clear, effective English. The principal means are the reading and discussion of essays and articles, with frequent practice in expository writing. English 101 or 105 required of all freshmen. *Staff.*

102 *Freshman Composition.* (3)
A continuation of English 101, which is prerequisite. Emphasis on composition continues, with particular attention to forming and expressing acceptable judgments about significant topics of discussion. English 102 or 106 required of all freshmen. *Staff.*

105 *Advanced Freshman Composition.* (3)
A variant of English 101 for students who score in the 85th percentile or above on their classification tests. *Staff.*

106 *Advanced Freshman Composition.* (3)
A continuation of English 105. The reading matter is largely imaginative: poetry, drama, fiction. Excellence in English 101 or 105 and recommendation of the instructor required for admission. *Staff.*

201 *Business English.* (2)
A study of the principles of composition with emphasis on their practical application in business. Letters, articles, and reports. Prereq: Freshman Composition. *Staff.*

203 *Composition for Technical Students.* (3)
A course designed to give writing experience for students in the sciences, engineering, agriculture, and business. Definitions, analyses, classifications, interpretations, directives, business letters, reports. Prereq: Freshman Composition. *Staff.*

205 *Advanced Composition.* (3)
A course for those who wish further instruction and practice in expository writing. The emphasis is upon thoughtful organization of material and clear writing. Prereq: Freshman Composition. *Axton.*

207 *Writing of Fiction.* (3)
A course for those who wish to write fiction and to develop a critical appreciation of narrative writing. Analysis of models and student manuscripts. Prereq: Consent of instructor. *White.*

208 *Writing of Poetry.* (2)
The theory and practice of the craft of English verse, to develop the student's ability to understand and write poetry.

501 *Fiction Workshop.* (2)
Chief attention is directed to the short story, but time is also given to the novel. Manuscripts are analyzed, but primary attention is given to the theory and convention of fiction writing. Prereq: Consent of instructor. *White.*

502 *Fiction Workshop.* (2)
Emphasis on application of fictional techniques in student writing. Designed to bring about a fuller understanding of the conventions set forth in 501 and to bring practice closer to theory. Prereq: Consent of instructor. *White.*

504 *Writing the One-Act Play.* (3)
This course is designed for those students interested in creative drama. The completion of at least one one-act play is required during the semester. *Robinson.*

505 *Writing the Full-Length Play.* (3)
The writing of a full-length play is required during the semester. *Robinson.*

509 *Composition for Teachers.* (3)
The basic studies helpful to high school teachers of composition. The teaching of grammar, punctuation, usage, etc., and of theme planning, correction, and revision. Students are required to do quite a bit of writing. *Crabb, Hatch.*

510 *Modern British and American English.* (3)
A survey of modern British and American English with respect to pronunciation, syntax, spelling, and usage. Historical developments will be examined insofar as doing so sheds light on modern practice. *Cutler.*

512 *Grammar of Structure and Usage.* (3)
Descriptive grammar for advanced students. Analysis of sentence structure; consideration of standards of usage; investigation of current practice. *Faust.*

515 *Descriptive Linguistics: Phonemics.* (3)
An investigation of speech-sounds and systems of speech-sounds. Also attention to both speech and writing as communication systems. (Same as Anthropology 515.) Prereq: Consent of instructor. *Faust.*

516 *Descriptive Linguistics: Morphemics.* (3)
An explanation of some of the ways speech sounds are put together in patterns so as to form languages. (Same as Anthropology 516.) Prereq: English 515. *Faust.*

610 *Old English.* (3)
Introduction to Old English language and literature. *Moore.*

611 *Beowulf.* (3)
Chiefly a study of *Beowulf*, though with some reference to allied literature and the Germanic background. *Moore.*

612 *History of the English Language.* (3)
A survey tracing the development of modern standard English from its Indo-European origin. Emphasis will be placed on the history of sounds, inflections, and vocabulary and on the varying concepts of "correctness." *Cutler.*

ENGLISH, AMERICAN, AND COMPARATIVE LITERATURE

161 *Introduction to Literature.* (3)
An analytical rather than historical approach to literature, intended to deepen the student's insight into the nature and purpose of literature and to develop literary taste and judgment. *Staff.*

221 *Survey of English Literature.* (3)
A survey of English literature from *Beowulf* to the beginnings of the Romantic movement. The emphasis is upon the more important writers, with attention to their cultural background. *Staff.*

222 *Survey of English Literature.* (3)
A survey of English literature from the beginnings of the Romantic movement to the present. The emphasis is upon the more important writers, with attention to their cultural background. *Staff.*

251 *Major American Writers.* (3)
The approach is aesthetic and analytical, rather than historical. Authors such as the following are studied: Franklin, Irving, Cooper, Poe, Longfellow, Hawthorne, Emerson, Thoreau, Melville. *Staff.*

252 *Major American Writers.* (3)
The approach is aesthetic and analytical, rather than historical. Authors such as the following are studied: Whitman, Twain, Howells, James, Frost, Robinson, Eliot, O'Neill, Maxwell Anderson. *Staff.*

395 *Independent Work.* (3)
For undergraduate majors in English with a high standing. Each pursues a course independently under the guidance of a staff member, writes a paper embodying the results of his study, and takes an examination. May be repeated once for a total of 6 credits. Prereq: Major and standing of 3.0 in the Department. *Staff.*

520 *Chaucer.* (3)
Extensive readings in the principal works of Chaucer, with particular attention to The Canterbury Tales and Troilus and Criseyde. *Moore and Cutler.*

522 *English Literature: 1500-1600.* (3)
Literature of the Elizabethan period exclusive of the drama. Foreign sources of the English Renaissance. Major writers such as More, Ascham, Wyatt, Sidney, Spenser, Raleigh, and Marlowe. *Stroup, Evans.*

523 *English Literature:1600-1660.* (3)
Selected non-dramatic works of such writers as Bacon, Donne, Ben Jonson, George Herbert, Izaak Walton, Herrick, Sir Thomas Browne, Vaughan, Traherne, and Milton. *Stroup, Rickey.*

524 *Pre-Shakespearean Drama.* (3)
A course in English origins, beginning with the *Quem Quaeritis* Trope and extending through the works of the early Elizabethans. *Stroup.*

525 *Elizabethan Drama, Exclusive of Shakespeare.* (3)
A survey of English drama from the early Elizabethans until the closing of the theatres. *Stroup.*

526 *Shakespeare: The Comedies.* (3)
Shakespeare's comedies will be studied in detail. *Black, Evans, Rickey.*

527 *Shakespeare: The Tragedies.* (3)
Shakespeare's tragedies will be studied in detail. *Black and Evans.*

528 *Milton.* (3)
A study of all of Milton's poetry and of his more important prose; readings from contemporary thinkers; studies in thought currents of the time and Milton's relation to them. *Stroup.*

530 *Age of Pope.* (3)
Addison and Steele, Swift, Pope, Defoe, and other contemporary figures. *Cooke.*

531 *Age of Johnson.* (3)
Johnson and his circle; Burke, Goldsmith, Gray, Walpole, Cowper. The Pre-Romantic movement. *Cooke.*

532 *Restoration and Eighteenth-Century Drama.* (3)
A study of the dramatic types that arose between the closing of the theatres in 1642 and the death of Sheridan. *Cooke.*

533 *Eighteenth-Century British Novel.* (3)
Study of the novel from its beginnings in English literature through the eighteenth century. *Cooke.*

535 *English Romantic Poetry.* (3)
The philosophical, critical, social, and political backgrounds of romanticism are examined. The emphasis is on Wordsworth, Coleridge, Byron, Shelley, and Keats. *Ward.*

536 *English Romantic Prose.* (3)
The emphasis is on the essays and critical prose of Lamb, Hazlitt, and DeQuincey; the critical prose of Wordsworth, Coleridge, and Shelley; and the letters of Keats. *Ward.*

538 *Victorian Literature: 1830-1860.* (3)
Poets and essayists—Macaulay, Mill, Carlyle, Newman, Tennyson, Mrs. Browning, Browning, Ruskin, and Arnold—in their historical setting. *Shine.*

539 *Victorian Literature: 1860-1900.* (3)
Poets and essayists—Rossetti, Swinburne, Meredith, Huxley, Pater, Wilde, Davidson, Henley, Stevenson, Housman, Hardy, Kipling, and some others—in their historical setting. *Shine.*

540 *Nineteenth-Century British Novel.* (3)
Study of the novel in English literature from Jane Austen through Thomas Hardy. *Axton.*

541 *Twentieth-Century British Novel.* (3)
A study of the content and technique of the best twentieth-century British novels, with some consideration of these in relation to significant social, philosophical, and literary trends. *Evans.*

542 *Twentieth-Century British Poetry.* (3)
Close study of major British poetry of the twentieth century, with attention to literary movements and critical theory. *Moore.*

551 *American Literature Before 1860.* (3)
A survey of the development of American life, thought, and letters from the beginnings to 1860. *Jacobs, White.*

552 *American Literature After 1860.* (3)
A survey of the development of American life, thought, and letters from 1860 to the present. *Jacobs, White.*

554 *American Novel Before 1900.* (3)
Study of the American novel from the beginnings to Henry James. *White.*

555 *Modern American Novel.* (3)
Novels chosen for their enduring value rather than historical importance. Attention to shifting techniques of fiction and to contrasting interpretation of the American scene. *Jacobs.*

556 *Modern American Poetry.* (3)
Examination of the forces which brought about the revolutionary changes in technique and idea in twentieth-century poetry; study of the major American poets from 1890 to the present. *Jacobs, White.*

560 *Comparative Literature I.* (3)
A study of Western World literature. From Homer to Montaigne. *Brady.*

561 *Comparative Literature II.* (3)
A study of Western World literature. From Montaigne to Anatole France. *Brady.*

563 *Modern Drama.* (3)
Continental, British, and American dramatic literature from Ibsen to the present. *Adler.*

565 *The Lyric in English.* (3)
A critical examination of selected lyrics from the Middle Ages to the present. *Moore.*

568 *History of Literary Criticism I.* (3)
Literary criticism in the Western World from Plato through the eighteenth century. Application of critical principles to literary works. *Adler.*

569 *History of Literary Criticism II.* (3)
Literary criticism in Europe and America from Wordsworth to the present. Application of critical principles to literary works. *Adler.*

570 *Literature of the Old Testament.* (3)
Critical analysis of the canonical and apocryphal Old Testament in English, with particular attention to Biblical ideas and symbols helpful to students of literature.

571 *Literature of the New Testament.* (3)
Critical analysis of the canonical and apocryphal New Testament in English, with particular attention to Biblical ideas and symbols helpful to students of literature. *Rickey.*

573 *General Introduction to Folklore.* (3)
An introduction—on a world-wide scope—to the types of folklore. Emphasis upon folklore as a cultural phenomenon in its own right and upon its relations to literary types. The development of the science of folklore. *Jansen.*

574 *American Folklore.* (3)
A study of the major materials in American folklore. The use of this material in other forms. Experience in actual collecting and in the cataloging of materials. *Jansen.*

600 *Bibliographical Studies.* (3)
An introduction to graduate work, with particular attention to the monuments of literary scholarship, reference works, and use of the library. The preparation of an extensive bibliography is required. Must be taken by all candidates for the M.A. in English. *Brady.*

620 *Middle English Literature.* (3)
Survey of Middle English literature, exclusive of Chaucer, with collateral reading of non-English monuments in English translation. *Moore.*

622 *Studies in English Literature: 1500-1600.* (4)
Comprehensive study of broad topics, normally limited to an intensive survey of the literature and scholarship of the period as a whole. *Stroup.*

623 *Studies in English Literature: 1600-1660.* (4)
Comprehensive study of broad topics, normally limited to an intensive survey of the literature and scholarship of the period as a whole. *Stroup.*

630 *Studies in English Literature: 1660-1720.* (4)
Comprehensive study of broad topics, normally limited to an intensive survey of the literature and scholarship of the period as a whole. *Cooke.*

631 *Studies in English Literature: 1720-1780.* (4)
Comprehensive study of broad topics, normally limited to an intensive survey of the literature and scholarship of the period as a whole. *Cooke.*

635 *Studies in English Literature: 1780-1830.* (4)
Comprehensive study of broad topics, normally limited to an intensive survey of the literature and scholarship of the period as a whole. May be repeated once for a total of 8 credits. *Ward.*

638 *Studies in English Literature: 1830-1860.* (4)
Comprehensive study of broad topics, normally limited to an intensive survey of the literature and scholarship of the period as a whole. *Shine.*

639 *Studies in English Literature: 1860-1900.* (4)
Comprehensive study of broad topics, normally limited to an intensive survey of the literature and scholarship of the period as a whole. *Shine.*

651 *Studies in American Literature Before 1860.* (4)
Comprehensive study of broad topics, normally limited to an intensive survey of the literature and scholarship of the period as a whole. *Jacobs.*

652 *Studies in American Literature Since 1860.* (4)
Comprehensive study of broad topics, normally limited to an intensive survey of the literature and scholarship of the period as a whole. *Jacobs.*

768 *Residence Credit for the Master's Degree.* (0)
May be repeated once.

769 *Residence Credit for the Doctor's Degree.* (0)
May be repeated indefinitely.

770 *Seminar in English Literature.* (3)
Intensive study and research centering upon such subjects as the following: a particular author or group of authors, a literary *genre*, a literary movement, a restricted period of time. May be repeated three times for a total of 12 credits. *Graduate Staff.*

772 *Seminar in American Literature.* (3)
Intensive study and research centering upon such subjects as the following: a particular author or group of authors, a literary *genre*, a literary movement, a restricted period of time. May be repeated once for a total of 6 credits. *Graduate Staff.*

774 *Seminar in Comparative Literature.* (3)
Intensive study and research centering upon the relationship between English or American literature and that of some other country. May be repeated once for a total of 6 credits. *Graduate Staff.*

780 *Directed Studies.* (3)
Independent work devoted to study and research on specific subjects and problems according to the interests and needs of individual students. May be repeated twice for a total of 9 credits. *Graduate Staff.*

SPEECH

181 *Basic Public Speaking.* (3)
A course designed to give the student platform experience in the fundamentals of effective speaking. *Staff.*

183 *Parliamentary Usage.* (2)
The theory and practice of parliamentary procedure as it applies both to governmental and non-governmental organizations. Ample time is allocated for practice in organizing groups and conducting meetings. *Blyton.*

184 *Intercollegiate Debating.* (1)
Preparation for and participation in intercollegiate debating. May be repeated once for a total of 2 credits. *Blyton.*

283 *Argumentation and Debate.* (3)
A course in the theory of argument, with practice in the several forms of debate. *Blyton, Patterson.*

284 *Intercollegiate Debating.* (1)
Preparation for and participation in intercollegiate debating. May be repeated three times for a total of 4 credits. *Blyton.*

285 *Applied Phonetics.* (3)
Study of the phonetic structure of the English language with requirement of mastery of international Phonetic Alphabet. Emphasis will be placed on phonetic transcription, and application will be made for students interested in general speech, speech correction, radio, television, and theatre. *Blyton and Cutler.*

287 *Speeches for Special Occasions.* (3)
Practice in various types of speeches motivated by specific occasions, such as introductions, welcomes, presentations, dedications, good-will speeches, and after-dinner speeches. *Sterrett, Patterson.*

288 *Oral Interpretation.* (3)
An analysis of prose and poetry for oral interpretation. Helpful to those who plan to teach literature. *Sterrett.*

388 *Oral Reading of the Bible.* (3)
Specific training in the oral readings of the Bible as one of the world's great pieces of literature. *Sterrett.*

580 *Discussion.* (3)
The essentials of discussion, with emphasis upon the thinking process as it operates in group situations. Participation in the various forms of discussion. *Blyton, Patterson.*

581 *Advanced Discussion.* (3)
An intensive study of discussion as democracy in action. Ample time devoted to practice discussions. *Blyton.*

582 *Persuasion.* (3)
The principles and methods of persuasion. Of particular benefit to teachers, lawyers, business majors, and other persons whose work is concerned with motivating human conduct. *Blyton, Patterson.*

583 *Advanced Argumentation and Debate.* (3)
The function of argumentation and debate in a democracy, plus a much more detailed and critical examination of logic and argument than in English 283. *Blyton.*

584 *Teaching of Speech.* (3)
An analysis of the field of speech education as related to the teacher of speech. *Blyton, Patterson.*

588 *Oral Interpretation of Drama.* (3)
The cutting and adapting of the three-act play for oral presentation. *Sterrett.*

782 *Special Topics in Speech.* (3)
Study and research on specific topics and problems according to the interests and needs of individual students. Normally offered as an independent work course. *Staff.*

DRAMATIC ARTS

191 *Stagecraft.* (2)
A laboratory course in the craft of play production: scenery, construction, properties, lighting, painting of scenery etc. Recommended for those interested in any technical phase of amateur theatre. *Smith.*

192 *Staging Techniques.* (2)
Problems in stage management, lighting, equipment, and design. Students are given an opportunity to take charge of completing important scenic units in a current production and to serve on its production staff. *Smith.*

291 *Voice Development.* (2)
An analysis of each student's voice and articulation, and a pointing out of methods to correct speech faults. Exercises for flexibility, range, relief from tension, and articulation. One hour of lecture and two hours of laboratory weekly. *Briggs and others.*

590 *Acting.* (3)
Development of skill and grace in the use of the body. Attention to establish mood, reactions between characters, suspense through voice modulations, pause and other modes of emphasis, projecting voice and characterization. *Briggs.*

591 *Theatre Directing.* (3)
Study of movement, interpretation of lines, creation of atmosphere, use of stage areas, use of levels, methods of achieving a climax, handling of groups, planning of mob scenes. *Briggs.*

592 *Theatre Production.* (3)
Application of modern aesthetic principles and theories of the theatre. Attention to coordination of the playwright, designer, technical director, electrician, stage manager, actor. *Smith.*

593 *Scenic Design.* (3)
A study of form, line, and color as applied to the stage. Practical work in building model sets and in the application of these models to the major production. *Smith.*

596 *History of the Stage.* (3)
Designed to give the student a knowledge of the problems of staging from ancient to modern times. Theatre and stage architecture, scenic effects, costuming, and acting styles of all major periods are discussed and their relation to dramatic literature analyzed. *Dickens.*

597 *Survey of Theatre Principles.* (3)
A course designed to introduce teachers and community theatre workers to the problems of staging under circumscribed conditions; minimum essentials of play production and the means of supplying these needs. *Briggs.*

784 *Special Topics in Dramatic Arts.* (3)
Study and research on specific topics and problems according to the interests and needs of individual students. Normally offered as an independent work course. *Staff.*

GEOGRAPHY

FACULTY

Professors: Joseph Raymond Schwendeman (Ph.D., Clark, 1941), HEAD. Thomas Parry Field (Ph.D., North Carolina, 1948). *Associate Professor:* Pradyumna Prasad Karan (Ph.D., Indiana, 1956). *Assistant Professors:* Forrest Lester McElhoe, Jr. (Ph.D., Ohio State, 1955), William Adriance Withington (Ph.D., Northwestern, 1955).

The need for well-trained personnel in the field of Geography has become increasingly apparent. At the present time three major fields of activity utilize the services of competent professional geographers: Education (Elementary, Secondary, and Collegiate), Government (National, State, and City), and Business (Trade, Transportation, Publishing). The Department of Geography is prepared to offer necessary training to students for these economic activities.

In addition to the training of professional geographers, the Department of Geography contributes directly to the fulfillment of the College of Arts and Sciences requirement in Social Studies (Geography 153 and 154). To non-geography majors in all colleges of the University the Department of Geography offers a wide selection of supplementary and elective courses which contribute importantly toward a liberal education.

A foundation in all phases of Geography is required of all department majors seeking a career in the field. For those who do not wish to become professional geographers, a major in Geography may be arranged. (See Catalogue of Courses.)

Upper Division Requirements

Requirements in the Field of Concentration: Forty credits, including the major work, in advanced courses in the field of Social Studies and certain closely allied physical science fields.

Requirements for a Major. Prerequisites: Geography 151 and 155. *Requirements:* A minimum of 18 credits of advanced work in Geography varied according to the curriculum elected by the student.

Course Descriptions

151 *Elements of Geography.* (3) I, II, S
An orientation course in the field of geography, certain basic facts and geographical tools. Major emphasis upon elements of weather, climate, and earth processes. *Karan.*

152 *Regional Geography of the World.* (3) II, S
A study of the geography of the world by regions, an explanation of their (1) position, (2) extent, and (3) influence upon people. (Required of students in Education for elementary certification.) *Karan, Field.*

153 *Societies Around the World.* (3) I, II, S
Meets Social Studies requirements. Comparative study of the Eskimo, Navajo, and Baganda as preliterate, primitive societies in difficult environments. (Same as Anthropology and Sociology 153 except for Ed. majors.) *Schwendeman, McElhoe, Field.*

154 *Societies Around the World.* (3) I, II
Meets Social Studies requirements. Comparative study of the Chinese Peasant, Cotton South and British Midlands as more highly developed societies living in more moderate environments. (Same as Sociology 154 except for Ed. majors.) *Schwendeman and Field.*

155 *Economic Geography of the World.* (3) I, II, S
Description and analysis of world patterns of major resources and their development through agriculture, fishing, forestry, mining, manufacturing, transportation and trade. *Withington, McElhoe.*

252 *Introduction to Weather and Climate.* (3) I
A study of the atmosphere directed toward a basic understanding of the elements and controls of weather and climate. Attention is given to instruments, maps and observation techniques. Prereq: Geography 151 or consent of instructor. *Karan.*

260 *Introductory Field Studies in Geography.* (3)
Techniques of obtaining and verifying data in the field, association of geographic names, technical and descriptive terms of geographic phenomena with classification and report. May be repeated once. *Staff.*

520 *Regional Geography of Anglo-America.* (2) I, S
A regional study of the physical, economic, and cultural characteristics of the various areas of the United States, including Hawaii, and Alaska. Prereq: One geography course. *Withington.*

521, 523, 525, 527, 529, 535, 537, 539, 541, 543 *Special Problems.* (1 ea.) I, II, S
Designed for advanced students who undertake minor research problems to be conducted in regular consultation with the instructor. It can only be taken concurrently with a related upper division course in Geography. *Staff.*

522 *Geography of Kentucky.* (2) II, S
A study of how the people of Kentucky adjust themselves to the location, surface, climate, and other natural resources of their state. Prereq: One geography course. *Schwendeman.*

524 *Regional Geography of Latin America.* (2) I
A study of countries and geographic regions of Mexico, Central America, and South America. Prereq: One geography course. *Schwendeman.*

526 *Regional Geography of Europe.* (2) I
A study of Western Europe major geographic regions, climate, soil, terrain, mineral, and biotic factors. Population problems, economic adjustments, and political significance of resources. Prereq: One geography course. *Karan.*

528 *Regional Geography of Asia.* (2) II
A regional study of the countries of Asia including European U.S.S.R., China, Japan, and India. Role of the Orient in the international landscape. Prereq: One geography course. *Karan, Withington.*

530 *Intermediate Field Studies.* (3)
An intensive study of a particular geographic area with such specific skills as filling in a base map and observing and recording data for map composition and report. May be repeated once. *Staff.*

534 *Regional Geography of Australia and the Pacific Islands.* (2) II

A study of the geographical problems and adjustments of the peoples and countries of the Pacific area. Reference to the strategic nature of the location. Prereq: One geography course. *Field.*

536 *Regional Geography of Africa.* (2) II

A study of Africa as a complete continent and not as an example of European imperialist policy; as a series of geographic regions. Prereq: One lower division course in geography. *Field.*

538 *Conservation of Natural Resources.* (2) I

A general study of the needs for and problems of conserving the natural resources including the development of the conservation movement and resource use. Prereq: Geography 155. *Withington, McElhoe.*

540 *Geography of Urban Areas.* (2) II

A study of the location and growth of cities and urban communities in relation to environmental factors. Prereq: Geography 155 or permission of Instructor. *McElhoe, Withington.*

542 *Geographical Foundations of World Power.* (2) I

The influence of such factors as location, size, form, surface, climate, and natural resources, on the rise and fall of nations. Consideration given to geopolitics. Prereq: One geography course. *Schwendeman.*

544 *Climatology.* (3)

A study of the elements and controls of climate and of world climatic patterns. Prereq: Geography 151 or consent of instructor. *Karan.*

545 *Independent Work in Geography.* (3) I, II, S

Individual research involving such problems as: (a) Materials and methods in teaching geography; (b) the Historical Evolution of Geography; (c) map reading and interpretation; (d) special area studies; (e) other topics may be elected by consent of instructor. May be repeated once. Prereq: Major and a standing of 3.0 in the department. *Staff.*

547 *Cartography.* (3) I, II

A course in the construction and interpretation of maps. Prereq: Geography 151. *Field.*

548 *Applied Cartography.* (3) I, II, S

Map compilation techniques as directed by Army Map Service specifications. Enrollment by permission. Field.

650 *Regional Study of Special Areas.* (3)

The application of the methods of regional interpretation to special areas such as the U.S.S.R., Mediterranean Basin, Caribbean Region, Mexico, Central Europe, etc. May be repeated once. *Staff.*

660 *Advanced Field Studies in Geography.* (3)

Field study and preparation of a report which shall include both manuscript and graphic material. May be repeated once. *Staff.*

770 *Seminar—Development of Geographic Thought.* (3) II

Series of topics selected in order to acquaint the graduate student of geography or of related subjects with the basic literature and evolution of the broad field of geography. Prereq: Geography major or consent of instructor. *Staff.*

768 *Residence Credit for the Master's Degree.* (0) I, II, S

May be repeated once.

GEOLOGY

FACULTY

Professors: Arthur Crane McFarlan (Ph.D., Chicago, 1924), HEAD. William Randall Brown (Ph.D., Cornell, 1942), Vincent E. Nelson (Ph.D., Chicago, 1942). *Associate Professors:* Irving Sanborn Fisher (Ph.D., Harvard, 1952), Erwin John Lyons (Ph.D., Wisconsin, 1947), Thomas Glasdir Roberts (Ph.D., Columbia, 1949). *Assistant Professor:* Lois Jeannette Campbell (Ph.D., Ohio State, 1955).

The demand for the professional geologist comes from the need for geological guidance in the exploitation of the nation's mineral wealth. Its relation to mining and to oil and gas exploration is such that geological services are indispensable to companies engaged in developing these mineral resources. Opportunities are also open with state and federal geological surveys, in museum work, and in college teaching. The Department of Geology is prepared to equip men and women for such work.

The George W. Pirtle Fellowship:

A grant of $500 a year is given by George W. Pirtle to a graduate student in geology upon the recommendation of the faculty of the Department of Geology. The award is made upon the basis of need and promise of future achievement in the geological field. Mr. Pirtle has set up this grant in appreciation of the training he received in the Geology Department and is given in honor of Dr. A. C. McFarlan.

The recipient shall write a thesis based on field work. Mr. Pirtle was the first student to obtain the Master's Degree from the University with a major in Geology.

Applications for this grant should be directed to the Head, Department of Geology.

LIST OF COURSES FOR PROFESSIONAL TRAINING IN GEOLOGY

	Crs.
Freshman Year	
Geology 104, 105, Outlines of Geology.	6
Geology 110, Lab Work in Elementary Geology	1
Sophomore Year	
Geology 210, 211, Historical Geology	6
Geology 220, 221, Field Geology	5
Geology 212, 213, Mineralogy	6
Junior Year	
Geology 520, 521, Advanced Field Geology	4
Geology 500, 501, Paleontology	6
Geology 502, Economic Geology	4
Geology 524, 526, Field Work in Regional Geology (Summer)	8
Senior Year	
Geology 504, Elementary Petrology	3
Geology 505, Elementary Structural Geology	3
Geology 522, 523, Advanced Field Geology	4
Geology 503, Petroleum Geology	2
Geology 530, Seminar	2
Geology 506, Advanced Principles of Geology	4

ALLIED SCIENCES, ETC.

Chemistry—General, Qualitative,° and Quantitative
Physics—General°
Zoology—General Zoology°
Mathematics—College Algebra, Trigonometry, Analytics and Calculus I°
Engineering—Engineering Graphics I°

The suggested courses do not constitute a prescribed curriculum. It is planned, however, to give the necessary background for professional work. For a less professional major,

° Required work in other sciences indicated by asterisks.

courses in other fields may be substituted except for those prerequisite to required courses in Geology. For mineral resource work attention is called to courses in Mining and Metallurgy. For paleontological work take Zoology 200 and 500. For later training in geo-physical methods, add analytics and calculus I and substitute Physics 231, 232, and 241, 242, for a second year of Chemistry. For combination engineering and geology, consult Dr. Lyons.

Upper Division Requirements

Requirements in the Field of Concentration: Forty credits in the field of Physical and Biological Sciences, including the major work, in courses not open to freshmen.

Requirements for a Major. Required: Geology 210, 211, 212, 213, 220, 221, 500, 501, 502, 504, 505, 506, 520, 521, 524, 526, 530, 531. *Field Work:* A summer field course, Geology 524, and a report, Geology 526, are required of major students for graduation. Local field work is offered throughout the year.

Students majoring in Geology are required to pass a final comprehensive examination in the department.

Course Descriptions

100 *Elementary Geology.* (3)
A course in general geology including the common minerals and rocks, geologic processes, and a brief discussion of historical geology. Lecture and recitation, two hours; one lab. conf. (Credit is not allowed for both 100 and 104). *Staff*

104 *Outlines of Geology.* (3)
An introduction to general geology. Lecture, three hours. *Staff.*

105 *Outlines of Geology.* (3)
A study of some of the more important and better known geologic features of the earth. An introduction to mineral resources, historical geology and the fossil record. Lectures, three hours. Prereq: Geol. 100 or 104 or 200.

110 *Laboratory Work in Elementary Geology.* (1)
Prereq or Concurrent: Geology 104.

112,113 *Elementary Field Geology.* (1 ea.)
Visits are made to localities in the vicinity of Lexington to study local geologic phenomena. For special fee see page 24.

120,121 *Elementary Field Work in Regional Geology.* (6 ea.)
Eight weeks in the field. The party works along with that in Geology 524. Prereq: Elementary Geol. For special fee see page 21. *McFarlan and Lyons.*

200 *Elementary Geology for Engineers.* (3)
An introduction to the principles of geology. Three lectures. *Lyons.*

202 *Elementary Geology for Engineers.* (3)
The practical application of geology to engineering. A treatment of metallic and non-metallic mineral resources. Geologic maps. Two lectures, one lab conference. Prereq: Geol. 200. *Lyons.*

204 *Laboratory in Engineering Geology.* (1)
Prereq: Geol. 200. *Lyons.*

210,211 *Historical Geology.* (3 ea.)
A study of the events of earth history and the interpretation of this record from the rocks. Continental evolution—stratigraphic succession —fossil record. Two lectures, one laboratory conference. Prereq: a course in Elem. Geol. with laboratory. *Lyons.*

212 *Mineralogy.* (3)
A study of geometrical crystallography and other physical properties useful in mineral identification. Lecture, one hour; lab, four hours. Prereq: Geology 104 and 110, or equivalent, and Chemistry 110 and 112 (or concurrent). *Fisher.*

213 *Mineralogy.* (3)
The determination of minerals by physical properties, blowpipe analysis, and the petographic miscroscope. A study of their origin, occurrence, and associations. Lecture, one hour; lab, four hours. Prereq: Geology 212. *Fisher.*

214 *Physiography of North America.* (3)
A regional study of the physical regions of North America, land forms, their nature and origin. Lecture, two hours; lab, two hours. Prereq: a course in Elem. Geol. *Campbell.*

215 *Geomorphology.* (3)
A study of the geologic origins and the development of landscapes by subaerial and submarine processes. Special attention will be given to the evolution of concepts of interpretation and classification. Prereq: a course in Elem. Geol. *Campbell.*

220 *Field Geology.* (3)
An introduction to field methods involving the identification and tracing of formations, areal mapping, and structure contouring. Prereq or concur: Geol. 210. For special fee see section on "Expenses and Financial Aid" near front of catalogue. One lecture and 6 hours field work. *Lyons.*

221 *Field Geology.* (2)
Topographic mapping. Six hours of field work a week. Prereq: Geol. 210, 211; Math. 112. For special fee see section on "Expenses and Financial Aid" near front of catalogue. *Roberts.*

300 *Gems and Gem Materials.* (3)
Recognition, distribution, geologic occurrence, and origin of gems and gem materials. Lecture, two hours; lab, two hours. *Lyons.*

400 *Geology of Kentucky.* (3)
A study of the geology of the state. This includes the major events in its geological history, the development of regional characteristics, an explanation of its scenic and natural wonders, and mineral resources. *McFarlan.*

500 *Paleontology.* (3)
A study of fossil invertebrates, their nature, classification, and geological distribution. Lecture, one hour; lab, four hours. Prereq: Geol. 210, 211 and Gen. Zoology. *Campbell.*

501 *Paleontology.* (3)
A study of geologic faunas. Practice in determining stratigraphic horizons. Lecture. one hour; lab, four hours. Prereq: Geol. 500. *McFarlan.*

502 *Economic Geology.* (4)
Mineral deposits other than petroleum and natural gas. Distribution, mode of occurrence, origin, methods of search for and uses. Lecture, three hours; lab, two hours. Prereq: Geol. 210, 211, 212 and 213. *Brown.*

503 *Petroleum Geology.* (2)
The origin and accumulation of petroleum and natural gas. A study of geological methods used in exploratory work. Geology of principal producing fields. Lecture, two hours. Prereq: Geol. 210, 211. *Roberts.*

504 *Elementary Petrology.* (3)
A study of the common rocks with emphasis on the sedimentary rocks. Prereq: Geol. 212, 213. *Fisher.*

505 *Elementary Structural Geology.* (3)
An introduction to Earth structures. Advanced geologic map interpretation. Prereq: Geol. 210, 211; Physics 211, 213. *Nelson.*

506 *Advanced Principles of Geology.* (4)
A general study of geological processes. Lecture, three hours; lab, one hour conference. Prereq: Restricted to senior major students in geology or by permission of the instructor. *Fisher.*

520-523 *Advanced Field Geology.* (2 ea.)
A field course in geologic mapping involving problems of local structure and stratigraphy. Six hours a week in the field. Prereq: Geol. 220, 221. For special fee see section on "Expenses and Financial Aid" near front of catalogue. *McFarlan.*

524,525 *Field Work in Regional Geology.* (7 ea.)
Eight weeks in the field in Colorado. The course is an effort to bring the student into contact with diverse geological phenomena and problems. Geological field methods. See special announcement. Required of major students at the end of junior year. Prereq: Geol. 210, 211. For special fee see section on "Expenses and Financial Aid" near front of catalogue. *McFarlan, Lyons.*

526,527 *Report on Field Work in Regional Geology.* (1 ea.)
Prereq: 524, 525.

530,531 *Seminar.* (1 ea.)
Required of all senior majors. *Staff.*

532 *Independent Work in Geology.* (3)
Directed work in independent investigations. Thesis required. May be repeated for a maximum of 12 credits. Prereq: Major and standing of 3.0 in the department.

600 *Structural Geology.* (3)
A study of the structural features of the earth's crust with an analysis of the mechanics involved. Lecture, three hours; or lecture, two hours; lab, two hours. Prereq: Physics 211, 213; Geol. 210, 211, 505. *Nelson.*

601 *Stratigraphy.* (3)
Regional stratigraphy. Stratigraphic problems and principles. Use of fossils. Lecture, two hours; lab, three hours. Prereq: Geol. 210, 211, 500, 501. *McFarlan.*

602 *Stratigraphy.* (3)
A continuation of 601. Lecture, two hours; lab, three hours. Prereq: Geol. 601. *McFarlan.*

603 *Optical Mineralogy.* (3)
A study of the optical properties of minerals by means of the petrographic microscope. Lecture, one hour; lab, four hours. Prereq: Geol. 212 and 213; Physics 211 and 213. *Brown.*

604 *Sedimentary Petrology.* (3)
The classification and interpretation of sedimentary rocks, with emphasis on those aspects which relate to the occurrence of petroleum. Lecture, two hours; lab, two hours. Prereq: Geol. 603. *Roberts.*

605 *Petrology of the Igneous Rocks.* (3)
The occurrence, origin, and classification of igneous rocks. Identification with the petrographic microscope. An introduction to metamorphic rocks. Lecture, one hour; lab, four hours. Prereq: Geol. 603. *Brown.*

606 *Advanced Economic Geology.* (3)
Lecture, two hours; lab, two hours.

768 *Residence Credit for Master's Degree.* (0)
May be repeated once. *Staff.*

770 *Seminar.* (1)
May be repeated three times for a total of 4 credits. *Staff.*

HISTORY

FACULTY

Distinguished Professor: Thomas Dionysius Clark (Ph.D., Duke, 1932), Head. *Professors:* Carl B. Cone (Ph.D., Iowa, 1940), William Clement Eaton (Ph.D., Harvard, 1929), James Franklin Hopkins (Ph.D., Duke, 1949), Albert Dennis Kirwan (Ph.D., Duke, 1947), Shelby Thomas McCloy (Ph.D., Columbia, 1933). *Associate Professors:* Will D. Gilliam, Jr. (Ph.D., Indiana, 1941), Holman Hamilton (Ph.D., Kentucky, 1954), Enno E. Kraehe (Ph.D., Minnesota, 1948), Robert Gerhard Lunde (M.A., Chicago, 1928), Paul Chester Nagel (Ph.D., Minnesota, 1952), Rhea Alec Taylor (Ph.D., Chicago, 1948), Bennett H. Wall (Ph.D., North Carolina, 1946). *Assistant Professors:* Jill Nadell Claster (Ph.D., Pennsylvania, 1959), Ross Allan Webb (Ph.D., Pittsburgh, 1956), Stanley John Zyzniewski (Ph.D., Harvard, 1956). *Instructors:* Dirck Mackay Parkin (M.A., Pennsylvania State, 1956).

The Department of History has two fundamental functions in a liberal arts curriculum. First, it seeks to give a maximum number of students an understanding of the background of civilization. History is a significant gateway to the world's great collections of literature embodying the story of man's striving, hopes, and accomplishments. It is basic to many of the fields of the Arts and Sciences, and to an intelligent understanding of the complexities of civilization. The second function of the Department of History is that of offering a sound and comprehensive advanced and graduate program whereby students may acquire better familiarity with the broad movements in history, an intense knowledge of given fields, and specific knowledge of historical criticism and techniques.

For a Department of History to render effective service to its students, it must be composed of scholarly persons who have had original experience in research, writing, and interpretation of source materials. Since this department offers work leading to two advanced degrees, it tries to live up to these objectives.

History offers students an excellent foundation for many special courses in the university curriculum, its cultural possibilities are unlimited, and it provides excellent training for specialists in the fields of journalism, library work, public service, literature, law, and the radio. In his own right the historian has an unlimited field for teaching, research, and writing.

The introductory courses—104 and 105 in European history, and 108 and 109 in American history, and 202 and 203 in British history—will aid freshmen and sophomores in subsequent courses in history, commerce, law, education, journalism, literature, and general liberal arts.

Upper Division Requirements

Requirements in the Field of Concentration: Forty credits of advanced work in the field of social studies, including the major work.

Requirements for a Major. Prerequisites: History 202 and 203, or 104 and 105, 108 and 109. *Required:* A minimum of 18 credits of advanced courses in history plus the Senior Seminar.

Course Descriptions

104 *Modern Europe to the French Revolution.* (3) I, II
A survey of the growth of Europe from the decline of the Roman Empire to the French Revolution. *Staff.*

105 *Modern Europe Since the French Revolution.* (3) I, II
A survey of European developments from the French Revolution to the present. A continuation of 104. *Staff.*

108 *History of the United States Through 1865.* (3) I, II
This course traces the nation's development through the Civil War. It is designed to meet the demands for a general understanding of American history. This course fulfills the requirements for the elementary teachers' certificate. *Staff.*

109 *History of the United States Since 1865.* (3) I, II
A continuation of 108, from 1865 to the present. *Staff.*

202 *History of British People to the Restoration.* (3) I, II
From the Roman period to the Stuart period. A general survey of the various epochs and phases of the English people at home and abroad. *Cone.*

203 *History of British People Since the Restoration.* (3) I, II
From the Stuart period to the present. A continuation of 202. *Cone.*

229 *The Ancient Near East and Greece to the Death of Alexander the Great.* (3)
Covers the birth of civilization in Egypt and Mesopotamia, and the history of the Ancient Near East and Greece to the conquest of Greece by Philip of Macedon.

230 *The Hellenistic World and Rome to the Death of Constantine.* (3)
Covers the conquests of Alexander the Great, and the main features of the Hellenistic World, the Roman Republic and the Roman Empire to the death of Constantine.

240 *History of Kentucky.* (3) I, II
A general survey of the chief periods of Kentucky's growth and development from 1750 to the present. *Clark.*

285 *History of Russia to 1801.* (3)
A broad survey of the life of the Russian people from earliest times to the start of the modern imperial period. Primary attention is given to political developments and the socio-economic patterns that evolved, as well as to the significant intellectual and cultural achievements.

286 *History of Russia Since 1801.* (3)
Political institutions and events are surveyed, along with the progress and problems in towns and country (serfdom, industrialization, agrarian pressures). A summary of the revolutionary movements is presented as a preface to the upheavals of 1905 and 1917 and the subsequent evolution of the Soviet system.

I. AMERICAN HISTORY

316 *Seminar: Historical Method.* (2) I
To be taken during the first semester of junior year. *Staff.*

416 *Senior Seminar: Historical Literature.* (2)
A course for seniors designed to present the bibliography and literature in selected fields of history. *Staff.*

500 *The Diplomacy and Foreign Policy of the United States to 1898.* (3) I
A survey designed to acquaint the student with the principles of American foreign policy and its historical evolution. Prereq: History 108 or equivalent. *Hopkins.*

501 *The Diplomacy and Foreign Policy of the United States Since 1898.* (3) II
A continuation of 500. Foreign policy after the United States became a world power. Prereq: History 109 or equivalent. *Hopkins.*

505 *Colonial America.* (3) I
A study of the origins and development of the English colonies; their relations with England and European states. Emphasis on imperial policies and colonial autonomy. Prereq: One year of American or European History. *Gilliam.*

506 *The American Revolution and the Constitution, 1763-1800.* (3) II
This course deals with the American Revolution and the beginning of the United States as a sovereign nation. Prereq: One year of American or European History. *Taylor.*

508 *Colonial Latin America.* (3) I
A survey of the origins and development of Latin American Colonies and their struggle for independence.

509 *Latin American Republics.* (3) II
This course involves a study of the political, economic, and social institutions, and problems of the Latin American Republics from attainment of independence to the present.

524 *Social and Cultural History of the United States to 1865.* (3) I
The development of American life and thought.

525 *Social and Cultural History of the United States Since 1865.* (3) II
A continuation of 524.

532 *History of American Agriculture.* (3)
A study of American agriculture from 1800 to 1941. *Wall.*

540 *Independent Work.* (2 ea.)
Under special conditions selected students may investigate problems, with weekly reports to the instructor. Prereq: Major and standing of 3.0 in the dept. May be repeated three times for a total of 8 credits.

545 *Tutorial Reading.* (1)
Staff.

546 *The Middle Period of American History, 1800-1850.* (3)
A study of powerful personalities and pivotal events during this period: presidential influence of Jefferson; War of 1812; the impact of Marshall and Jackson; sectional differences and similarities; Mexican War, Compromise of 1850. Emphasis is placed on national growth, party battles, social cleavage, and industrial change. Prereq: History 108, 109.

547 *The Civil War and Reconstruction, 1850-1877.* (3) II
The political, social, and constitutional history of the Confederacy and the Reconstruction of the southern states.

548 *Recent History of the United States. 1877-1920.* (3) I
A study of the transformation of America from a rural society "isolated" from world affairs into a highly industrialized power. Prereq: History 108 and 109 or equivalent.

549 *Recent History of the United States, 1920 to the Present.* (3) II
An intensive study of the principal movements and episodes in the history of the people of the United States from World War I to the present. Prereq: One year of American History. *Wall.*

551 *The American Frontier.* (3) I
A course dealing specifically with American westward expansion. Prereq: History 108 and 109 or equivalent. *Eaton and Clark.*

552 *The American Frontier.* (3) II
A continuation of 551. It will consider the Trans-Mississippi West. *Eaton and Clark.*

555 *History of the Old South.* (3) I
A study of the colonial beginnings and expansion of southern life, economics, and society. The growth of slavery, staple agriculture, and sectional politics will constitute the major interest. Prereq: History 108. *Eaton and Kirwan.*

556 *History of the New South.* (3) II
The evolution of southern life and society, agrarian politics, relationships with other sections, industrial growth, and new leadership. *Clark.*

II. ENGLAND AND THE BRITISH EMPIRE

561 *English Constitutional History to 1603.* (3) I
A study of the backgrounds of the English constitution. Prereq: History 202 or equivalent. *Cone.*

562 *English Constitutional History Since 1603.* (3) II
A continuation of 561. The constitutional struggle between the Stuart kings and Parliament; triumph of constitutional monarchy; rise of the Cabinet; effect of democracy in recent times. Prereq: History 203 or equivalent. *Cone.*

564 *History of Canada.* (3)
A brief survey of Canada under the French; the development under British control; evolution of the Dominion; relation with the United States and British Commonwealth of Nations. Prereq: One year of college history. *Cone.*

565 *The British Empire to 1860.* (3) I
Origin of the British Empire, 1783 to 1860; development of British sea power; the early growth and development of Canada, Australia, New Zealand, South Africa, and India. *Cone.*

566 *The British Empire and Commonwealth.* (3) II
A continuation of 565. Great Britain and the growth of the Dominions and the Commonwealth since 1860. Prereq: History 202 and 203. *Cone.*

568 *British Social History During the Tudor Period, 1485-1603.* (3) II
A study of British life, manners, and customs in town and country. Particular emphasis will be placed upon the age of Elizabeth, with political events subordinated to social changes. Prereq: History 202. *Cone.*

569 *British History Since 1815.* (3) I
A detailed study of Britain's political, social, diplomatic and industrial development during the modern period. Special consideration of Britain in World War I and World War II, and her position in the contemporary world. *Cone.*

III. EUROPE

570 *Early Middle Ages.* (3)
The political, economic and cultural aspects of medieval development from the fourth to the twelfth centuries.

571 *Later Middle Ages.* (3)
Emphasis will be placed on the significant political and intellectual development of the "High Middle Ages" through the later Middle Ages.

572 *Medieval Civilization.* (3) II
The chief emphasis will be placed on the "High Middle Ages" of the twelfth and thirteenth centuries and the distinctive civilization which then flourished in Western Europe.

573 *History of Classical Greece.* (3)
Covers the major political, economic, social and intellectual developments in Greece from the Persian Wars to the close of the War between Athens and Sparta. Emphasis will be placed on the reading of primary source material in translation.

574 *Fourth Century Greece.* (3)
Traces the intellectual and social developments of Greece in the fourth century; the decline of the city-state system, and the risé of Macedon. The semester will end with the conquests of Alexander the Great. Prereq: Hist. 573 or consent of the instructor.

575 *The Renaissance and Reformation.* (3) I
This course is designed for a study of the birth of modern spirit and institutions. *McCloy.*

576 *The Roman Republic from 133 B.C. to 27 B.C.* (3)
The history of the Roman Republic from 133 B.C. to 27 B.C. The first semester will stress the effects of Rome's political expansion on her republican institutions, and the history of the Roman Revolution. The use of ancient source materials (in translation) will be emphasized.

577 *History of the Roman Empire from 27 B.C. to A.D. 117.* (3)
The history of the Roman Empire from 27 B.C. to A.D. 117. The second semester will cover the founding of the Roman Empire by Caesar Augustus, the political history of the Empire through the reign of the Emperor Trojan, and the social and intellectual history of the Graeco-Roman world during the early Empire. Prereq: Hist. 576 or consent of the instructor.

578 *Social History of Europe in the Eighteenth Century.* (3) II
A study of the life and manners of the people of Europe in the 1700's. Special attention will be given to Western and Southern Europe. McCloy.

580 *The French Revolution and Napoleon.* (3) I
A study of the period 1789-1815 in Europe, treating of the appearance and manifestation of the spirit of revolt. Conditions in France and adjoining nations, the evolution of France from 1774 to 1795, and changes under Napoleon. *McCloy.*

581 *Europe 1814-1870.* (3) II
This course treats the successive political changes in 1823, 1830, 1848, and 1870, together with the outstanding commercial, cultural, and scientific developments of European life after 1815. *Kraehe.*

582 *Europe, 1870-1918.* (3)
A balanced treatment of the political, social, cultural, economic, and intellectual life of Europe in the period indicated. Special emphasis placed on diplomatic and military developments leading to the first World War. *Kraehe.*

583 *Europe Since 1919.* (3) I
A study of the origins and consequences of the two World Wars together with the revolutionary movements of fascism and communism and their challenge to liberal democracy. *Kraehe.*

584 *Russian Revolutions and the Soviet System I.* (3)
Study of the fundamental factors leading to the collapse of the monarchy, with emphasis upon the reforms and the governmental policies, their shortcomings, and the pressures of discontent that generated revolutionary movements. Prereq: Hist. 104, 105 or Hist. 285, 286.

587 *Russian Revolutions and the Soviet System II.* (3)
A continuation of 584, this course examines the ideological bases and *raison d'etre* of the Soviet State, before undertaking analyses of those conditions and policies which have molded the totalitarian system during the past four decades. Prereq: Hist. 104, 105 or Hist 285, 286.

588 *The Age of Absolutism.* (3) I
A study of the development of absolute monarchies from Louis XIV; the European rivalries at home and abroad; benevolent depotism, and the Age of Enlightment. Prereq: History 104 or equivalent. *Lunde.*

589 *History of Russian Social and Political Thought, 1789-1914.* (3)
A study of the significant trends and concepts which evolved among the Russian intelligentsia is undertaken, with particular attention given to those ideas and doctrines which gave direction to revolutionary movements in Russia. Prereq: Hist. 584 and 587 or consent of the instructor.

590 *Modern Europe.* (3)
This course is offered to meet a demand for a broader course which will equip students who are going out to teach European history in the present high school curriculum. Prereq: History 104 and 105. *Kraehe.*

591 *Political and Diplomatic History of East Central Europe from the French Revolution to the End of World War I.* (3)
A survey of the major factors and events which conditioned the political life and identity of the predominantly Slavic peoples inhabiting the region from Poland south to the Balkans, excluding the Eastern Slavs. Prereq: Hist. 104, 105 or consent of the instructor.

592 *Cultural History of Seventeenth Century Europe.* (3) I
A history of the development of culture in Western and Southern Europe in various fields. *McCloy.*

593 *Cultural History of Eighteenth Century Europe.* (3) II
This course is designed to give a survey of European culture during the 1700's treating the sciences, literature, history, philosophy, the fine arts, and the industrial arts. *McCloy.*

594 *Political and Diplomatic History of East Central Europe Since World War I.* (3)
A comparative study is made of the political institutions and policies of these states located in the north-south corridor stretching from the Baltic to the Aegean-Adriatic Seas, their intra-regional relations and roles in European diplomacy. Prereq: Hist. 104, 105 or consent of the instructor.

IV. THE FAR EAST

595 *The Far East to 1900.* (3) I
The Portuguese, Dutch, French and British colonial and trading empires in the Central East (India, Burma, Indo-China, and the East Indies). Prereq: History 104 or equivalent. *Staff.*

596 *The Far East Since 1900.* (3) II
The contacts of Europe and America with the Far East (China, Japan, Korea, and the Philippines) in the 19th and 20th centuries. Prereq: History 105 or equivalent. *Staff.*

THE GRADUATE GROUP

a. Seminars

These are content courses presented by the lecture and discussion method and as such are distinct from those numbered "300" and which are concerned with problems and the practice of research.

600 *European Historiography.* (3) I
McCloy.

603 *American Historiography.* (3) II
Clark, Eaton, and Kirwan.

606 *Historical Criticism.* (3)
Required of every entering graduate student. *Staff.*

b. Advanced Seminars

Seminars—Basically research in character. These are not content courses. They provide intensive training in historical research (collection and critical analysis of bibliography, note-taking and organization of materials, and the presentation of a properly documented thesis).

610 *Seminar in American History.* (3) I, II
Topics will be chosen in keeping with the interest of the professors in charge. May be repeated three times for a total of 12 credits. *Staff.*

620 *Seminar in Modern European History.* (3)
May be repeated three times for a total of 12 credits. *Kraehe.*

630 *Seminar in Modern British History.* (3)
Cone.

640 *Seminar in Kentucky History.* (3) I
The development of Kentucky as a western commonwealth, with emphasis on economic and political phases from the 18th century to the present, with writing of papers based upon research among documents and other source materials. *Clark.*

c. Theses

768 *Residence Credit for the Master's Degree.* (0)
May be repeated once.

769 *Residence Credit for the Doctor's Degree.* (0)
May be repeated indefinitely.

HOME ECONOMICS

A student in the College of Arts and Sciences may elect toward the A.B. or B.S. degree a total of 30 credits from other colleges of the University.

HUMANITIES

To satisfy the lower division requirement in the Humanities, students in the College of Arts and Sciences must take two courses in literature and philosophy (Humanities 200, 201 or 202) and one course in art or music (Humanities 203 or 204). Work in the Humanities has not been organized into a distinct department, but a faculty of instructors interested in the humanistic approach to literature, philosophy, and the fine arts has been assembled from the related departments.

200 *Classicism: Graeco-Roman; Modern European.* (2)
Lecture and discussion, and required reading from representative works. Typical of the writers to be considered are Plato, Aristotle, Descartes, Lessing, Goethe. Prereq: Sophomore standing.

201 *Romanticism: The Renaissance to the Present.* (2)
Lecture and discussion, and required reading from representative works. Typical of the writers to be considered are Ovid, Dante, Rabelais, Cervantes, Rousseau, Goethe, Shelley, Poe, Rostand. Prereq: Sophomore standing.

202 *Realism and Naturalism: The Contemporary.* (2)
Lecture and discussion, and required reading from representative works. Typical of the writers to be considered are Zola, Hardy, Huxley, O'Neill, Kafka. Prereq: Sophomore standing.

203 *Art: The Renaissance to the Present.* (2)
Illustrated lectures and discussions, with required reading from the literature of art, history and criticism. Intensive critical study of selected masterworks. Prereq: Sophomore standing.

204 *Music: The Renaissance to the Present.* (2)
Lectures and discussion, with illustrations by performance and from recordings. Study of musical forms; required reading and listening; analyses of selected masterworks. Prereq: Sophomore standing.

205 *Aspects of Oriental Culture.* (2)
Selected readings from the literary masterpieces of India, China, Japan as an introduction to the outlook of Oriental man. Prereq: Sophomore standing. May be taken only as an elective.

206 *Aspects of Middle Eastern Culture.* (2)
Lectures, reading and discussion in the literature and thought of the Middle East, with emphasis on the perspective of the Middle Eastern man. Prereq: Sophomore standing. May be taken only as an elective.

300 *Seminar: Studies in the Humanities.* (2)
Intensive study of an area involving the several humanistic disciplines—literature, philosophy and the arts. May be repeated to a maximum of 6 credits. Prereq: 6 crs. in Humanities and consent of the staff.

HYGIENE & PUBLIC HEALTH

FACULTY

Professors: John Sharpe Chambers (M.D., Michigan, 1921), special assignment. Jacob Duncan Farris (M.D., Vanderbilt, 1928), William Brooks Hamilton (Ph.D., Massachusetts, 1935). *Associate Professor*: Wilbur August Heinz (M.S.P.H., Michigan, 1930), ACTING HEAD.

The lower division courses are designed to meet the general requirements in health and also to fulfill the requirements in health for teacher certification in elementary and secondary schools. The courses at the upper division level lead to a major in Hygiene and Public Health. There are opportunities in the field of Public Health for those interested in sanitary work, education, field positions in voluntary and official health agencies, etc.

Upper Division Requirements

Requirements in the Field of Concentration: 40 credits in the field of Biological Sciences, including the major work, in courses not open to freshmen.

Requirements for a Major. Prerequisite: 12 credits in Biological Sciences. *Required:* A minimum of 15 credits of advanced work in Hygiene and Public Health.

Course Descriptions

101 *Personal and Community Health.* (1) I, II
Lectures and recitations. An introduction to the principles of personal and community health. *Heinz and Hamilton.*

109 *Fundamentals of Health.* (2) I, II, S
A course considering the major health problems of today, with special emphasis upon the problems of adult health. It covers the area of chronic disease and disability and reviews our knowledge concerning the causes, prevention, and control of these diseases. *Heinz and Hamilton.*

224 *Community Organization for Public Health.* (1) I, II
A consideration of community resources that may be utilized in the promotion of Public Health programs. *Staff.*

251 *Personal Health Problems.* (2) I, II
A course involving the detailed study of certain practical health problems of the present day. Not available for credit to students who have had Hygiene 101. Not open to Freshmen. *Hamilton.*

500 *Public Health.* (3) I, S
Environmental sanitation and the effects of environment on the control of communicable diseases. Prereq: Hyg. 109 or 251. *Hamilton.*

501 *Public Health.* (3) II, S
A continuation of 500. Administrative and organizational approach to disease prevention. Prereq: Hyg. 109 or 251. *Heinz.*

510 *Health Education.* (3) II, S
A course dealing primarily with principles of health education, health service, and health protection. Prereq: Hyg. 109 or 251. *Heinz.*

511 *Independent Work in Hygiene and Public Health.* (3) I, II, S
Prereq: Major and a standing of 3.0 in the department. May be repeated three times for a total of 12 credits. *Staff.*

515 *Communicable Diseases.* (3) II, S
A consideration of the cause, prevalence, transmission, and control of preventable diseases. Prereq: Micro 200 or its equivalent.

520 *Mental Hygiene.* (3) I, II, S
An introduction to mental hygiene including a consideration of the cause, treatment and prevention of mental disorders. Not open to students who have credit in Psychology 520.

522 *School and Community Health.* (2) II, S
A course designed to develop an idea of the cooperative nature of school health work and the importance of connecting it up with adult health work. *Heinz.*

550,552 *Problems in Health Education.* (2, 2) I, S
An individual problems course for students and teachers in service, based upon a systematic attack upon the health problems of a school. Prereq: Hyg. 109 or 251. *Heinz.*

600 *Epidemiology.* (3) I, II, S
A study of the natural history of disease. *Hamilton.*

603 *Public Health Records.* (2) I, II, S
General principles of recording, filing, and use of public health data.

604 *Maternal and Child Health.* (2) I, S
A study of the principles of maternal, prenatal, infant, and child care. *Staff.*

612 *Public Health Administration.* (3) I, S
A consideration of the principles of public health administration. *Heinz.*

613 *Public Health Administration.* (2) II
A continuation of Hygiene 612. *Heinz.*

618 *Vital Statistics.* (3) I, S
Application of the statistics of population, births, deaths, etc. in Public Health.

619 *Vital Statistics.* (2) II, S
A continuation of Hygiene 618.

625 *County Health Practice for Health Officers.* (3) I, II, S
An internship in actual county health practice.

626 *County Health Practice for Health Officers.* (2) I, II, S
A critical analysis of one service of the Fayette County Health Department.

768 *Residence Credit for Master's Degree.* (0)
May be repeated once. *Staff.*

770 *Seminar.* (1) I, II, S
Staff.

JOURNALISM

See School of Journalism.

LAW

A student in the College of Arts and Sciences may elect toward the A.B. or B.S. degree a total of 30 credits from other colleges of the University. For the combined Arts-Law curriculum consult the Dean of the College of Arts and Sciences.

LIBRARY SCIENCE

FACULTY

Professor: Maurice Derby Leach, Jr. (B.L.S., Chicago, 1946), HEAD. *Associate Professors:* Laura Katherine Martin (M.A., Stanford, 1940), Azile M. Wofford (M.S., Columbia, 1938), special assignment. *Assistant Professor:* Georgia R. Cole (M.S.L.S., Kentucky, 1953), Emma Lou Lecky (M.S.L.S., Kentucky, 1953).

The University provides professional education for librarianship through the Department of Library Science of the College of Arts and Sciences. This Department is accredited by the American Library Association, the only library science department so accredited in Kentucky. The Department also is accredited by the Southern Association of Colleges and Schools.

An acute nation-wide shortage of librarians, estimated at 18,000 by the American Library Association, provides unusual opportunities for qualified men and women entering the profession. Recognizing its responsibility for preparing librarians for various levels of service in schools, colleges, universities, and public libraries, the Department offers training on both an undergraduate and a graduate level.

The *undergraduate curriculum*, leading to a bachelor's degree, may be taken during the junior and senior years. Intended primarily for the education of school librarians, this program gives the training required for certification by the Kentucky State Board of Education. Students working toward the bachelor's degree either in the College of Education or the College of Arts and Sciences may qualify for a certificate in school librarianship in Kentucky by completing a prescribed 21-hour minor in Library Science. The undergraduate curriculum includes nine hours of basic foundation for graduate work and gives students majoring in other fields opportunities to take related courses in Library Science.

The *graduate curriculum* is designed for majors in Library Science and leads to a master's degree. It is open to nonmajors on the approval of the Head of the Department. In general, the graduate courses are designed to train for the more responsible positions in librarianship.

REQUIREMENTS FOR THE MASTERS DEGREE

Prerequisites: A bachelor's degree from an approved college or university; an undergraduate scholastic record that is above average, together with evidence of ability to perform graduate work satisfactorily; and completion of a preliminary core of nine semester hours in Library Science.

Undergraduate preparation should include academic rather than professional courses. Languages are considered basic for those interested in college or university library work. Subject to the recommendation of the Head of the Department, the preliminary core of nine semester hours in Library Science may be taken during the first semester of the graduate program; comparable work taken elsewhere may reduce this requirement.

The Master of Arts degree requires: Satisfactory completion of twenty-four semester hours of graduate work in Library Science; fulfillment of the residence requirement of 36 weeks; fulfillment of the requirement of a reading knowledge of one modern foreign language; preparation of a thesis; and passing a final oral examination in which the student is asked to defend his thesis and also is examined on any subject matter related to his field. The M.S.L.S. degree substitutes six semester hours for the thesis and a minimum of six semester hours with a minimum grade of C for the requirement of a reading knowledge of one modern foreign language.

The residence requirement may be fulfilled by any combination of semesters or summer sessions which totals the required number of weeks. Subject to the recommendation of the Head of the Department, candidates who have had previous training in Library Science may take up to one-third of their graduate work in courses in other departments. Such courses must be related closely to the student's field of specialization.

PROFESSIONAL CURRICULUM IN LIBRARY SCIENCE

Undergraduate Courses

Course No.	Title	Crs.
395	Independent Work—once	2
513	Organization and Administration of the School Library	3
521	Introduction to Library Work	3
529	Cataloging and Classification	3
533	Reference and Bibliography	3
536	Literature and Related Materials for Young People	3
537	Children's Literature and Related Materials	3
539	Library Practice	3
545	Organization of Library Materials	3
552	Book Selection	3
586	Visual Teaching	3

Graduate Courses

612	The Public Library	3
613	Problems in School Library Service	3
614	The College and University Library	3
627	Problems in Reading for Children and Young People	3
629	Advanced Cataloging and Classification	3
632	Library Work with Children	3
633	Subject Bibliography	3
635	Government Publications	3
642	History of Books	3
650	Adult Reading Guidance	3
652	Advanced Book Selection	3
687	Nonbook Materials	3
771	Seminar	3
781	Individual Study in Library Science—repeated for a total of 4 credits	1
786	Problems in Library Science	1

Upper Division Requirements

Requirements in the Field of Concentration: Forty credits of advanced work in the Field of Literature, Philosophy, and the Arts, or acceptable equivalent, including major work.

Requirements for a Major. Prerequisite: Junior or senior standing, with average scholastic record during the first two college years. Prospective majors should consult with the Head of the Department regarding courses to be taken during the first two years of college. A broad academic program is recommended. *Required:* A minimum of 21 semester hours.

Course Descriptions

GENERAL COURSES

125 *Use of the Library.* (2) I, II
A practical survey of library book resources, tools, and services; designed to aid the college student in his study, research, and recreational reading. *Staff.*

311-316 *Workshop.* (1 ea.) S
Designed primarily for persons with little or no library science training who are responsible for a bookmobile or a public or school library situation. *Visiting Instructors.*

PROFESSIONAL COURSES

513 *Organization and Administration of the School Library.* (3) I, II, S
Designed to help beginning librarians organize collections for and administer school libraries. Topics include: planning and managing the library; ordering and preparing materials for use; and work with students and teachers.

395 *Independent Work.* (2 ea.) I, II, S
Conferences, assigned readings, reports, etc. May be repeated once for a maximum of 4 credits. Prereq: Major and a standing of 3.0 in the department. *Staff.*

521 *Libraries and Librarianship.* (3) I, II, S
An orientation course designed to give students a general understanding of libraries and library work.

529 *Cataloging and Classification.* (3) I, S
Emphasis on functions with sufficient practice to enable students to handle cataloging in the average library situation. Dewey Decimal classification and simplified cataloging emphasized with use of printed cards and other aids.

533 *Reference and Bibliography.* (3) I, II, S
A study of the essential reference works, including dictionaries, encyclopedias, atlases, yearbooks, periodical indexes, and the more important subject and trade bibliographies.

536 *Literature and Related Materials for Young People.* (3) II, S
For teachers and librarians planning to work with young people. Emphasis on library materials to supplement the school curriculum and encourage recreational reading.

537 *Children's Literature and Related Materials.* (3) I, II, S
For teachers and librarians planning to work with children. Emphasis on library materials to supplement the school curriculum and encourage recreational reading.

539 *Library Practice.* (3) I, II, S
Observation and supervised practice in a school library. This course fulfills a requirement of the Southern Association for school librarians. Prereq: L.S. 513, 529 and two of the following courses: 533, 536, 537.

545 *Organization of Library Materials.* (3) I, II, S
A course designed to give the beginning librarian practical instruction in the acquisition and organization of library materials. Among the topics included are ordering, accessioning, preparation of books and other materials.

552 *Book Selection.* (3) I, S
A general study of book selection principles and methods, with emphasis on printed materials as they interpret modern problems.

586 *Visual Teaching.* (3) I, II, S
A course in methods and techniques of visual instruction. Emphasis is on the effective use of films, film strips, pictures, maps, graphs, slides, field trips, by means of lesson plans. Surveys are made of visual materials. (Same as Ed. 544.)

612 *The Public Library.* (3) I, II, S
A study of the public library as a functioning institution. The course will include case studies of specific libraries.

613 *Problems in School Library Service.* (3) II, S
For experienced school librarians and administrators concerned with improving the program of library services in elementary and junior and senior high schools. Prereq: Library Science courses leading to professional certification (18 hours.)

614 *The College and University Library.* (3) I, II, S
A study of the college and university library as a functioning institution. The course will include case studies of specific libraries. *Leach.*

627 *Problems in Reading for Children and Young People.* (3) II, S
Reading interests of young readers of various ages, and reading needs of average and exceptional readers. Current studies in field considered. Designed for those with experience in working with young readers. Prereq: 536, 537, or equivalent.

629 *Advanced Cataloging and Classification.* (3) II, S
Expansion of the principles and methods of classification and cataloging books and related materials. Attention given to more advanced problems in cataloging. Prereq: 529 or equivalent. *Lecky.*

632 *Library Work with Children.* (3) I, S
A study of the origin and present status of library work with children in school and public libraries.

633 *Subject Bibliography.* (3) II
A comprehensive study of basic reference materials in the humanities, social sciences, and natural sciences. This course emphasizes reference service in research libraries. Prereq: 533 or equivalent.

635 *Government Publications.* (3) II
A study of the problems of acquisition, preparation, and use of United States federal, state, and local government publications. Some consideration is given to documents of the United Nations. Prereq: 533 or equivalent.

642 *History of Books.* (3) I
This course considers the records of early man, invention of the alphabet, early writing materials, manuscript books, the invention of printing, and book production in modern times. *Lecky.*

650 *Adult Reading Guidance.* (3) II, S
Survey of the significant published studies of adult reading, as a guide to book selection through knowledge of adult needs and interests commonly satisfied through printed materials.

652 *Advanced Book Selection.* (3) II, S
Emphasis on the more imaginative and creative forms of literature, especially the place of fiction in the modern library. Prereq: 552 or equivalent.

687 *Non-Book Materials.* (3) II
The evaluation, selection, acquisition, preparation for use, preservation and function of non-book materials in a library program. Prereq: L.S. 529, 533, and 545, or equivalent. *Lecky.*

768 *Residence Credit for the Master's Degree.* (0)
May be repeated once. *Staff.*

771 *Seminar.* (3) II, S
Discussions and reports on current problems and trends in library service. Consideration of methods of investigating library problems Assistance in the preparation of the thesis.

781 *Individual Study in Library Science.* (1) I, II, S
Conferences, assigned readings, reports, etc. May be repeated for a total of 4 credits. *Staff.*

786 *Problems in Library Science.* (1-4) I, II, S
Individual conferences, assigned readings, and reports on the investigation of chosen problems and areas in library science. May not be repeated. Prereq: 9 hours of library science at the 600 level.

MATHEMATICS & ASTRONOMY

FACULTY

Professors: James Clifton Eaves (Ph.D., North Carolina, 1949), HEAD. Paul Prentice Boyd (Ph.D., Cornell, 1911), special assignment. Harold Hardesty Downing (Ph.D., Chicago, 1929), special assignment. Adolph Winkler Goodman (Ph.D., Columbia, 1947), Sallie E. Pence (Ph.D., Illinois, 1937), Wimberly C. Royster (Ph.D., Kentucky, 1952). *Associate Professor:* Wasley Sven Krogdahl (Ph.D., Chicago, 1942). *Assistant Professors*: Marion Clay Brown (M.A., Kentucky, 1925), Tullio J. Pignani (Ph.D., North Carolina, 1955), Harold G. Robertson (Ph.D., Illinois, 1962), Rodney Jack Roth (Ph.D., Duke, 1962), James H. Wells (Ph.D., Texas, 1958), John Bond Wells, Jr. (Ph.D., Kentucky, 1957). *Instructors:* James Caveny (M.A., Kentucky, 1962), Saeed Salehi (M.S., Kentucky, 1962).

The Department of Mathematics and Astronomy serves a four-fold purpose.

First: It provides courses in furtherance of the aim that a student, aside from his specialized interests, acquire some understanding of the elements of mathematics and the role it plays in society if his education is to be truly liberal.

Second: It provides courses to fit the specialized needs of students in other departments and colleges. To this end it offers courses to prepare the student for his work in agriculture, bacteriology, chemistry, economics, engineering, geology, philosophy, and physics.

Third: It provides the prospective elementary school teacher with courses planned to furnish the special and desirable background training he needs for teaching the introductory concepts. The prospective secondary school teacher will find courses suitable to his needs on the undergraduate and graduate level. The inservice teacher will find specially selected topics to fit the needs in this area.

Fourth: It provides courses for those who wish to specialize in mathematics. Courses are offered in algebra, analysis, geometry, statistics and applied mathematics, topology, and various courses in numerical analysis and computer techniques being directly applicable to the electronic computer field. Courses at the advanced levels, leading to the M.A. Degree and the Ph.D. Degree, are offered for the research specialist and/or college teacher.

The Mathematics library is one of the best in the South. It contains several thousand volumes as well as complete sets of most of the important mathematical periodicals.

Two non-mathematical courses in Introductory Astronomy are offered. Other courses of a mathematical and practical nature are offered from time to time. The University has a small observatory with an eight-inch refracting telescope and other instruments. Occasional meetings are held at the observatory to give the student an opportunity to view the more interesting celestial objects. A portion of the departmental library consists of astronomical books, journals, and bulletins.

Upper Division Requirements

Requirements in the Field of Concentration: At least forty credits of advanced work in the field of Physical Science, including the major work.

Requirements for a Major. Prerequisites: Math. and Ast. 2, 101 or 111, 112, 113, 211, 212. *Required:* A minimum of 18 credits of advanced work in mathematics, including M&A 431 and 471. Upper division major work is usually selected from M&A 361, 301, 565, 431, 531, 471, 571, 433, 407, 521, 543, 523, 551, 566, 538. Other courses may be substituted as approved by the advisor.

Requirements for Graduate Work. Graduate students must have had at least 12 credits of mathematics beyond M&A 212 before counting work toward an advanced degree.

Course Descriptions

1 *Basic Mathematics.* (non-degree credit) I, II, S
Common and decimal fractions, percentages, averages, powers and roots in arithmetic; simple equations, and graphs in algebra. Prereq: For students making 30 or less on University Placement Test. Only under unusual circumstances will a student be permitted to register for this course a second time.

2 *Solid Geometry.* (non-degree credit) I, II, S
A study of lines, planes, cubes, spheres, cones, and cylinders. For the student who has not had this subject in high school. Prerequisite for M. and A. 211. Prereq: 1 unit high school plane geometry. Only under unusual circumstances will a student be permitted to register for this course a second time.

3 *Basic Geometry.* (non-degree credit)
An introductory course in Euclidean Geometry for students who have had no previous work in geometry. Five hours per week. Prereq: None. Only under unusual circumstances will a student be permitted to register for this course a second time.

12 *Trigonometry Lab for Engineers.* (0)
To be taken with M. & A. 112.

101 *College Algebra.* (3) I, II, S
Contents same as M&A 111. Extra time is spent in scheduled study. Prereq: For students having score of greater than 30 and less than 70 on University Placement Test(or M&A 1, or consent of the department. (Credit is not allowed for both M&A 101 and 111.)

111 *College Algebra.* (3) I, II, S
Standard course. Prereq: 1 unit high school algebra and score of 70 or better on University Placement Test. (Credit is not allowed for both 101 and 111.)

112 *Plane Trigonometry.* (2) I, II, S
Study of the triangle with applications. Also a study of analytic trigonometry. Prereq: 1 unit high school plane geometry, and M. and A. 101 or score of 70 or better on University Placement Test.

113 *Analytics and Calculus I.* (4) I, II, S
Introductory analytical geometry, differentiation and integration of algebraic and trigonometric functions, differentials, and applications of these concepts. Prereq: M. and A. 111 or 101 and 112.

121 *Mathematics of Finance.* (3) I, II
A study of simple interest, simple discount, compound interest, and annuities with the derivations of the necessary formulas. Applications to solutions of problems in amortization, sinking funds, valuation of bonds. Prereq: M. & A. 101 or 111.

201 *Fundamentals of Elementary Mathematics.* (3)
A course designed to give teachers an understanding of elementary mathematics. Basic concepts of the number system and the laws of operation. This course is for elementary education majors. Prereq: Consent of instructor.

202 *Fundamentals of Elementary Mathematics.* (3)
A course designed to give teachers an understanding of elementary mathematics. Selections will be made from: the number system, elementary number theory, algebra, non-Euclidean geometry, finite geometry, topology, matrices. This course is for education majors who are planning to teach at the junior or senior high school level. Prereq: Consent of instructor.

211 *Analytics and Calculus II.* (4) I, II, S
Additional topics in analytic geometry, transcendental functions, hyperbolic functions, integrational techniques and application to physics and engineering problems. Prereq: M&A 2 (or 3 or high school solid geometry) and M&A 113.

212 *Analytics and Calculus III.* (4) I, II, S
Vectors, determinants, space geometry, partial differentiation, multiple integrals, infinite series, complex numbers. Prereq: M&A 211.

301 *Advanced Analytic Geometry.* (3)
General equations of the second degree, translation and rotation of axes, invariants, simple transformations in the plane, tangents and normals, curves sketching, polar reciprocation, inversion. Prereq M&A 211.

331 *Differential Equations for Engineers.* (2)
First order differential equations, higher order differential equations with constant coefficients, and applications. Prereq: M&A 212.

361 *Advanced College Algebra.* (3) I
Introduction to theory of numbers, domains, fields, polynomials, matrices. Prereq: M&A 113.

395-397 *Problem Seminar.* (3 ea.)
Reports on current research papers. Problems from various fields of mathematics. Prereq: Consent of instructor.

398,399 *Independent Work in Mathematics.* (3 ea.) I, II, S
Reading courses for upper division students of high standing. Prereq: Major and a standing of 3.0 in the department.

407 *College Geometry.* (3)
The geometry of the triangle and the circle. Requires only elementary Euclidean concepts. Prereq: Consent of instructor.

421 *Elementary Computational Methods.* (3)
Study of number systems, matrices, determinants, and Boolean Algebra with applications to electrical networks, machine computation, automatic electronic digital computors, and other engineering problems. Prereq: M&A 212.

431 *Differential Equations.* (3)
First order differential equations, differential equations of higher order, series solutions, special second order equations. Prereq: M&A 212.

432 *Applied Calculus.* (3)
Fourier series and integrals, Laplace Transform, partial differential equations, matrices, Bessel functions, complex variables and conformal mapping, vector analysis, and numerical analysis. Prereq: M&A 331.

433 *Applied Calculus.* (3)
A continuation of M&A 432.

471 *Advanced Calculus.* (3)
Continuous functions, differentiable functions, infinite series, implicit functions, Riemann integral, the gamma and beta functions, line, surface and space integrals. Prereq: M&A 212 or equivalent.

501-504 *Summer Seminar in Selected Topics.* (3 ea.) S
This course is designed for those students who do not usually attend our regular semester courses but who wish to take several of the courses in summer school. The topics covered here will be selected from the advanced courses. Prereq: Teaching experience in the field of mathematics and consent of instructor.

521 *Mathematical Statistics.* (3) II
Averages, coefficients of dispersion and skewness, correlation and regression lines, curve fitting, Bernouli Theorem, DeMoivre-Laplace Theorem, generating functions, sampling. Prereq. M&A 212.

522 *Actuarial Mathematics.* (3)
Theory of mortality tables, life annuities, premiums, terminal reserve, joint-life annuities and insurance. Prereq: M&A 211.

523 *Probability.* (3)
Theorems of total and compound probability, Bernoulli's Theorem, Bayes' Theorem. Poisson Law, Expected value, Law of large numbers. Distribution functions and characteristic functions. Prereq: M&A 212.

525 *The Calculus of Finite Differences.* (3)
Method of differencing, interpolation, finite integration, summation of series, approximate integration and difference equations. Prereq: M&A 212 and consent of instructor.

531 *Partial Differential Equations.* (3)
Equations in several variables, partial differential equations. Prereq: M&A 431.

532 *Differential Equations.* (3)
This course consists of a thorough study of the linear differential equation of the second order along with its associated Riccati Equation. Attention is given to equations of the Fuchsian Type and other classical equations. Eigenvalue problems are considered along with oscillation theory of the second and fourth order linear differential equations. Prereq: M&A 431.

535 *Vector Analysis.* (3)
The algebra and calculus of vectors; applications to geometry, electricity, and physics; harmonic functions and potentials. Prereq. M&A 212.

536 *The Operational Calculus.* (3)
The introductory theory and properties of the Laplace Transformation. Application in differential equations, difference equations and boundary value problems of mechanics, electricity and heat. Prereq: M&A 331.

537 *The Operational Calculus.* (3)
The theory of the inverse Laplace Transformation. Applications in advanced boundary value problems. Fourier Transforms and applications. Prereq: M&A 536.

538 *Elementary Numerical Analysis.* (3)
Approximate computation, approximate roots of equations, numerical curve fitting, interpolation formulas, numerical differentiation and integration, solutions of systems of linear equations, introduction to numerical solutions of ordinary differential equations. Prereq: M&A 331 or consent of instructor.

541 *Projective Geometry.* (3)
Harmonic forms, projectively related primitive forms, curves and pencils of rays of second order, ruled surfaces of second order, theory of poles and polars, involution, inversion. Prereq: Consent of instructor.

542 *Curve Tracing.* (3)
A study of various methods for sketching algebraic curves. Emphasis on the analytic polygon in finding approximations to the form of the curve in the finite portion of the plane and at infinity. Prereq: Consent of instructor.

543,544 *Introduction to Higher Geometry.* (3 ea.)
Emphasis on fundamentals common to all geometry. Geometries associated with the projective group and the group of circular transformations. Prereq: M&A 301 or its equivalent.

545,546 *Algebraic Curves.* (3 ea.)
Topics include general properties of algebraic curves, the theory of residuation, singular points, covariant curves, unicursal curves, systems of curves. Prereq: M&A 544. *Pence.*

551 *Introductory Topology.* (3)
Elementary set theory and general topological phenomena, metric spaces, the topology of the real line and plane. Prereq: Consent of instructor.

561 *Introduction to Higher Algebra.* (3)
Integral domains, groups, rings, fields, polynomials, vector spaces. Prereq: M&A 361 or consent of instructor.

565 *Introduction to Matrices.* (3)
The algebra of matrices, linear transformations, determinants of matrices, systems of equations, applications. Prereq: M&A 211.

566 *Introduction to Theory of Numbers.* (3)
Divisibility, prime numbers, congruences and residues, Diophantine equations. Prereq: Consent of instructor.

571 *Advanced Calculus.* (3)
A continuation of M&A 471.

601-604 *Summer Seminar in Selected Topics.* (3 ea.) S
Continued fractions, Peano's axioms, matrices and the solutions of systems of equations, machine computation, space curves, groups, rings, and fields. Prereq: Teaching experience in the field of mathematics and consent of instructor.

611-614 *Research Work in Mathematics.* (3)
Reading course for graduate students of high standing. Prereq: Mathematics major and a standing of at least 3.0 in the department.

621 *Mathematical Statistics.* (3)
Theory of sampling, the Chi-square distribution, testing statistical hypotheses. Prereq: 521.

632 *Advanced Differential Equations.* (3)
Existence theorems, partial differential equations, linear equations with periodic coefficients, classical equations, equations in infinitely many variables. Prereq: M&A 532, 571.

635 *Tensor Analysis.* (3)
Topics considered: The theory of tensors, quadratic differential forms, Riemannian geometry, pseudo-Euclidean geometry. Prereq: Consent of instructor.

638 *Numerical Analysis.* (3)
Advanced methods of solutions of systems of equations, approximation of functions, numerical solution of ordinary and partial differential equations, convergence of iterative processes, error analysis, eigen-values of matrices. Prereq: M&A 421 or 538 or equivalent with consent of instructor.

641 *Differential Geometry.* (3) I
Metric differential geometry of curves and surfaces in 3 dimensional Euclidean space, developable surfaces, curvature, geodesics, mapping of surfaces, absolute geometry of a surface. Prereq: Consent of instructor. *Staff.*

642,643 *Higher Geometry.* (3 ea.)
Topics include: Projective spaces, groups of collineations, invariants and covariants, Cremona transformations, the plane cubic and quartic, space curves, the cubic surface. Prereq: M&A 544, or consent of instructor.

651 *General Topology.* (3)
Embedding and metrization, compact spaces, and combinatorial topology. Prereq: M. and A. 551.

661,662 *Higher Algebra.* (3 ea.)
Groups, rings, fields, Galois theory, linear algebra, hyper-complex numbers, ideals. Prereq: M&A 561 or consent of instructor.

665 *Theory of Matrices.* (3)
Study of matric algebra and canonical forms. Prereq: M. and A. 565, or consent of instructor.

666 *Number Theory.* (3)
Peano's Axioms, continued fractions, quadratic fields, algebraic integers, p-adic numbers, etc. Prereq: M. and A. 561 and 566.

667 *Theory of Groups.* (3)
Permutation groups, isomorphisms, the group postulates, abstract groups, automorphisms, homomorphisms, quotient groups. Abelian groups, Galois groups. Prereq: M&A 561 or consent of instructor.

671,672 *Functions of a Complex Variable.* (3 ea.)
Differentiation and integration, contour integration, poles and residues, Taylor and Laurent series, conformal mapping, Riemann mapping theorem, Dirichlet problem, multiple-valued functions, Riemann surfaces, and applications. Prereq: M&A 571.

677 *Potential Function.* (3)
Topics considered: Attraction of bodies, Newtonian potential function, theorems of Green and Gauss, level surfaces, spherical harmonics. Prereq: M&A 531.

678,679 *Calculus of Variations.* (3 ea.)
The ordinary problem for the plane and space cases; the necessary conditions of Euler, Weietrass, Legendre, and Jacobi. The parametric problem; the isoperimetric problem. Sufficiency conditions. Prereq: M&A 531.

681,682 *Functions of a Real Variable.* (3 ea.)
Brief discussion of real numbers; continuous functions, semi-continuous functions, functions of bounded variation; Stieltjes Integral, measure and integration. Prereq: M&A 571 or consent of instructor.

683, 684 *Summable Infinite Processes.* (3 ea.)
Fundamental limit ideas applied to infinite sequences, infinite series, infinite products, etc. Summability of Cesaro, Holder, Abel, Borel and Leroy. Prereq: M&A 571.

685 *Fourier Series.* (3)
Expression of a general periodic function as a Fourier series, sufficient conditions for convergence, Fejer's theorem, applications. Prereq: M&A 571.

686 *Orthogonal Systems of Functions.* (3)
Eigen value problems for linear differential equations, systems of orthogonal functions, spherical harmonics, hypergeometric and related functions, completeness. Prereq: Consent of instructor.

687 *Integral Equations.* (3)
Systems of ordinary linear equations, linear operators, orthogonal systems, linear integral equations of the second kind, theorems of Freedholm, Volterra's equation. Prereq: Consent of instructor.

711 *Research in Mathematics.* (3)
Reading courses for graduate students. Prereq: Consent of the Department. May be repeated to a maximum of 12 credits.

751,752 *Selected Topics in Topology.* (3 ea.)
Topological algebras, algebraic topology, topologies in lattices. Prereq: M&A 651.

753,754 *Linear Spaces.* (3 ea.)
Topological spaces, metric spaces, vector spaces. Banach space, with applications to summability theory, infinite systems of linear equations, spectral theory. Prereq: Consent of instructor.

768 *Residence Credit for Master's Degree.* (0)
This course is designed for graduate students working for the Master's degree. The time-credit is on the same basis as for any other course but no point-credit is given. May be repeated once.

769 *Residence Credit for Doctor's Degree.* (0)
This course is designed for graduate students working for the Ph.D. degree. The time-credit is on the same basis as for any other course but no point-credit is given. May be repeated indefinitely.

771-776 *Selected Topics in the Theory of Complex Variables.* (3 ea.)
Analytic continuation, functions with natural boundaries, gap theorems, over-convergence, entire functions, Dirichlet series, univalent functions, variational methods, Dirichlet principles. Prereq: Consent of instructor.

777,778 *Mathematical Seminar.* (3 ea.)

ASTRONOMY

191,192 *Descriptive Astronomy.* (3 ea.)
A non-mathematical course dealing with the earth, moon, solar system, the stars, the galaxy, and the universe at large. Occasionally special classes will be held at the observatory. Prereq: None.

193 *Elementary Astronomy.* (3)
A descriptive, non-mathematical account of the solar system, the sun and stars, our galaxy, and the universe at large. For elective credit, non-science requirement. (Credit is not given for both M&A 193 and either 191 or 192.) Prereq: None.

291 *Spherical Astronomy.* (3)
Application of the formulae for the spherical triangle to a variety of problems on the celestial sphere. Prereq: M&A 112.

292 *Galactic Astronomy I.* (3)
Consideration of stellar statistics, radio astronomy, galactic rotation, stellar populations, interstellar medium. Prereq: M&A 191, 192, or consent of the department.

391 *Celestial Mechanics.* (3)
The mechanics of systems of gravitating particles, with emphasis upon the calculation of orbits, theory of perturbations. Prereq: M&A 331.

492 *Galactic Astronomy II.* (3)
Study of the content, organization, and evolution of our own and other galaxies. Prereq: Consent of the department.

591 *Cosmology I.* (3)
Consideration of observational basis of cosmology, cosmological theories of general relativity, the steady state theory, and kinematic relativity. Prereq: M&A 113, and M&A 211.

592 *Cosmology II.* (3)
A study of the universe as a complete physical unit. Consideration of the various relativistic models and theory evaluation in the light of current observations. Prereq: M&A 471.

MICROBIOLOGY

FACULTY

Professors: Morris Scherago (D.V.M., Cornell, 1919), HEAD. Margaret Hotchkiss (Ph.D., Yale, 1922), James Charles Humphries (Ph.D., Yale, 1944), James T. McClellan (M.D., Oklahoma, 1942, M.S., Minnesota, 1950), Ralph Holder Weaver (Ph.D., Michigan State, 1926). *Associate Professors:* Ogden Frazelle Edwards (Ph.D., Yale, 1936), Ralph Franklin Wiseman (Ph.D., Wisconsin, 1956). *Assistant Professor:* Kingsley Morton Stevens (M.D., Harvard, 1947).

The Department of Microbiology as its contribution to a curriculum devoted to the liberal arts, offers courses for students who wish to learn about microbes, their effects on human and animal health, and their use as tools in many industries, as well as for students who wish to major in microbiology. The student becomes acquainted with many fundamental biological principles through the study of living things seen only with the microscope. The department affords opportunity to gain the A.B. or B.S. degree with microbiology as a major, and it also provides a curriculum in Medical Technology. In addition, the department offers the M.S. degree in the various fields of microbiology, and the Ph.D. degree in the fields of morphology and physiology of microorganisms, immunology and serology, and public health bacteriology.

The Degree of B.S. in Medical Technology

The University of Kentucky, in affiliation with the Good Samaritan Hospital, and the Lexington Clinic, is registered, through the Department of Microbiology, as an approved school for the training of medical technologists by the Board of Registry and the Board of Approved Schools of the American Society of Clinical Pathologists, and by the Council on Medical Education and Hospitals of the American Medical Association.

The Medical Technology curriculum may function as a pre-medical curriculum since it includes all the requirements of the American Medical Association and the Association of American Medical Colleges for entrance to accredited medical schools, provided the student has a reading knowledge of a foreign language.

CURRICULUM LEADING TO THE DEGREE B.S. IN MEDICAL TECHNOLOGY

Freshman Year

First Semester	Crs.
English 101	3
Chemistry 110	5
Microbiology 100	4
M&A 101, Coll. Alg.	3
Physical Education	1
Military or Aerospace Sci. or elective	2
	16

Second Semester	Crs.
English 102	3
Chemistry 112	5
Microbiology 102	4
Zoology 100	4
Physical Education	1
Military or Aerospace Sci. or elective	2
	17

Sophomore Year

First Semester	Crs.
Zoology 200, Comp. Anatomy	4
Chem. 230, Org. Chem.	5
Microbiology 210, Bact. of Foods	4
Humanities	4
Military or Aerospace Sci. or elective	2
	17

Second Semester	Crs.
Chemistry 226, Anal. Chem.	5
Chem. 232, Org. Chem.	5
Microbiology 220, Bact. of Water and Sewage	4
Bot. 103, Plant Kingdom	3
Military or Aerospace Sci. or elective	2
	17

Junior Year

First Semester	Crs.
Zoology 513, Gen. Histology	4
Microbiology 500, Pathogenic Bact.	4
Foreign Lang.	3
Microbiology 510, Lab. Diagnosis	3
Physiology 502, Human Physiology	5
	19

Second Semester	Crs.
Zoology 515, Special Histology	3
Microbiology 550, Immunology, Serology	5
Foreign Lang.	3
Microbiology 511, Lab. Diagnosis	3
Zoology 506, Embryology	4
*Microbiology 99, Practicum in Med. Tech.	0
	18

Senior Year

First Semester	Crs.
Physics 211, Gen. Elem.	5
Microbiology 520, Gen. Pathology	4
Microbiology 350, Seminar	1
Microbiology 300, Hospital Practice	4
Elective (Social Sci.)	3
	17

Second Semester	Crs.
Physics 213, Gen. Elem.	5
Humanities	2
Microbiology 350, Seminar	1
Microbiology 301, Hospital Practice	6
Elective (Social Sci.)	3
	17

Total credits 136 exclusive of Military Science and Physical Education credits.

° A student must make a grade of C or better in this course to be eligible for the degree Bachelor of Science in Medical Technology.

Upper Division Requirements

Requirements in the Field of Concentration: Forty credits of advanced work in the Sciences including the major work.

Requirements for a Major. Prerequisites: Chemistry 110 and 112; Physics 211 and 213; Microbiology 102, or 200 and 410; Botany 101 or 103; Zoology 100. *Required:* Chemistry 226 and 230, 232, Microbiology 500, 550, 350 twice, and a minimum of 5 additional credits of advanced work in Microbiology.

Courses 100 and 102 are for majors. Course 200 or 400 is recommended to fulfill the requirements of students in the College of Agriculture and Home Economics, premedical students, and students in sanitary engineering.

Courses 100 and 102 or 200 or 400 are available for students in Education and Commerce, to fulfill the biological sciences group requirement in the College of Arts and Sciences, etc.

Courses 110 and 112 are designed primarily for student nurses but are open to others.

Course Descriptions

99 *Practicum in Medical Technology.* (0) I, II, S
Students are required to spend the entire summer between the junior and senior years performing under supervision, various clinical laboratory tests in one of the A.M.A. approved clinical laboratories in Lexington. Prereq: Micro. 510, 511 and 550. *McClellan and others.*

100 *Elementary Microbiology.* (4) I, II
The fundamental nature of bacteria and other microorganisms. Morphology of microorganisms. Lecture, two hours; lab, four hours. *Weaver and Wiseman.*

102 *Elementary Microbiology.* (4) I, II
Continuation of 100. A cultural study of bacteria. Microbial physiology. Relationship of microorganisms to soil fertility, foods, industrial fermentations, disease, etc. Lecture, two hours; lab, four hours. Prereq: Micro. 100. *Weaver and Wiseman.*

110 *Elementary Medical Microbiology.* (4) II, S
A study of the characteristics and habits of microorganisms and of their relation to medicine, surgery, and public health. Lecture and recitation, two hours; lab, four hours. Prereq: Physiology 206; Chemistry 100. *Scherago, Edwards, and Hotchkiss.*

112 *Elementary Pathology.* (2) II, S
A study of the causes of disease, the nature of disease processes, the securing and preserving of specimens for the laboratory. Lecture and recitation, one hour; lab, two hours. Prereq. or concurrent: Micro. 110. *Scherago, Edwards, and Hotchkiss.*

200 *Principles of Bacteriology.* (4) I, II, S
Lecture and recitation, two hours; lab, four hours. (An alternative course for students who do not have the prerequisites for 400.) Prereq. or concurrent: Chem. 112 or 104. *Scherago or Edwards and others.*

210 *Bacteriology of Foods.* (For Sophomores.) (4) I, S
Dairy and miscellaneous food products; food preservation; food poisoning. Standard methods for official food and public health laboratories. Lecture, two hours; lab, four hours. Prereq: Micro. 400 or 200; or 102 and Chem. 112. *Weaver and Humphries.*

220 *Bacteriology of Water and Sewage.* (For Sophomores.) (4) II, S
Microbiology of water; methods of purification. Sewage disposal methods. Operation of swimming pools. Standard and other methods for examination. Lecture, two hours; lab, four hours. Prereq: Micro. 400 or 200; or 102 and Chem. 112. *Weaver and Humphries.* ....

221 (Conjoint) *Fundamentals of Microbiology and Infectious Diseases.* (6) I
A course for medical students taught jointly by members of the College of Medicine and the Department of Microbiology. Taxonomic, metabolic and reproductive properties of bacteria, viruses and fungi of importance to man. Mechanisms of the immune response and the role of these responses in disease. The dynamic interrelationships between pathogenic microorganisms and man.

300,301 *Hospital Laboratory Practice.* (4,6) I, II, S
Students are required to carry out, under supervision, the laboratory work in one of the A.M.A. approved hospitals in Lexington. Lab, twelve hours, and eighteen hours, respectively. Prereq: Micro. 99. *McClellan and others.*

350 *Seminar.* (1) I, II
Review of current literature in bacteriology; presentation of papers on work in progress in the department or on assigned topics; reports on meetings of national bacteriological societies. Required of all seniors. May be repeated to a maximum of 4 credits. Two hours. *Staff.*

395 *Independent Work.* (3) I, II, S
Students are assigned special problems in laboratory work and reference reading. Lab, six hours. May be repeated to a maximum of 18 credits. Prereq: Major and standing of 3.0 in the department. *Staff.*

400 *General Bacteriology.* (4) I, II, S
Microorganisms; their morphology, classification, physiology, relation to certain fermentations, to food, to soil fertility, and to disease. Lecture and recitation, two hours; lab, four hours. Prereq: Chem. 112 or 104. *Scherago or Hotchkiss and others.*

410 *Applied Bacteriology.* (2) I, II, S
A course in bacteriological analysis to supplement Courses 200 and 400. Lab, four hours. Prereq: Micro. 400 or 200; or 102 and Chem. 112. *Hotchkiss and others.*

500 *Pathogenic Bacteriology.* (4) I, S
Human and animal pathogenic microorganisms, especially their morphological, cultural, and pathogenic properties. Lectures, two hours; lab, four hours. Prereq: Micro. 400 or 200; or 102 and Chem. 112. *Scherago or Humphries.*

510 *Laboratory Diagnosis.* (3) I, S
Laboratory methods employed in diagnostic and public health laboratories. Designed primarily for medical technology students. Examination of sputum, urine, and blood. Lab, six hours. Prereq: Preceded or accompanied by Micro. 500. *Hotchkiss.*

511 *Laboratory Diagnosis.* (3) II, S
Continuation of 510. Examination of blood continued. Laboratory diagnosis of parasitism and infectious diseases. Lab, six hours. Prereq: Preceded or accompanied by Micro. 500. *Hotchkiss.*

520 *General Pathology.* (4) I, S
Effects of disease are studied at autopsies and by the examination of fresh and museum specimens and histological sections. Lecture, two hours; lab, four hours. Prereq: Physiol. 502, Zool. 200, 515 and 506; Micro. 500. *Scherago, McClellan, and Hotchkiss.*

550 *Immunology and Serology.* (5) II
The theories and mechanisms of infection and immunity; preparation, standardization, and uses of biological products; serology. Lectures, two hours; lab, six hours. Prereq: Micro. 500. *Scherago and Humphries.*

610 *Bacteriology of Foods.* (4) I, S
Dairy and miscellaneous food products; food preservation; food poisoning. Standard methods for official food and public health laboratories. Lecture, two hours; lab, four hours. Prereq: Micro. 400 or 200; or 102 and Chem. 112. *Weaver and Humphries.*

620 *Bacteriology of Water and Sewage.* (4) II, S
Microbiology of water; methods of purification. Sewage disposal methods. Operation of swimming pools. Standard and other methods for examination. Lecture, two hours; lab, four hours. Prereq: Micro. 400 or 200; or 102 and Chem. 112. *Weaver and Humphries.*

630 *Public Health Bacteriology.* (3) I, S
Public health aspects of bacteriology including the etiology, epidemiology, immunology, and lab. diagnosis of infectious diseases. Lectures, one hour; lab, four hours. Prereq: Open only to physicians and health officers or those with equivalent training. *Scherago and others.*

632 *Public Health Bacteriology.* (3) II, S
Continuation of 630. Lectures and recitations, one hour; lab, four hours. Prereq: Micro. 630. *Scherago and others.*

635 *Clinical Mycology.* (2) I, S
Methods and techniques for isolating and propagating pathogenic actinomycetes and fungi. Laboratory diagnosis of fungous infections. Lab, four hours. Prereq: Chem. 432; reading knowledge of one foreign language; Micro. 550. *Hotchkiss.*

640 *Disinfectants and Antibiotics.* (3) II, S
Chemical agents injurious to microorganisms. Practical applications and methods of testing. Conferences, one hour; lab, four hours. Prereq: Micro. 400 or 200; or 102 and Chem. 432. *Hotchkiss.*

651 *Immunochemistry and Advanced Immunology.* (4) II, S
Chemistry of antigens and antibodies; of the reaction between them in vitro and in vivo; immune and hypersensitive reactions. Lectures and conferences, two hours; lab, four hours. Prereq: Micro. 550; Chem. 432 and 444. *Scherago or Humphries.*

660 *Electron Microscopy.* (3) II, S
Theory, operation and uses of the magnetic electron microscope and the vacuum unit for metal shadow casting. Lecture, one hour; lab, four hours. Prereq: Physics 232, 242. *Edwards.*

670 *Viruses and Rickettsiae.* (4) I, S
Natures, activities, and methods of laboratory cultivation of viruses and rickettsiae; their relation to bacteria, plants, and animals. Lectures, two hours; lab, four hours. Prereq: Micro. 550. *Edwards.*

700 *History of Bacteriology.* (2) II, S
Conferences, two hours. Prereq: Micro. 550. *Weaver.*

710 *Advanced General Bacteriology.* (4) I, S
Bacterial cytology; theories of staining. Microbial genetics. Taxonomy and nomenclature. Lectures and conferences, two hours; lab, four hours. Prereq: Micro. 550 and Chem. 432. *Weaver.*

720 *Metabolism of Micoorganisms.* (4) I
Chemical changes produced by microorganisms; properties of their enzymes; the physiology of their growth. Lectures or conferences, two hours; lab, four hours. Prereq: Chem. 432; reading knowledge of German or French. *Wiseman.*

722 *Metabolism of Microorganisms.* (4) II
Continuation of 720. Lectures or conferences, two hours; lab, four hours. Prereq: Micro. 720. *Wiseman.*

768 *Residence Credit for the Master's Degree.* (0)
May be repeated once.

769 *Residence Credit for the Doctor's Degree.* (0)
May be repeated indefinitely.

770 *Seminar.* (1) I, II
Review of current literature in bacteriology; presentation of papers on work in progress in the department or on assigned topics; reports on meetings of national bacteriological societies. Required of all graduate students. Two hours. May be repeated to a maximum of 10 credits. *Staff.*

790 *Research in Bacteriology.* (6) I, II, S
For the Master's Degree. Lab, ten hours. May be repeated to a maximum of 12 credits. *Senior Staff.*

795 *Research in Bacteriology.* (6) I, II, S
For the Doctor's Degree. Lab, ten hours. May be repeated to a maximum of 24 credits. *Senior Staff.*

MILITARY SCIENCE & TACTICS

FACULTY

Professor: Colonel Robert Eugene Tucker (B.S., United States Military Academy, 1935), HEAD. *Assistant Professors:* Thomas William Arnold (B.S., Clemson, 1954), Stanley Wayne Campbell (A.B., Eastern Kentucky State College, 1957), John Enwright Schaenzer (A.B., Bradley, 1952). *Instructors:* Adrian Ray Doss, Harry Wertz Jones, John Woodrow Morgan, Michael Joseph Mucio, Russell J. Plue (B.S., University of Kentucky, 1927).

THE RESERVE OFFICERS TRAINING CORPS

The University of Kentucky maintains a unit of the senior division of the Reserve Officers' Training Corps in conformity with the provisions of the National Defense Act of 1916, as amended.

Object. The object of the Reserve Officers' Training Corps is to provide systematic military training at civil educational institutions for the purpose of qualifying selected students of such institutions as reserve officers in the military forces of the United States. This object is attained by employing methods which fit men physically, mentally, and morally for pursuits of peace as well as for duties as leaders in the defense forces of the nation in an emergency.

Educational Aim. The course of study is designed to give to the student a training which will be as valuable to him in his industrial or professional career as it would be should the nation call upon him to act as a leader in its defense forces.

General Policy. The policy adopted by the War Department to carry out the provisions of the act of Congress of June 3, 1916, as amended, is to qualify students for positions of leadership in time of national emergency and to inculcate in them a respect for all lawful authority, and to teach the fundamentals of the military profession.

The primary purpose of all training is the development of character, leadership, and good citizenship; character through high standards of honor and integrity, leadership through the acquisition and use of knowledge, good citizenship through the idea of service as the real measurement of accomplishment and success.

Discipline of Body and Mind. The following characteristics of an officer and a gentleman will be insisted upon: Neatness in dress, the cultivation of the manners and habits of a gentleman, a dignified and military bearing, devotion to duty and consideration of others; the cultivation in the student body of esprit de corps, obedience to orders, acceptance of responsibility, and avoidance of excuses.

Uniform Equipment. Government uniforms and equipment are furnished the University for issue to basic students without cost to the individual. Each basic student is required to make

a deposit of $10.00 with the Business Office of the University to cover the cost of any lost or damaged articles. If no clothing is lost or damaged, the entire sum is refunded to the student when he completes the two years' basic course or leaves school.

Advanced students will obtain uniforms through a commutation of uniforms system. The University acts as the agent of the advanced course student in whose behalf commutation of uniform is drawn, and purchases a uniform for the advanced student with the allowance received. This uniform becomes the property of the student only after fulfillment of the advanced course contract and, as such, is his sole responsibility to maintain and keep. Advanced course students are required to deposit $10.00 with the Comptroller of the University prior to receipt of the Uniform. Refund of this deposit, during the period between academic years, is governed by the same rules as for the basic student.

Subsistence. Advanced course ROTC enrollees receive an allowance of 90 cents per day for subsistence in lieu of rations.

Basic Course. The military department offers a two years' basic course in military science and tactics. The basic course in military or air science may be selected by freshmen and sophomores who are citizens of the United States, and who conform to the physical requirements as prescribed by the Department of Defense for units of the Reserve Officers' Training Corps. Credit in the two years' elementary course in military or air science may be given for three months' service in the United States or allied military, naval, or air force. This credit will not necessarily admit the student to advanced military or air science.

Advanced Course. The advanced course of two years, including a six-weeks summer encampment at the conclusion of the junior (MS III) year, is offered to students who have successfully completed the basic course, and who have been recommended by the President of the University and the Professor of Military Science and Tactics for further training. Recommendations for this course will be limited to those students who have manifested special interest and demonstrated ability during the basic course, and who meet other standards, with a view to qualifying for a commission in the United States Army Reserve. An advanced course student, who makes and maintains a minimum graduation point standing of 2.5 and meets other standards, may be designated a Distinguished Military Student which makes him eligible to apply for a commission in the Regular Army. A Distinguished Military Student may be designated a Distinguished Military Graduate upon his being awarded a baccalaureate degree, provided he continues to meet the required standards.

The Military Science Department offers two programs leading to a Bachelor of Arts or Bachelor of Science degree with a major in Military Science.

Course Descriptions

Branch General

BASIC COURSE

101,102 *Military Science I, ROTC.* (2 ea.)
Introductory course covering broad concepts of military science, including Organization of the Army; American military history; and individual weapons, together with such practical subjects as marksmanship, leadership and drill. *Staff.*

201,202 *Military Science II, ROTC.* (2 ea.)
Course in map and aerial photograph reading; role of the Army in National Defense; leadership, drill and command. Prereq: 101 and 102.

ADVANCED COURSE

Upon successful completion of the Advanced Course (MS III and MS IV), commissions may be granted as Second Lieutenants, United States Army Reserve. Each member of the Advanced Course will be required to attend Summer Camp.

Prerequisite for the Advanced Course is the satisfactory completion of the Basic Course requirements, and selection by the President of the University and the head of the Department of Military Science.

301,302 *Military Science III ROTC.*
(Branch General) (3 ea.)
A study of small unit tactics and communications; organization, function, and mission of the arms and services; military teaching methods; leadership; and school of the soldier and exercise of command. Prereq: 201, 202. *Staff.*

341-342 *Military Science IV ROTC.*
(Branch General) (3 ea.)
An advanced study of logistics, operations, military administration, personnel management, military justice, the role of the United States in world affairs, service orientation and leadership, drill and command. Prereq: 301, 302. *Staff.*

11 *Army ROTC Summer Camp.* (0) S
Practical training supplementing theoretical work of the college course. Exercises developing performance technique of tactical, technical, and administrative duties; training in leadership is stressed. Record and familiarization firing of weapons. Prereq: 301, 302.

MODERN FOREIGN LANGUAGES & LITERATURES

FACULTY

Professors: Adolph E. Bigge (Ph.D., Michigan, 1930), Special Assignment. J. Eduardo Hernandez (Ph.D., Kentucky, 1938), Alberta Wilson Server (Doctorat de l'Universite, Besancon, 1939), Thomas Capell Walker (Ph.D., Johns Hopkins, 1941), Paul Knowlton Whitaker (Ph.D., Ohio State, 1942). *Associate Professors*: Norman Henry Binger (Ph.D., Ohio State, 1942), Phillip Aaron Duncan (Ph.D., Indiana, 1958), Acting Head, Eugene K. Grotegut (Ph.D., Michigan, 1958), Jane Haselden (Ph.D., Kentucky, 1941), Robert O. Weiss (Ph.D., Stanford, 1955). *Assistant Professors:* Margaret Bennett Horsfield (A.M., Columbia, 1922), John Hunter Peak (Ph.D., North Carolina, 1955), Blaine Wilhelm Schick (M.A., Tulane, 1926), special assignment. *Instructors:* Marie Cazaudebat, (M.A., Iowa, 1959), William Jones Chambliss (M.A., Michigan, 1954), W. Robert Luszczynski (M.A., Wayne State, 1960), Robert Payne Moore (M.A., Harvard, 1959), John A. Rea (A.B., Miami, 1948), Ingeborg Fiehler Riester (M.A., Kentucky, 1952).

The Department of Modern Foreign Languages and Literatures embraces the five major European languages: French, German, Spanish, Italian, Russian and three years of

Japanese. Undergraduate students are offered the choice of four specialized curricula leading to the A.B. degree with a major in French, German, or Spanish. On the graduate level, the Department offers advanced work in the literature and philology of each of the three languages (French, German, Spanish), leading at present to the Master of Arts degree.

As a branch of the liberal arts curriculum, one of the fundamental aims of language study must be to broaden and deepen our acquaintance with the world about us by presenting new aspects of its culture and a more intimate knowledge of its peoples through the medium of foreign languages and literatures. In addition, the Department provides training for those interested in entering the diplomatic and various other Government services where knowledge of foreign languages is required; it offers specialized preparation to prospective high school and college language teachers; it furnishes graduate and science students with the training necessary to use foreign language books and periodicals for reference and research.

Upper Division Requirements

Requirements in the Field of Concentration: Forty credits in the field of Literature, Philosophy, and the Arts, including the Major work, in courses not open to freshmen. With the approval of the head of the department and the dean, courses in related fields may be counted in the field of concentration.

It is inadvisable for a student to begin the study of two foreign languages at the same time.

The student who offers two high school units of a foreign language should register for the first semester of the intermediate course. Students who have had more than 2½ high school units should register for the second semester of the intermediate course.

Course Descriptions

FRENCH LANGUAGE AND LITERATURE

Requirements for a Major. Prerequisites: Junior standing; 12 hours of English, MFL 101, 102, 201, 202; 141, 142 or 191, 192; 203 or 207, 208. *Required:* a minimum of 17 credits of advanced work in French; MFL 513. Comprehensive examination in the senior year.

101 *Elementary French.* (3) I, II, S
The study of the basic principles of the language through grammar, with emphasis on oral practice through the use of oral exercises. A short reader is introduced. *Staff.*

102 *Elementary French.* (3) I, II, S
A continuation of 101. Several short readers are translated. Prereq: 101 or one year of high school French. *Staff.*

103 *Elementary Aural-Oral Practice in French.* (1)
Two hours a week. A course to improve pronunciation and comprehension of spoken French. Aural-oral drills, diction, and recordings. *Staff.*

104 *Elementary French (oral approach).* (4) I, II, S
The study of the basic principles of the language through grammar, with emphasis on oral practice through the use of oral exercises. A short reader is introduced.

105 *Elementary French (oral approach).* (4) I, II, S
A continuation of 104. Several short readers are translated. Prereq: 104 or permission of instructor.

201 *Intermediate French.* (3) I, II, S
Supplementary reading. A good pronunciation, a thorough knowledge of grammar and verbs, reading and conversation are the aims of the course. Prereq: 101, 102 or two years of high school French. *Staff.*

202 *Intermediate French.* (3) I, II, S
A continuation of 201. Prereq: 201 or three years of high school French. *Staff.*

203 *French Conversation and Composition.* (2) I, II, S
This course is designed to give students a fair amount of fluency in the use of the spoken language. Vocabulary will be built by the use of images rather than by translation, i.e. the direct method. May be repeated for a total of 4 credits. Prereq: 201, 202.

204,205,206 *French Novel and Drama.* (3 ea.) I, II, S
Reading of standard texts in prose, and drama. Verb drill, dictation, composition, conversation drill, based on some text read and memorized. Reports on assigned reading outside of classrooms. Prereq: 201, 202.

207,208 *French Phonetics.* (3 ea.) I, II, S
A scientific study of French sounds based on the International System of Phonetic Symbols. Prereq: 201, 202.

212 *French Civilization.* (2) I, II, S
A history of French literature and the arts correlated with evolution of the political, social, economic and scientific life of France. No knowledge of French is necessary.

395 *Independent Work in French.* (3) I, II, S
May be repeated once. Prereq: Major and a standing of 3.0 in the department.

501 *Advanced Phonetics.* (3) I, II, S
This course is especially planned for teachers of phonetics both in high school and in college. May be repeated once. Prereq: 207, 208 or equivalent.

502 *French Literature of the XIX Century.* (3) I, II, S
A study of the representative writers of the period with emphasis on Romanticism. Prereq: 204, 205. *Walker.*

503 *French Literature of the XIX Century.* (3) I, II, S
A continuation of 502 with emphasis on Realism, Naturalism and the Parnassian movement. Prereq: 204, 205. *Walker.*

504 *French Literature of the XVII Century.* (3) I, II, S
A study of the representative writers of the XVII century with the exception of Moliere, Corneille, and Racine. Prereq. 204, 205.

505 *French Literature of the XVII Century.* (3) I, II, S
A course in the Classical Drama of the XVII century. Plays of Moliere, Corneille and Racine will be studied. Prereq: 204, 205.

506,507 *Advanced French Grammar.* (3 ea.) I, II, S
A study of the finer points of French grammar. Prereq: 204, 205.

508 *French Literature of the XVIII Century.* (3) I, II, S
A study of the representative writers of the period, with special attention given to Montesquieu and Voltaire. Prereq: 204, 205. *Walker.*

509 *French Literature of the XVIII Century.* (3) I, II, S
A continuation of 508 with emphasis on Diderot and Rousseau. Prereq: 204, 205. *Walker.*

510 *French Literature of the XX Century.* (3) I, II, S
A study of the modern writers starting with the Symbolist Group and continuing up to the present. Prereq: 204, 205.

511 *French Literature of the XX Century.* (3) I, II, S
A continuation of 510 with special emphasis given to the theater from Giraudoux to Ionesco. Prereq: 204, 205.

512 *Advanced French Conversation.* (2) I, II, S
A study of intonation and elocution in French. Three minute speeches in French will be prepared for each recitation. Some reading in French poetry will also be practiced. May be repeated for a total of 4 credits. Prereq: 203 or 207, 208.

513 *Tutorial Seminar for Majors in the Romance Languages.* (French) (1) I, II
A survey of French literature. Required of all Majors in French during the senior year. May be repeated for a total of 2 credits. *Staff.*

601,602 *French Literature of the Renaissance.* (3 ea.) I, II, S
A course starting with Francois Villon and including such writers as Marot, Rabelais, Calvin, Montaigne, Ronsard, DuBellay, Belleau and Regnier. To be given in French. Prereq: twenty-one semester hours of college French.

603,604 *Old French.* (3 ea.) I, II, S
A study of the historical development of the French language to 1300, with readings in Old French literature. Prereq: three years of college French or equivalent. *Rea.*

770 *Seminar in French Literature.* (3) I, II, S
Prereq: twenty-one semester hours of college French. May be repeated once for a total of 6 credits. *Staff.*

780 *Special Studies in French.* (3) I, II, S
Selected studies and investigations in the French language and literature, permitting the student to work in areas of special interest, and providing opportunity for original endeavor. May be repeated once.

GERMAN LANGUAGE AND LITERATURE

Requirements for a Major. Prerequisites: Junior standing, MFL 121, 122, 221, 222. *Required:* A minimum of 18 credits of work in German, independent of Junior and Senior Tutorial Courses. Comprehensive examination in the senior year.

21 *Elementary German.* (0) I, II, S
This course is designed to meet the needs of Upper Division and Graduate Students who are preparing for the graduate reading examination. No prereq. *Staff.*

121 *Elementary German.* (3) I, II, S
The essentials of grammar with practice in reading and writing German. *Staff.*

122 *Simple German Reading and Pronunciation.* (3) I, II, S
Continuation of German 121 with more extended exercise in easy reading, writing and pronunciation. Prereq: 121 or one high school unit. *Staff.*

123 *Elementary Aural-Oral Practice in German.* (1)
A course designed to improve pronunciation and comprehension of spoken German. Aural-oral drills, dictation, recording, etc. Class will be limited to permit individual attention. *Staff.*

221 *German Translation and Rapid Reading.* (3) I, II, S
Certain selected texts are read intensively with emphasis upon translation, while others, particularly in the second semester, are read with emphasis upon the development of rapid reading and comprehension of content. Prereq: 122. *Staff.*

222 *German Translation and Rapid Reading.* (3) I, II, S
Continuation of 221. Prereq: 221. *Staff.*

223 *Readings in Medical German.* (3) I, II, S
This course is designed to meet the needs of Chemistry majors. The material provides a vocabulary in Chemistry and an intimate acquaintance with the style which is characteristic of German scientific writing. Prereq: 122.

224 *Readings in Medical German.* (3) I, II, S
Continuation of 223. Prereq: 223. *Staff.*

225 *Readings in Chemical German.* (3) I, II, S
This course is designed to meet the needs of Chemistry majors. The material provides a vocabulary in Chemistry and an intimate acquaintance with the style which is characteristic of German scientific writing. Prereq: 122.

226 *Readings in Chemical German.* (3) I, II, S
Continuation of 225. Prereq: 225. *Staff.*

227 *Intermediate Aural-Oral Practice in German.* (1) I, II
Continuation of the elementary course on a more advanced level. May be taken only in conjunction with courses on or beyond the second year level. Prereq: 123 or permission of instructor. *Staff.*

228 *Elementary German Conversation and Composition.* (3) I, II, S
This course is conducted mainly in German. The work will be held to simple every-day terms which any student having had 122 should be able to master without difficulty. Prereq: 122 or approval of the Department.

229 *Elementary German Conversation and Composition.* (3) I, II, S
Continuation of 228. Prereq: 228.

230 *Introduction to Classical and 19th Century German Literature.* (3) I, II, S
The emphasis in this course will be on the development of reading facility and the acquisition of vocabulary through extensive reading. Selections from the less difficult work of authors of this period will be read. Prereq: 222. *Bigge.*

231 *Introduction to Modern German Literature.* (3) I, II, S
Readings from some of the less difficult works of Hauptmann, Mann, Schnitzler, and other late 19th and 20th Century writers. Prereq: 222. *Bigge.*

232 *Survey of German Literature in English Translation.* (2) I, II, S
More than a thousand years of German literature, from the "Song of Hildebrand" to "The Magic Mountain," are covered in this course. No knowledge of German is required. Lectures and reports on outside reading. *Staff.*

320 *Junior Tutorial for German Majors.* (1) I, II, S
A review of the history of German literature from its beginning. May be repeated once.

321 *Senior Tutorial for German Majors.* (3) I, II, S
The development of the German Epic and Lyric is studied during the first semester and development of the German Drama during the second semester. May be repeated once.

396 *Independent Work in German.* (3) I, II, S
This course is designed for students who wish to do advanced work in German on any subject. Prereq: Major and a standing of 3.0 in the department. May be repeated once.

522,523 *Advanced Scientific German.* (3 ea.) I, II, S
This course is designed for students of the Physical and Biological Sciences. Reading is done in recent German scientific journals and books, the material being selected in line with the student's special interest. Prereq: 224 or 226. *Whitaker.*

Proseminars in 18th, 19th and 20th Century German Literature.
A balanced selection of works from one representative author of each century will be studied in each course, and written reports will be assigned on various subjects related to his writing.
The purpose of the proseminar courses is threefold:
(1) Study of a representative author and certain of his works in their relation to his period;
(2) Acquaintance with basic works of the author;
(3) Training in simple research projects and proper form in the writing of papers. Prerequisites for any Proseminary Course: 230 or 231.

524 *Proseminar in Kleist.* (3) I
Whitaker.

525 *Proseminar in Hauptmann.* (3) II
Bigge.

526 *Proseminar in Schiller.* (3) I
Weiss.

527 *Proseminar in Grillparzer.* (3) II
Whitaker.

528 *Proseminar in Thomas Mann.* (3) I
Bigge.

529 *Proseminar in Lessing.* (3) II
Weiss.

530 *Proseminar in Hebbel.* (3) I
Whitaker.

531 *Proseminar in Sudermann.* (3) II
Whitaker.

534,535 *Life and Works of Goethe.* (3 ea.) I, II, S
This course follows the unfolding of Goethe's genius from his first lyrics through Faust. His principal literary works will be read and attention devoted to autobiographical material, letters and diaries. Prereq: six semesters of German. *Weiss.*

536 *Origin and Development of the German Language.* (3) I, II
This course in Germanic Philology acquaints the student with the position of German in the European language group and traces the development of the language to the present. Special emphasis is given to the relationship of German and English words. Prereq: six semester of German. *Staff.*

537 *Introduction to Middle High German.* (3) I, II
This is a literary course with a necessary minimum of Middle High German grammar. Selections will be read from epic and lyric poetry of the period and reports will be given on assigned topics. Prereq: six semesters of German. *Staff.*

538 *Advanced German Conversation and Composition.* (3) I, II, S
This course is primarily for German majors. It involves intensive practice in the writing of German prose, with some review of German grammar. Prereq: six semesters of German.

621 *German Drama of the 19th Century.* (3) I, II
This course is a study of the German Drama from Schiller's "Die Braut von Messina" to 1870. Prereq: six semesters of German. *Whitaker.*

622 *The German Novelle.* (3) I, II
This course traces the origin and development of the German Novelle from Goethe to Thomas Mann. Prereq: six semesters of German. *Whitaker.*

623,624 *20th Century German Literature.* (3 ea.) I, II
Extensive readings, discussions, and comprehensive reports on the leading literary minds and movements of this Century. Prereq: six semesters of German. *Bigge.*

771 *The Age of Goethe.* (3) I, II
A seminar devoted to the investigation of one or more topics in the literature and social development of Germany during the period 1750 to 1825. Prereq: six semesters of German. *Staff.*

781 *Special Studies in German.* (3) I, II, S
Selected studies and investigations in the German language and literature, permitting the student to work in areas of special interest. May be repeated once.

SPANISH LANGUAGE AND LITERATURE

Requirements for a Major. Prerequisites: Junior standing, 12 hours of English, MFL 141, 142, 241, 242; 101, 102 or 191, 192; 246. *Required:* A minimum of 17 credits of advanced work in Spanish, MFL 551 (2 credits). Comprehensive examination in the senior year.

141 *Elementary Spanish.* (3) I, II, S
The study of the basic principles of the language through grammar, with emphasis on oral practice through the use of oral exercises. A short reader is introduced. *Staff.*

142 *Elementary Spanish.* (3) I, II, S
A continuation of 141. Selected readings. Prereq: 141 or one year of high school Spanish. *Staff.*

143 *Elementary Aural-Oral Practice in Spanish.* (1) I, II, S
Two hours a week. A course to improve pronunciation and comprehension of spoken Spanish. Aural-oral drills, dictation and recordings. *Staff.*

144 *Elementary Spanish (oral approach).* (4) I, II, S
The study of the basic principles of the language through grammar, with emphasis on oral practice through the use of oral exercises. A short reader is introduced.

145 *Elementary Spanish (oral approach).* (4) I, II, S
A continuation of 144. Selected readings. Prereq: 144 or permission of instructor.

241 *Intermediate Spanish.* (3) I, II, S
Readings of selected Spanish works and rapid review of principles of grammar. Prereq: 144, 145 or two years of high school Spanish.

242 *Intermediate Spanish.* (3) I, II, S
Continuation of 241. Prereq: 241 or three years of high school Spanish. *Staff.*

243,244,245 *Spanish Novel and Drama.* (3 ea.) I, II, S
Reading of standard texts; brief survey of Spanish literature; composition and outside reading. Prereq 241, 242. *Server.*

246 *Spanish Conversation and Composition.* (3) I, II, S
This course is designed to give the student a fair amount of fluency in the use of the spoken language. Dictation, vocabulary building, special emphasis on pronunciation. Class conducted entirely in Spanish. May be repeated for a total of 6 credits. Prereq: 241, 242.

247 *Civilization of Spain and Spanish America.* (2) I, II
Spanish traditions and their influence on the cultural development of Spanish America; indigenous civilizations and folklore. Lectures and reports on outside reading. No knowledge of the Spanish language is required. *Server.*

397 *Independent Work in Spanish.* (3) I, II, S
Prereq: Major and standing of 3.0 in the department. May be repeated once.

541,542 *Advanced Spanish Grammar and Composition.* (3 ea.) I, II, S
A study of the finer points of Spanish grammar. Prereq: 243, 244. *Server.*

543 *Spanish Literature of the XVII Century.* (3) I, II, S
Cervantes and the picaresque novel. Prereq: 243, 244. *Hernández.*

544 *Spanish Literature of the XVII Century.* (3) I, II, S
The Golden Age: Dramatic works of Calderon, Lope, de Vega, Tirso de Molina, etc. Prereq: 243, 244. *Hernández.*

545,546 *Spanish Literature of the XX Century.* (3 ea.) I, II, S
A study of the works of the Generation of 1898 and representative novelists and dramatists of the XX century. Prereq: 243, 244. *Server.*

547,548 *Spanish American Literature.* (3 ea.) I, II, S
A study of representative writers and principal literary productions of Spanish America. Outside reading of 1500-2500 pages of selected works. Prereq: 243, 244. *Server.*

549 *Spanish Literature of the XIX Century.* (3) I, II, S
A study of the prose writers from Fernan Caballero to Galdos. Prereq: 243, 244. *Hernández.*

550 *Spanish Literature of the XIX Century.* (3) I, II, S
A study of the romantic poets and dramatists. Prereq: 243, 244. *Hernández.*

551 *Tutorial Seminars for Majors in the Romance Languages.* (Spanish) (1) I, II
A survey of Spanish literature. Required of all Majors in Spanish during the senior year. May be repeated once for a total of 2 credits. *Staff.*

641 *Old Spanish.* (3) I, II, S
A study of the vocabulary and grammar of Old Spanish, contrasting and comparing it to modern Spanish. Prereq: twenty-one semester hours of college Spanish. *Rea.*

642 *Old Spanish.* (3) I, II, S
Reading of texts in Old Spanish. Prereq: 641. *Server.*

772 *Seminar in Spanish Literature.* (3) I, II, S
Prereq: twenty-one semester hours of college Spanish. May be repeated once for a total of 6 credits. *Staff.*

782 *Special Studies in Spanish.* (3) I, II, S
Selected studies and investigations in the Spanish language and literature, permitting the student to work in areas of special interest. May be repeated once.

RUSSIAN

161 *Elementary Russian.* (3) I, II
The study of the basic principles of the language through grammar and reading, with emphasis on oral practice.

162 *Elementary Russian.* (3) I, II
A continuation of 161. Prereq: 161 or one year of high school Russian.

163 *Elementary Aural-Oral Practice in Russian.* (1) I, II
A course designed to improve pronunciation and comprehension of spoken Russian. Aural-oral drills, dictation, recording, etc. Class will be limited to permit individual attention. Two hours per week.

261 *Intermediate Russian.* (3) I, II
Review of grammatical principles, supplementary reading of lighter prose. Increased emphasis on good pronunciation and comprehension of spoken Russian. Conversation and recordings. Prereq: 161, 162.

262 *Intermediate Russian.* (3) I, II
A continuation of 261. Prereq: 261.

263 *Intermediate Aural-Oral Practice in Russian.* (1) I, II
Continuation of 163 on a more advanced level. Prereq: 163 or 161, 162.

264 *Advanced Readings in Russian Literature.* (3) I, II
Readings in Russian in Gogol, Turgenev, Tolstoy, Lermontov, Dostoyevski, and others. Assigned readings in English on Russian history and culture. Review of Russian grammar as necessary. Oral practice. Prereq: 262 or equivalent.

265 *Advanced Readings in Russian Literature.* (3) I, II
A continuation of 264. Prereq: 262 or equivalent and approval of the instructor.

266,267 *Russian Conversation.* (3 ea.)
This course is designed to give students a fair amount of fluency in the use of the spoken language. Dictation, vocabulary building, pronunciation. Class conducted entirely in Russian. Prereq: MFL 261, 262, or permission of the instructor. *Moore.*

561 *Survey of Russian Literature.* (3) I, II
An outline of Russian literature in lecture to be accompanied by representative readings in Russian up through the period of Turgenev. A paper on some aspect of Russian literature will also be required. Prereq: eighteen semester hours of college Russian or consent of the instructor.

562 *Survey of Russian Literature.* (3) I, II
A continuation of 561. Readings from the time of Tolstoy and Dostoyevski to the present. Prereq: eighteen semester hours of college Russian or consent of the instructor.

JAPANESE

181 *Elementary Japanese.* (3,4) I, II
An introduction to the spoken language through conversational practice, with grammatical principles being explained as an aid to conversation. Written Japanese is introduced gradually. *Chambliss.*

182 *Elementary Japanese.* (3,4) I, II
A continuation of 181. Prereq: 181 or one year of high school Japanese. *Chambliss.*

281 *Intermediate Japanese.* (3) I, II
Reading of texts written in modern colloquial Japanese and continued practice in conversation. Prereq: 181, 182. *Chambliss.*

282 *Intermediate Japanese.* (3) I, II
A continuation of 281. Prereq: 281. *Chambliss.*

284 *Comprehensive Readings in Japanese.* (3) I, II
The objective is to enlarge the student's reading and speaking ability by acquainting him with the standard and colloquial form of Japanese used in newspapers and popular journals. *Chambliss.*

285 *Comprehensive Readings in Japanese.* (3) I, II
A continuation of MFL 284. Prereq: 284. *Chambliss.*

ITALIAN

191 *Elementary Italian.* (3) I, II
A study of the grammar and composition of Italian.

192 *Elementary Italian.* (3) I, II
A continuation of 191. Prereq: 191 or one year of high school Italian.

291 *Intermediate Italian.* (3) I, II
Review of grammatical principles and readings of selected Italian works. Prereq: 192.

292 *Intermediate Italian.* (3) I, II
A continuation of 291. Prereq: 291.

OTHER DEPARTMENTAL OFFERINGS

248 *Mexican Civilization.* (3) S
A lecture course on the cultural development of Mexico, designed to furnish a working basis for required trips to important centers of Mexican civilization. To be offered only during the summer session in Mexico. *Server.*

553 *The Teaching of Modern Foreign Languages.* (3)
A course for teachers and prospective teachers of French, Spanish, or German, with the objective of providing a more vital approach to the teaching of these languages. *Server.*

610 *Romance Philology.* (3) I, II, S
Study of the historical development of the various Romance languages with reading of texts chiefly from the medieval period. Special attention will be given to historical phonology and morphology. Prereq: 603 or 641 or equivalent. May be repeated once for a total of 6 credits. *Rea.*

768 *Residence Credit for Master's Degree.* (0)
May be repeated once. *Staff.*

769 *Residence Credit for Doctor's Degree.* (0)
May be repeated indefinitely. *Staff.*

778 *Seminar: Main Currents of Romance and German Literature.* (3)
Studies of the principal works of the French, German and Spanish literatures. Lectures, student reports. Required of all candidates for M.A. degree under Plan B.

MUSIC

FACULTY

Professors: R. Bernard Fitzgerald (M.M., Jordan Conservatory, 1935), Arnold Blackburn (M.M., Michigan, 1943), Aimo Justus Kiviniemi (M.A., Ohio State, 1946), Mildred Sinclair Lewis (M.A., New York, 1941), special assignment, Nathaniel Maxwell Patch (M.M., Rochester, 1941), Kenneth W. Wright (Ph.D., Rochester, 1941). *Associate Professors:* Almonte Charles Howell, Jr. (Ph.D., North Carolina, 1953), Donald W. Ivey (D.M.A., Illinois, 1962), Gordon J. Kinney (Ph.D., Florida State, 1962), Gordon A. Nash (M.A., Kentucky, 1950). *Assistant Professors:* Rex Alton Conner (M.M.E., Missouri, 1953), Lewis S. Danfelt (M.M.E., Florida State, 1954), Sara L. Holroyd (M.A., Columbia, 1951), Phyllis Jenness (M.A., Kentucky, 1958), Phillip Miller (M.M.E., Boston U., 1958), Ford McRae Montgomery (M.M., Michigan, 1949), Albert Leroy Schaberg (M.M., Rochester, 1959), Thomas Frederick Still (M.M., Oberlin, 1952), Paul R. Todd (M.M., Texas, 1956). *Instructors:* Sarah Baird Fouse (M.M., Kentucky, 1961), Ann K. Huddleston (M.M., Kentucky, 1955).

The music department provides the opportunity for cultural and professional growth through intensive music study and participation, and presents a varied series of musical programs of cultural value to the entire university community.

A student whose prime interest is music may work toward the Bachelor of Music degree in Applied Music or Music Education, or the Bachelor of Arts degree. The courses of study leading to the Bachelor of Music degree are designed for those who plan to be professional performing musicians or school music teachers, and presume a considerable amount of musical experience on the pre-college level. The Bachelor of Arts degree with a major in music is a general cultural degree with emphasis in music, allowing more time during the Junior and Senior years for the election of courses in related and other subject matter fields. All degrees offered by the Department of Music demand the fulfillment of the basic lower division course requirements of the College of Arts and Sciences.

DEPARTMENTAL FACILITIES

The University provides one of the most modern and adequately equipped Fine Arts buildings in the South. The music facilities include well lighted, sound proofed, air conditioned classrooms, rehearsal halls, teaching studios, listening cubicles, a departmental library, and 44 practice rooms including 4 two-manual practice pipe organs. In the building there are two auditoriums seating approximately 500 and 120. Radio, recording, and broadcasting facilities are available for instructional purposes and performances. There is a fine Holtkamp pipe organ in Memorial Hall for teaching and concert purposes.

SCHOLARSHIPS

The department offers a number of grants-in-aid consisting of a waiver of the registration fee each semester. These grants are awarded on the basis of scholastic standing, character, musical ability, and need.

Approximately $750.00 is available each year from the McCracken Music Scholarship Fund for Kentucky students with exceptional musical talent.

The Junior-League Award in Music Education of approximately $200.00 is awarded to a Junior or Senior in the department each year on the basis of scholarship, character, and prospective success in the field of music teaching.

The Mildred Sinclair Lewis Music Scholarship of $125 is awarded to a student majoring in music education. Recipients are selected on the basis of scholarship, musical talent, character, financial need, and professional promise as a teacher.

Four Junior League Honor Loans of $50 each are available each year to music majors.

For further information or application write to the Head of the Department of Music.

UNIVERSITY BANDS

The University has three bands: the famous Marching 100, the Symphonic Band, and the AFROTC Band. The Marching 100 performs at athletic events and other campus and community activities. The Symphonic Band is a concert organization which performs the finest of concert band literature in a series of programs on campus, and makes one concert tour each year. The Air Force Band is a regular part of the ROTC program at the University and plays at Army and Air Force reviews.

UNIVERSITY CHORAL ENSEMBLES

For those students interested in singing, there are four choral organizations on campus: the Men's Glee Club, Women's Glee Club, the Choristers, a select mixed choir, and the University Chorus of approximately 150 members. These organizations are open to every University student by permission of the respective directors.

UNIVERSITY SYMPHONY ORCHESTRA

The *University Symphony Orchestra* is a student, faculty, and civic musical organization, and presents standard symphonic literature regularly in concert. Admission to the orchestra is arranged by consultation with the director.

PARTICIPATION IN MUSICAL ORGANIZATIONS

No student is permitted to participate in the orchestra, concert band, glee clubs, or other musical organizations unless all eligibility requirements for extracurricular activities are met.

SPECIAL FEES

Applied Music:

$25.00 per semester for one course for 1 credit (or non-credit)

50.00 per semester for one course for 2 credits (or non-credit)

50.00 for 2 or more courses (credit or non-credit)

5.25 per semester for each half-hour lesson per week for each student in Applied Music who is not regularly enrolled in the University. This is in addition to the usual charge for individual lessons.

BACHELOR OF ARTS DEGREE

This curriculum, leading to a Bachelor of Arts Degree with a major in music, is intended to provide the student with a general cultural background with emphasis on music.

CURRICULA LEADING TO THE DEGREE OF BACHELOR OF MUSIC

The following sequences are offered:

MUSIC EDUCATION

Freshman

	1st Sem. Crs.	2d Sem. Crs.
Applied Major	2	2
[1]Secondary Applied	1	2
Ensemble	1	1
Music 170, 171	3	3
Foreign Language (Intermediate year)	3	3
English 101, 102	3	3
Social Studies	3	—
[2]Humanities 204	—	2
Physical Education	1	1
Military or Aero. Science or elective	(2)	(2)
[7]Recital Attendance	0	0
	17	17

Sophomore

	1st Sem. Crs.	2d Sem. Crs.
Applied Major	2	2
Secondary Applied	2	2
Ensemble	1	1
[4]Music 270, 271	2	2
Music 272, 273	2	2
Music 280, 281	3	3
Humanities	2	—
Biological Science	3	—
Education 202	—	4
Military or Aero. Science or elective	(2)	(2)
[7]Recital Attendance	0	0
	17	16

Junior

	1st Sem. Crs.	2d Sem. Crs.
Applied Major	2	2
Secondary Applied	1-2	1-2
Music 371, 372	2	3
Education 325	3	—
Ensemble	1	1
Music 562, 563 or 564	2	2
[4]Music 360, 361	2	2
[5]Music 363, 362	2	2
Physical Science	3-4	3-4
Social Science	—	3
[7]Recital Attendance	0	0
	16-18	17-18

Senior

	1st Sem. Crs.	2d Sem. Crs.
Applied Major	1-2	0-1
Secondary Applied	1	—
Education 344	4	—
Education 377	—	9
Music 560	—	1
Hygiene	1	—
Ensemble	1	1
Humanities	2	—
Biological Science	3-4	—
[7]Recital Attendance	0	0
Education 564	—	3
	13-14	14-15

MINIMUM CREDITS—134

For all footnotes see p. 94

APPLIED MUSIC

Voice

Freshman

	1st Sem. Crs.	2d Sem. Crs.
Music 142	3	3
Music 101	1	1
Ensemble	1	1
Music 170, 171	3	3
English 101, 102	3	3
Foreign Language (Intermediate year)	3	3
Biological Science	3	—
Physical Education	1	1
Military or Aero. Science or elective	(2)	(2)
Humanities 204	—	2
[7]Recital Attendance	0	0
	17-19	17-19

Sophomore

	1st Sem. Crs.	2d Sem. Crs.
Music 242	3	3
Music 201	1	1
Ensemble	1	1
[3]Music 270, 271	2	2
Music 272, 273	2	2
Humanities	2	2
Music 280, 281	3	3
Foreign Language	3	3
Military or Aero. Science or elective	(2)	(2)
[7]Recital Attendance	0	0
	17-19	17-19

Junior

	1st Sem. Crs.	2d Sem. Crs.
Music 342	3	3
Music 370, 372	2	3
Social Studies	3	3
Hygiene 101	1	—
Music 580 and 581	2	2
Electives	3	6
Biological Science	3	—
[7]Recital Attendance	0	0
	17	17

Senior

	1st Sem. Crs.	2d Sem. Crs.
Music 442	3	3
Music 564	2	—
Music 584	—	3
Music 572, 573	2	2
Music 587	2	—
[5]Physical Science	3	3
Electives	4	4
[7]Recital Attendance	0	0
	16	15

MINIMUM CREDITS—133

For all footnotes see p. 94

PIANO

Freshman

	1st Sem. Crs.	2d Sem. Crs.
Music 141	3	3
Music 170, 171	3	3
Ensemble	1	1
English 101, 102	3	3
Foreign Language (Intermediate year)	3	3
Social Studies	3	—
Physical Education	1	1
Military or Aero. Science or elective	(2)	(2)
Humanities 204	—	2
[7]Recital Attendance	0	0
	17-19	16-18

Sophomore

	1st Sem. Crs.	2d Sem. Crs.
Music 241	3	3
[3]Music 270, 271	2	2
Music 272, 273	2	2
Ensemble	1	1
Music 280, 281	3	3
Humanities	2	2
Biological Science	3	3
Hygiene 101	1	—
Military or Aero. Science or elective	(2)	(2)
[7]Recital Attendance	0	0
	17-19	16-18

Junior

	1st Sem. Crs.	2d Sem. Crs.
Music 341	3	3
Music 370, 372	2	3
Ensemble	1	1
[5]Physical Science	3	3
Music 580 and 581	2	2
Electives	6	6
[7]Recital Attendance	0	0
	17	18

Senior

	1st Sem. Crs.	2d Sem. Crs.
Music 441	3	3
Music 572, 573	2	2
Ensemble	1	1
Music 582, 583	2	2
Social Studies	—	3
Music 587	2	—
Electives	6	5
[7]Recital Attendance	0	0
	16	16

MINIMUM CREDITS—133

For all footnotes see p. 94

ORGAN

Freshman

	1st Sem. Crs.	2d Sem. Crs.
Music 143	3	3
Music 101	1	1
Music 170, 171	3	3
Ensemble	1	1
English 101, 102	3	3
Foreign Language (Intermediate year)	3	3
Social Studies	3	—
Physical Education	1	1
Military or Aero. Science or elective	(2)	(2)
Humanities 204	—	2
[7]Recital Attendance	0	0
	18	17-19

Sophomore

	1st Sem. Crs.	2d Sem. Crs.
Music 243	3	3
Music 201	1	1
[3]Music 270, 271	2	2
Music 272, 273	2	2
Ensemble	1	1
Music 280, 281	3	3
Humanities	2	—
Biological Science	3	3
Military or Aero. Science or elective	(2)	(2)
[7]Recital Attendance	0	0
	17-19	15-17

Junior

	1st Sem. Crs.	2d Sem. Crs.
Music 343	3	3
Music 370, 372	2	3
Humanities	2	—
Hygiene 101	—	1
[5]Physical Science	3	3
Music 580, 581 (131 and 132)	2	2
Electives	6	6
[7]Recital Attendance	0	0
	18	18

Senior

	1st Sem. Crs.	2d Sem. Crs.
Music 443	3	3
Music 572, 573	2	2
Music 585, 586	2	2
Social Studies	—	3
Music 587	2	—
Electives	6	5
[7]Recital Attendance	0	0
	15	15

MINIMUM CREDITS—133

For all footnotes see below.

ORCHESTRAL INSTRUMENT

Freshman

	1st Sem. Crs.	2d Sem. Crs.
Performance Major	3	3
Piano 101	1	1
Music 170, 171	3	3
Ensemble	1	1
English 101, 102	3	3
Foreign Language (Intermediate year)	3	3
Social Studies	3	—
Physical Education	1	1
Military or Aero. Science or elective	(2)	(2)
Humanities 204	—	2
[7]Recital Attendance	0	0
	17-19	17-19

Sophomore

	1st Sem. Crs.	2d Sem. Crs.
Performance Major	3	3
Piano 201	1	1
[3]Music 270, 271	2	2
Music 272, 273	2	2
Ensemble	1	1
Humanities	2	2
Biological Science	3	3
Music 280, 281	3	3
Military or Aero. Science or elective	(2)	(2)
[7]Recital Attendance	0	0
	17-19	17-19

Junior

	1st Sem. Crs.	2d Sem. Crs.
Performance Major	3	3
Music 370, 372	2	3
Hygiene 101	1	—
[5]Physical Science	3	3
Music 371, 560	2	2
Music 580, 581	2	2
Electives	4	4
[7]Recital Attendance	0	0
	17	17

Senior

	1st Sem. Crs.	2d Sem. Crs.
Performance Major	3	3
Music 572, 573	2	2
Social Studies	—	3
Music 587	2	—
Electives	8	8
[7]Recital Attendance	0	0
	15	16

MINIMUM CREDITS—133

NOTES

1. A total of 10 credits in secondary applied subjects must be elected.
2. With special permission.
3. Must be taken concurrently with 272 and 273.
4. Required only of choral teachers.
5. Required only of instrumental majors.
6. Must satisfy lower devision requirement.
7. All students are required during each semester of residence to attend a certain percentage of the departmental recitals.

Upper Division Requirements

Requirements in the Field of Concentration: Forty credits of advanced work in the field of Literature, Philosophy, and the Arts, including the major work.

Music Prerequisites: Junior standing and the following lower division courses in music: Music 170, 171, 270, 271, 272, 273, 280, 281; Applied Music—8 to 10 semester hours.

Upper Division Music Requirements: A minimum of 20 semester hours of advanced work in music in accordance with the student's particular interest and as directed by the Department of Music. A comprehensive examination is required in the senior year.

MUSIC PERFORMANCE COURSES

Non-Credit Courses

Piano	1	21
Voice	2	22
Organ	3	23
Violin	4	24
Viola	5	25
Cello	6	26
String Bass	7	27
Flute	8	28
Oboe	9	29
Clarinet	10	30
Bassoon	11	31
Trumpet	12	32
French Horn	13	33
Trombone	14	34
Baritone	15	35
Tuba	16	36
Saxophone	17	37
Percussion	18	38

Students enrolled in courses numbered 1-18 receive one half-hour lesson a week.

Students enrolled in courses numbered 21-38 receive two half-hour lessons a week.

MUSIC PERFORMANCE COURSES

Series I—Secondary Courses

Secondary courses in music performances carry 1 hour credit each semester. Registration in these courses is open to students from other divisions of the University desiring elective credit and to music majors electing a secondary instrument. Music majors may not count secondary courses toward the music performance requirement for the major instrument.

Each undergraduate course in this series may be repeated twice for a total of 3 credits.

Each graduate course in this series may be repeated 3 times for a total of 4 credits.

Undergraduate Courses

Piano	101, 201, 301, 401
Voice	102, 202, 302, 402
Organ	103, 203, 303, 403
Violin	104, 204, 304, 404
Viola	105, 205, 305, 405
Cello	106, 206, 306, 406
String Bass	107, 207, 307, 407
Flute	108, 208, 308, 408
Oboe	109, 209, 309, 409
Clarinet	110, 210, 310, 410
Bassoon	111, 211, 311, 411
Trumpet	112, 212, 312, 412
French horn	113, 213, 313, 413
Trombone	114, 214, 314, 414
Baritone	115, 215, 315, 415
Tuba	116, 216, 316, 416
Saxophone	117, 217, 317, 417
Percussion	118, 218, 318, 418

Graduate Courses

Piano	501, 601
Voice	502, 602
Organ	503, 603
Violin	504, 604
Viola	505, 605
Cello	506, 606
String Bass	507, 607
Flute	508, 608
Oboe	509, 609
Clarinet	510, 610
Bassoon	511, 611
Trumpet	512, 612
French horn	513, 613
Trombone	514, 614
Baritone	515, 615
Tuba	516, 616
Saxophone	517, 617
Percussion	518, 618

MUSIC PERFORMANCE COURSES

Series II—Major Courses

Courses in this series carry 2 hours credit each semester. Registration in these courses is open only to music majors.

Each undergraduate course in this series may be repeated twice for a total of 6 credits.

Each graduate course in this series may be repeated 3 times for a total of 8 credits.

All courses in this series carry 1 hour credit if taken in the Summer Session.

Undergraduate Courses

Piano	121, 221, 321, 421
Voice	122, 222, 322, 422
Organ	123, 223, 323, 423
Violin	124, 224, 324, 424
Viola	125, 225, 325, 425
Cello	126, 226, 326, 426
String Bass	127, 227, 327, 427
Flute	128, 228, 328, 428
Oboe	129, 229, 329, 429
Clarinet	130, 230, 330, 430
Bassoon	131, 231, 331, 431
Trumpet	132, 232, 332, 432
French horn	133, 233, 333, 433
Trombone	134, 234, 334, 434
Baritone	135, 235, 335, 435
Tuba	136, 236, 336, 436
Saxophone	137, 237, 337, 437
Percussion	138, 238, 338, 438

Graduate Courses

Piano	521, 621
Voice	522, 622
Organ	523, 623
Violin	524, 624
Viola	525, 625
Cello	526, 626
String Bass	527, 627
Flute	528, 628
Oboe	529, 629
Clarinet	530, 630
Bassoon	531, 631
Trumpet	532, 632
French horn	533, 633
Trombone	534, 634
Baritone	535, 635
Tuba	536, 636
Saxophone	537, 637
Percussion	538, 638

MUSIC PERFORMANCE COURSES

Series III—Major Courses

Courses in this series carry 3 hours credit each semester. Registration in these courses is open only to music majors.

Each undergraduate course in this series may be repeated twice for a total of 9 credits.

Each graduate course in this series may be repeated 3 times for a total of 12 credits.

Courses in this series carry 1 hour credit if taken in the Summer Session.

Undergraduate Courses

Piano	141, 241, 341, 441
Voice	142, 242, 342, 442
Organ	143, 243, 343, 443
Violin	144, 244, 344, 444
Viola	145, 245, 345, 445
Cello	146, 246, 346, 446
String Bass	147, 247, 347, 447
Flute	148, 248, 348, 448
Oboe	149, 249, 349, 449
Clarinet	150, 250, 350, 450
Bassoon	151, 251, 351, 451
Trumpet	152, 252, 352, 452
French horn	153, 253, 353, 453

Trombone	154, 254, 354, 454
Baritone	155, 255, 355, 455
Tuba	156, 256, 356, 456
Saxophone	157, 257, 357, 457
Percussion	158, 258, 358, 458

Graduate Courses

Piano	541, 641
Voice	542, 642
Organ	543, 643
Violin	544, 644
Viola	545, 645
Cello	546, 646
String Bass	547, 647
Flute	548, 648
Oboe	549, 649
Clarinet	550, 650
Bassoon	551, 651
Trumpet	552, 652
French horn	553, 653
Trombone	554, 654
Baritone	555, 655

Music Performance Courses are taught by the following faculty members:

Piano—Patch, Still, Huddleston, Montgomery
Voice—Kiviniemi, Jenness, Ivey, Holroyd, Huddleston
Organ—Blackburn
Violin, Viola—Wright, Todd
Cello, String Bass—Kinney
Flute—Fouse
Oboe—Bassoon—Danfelt
Clarinet, Saxophone—Miller
Trumpet—Fitzgerald, Schaberg
Trombone, Tuba, Percussion—Conner
French Horn, Baritone, Tuba—Schaberg

Course Descriptions

160 *Class Instruction in Voice.* (1) I, II, S
A beginning course in the fundamentals of singing. Two laboratory hours per week. May be repeated once for a total of 2 credits. *Jenness and Kiviniemi.*

161 *Class Instruction in String Instruments.* (1) I, II, S
A beginning course in the fundamentals of playing and teaching violin and viola. Two laboratory hours per week. May be repeated once for a total of 2 credits. *Todd, Kinney.*

162 *Class Instruction in String Instruments.* (1) I, II, S
A beginning course in the fundamentals of playing and teaching cello and string bass. Two laboratory hours per week. May be repeated once for a total of 2 credits. *Todd, Kinney.*

163 *Brass Instruments.* (1) I, II, S
A beginning course in the fundamentals of playing and teaching brass and percussion instruments. Two laboratory hours per week. *Schaberg, Conner.*

164 *Brass Instruments.* (1) I, II, S
A beginning course in the fundamentals of playing and teaching brass and percussion instruments. Two laboratory hours per week. *Schaberg, Conner.*

165 *Class Instruction in Woodwind Instruments.* (1) I, II, S
A beginning course in the fundamentals of playing and teaching woodwind instruments. *Miller.*

166 *Class Instruction in Woodwind Instruments.* (1) I, II, S
A beginning course in the fundamentals of playing and teaching woodwind instruments. *Miller.*

170 *Theory I—The Elements of Musical Theory.* (3) I
A course in the fundamentals of Musical theory including the elements of sight-singing, dictation, rhythm, keyboard, terminology, notation, corrective listening, and ear training. Five meetings each week. *Danfelt.*

171 *Theory I—The Elements of Musical Theory.* (3) II
A continuation of Music 170 (11a). Five meetings each week. Prereq: 170. *Danfelt.*

190 *Band.* (1) I, II
May be repeated 11 times for a total of 12 credits. *Staff.*

191 *Orchestra.* (1) I, II
Students who have demonstrated the required ability are given an opportunity to study standard orchestral literature. Public performances are given at regular intervals. May be repeated 11 times for a total of 12 credits. *Wright.*

192 *University Choristers.* (1) I, II
Admission to the University Choristers is through the director. May be repeated 11 times for a total of 12 credits. *Kiviniemi.*

193 *Men's Glee Club.* (1) I, II
Any student in the University may be admitted to the glee club after consultation with the director. May be repeated 11 times for a total of 12 credits. *Ivey.*

194 *Women's Glee Club.* (1) I, II
Any student in the University may be admitted to the glee club after consultation with the director. May be repeated 11 times for a total of 12 credits. *Jenness.*

195 *University Chorus.* (1) I, II, S
Any student in the University may be admitted to the University Chorus after consultation with the director. May be repeated 11 times for a total of 12 credits. *Kiviniemi.*

260 *Music Education in the Primary Grades.* (3) I, II, S
Methods and materials for the Primary Grades, stressing care of the child voice; rote song singing, selection, and repertoire; rhythmic development; listening, and experiences of standard music literature; beginning notation; keyboard and autoharp experiences; classroom observations. For non-music majors or classroom teachers. Three meetings each week. *Holroyd, Conner.*

261 *Music Education in the Intermediate Grades.* (3) I, II, S
Methods and materials for the Intermediate Grades. Continuation of activities started in 260 with emphasis upon development of part-singing; minor mode; extended work on keyboard and autoharp experiences; study of typical song series for elementary grades; classroom observations. Prereq: 260. For non-Music majors or classroom teachers. Three meetings each week. *Holroyd, Conner.*

270 *Theory II—Aural Theory.* (2) I
Development of aural responsiveness to the harmonic and melodic elements of music, and of sightsinging techniques as an aid to music comprehension. Three meetings each week. Prereq: 171. *Wright.*

271 *Theory II—Aural Theory.* (2) II
The continuation of the aural and sightsinging techniques of 270. Three meetings each week. Prereq: 270. *Wright.*

272 *Theory II—Written Theory.* (2) I
The acquisition of harmonic vocabulary and development of part-writing techniques, elementary counterpoint, free composition, and analysis. This course must be taken concurrently with 270 (51a). Two meetings each week. Prereq: 171. *Wright.*

273 *Theory II—Written Theory.* (2) II
The continuation of the work of 272. This course must be taken concurrently with 271. Two meetings each week. Prereq: 272. *Wright.*

280 *History of Music.* (3) I, S
A survey of the history of music from ancient times to the present. Prereq: Humanities 204 or consent of the instructor. *Blackburn and Howell.*

281 *History of Music.* (3) II, S
A continuation of Music 280. Prereq: Humanities 204 or consent of the instructor.

282 *Survey of Music Literature.* (2) I, S
This course is intended for non-music majors desiring to acquire an understanding of the literature of music through a study of representative compositions of great composers. Prereq: Humanities 204 or consent of instructor.

283 *Survey of Music Literature.* (2) II, S
A continuation of Music 282. For non-music majors. Prereq: Humanities 204 or consent of instructor.

290 *Chamber Music Ensembles.* (1) I, II, S
The study of chamber music through performance. Two class hours per week. May be repeated once for a total of 2 credits. *Staff.*

360 *Vocal Methods and Materials in the Elementary Grades.* (2) I, S
A course for music education majors in methods and materials in music education for the first six grades. This includes the care of the child voice, rote-singing and repertoire, rhythmic development, listening experiences, notation, part-singing, and use of accompanying instruments. Three lectures per week. *Holroyd.*

361 *Choral Methods and Materials on the Secondary Level.* (2) II, S
Methods and materials in music education for junior and senior high schools. This includes the study of the adolescent and his voice, general music classes, importance of assembly-singing, organization of choral groups, preparation of integrated units, program production, etc. Prereq: 360. Three lectures per week. *Holroyd.*

362 *Instrumental Methods and Materials in the Elementary School.* (2) I, S
A study of methods and materials, teaching techniques, and the organization of instrumental instruction in the elementary school. Three class hours each week. Prereq: Junior standing in music and Music 160, 163, 165. *Conner.*

363 *Instrumental Methods and Materials in the Secondary School.* (2) I
A study of the methods, materials and techniques of teaching instrumental music in the secondary school, including the survey and analysis of band and orchestra repertory, rehearsal techniques, marching band techniques. Three class hours each week. Prereq: Junior standing in music and Music 160, 163, 165, 560, 362. *Conner*

370 *Theory III—Advanced Harmony and Counterpoint.* (2) I
A study of the 19th Century harmonic idioms through projects in analysis and composition. Three meetings a week. Prereq: 273 *Kinney.*

371 *Instrumentation and Arranging.* (2) I, II, S
A basic course in instrumentation and arranging for typical school instrumental and vocal ensembles. *Fitzgerald and Kinney.*

372 *Musical Analysis.* (3) I, II, S
A study of musical style through structural, harmonic and melodic analyses. *Kinney, Howell.*

390 *Chamber Music Ensembles.* (1) I, II, S
A continuation of 290. Prereq: Junior standing in applied music. May be repeated once for a total of 2 credits. *Staff.*

560 *Supervision of Music.* (1) II, S
A study of supervision of the school music program through curriculum planning, supervisory techniques, administrative and community relationships, the use of mechanical aids in the improvement of teaching, etc. One lecture and one laboratory each week. Prereq: Music 360, 361, 362 and 363. *Holroyd, Nash.*

561 *Music Activities in the Elementary School.* (2) I, II, S
The study of music and its contribution to child development. An analysis of instructional materials and the development of criteria for the evaluation of these materials. Advanced studies and activities in rhythms, singing, listening, creativity, and reading music to create a musical environment in the classroom. Open to classroom teachers only. Prereq: Music 260 and 261 or equivalent and consent of the instructor. *Nash and Holroyd.*

562 *Conducting.* (2) I
A study of the technique and practice of the fundamentals of conducting. *Staff.*

563 *Instrumental Conducting.* (2) II
A continuation of 562. Prereq: 562. *Staff.*

564 *Interpretation of Choral Music.* (2) I, II, S
A study of the fundamentals of choral conducting and choral literature, emphasizing materials for the secondary school level. *Kiviniemi, Jenness.*

565 *Vocal Pedagogy.* (2) I, S
For teachers of voice, supervisors of music and choir directors. The study of physical and psychological problems in the teaching of voice production, the study of breath control, diction, resonance, interpretation, and repertoire. *Jenness and Kiviniemi.*

570 *Orchestration.* (2) I, S
This course includes a study of the individual instruments of the orchestra and band with practice in scoring for these instruments. Prereq: 371. *Kinney.*

571 *Orchestration.* (2) II, S
A continuation of 570. Prereq: 570. *Kinney.*

572 *Counterpoint.* (2) I, S
A study of Counterpoint based on 16th Century and 18th Century contrapuntal techniques, original compositions and analysis. *Kinney.*

573 *Counterpoint.* (2) II, S
A continuation of 572. Prereq: 572. *Kinney.*

574 *Composition and Orchestration.* (2) I, S
A basic course in original composition and orchestration. Prereq: Music 371. *Wright.*

575 *Composition and Orchestration.* (2) II, S
A continuation of 574. Prereq: 574. *Wright.*

580 *Seventeenth and Eighteenth Century Music.* (2) I, II, S
A survey of music literature composed c. 1600—c. 1800. Prereq: 280, 281. *Howell.*

581 *Nineteenth Century Music.* (2) I, II, S
A study of masterworks of music composed in the nineteenth century. Prereq: 280, 281. *Howell.*

582 *Piano Literature.* (2) I, S
A survey of music written for the piano, emphasizing problems in performance of standard piano literature. *Still and Patch.*

583 *Piano Literature.* (2) II, S
A continuation of 582. *Still and Patch.*

584 *Vocal Literature.* (3) I, S
A study of the development of the Art Song, Opera, Oratoria, and Cantata. *Jenness and Kiviniemi.*

585 *History and Literature of the Organ.* (2) I, S
A course of study designed to give the organ student a practical knowledge of the development of the organ, its construction, the standard literature, and teaching materials. *Blackburn.*

586 *History and Literature of the Organ.* (2) II, S
A continuation of 585. Prereq: 585. *Blackburn.*

587 *Survey of Contemporary Music.* (2) I, S
A stylistic study of representative compositions of the twentieth century. *Kinney, Wright.*

588 *History and Literature of Opera.* (3) I, S
The development of opera as an art form, and analysis of representative operas from various areas. *Howell.*

589 *History of American Music.* (3) II, S
A study of music in America from colonial times to the present. *Howell, Kinney, and Wright.*

590 *Opera Workshop.* (1)
May be repeated twice for a total of 3 credits. *Jenness, Ivey.*

591 *Music Education Workshop: Choral.* (1) S (30 class hours)
An intensive study of choral literature and interpretation through lectures, demonstrations, and participation. *Staff.*

592 *Music Education Workshop: General Music.* (1) S (26 class hours)
A study of elementary and secondary school methods and materials, class piano techniques, audio-visual aids in Music Education, and the administration of school music. *Staff.*

593 *Music Education Workshop: The School Orchestra.* (1) S (20 class hours)
A study of school orchestra methods, materials, and administration, and specific stringed instrument teaching problems. *Staff.*

594 *Music Education Workshop: The School Band.* (1) S (20 class hours)
A study of concert and marching band organizations on the secondary school level, with brass, woodwind, percussion, and conducting clinics. *Staff.*

660 *Advanced Instrumental Conducting.* (2) II, S
This course is intended to further develop the ability to interpret and conduct the larger forms written for the symphony orchestra and concert band. Prereq: 562, 564.

661 *Choral Literature and Technique.* (2) I, S
A study of Choral literature and its interpretation. Prereq: 563.

662 *Advanced Band Technique.* (2) II, S
An advanced course in band techniques with concentration on band organization and materials, the technique of band conducting and intensive study in the field of band arranging. *Staff.*

663 *Advanced Instrumental Techniques.* (1) S
An advanced technical study of playing string, brass, and woodwind instruments, designed for the needs of school music teachers. May be repeated twice for a total of 3 credits. *Staff.*

667 *Current Practices in Elementary School Music.* (2) I, II, S
Contemporary philosophies and objectives of music in the elementary school. The in-service training of the classroom teacher; the music specialist as a resource person. Techniques for developing the child's musical interest and capacity for music. The status of music in America's public schools. Open to music teachers only. Prereq: Music 360 or its equivalent. *Nash, Holroyd.*

670 *Theory Review.* (0) I, S
A review of the fundamentals of music theory. *Wright.*

671 *Advanced Musical Analysis.* (2) I, S
A course designed to show the changing aspects of musical style through analysis of representative compositions from all periods. *Kinney and Wright.*

672 *Advanced Musical Analysis.* (2) II, S
A continuation of 671. Prereq: 671. *Kinney and Wright.*

673 *Advanced Composition and Orchestration.* (2) I, II, S
Prereq: Music 574 and 575. May be repeated 2 times for a total of 6 credits. *Wright.*

674 *Pedagogy of Theory.* (2) I, II, S
The study of music theory from the standpoint of its function in the college and secondary school curriculum. *Wright.*

675 *Pedagogy of Theory.* (2) I, II, S
A continuation of Music 574.

676 *Sixteenth Century Counterpoint.* (2)
The study of sixteenth century contrapuntal techniques through analysis and composition. *Wright, Kinney.*

680 *Medieval and Renaissance Music.* (3) II, S
An advanced study of the musical development during these periods. *Howell.*

681 *Symphonic Literature.* (3) II, S
An intensive study of selected orchestral literature from Bach to Hindemith. *Howell.*

682 *Research Methods.* (2) I, S
A course designed to acquaint the student with the basic research techniques and materials in music. *Howell and Kinney.*

742 *Administration of Public School Music.* (3) II, S
A study of current trends in school music, curricula, testing programs, and other supervisory procedures. Same as Education 742. *Nash.*

743 *Advanced Methods and Materials in Music Education.* (2) I, S
Survey and evaluation of new music education methods and materials. Same as Education 743. *Conner, Holroyd.*

744 *History and Philosophy of Music Education.* (2) I, S
A course designed to acquaint the student with the historical development and basic philosophy in music education. Same as Education 744. *Holroyd, Nash.*

768 *Residence Credit for the Master's Degree.* (0) I, II, S
May be repeated once.

780 *Independent Work in Music Education.* (1) I, II, S
Prereq: 4-6 hours of graduate credit in the area of specialization.

781 *Independent Work in Music Education.* (2) I, II, S
Prereq: 4-6 hours of graduate credit in the area of specialization.

782 *Independent Work in Music Education.* (3) I, II, S
Prereq: 4-6 hours of graduate credit in the area of specialization.

783 *Independent Work in Music Theory.* (1) I, II, S
Prereq: 4-6 hours of graduate credit in the area of specialization.

784 *Independent Work in Music Theory.* (2) I, II, S
Prereq: 4-6 hours of graduate credit in the area of specialization.

785 *Independent Work in Music Theory.* (3) I, II, S
Prereq: 4-6 hours of graduate credit in the area of specialization.

786 *Independent Work in Musicology.* (1) I, II, S
Prereq: 4-6 hours of graduate credit in the area of specialization.

787 *Independent Work in Musicology.* (2) I, II, S
Prereq: 4-6 hours of graduate credit in the area of specialization.

788 *Independent Work in Musicology.* (3) I, II, S
Prereq: 4-6 hours of graduate credit in the area of specialization.

PHILOSOPHY

FACULTY

Professors: John Kuiper (M.A., Michigan, 1922), HEAD. Jesse DeBoer (Ph.D., Harvard, 1942). *Assistant Professors*: Roger Jose Chacon (Ph.D., Harvard, 1958), Henry Howard Jack (Ph.D., Harvard, 1955). *Instructors*: Frank Morrow, Jr. (M.A., Michigan, 1959), Alan Jerome Shavzin (M.A., Yale, 1959).

Philosophy is today, as it has been in the past, a pursuit of an understanding of the most basic traits of the universe and of man and his activities. While each of the special sciences examines a limited sphere, philosophy strives for inclusive vision. Also it seeks clear definition of the fundamental meanings that underlie the various fields of human knowledge and practice. Standards present in man's knowing and acting are studied in logic, theory of knowledge, and ethics. Historical courses survey the development of the most general thought patterns of successive epochs. Such systematic courses as metaphysics and philosophy of religion discuss ideas bearing on the nature and organization of the universe.

All the courses offered by the Philosophy Department are designed to provide training which will constitute significant components of a liberal education. The special services of the Department may be listed as follows: (1) Several of its courses provide such training in the broadest ideas and values of civilization as will be useful for students working for a career in education, engineering, commerce, law, agriculture, medicine, and nursing. (2) The Department plans courses with a view to reinforcing and complementing various Arts and Sciences curricula, such as those in the humanities and the social studies, although it offers courses of value to students in the physical and biological sciences as well. In pre-professional programs leading toward medicine and the ministry there are courses that are virtually indispensable. Such courses as logic and ethics, which develop skill in reasoning and a more thorough understanding of the principles of moral conduct, are of special value in all curricula. (3) Finally, it provides a program of study for students who wish to major in philosophy itself, whether these students do or do not plan to pursue philosophy beyond the A.B. degree. The Department offers training as far as the M.A. degree and plans its graduate program with a view to preparing the student for effective study elsewhere toward the Ph.D. degree and a career of teaching philosophy.

Upper Division Requirements

Requirements in the Field of Concentration: Forty credits of advanced work in philosophy and allied courses.

Requirements for a Major. Prerequisite: 6 credits in philosophy, including Philosophy 200. *Required:* A minimum of 15 credits in philosophy; Tutorial Work (3 credits); and a comprehensive examination in the senior year.

Course Descriptions

200 *Introduction to Philosophy.* (3) I, II, S
An elementary study of the principal problems of philosophy. *Staff.*

220 *Elementary Logic.* (3) I, II, S
A study of the logical principles underlying valid thought. *Staff.*

230 *Ethics.* (3) I, II
A first course in ethics; study of the nature of moral action; meaning of right and good; moral standards; principal moral theories; organization of individual and social values. *Shavzin.*

380,381,382 *Tutorial Work in Philosophy.* (1 ea.) I, II, S
Weekly conferences with major students; reports on assigned readings; readings in preparation for the comprehensive examination. Required of senior majors in Philosophy. *Staff.*

395 *Independent Work.* (3) I, II, S
Open only to students who have distinguished themselves in philosophy or in allied subjects. Prereq: Major in the department and standing of 3.0 in philosophy courses. May be repeated three times for a total of 12 credits. *Staff.*

500 *History of Philosophy—Ancient and Medieval.* (3) I
A survey of the philosophical thought of ancient Greece and Rome, and of medieval Christendom. *DeBoer.*

502 *Plato and Aristotle.* (3) II
Plato's development of a theory of the world and of practice, studies in selected dialogues. Analysis of passages in Aristotle's major works on natural philosophy, metaphysics, knowledge, ethics, and politics. *DeBoer.*

510 *History of Philosophy—Modern.* (3) II
A survey of modern European and American philosophy from the Renaissance to contemporary times. *Kuiper.*

511 *The Making of the Modern Mind.* (3)
A study of the intellectual background of the modern age. Renaissance humanism, 17th and 18th century rationalism, 19th century romanticism and idealism are some of the major tendencies to be stressed. *Kuiper.*

512 *Representative Modern Philosophers.* (3)
A study of the original works of the chief figures in modern philosophy. Special attention will be given to Descartes, Spinoza, Locke, Hume and Kant. *Kuiper.*

515 *Contemporary Philosophy.* (3) I
A study of contemporary philosophical tendencies, notably pragmatism, idealism, the analytic movement (e.g., logical atomism, logical positivism, and philosophical analysis), phenomenology, and existentialism. *Chacon.*

518 *Existentialism.* (3) II
A systematic study of the fundamental concepts and problems of existentialism. Selected readings in Kierkegaard, Marcel, Heidegger, Jaspers, and Sartre. *Chacon.*

520 *Intermediate Logic.* (3) I
A second course in logic including the logic of classes, of relations, of propositions and propositional functions, the theory of deductive systems, and a consideration of the rival schools of contemporary logical theory. *Morrow.*

540 *Great Religions.* (3) I, S
A descriptive survey of several religions as they developed within their culture, for example, Hinduism, Buddhism, Confucianism, Judaism, Christianity. *DeBoer.*

545 *Philosophy of Religion.* (3) II
A philosophical examination of religious ideas, including such topics as the origin of religion; the nature of religion; the various concepts of God, the soul, immortality; and internal and external criticisms of religion. *DeBoer.*

550 *Metaphysics.* (3) II
Study of concepts and problems important for understanding the general or ultimate factors in reality; e.g. space-time, change, causality, substance, matter, life, God. *DeBoer.*

555 *Epistemology.* (3) II
A study of the origin, nature, kinds, and validity of knowledge, with a consideration of such topics as faith, intuition, belief, opinion, certainty, and probability. Also some discussion of recent developments in semantics. *Chacon.*

560 *Philosophy of Science.* (3) II
An examination of the logical and epistemological foundations of empirical science, including such topics as the unity and diversity of the sciences, methodology, theory and explanation, and current studies in the language of science. *Morrow.*

580 *Problems of Philosophy.* (3) S
This course is designed for upper division and graduate students who have had little or no formal training in philosophy but wish to study the presuppositions underlying religion, education, art, morality, and government. *Staff.*

592 *Aesthetics.* (3) II
Problems of method in aesthetics; major types of aesthetic theory. Aesthetic materials of the arts in literature, music, and the space arts. Form and types of form. Meaning in the arts. Interrelations of the arts. Lectures, discussions, reports. (Same as Art 592.) *Amyx.*

620 *Types of Logical Theory.* (3)
An intensive study of recent and contemporary contributions to logical theory: Whitehead and Russell, C. I. Lewis, R. Carnap, John Dewey, and others. May be repeated once for a total of 6 credits. *Kuiper.*

768 *Residence Credit for the Master's Degree.* (0)
May be repeated once.

770 *Seminar in Philosophy.* (2)
One 2-hour meeting a week for discussion of current developments in philosophy as found in books and periodicals. Readings and reports. May be repeated 3 times for a total of 8 credits. *Staff.*

790 *Research in Philosophy.* (3) I, II, S
This course is primarily intended for advanced students who desire and are prepared to do research in philosophy. May be repeated 3 times for a total of 12 credits. *Staff.*

PHYSICAL EDUCATION

FACULTY

Professors: Don Cash Seaton (Ed.D., New York University, 1947), HEAD. Martha G. Carr (Ed.D., Indiana, 1944), Charles William Hackensmith (Ph.D., Ohio State, 1948), Ernst Jokl (M.D., Breslau, 1931), Earl Kauffman (Ed.D., New York University, 1949). *Associate Professors*: Maurice A. Clay (Ed.D., Kentucky, 1955), Milo Gist Karsner (Ph.D., Iowa, 1953), William E. McCubbin (Ed.D., George Peabody, 1956). *Assistant Professors*: Stella Spicer Gilb (M.A., Kentucky, 1942), Bernard Mason Johnson (M.A., Kentucky, 1949), Lovaine Carol Lewis (Ph.D., Kentucky, 1958), Alfred Marion Reece (M.A., Kentucky, 1946). Peggy Stanaland (M.S., Florida State, 1954), *Instructor*: Martha Frances Charnock (M.S., University of Wisconsin, 1948).

REQUIRED PHYSICAL EDUCATION

All students, except those in the College of Commerce, must successfully complete two semesters of physical education. The courses offer one hour credit for each semester successfully completed.

Incoming freshmen (and sophomores) are given screening tests for (1) physical fitness including swimming, and (2) sports achievement. Those who pass both categories are permitted to by-pass the two-semester requirement by their college dean. Those who fail in both categories will be enrolled in a physical fitness class their first semester and in a sports skills (of their choice) their second semester. Those who fail in only one category will be required to enroll during their first semester in the one failed, and be permitted to by-pass the other semester of the requirement.

The required (service) program is designed to:

1. Provide students with a means of regulated and supervised exercise to improve their physical fitness.
2. Teach the students those activities which may serve as a recreational pursuit during leisure time.
3. Develop a sane and intelligent attitude toward the need for and benefits of well-regulated physical activity.

A standard uniform is required in most all physical education classes. The cost of such uniform ranges from $5.00 to $12.00. A locker fee of $2.00 per semester is charged each student. This fee includes towel service, soap, locker rental and the privilege of using the equipment and facilities of the Department during non-class periods. The locker and towell fee for swimming is $4.00 per semester. Students must furnish their own swim suits.

Although neither locker nor uniform is required in either bowling or equitation classes, students enrolling in these activities must pay small additional fees since the facilities are not available in the physical education department. The fee for equitation classes is $28.00 and the fee for bowling is 25¢ for each class attended.

INTRAMURALS

A *second phase of the Department's program is its intramural sports* for men and women students and the Women's Athletic Association for women students. Through the intramural and W.A.A. programs and such organizations as the U.K. Troupers, Tau Sigma (Modern Dance), and Blue Marlin (Swim Club) numerous activities are sponsored which provide opportunity for all students to participate in competitive sports and recreational activities.

PROFESSIONAL PHYSICAL EDUCATION

The majority of students selecting Physical Education as a major do so because they expect to enter this field as teachers or as coaches. Since our students come from widely different backgrounds inside the state and from outside of Kentucky an effort is made to gear the program to their individual needs, backgrounds, and future requirements. To this end opportunities for varying extents of concentration in the major field and in minor fields within limitations of University and College policy are offered for the guidance of and selection by the student. Requirements in the fields of English, the Basic Sciences, Social Studies, Nutrition, Psychology and (for the teacher) in Education are outlined to accompany work in the major field. The student may receive the degree through the College of Arts and Sciences or through the College of Education. All physical education majors are required to enroll in Physical Education 281, Camp Leadership, offered at Camp Robinson at the end of the Sophomore year, and in Physical Education 61, Field Trip, scheduled in the spring of the Junior year.

PROFESSIONAL EDUCATION FOR RECREATION

The Topical Major in Recreation provides opportunities for students to prepare for positions of leadership and administration in public and private agencies, institutions, and special assignments. The fundamental base of the major is the undergraduate program of the College of Arts and Sciences. When

these requirements are met, usually by the end of the sophomore year (providing the student has earned a 2.5 average), the remaining work is hand-tailored to suit the individual life plans of each student.

TOPICAL FIELDS

Topical fields are offered in Recreation, Horsemanship and Dance. A student enrolling in one of the fields will have an individual curriculum prescribed to prepare him for his life's work.

SERVICE COURSES (FOR MEN AND WOMEN)

Note: At present all students except those excused from Physical Education and those enrolled in the College of Commerce are required to satisfactorily complete two Physical Education Service Courses prior to graduation. Students may elect to enroll in a maximum of four additional Service Courses after they have completed their requirement. Only two of the Service Courses may count in the minimum degree requirements of 130 credits.

Physical Education 100. (1) I, II, S
Two activities selected from a large variety of aquatic, individual and group activities, not previously taken in a Service Course. May be repeated for a maximum of six credits.

Physical Education 100 will be offered only during the first hour on the Monday, Wednesday, and Friday cycle. Physical Education 101 through 125 are the same as Physical Education 100, except that each course is offered at the hour and on the cycle designated below:

PHYSICAL EDUCATION 101, Second Hour, Monday, Wednesday and Friday
PHYSICAL EDUCATION 102, Third Hour, Monday, Wednesday and Friday
PHYSICAL EDUCATION 103, Fourth Hour, Monday, Wednesday and Friday
PHYSICAL EDUCATION 104, Fifth Hour, Monday, Wednesday and Friday
PHYSICAL EDUCATION 105, Sixth Hour, Monday, Wednesday and Friday
PHYSICAL EDUCATION 106, Seventh Hour, Monday, Wednesday and Friday
PHYSICAL EDUCATION 107, Eighth Hour, Monday, Wednesday and Friday
PHYSICAL EDUCATION 108, Ninth Hour, Monday, Wednesday and Friday
PHYSICAL EDUCATION 109, Tenth Hour, Monday, Wednesday and Friday
PHYSICAL EDUCATION 110, Eleventh Hour, Monday, Wednesday and Friday
PHYSICAL EDUCATION 111, Twelfth Hour, Monday, Wednesday and Friday
PHYSICAL EDUCATION 112, Thirteenth Hour, Monday, Wednesday and Friday
PHYSICAL EDUCATION 113, Fourteenth Hour, Monday, Wednesday and Friday
PHYSICAL EDUCATION 114, First Hour, Tuesday, Thursday and Saturday
PHYSICAL EDUCATION 115, Second Hour, Tuesday, Thursday and Saturday
PHYSICAL EDUCATION 116, Third Hour, Tuesday, Thursday and Saturday
PHYSICAL EDUCATION 117, Fourth Hour, Tuesday, Thursday and Saturday

PHYSICAL EDUCATION 118, 12:00-1:15, Tuesday and Thursday
PHYSICAL EDUCATION 119, 1:00-2:15, Tuesday and Thursday
PHYSICAL EDUCATION 120, 2:00-3:15, Tuesday and Thursday
PHYSICAL EDUCATION 121, 3:00-4:15, Tuesday and Thursday
PHYSICAL EDUCATION 122, 4:00-5:15, Tuesday and Thursday
PHYSICAL EDUCATION 123, 5:00-6:15, Tuesday and Thursday
PHYSICAL EDUCATION 124, 6:00-7:15, Tuesday and Thursday
PHYSICAL EDUCATION 125, 7:00-8:15, Tuesday and Thursday

Upper Division Requirements

PROFESSIONAL COURSES

Requirements in the Field of Concentration: Forty credits of advanced work in the field of Biological Sciences, including the major work.

Requirements for a Major. Prerequisites: For Men and Women—Zoology 100 or Anthropology 100 and 101, Sociology 220 or 240, English 181 or 291, Physical Education 150, 151, 250, 251. For Men—Physical Education 141, 142, 143, 144.

Required: For Men and Women— Anatomy 206 and Physiology 206; Home Economics 401; Hygiene 510; Physical Education 061, 152, 280, 281, 343, 360, 370, 520, 540, 545, 572. For Women: Physical Education 491.

(*For Teaching Certificate*: Education 98, 101, 202, 340 or 344, 369, 370, 444, Physical Education 344, 360. Only 6 hours of Education count in Field of Concentration in A. & S. It is recommended that the student seeking a teaching certificate elect a second teaching field in addition to Physical Education and that he consult with his advisor early in the Freshman year.)

Course Descriptions

COURSES FOR MEN AND WOMEN

061 *Field Trip.* (0) II
Required the spring semester of all Juniors majoring in physical education. Visitation and inspection of physical education programs. *Carr and Clay.*

140 *Professional Orientation.* (2) I
Introduction to the fields of health, physical education, and recreation. Two hours per week. Required of all students the first fall semester enrolled in the University in Physical Education and Recreation.

141 *Basketball Coaching Fundamentals.* (2) I
Theory and practice in coaching fundamentals involved in basketball. Four hours lab per week. *Lancaster.*

142 *Football Coaching Fundamentals.* (2) II
Theory and practice in coaching fundamentals of football. Four hours lab per week. *McCubbin and Arnsparger.*

143 *Track and Field Coaching Fundamentals.* (2) II
The theory and practice of coaching track and field events. Four hours lab per week. *Seaton.*

144 *Baseball and Softball Coaching Fundamentals.* (2) II, S
Theory and practice in coaching fundamentals involved in baseball and softball. Four hours lab per week. *Shannon.*

150,151 *Physical Education and Recreation Activities.* (2 ea.) I, II
Theory and practice of activities recommended for physical education and recreation programs. Six hours per week lab required of all freshman physical education and recreation majors.

152 *Techniques of Swimming.* (2) I, alternate S
A basic course in swimming and diving skills beginning with the intermediate level. To include survival, lifesaving, synchronized and skin diving skills. Four hours lab per week. Prereq: Special Skill Test. *Reece.*

185 *Jumping (Horseback.)* (1)
Practice in jumping over different obstacles for show and hunting. Prereq: Four hours in horsemanship or consent of instructor. Two hours lab per week. *Ryen.*

250,251 *Physical Education and Recreation Activities.* (2 ea.) I, II
Theory and practice of activities recommended for physical education and recreation programs. Six hours lab per week required of all sophomore physical education and recreation majors.

252 *Water Safety Leadership.* (2) II, alternate S
Leadership training in the teaching of swimming, lifesaving, diving, synchronized swimming, competitive swimming, camp waterfront, beach and pool operation and exhibition. Four hours lab per week. Prereq: Senior Lifesaving Certificate and Special Skill Test. *Reece.*

280 *Recreation Leadership.* (2) I, II
Practice in arts and crafts, dance, music, nature, and sports. This course is suitable for recreation workers, playground directors, church leaders, parents, teachers and others. Lecture, two hours; lab, two hours. *Kauffman.*

281 *Camp Leadership.* (2) II
Designed for the training of camp administrators and counselors. Offered at Camp Robinson or on campus with field experiences at Camp Robinson.

286 *Equestrian Dressage.* (2)
The technique of training dressage. One hour lecture and two hours laboratory. Prereq: Horsemanship or equivalent. *Ryen.*

290 *History and Survey of the Dance.* (3) I, S
The study of the evolution of dance through the cultural periods of history and the correlation of social structure and dance forms. Open to male students. Three hours per week. *Blanton.*

343 *History and Principles of Physical Education.* (3) I
Study of the historical development of physical education and an interpretation of the biological, psychological, and sociological principles of physical education. Three hours per week. *Hackensmith and Carr.*

344 *Physical Education in the Secondary School.* (3) II, S
Required for teacher certification in physical education. Theory and practice in methods of teaching physical education activities and supervising programs in the secondary school. One hour per week of lecture, and four hours lab. May be repeated by women for a maximum of six credits. *Carr and Clay.*

356 *Sports Officiating for Men.* (1) I, S
The theory and practice of officiating football, volleyball, basketball, swimming, and other sports. Officiating in college intramurals and high school athletics will be required. One hour lecture, two hours lab. *Johnson.*

357 *Sports Officiating for Men.* (1) II, S
The theory and practice of officiating basketball, track, baseball, tennis, and other sports. Officiating in college intramurals and high school athletics will be required. One hour lecture, two hours lab. *Johnson.*

358 *Sports Officiating for Women.* (1) I, S
Instruction, interpretation of rules, and practice in officiating field hockey, volleyball, and other sports. Preparation for Women's National Official's rating in athletics. One hour lecture, two hours lab.

359 *Sports Officiating for Women.* (1) II, S
Instruction, interpretation of rules, and practice in officiating basketball, softball, tennis, and other sports. Preparation for Women's National Official's rating in athletics. One hour lecture, two hours lab.

360 *Physical Education in the Elementary School.* (2) I, II, S
Required of all physical education majors and others who wish to qualify for a teaching certificate. Materials and techniques in physical education activities suitable for elementary school children. Prereq: Eight hours in lower level requirements or consent of instructor. *Gilb.*

362 *Tutorial Work in Physical Education.* (1) I, II
This work is to be given in preparation for the comprehensive examination. For Arts & Sciences majors only. One hour per week. May be repeated for maximum of two hours credit. *Carr and Seaton.*

370 *Safety, Training, and First Aid.* (2) I, II
Prevention and care of injuries common to physical education and recreation activities. Standard A.R.C. certificate in First Aid may be earned. One hour lecture and three hours lab. *Seaton and Hackensmith.*

386 *Applied Dressage.* (1)
The principles and practice of dressage movements in training for position and collection. Prereq: P.E. 286. Two hours lab. *Ryen.*

388 *Equitation Teaching.* (3)
The techniques of horsemanship and methods of instruction. One hour lecture and two hours lab. Prereq: Horsemanship and Animal Industry 102.

395 *Independent Work in Physical Education.* (3) I, II, S
Prereq: Major and 3.0 standing in the Department. May be repeated for a maximum of 12 hours credit. *Staff.*

481 *Camping in Education.* (2) I, S
Purpose, history, organization, and conduct of camps of various types. Prereq: Physical Education 281 or permission of instructor. *Kauffman.*

482 *Intramural Sports.* (2) II, S
A study of the development of intramural sports; lecture, recitation, and practice in methods of organizing and administering intramural sports. Three hours per week. One hour lecture and two hours, lab.

486 *Advanced Dressage.* (2)
The advanced techniques in equestrian dressage leading up to the fundamentals of haute'ecole (high school) riding. Prereq: 386. One hour lecture, two hours lab. *Ryen.*

491 *Dance in Education.* (4) II
An introduction to the creative approach to dance for elementary, secondary and college levels. The principles of kinesthetics and rhythmical forms applied to the practice of fundamental movement techniques. Two hours lecture and four hours lab. *Blanton.*

520 *Physiology of Exercise.* (3)
A comprehensive survey of the physiological and clinical aspects of exercise. Lectures and demonstrations, three hours. Prereq: Anatomy 206 and Physiology 206, 207; Psychology 100; and consent of instructor.

540 *Organization and Administration of Physical Education.* (3) I, S
Policies and procedures of administration on the secondary school and collegiate levels. Special emphasis on construction and care of facilities, equipment, and supervision of personnel. Three hours per week. *Carr and Clay.*

541 *Coaching Advanced Basketball.* (2) I, S
Lecture and recitation on the theory and practice of team play in basketball. Special emphasis is placed upon systems of offense and defense. Two hours per week. Prereq: Physical Education 141 or consent of instructor. *Lancaster.*

542 *Coaching Advanced Football.* (2) II, S
Lecture and recitation on the theory of football. Special emphasis is placed on generalship, signal systems, scouting and conditioning of players. Two hours per week. Prereq: Physical Education 142 or consent of instructor. *Arnsparger and McCubbin.*

545 *Introduction to Tests and Measurements.* (3) II
The construction and grading of essay and objective tests; construction and analysis of achievement tests; and testing and measuring in health and physical education. Lecture two hours and lab two hours per week. *Clay.*

572 *Kinesiology and Its Application.* (4) I
A study of basic principles of bodily movement and their application to sports, rhythmical activities and the correction of functional defects. Three hours lecture and two hours lab. Prereq: Anatomy 206 and Physiology 206, 207.

580 *Administration and Organization of Recreation.* (3) II, S
This course is designed to equip students and community workers with procedures for developing and operating recreation programs in communities of various sizes and with varying political and social structures.

583 *Interpretations of Leisure and Recreation.* (3) I, S
Designed to provide students interested in recreation as a profession as an adjunct to other work, or as informed citizens with a basic understanding of the significance of leisure and the objectives of recreation. *Kauffman.*

592 *Dance Composition.* (4) II
Dance choreography, program planning, directing, staging and costuming. Formal program required of all students. Open to male students. Two hours lecture and recitation; four hours lab per week. Prereq: Physical Education 491. *Blanton.*

595 *Folk Dance Leadership for School and Community.* (2) I, II, S
Philosophy, background, and methods of folk dance for schools and communities. Leadership, participation, and program planning with special emphasis upon field work with community groups. One hour lecture and two hours lab.

GRADUATE COURSES FOR MEN AND WOMEN

644 *Research and Its Application.* (3) I, S
The theory and practice of tests and measurements in the field of health and physical education. Two hours lecture and two hours lab. *Hackensmith.*

650 *Curriculum and Program Development.* (3) I, S (even years)
A study of fundamental principles basic to the development of the overall curriculum in physical education with special emphasis upon the proper selection and organization of physical education activities to meet the education and recreational needs of all students. Three hours per week. Prereq: P.E. 343, 344, 540. *Carr.*

651 *Facilities, Construction, and Equipment.* (2) II, S (odd years)
Principles and standards for maintaining facilities, and planning construction; purchase and care of equipment. Two hours per week. Prereq: P.E. 540. *Seaton.*

685 *Administrative Practices in Recreation.* (3) I, S
This course deals with such administrative practices as decision making, policy determination, public relations, personnel practices, and routine details that constitute the functions of the chief recreation officer and his staff associates. Prereq: P.E. 580 or consent of instructor. Three hours per week. *Kauffman.*

690 *Organization and Administration of Dance in Education.* (3) II, S (odd years)
Special emphasis will be placed upon the organization and administrative program in dance to meet the needs of students from elementary through college levels. Some attention will be given to dance production, festivals and social dance functions in schools. Three hours per week. Prereq: P.E. 491, 592, 595, or consent of instructor.

741 *Current Studies and Trends.* (3) II, S
A study of modern trends in health and physical education and standards of evaluation in relation to the history of the various systems, including a review of the principles and objectives. *Seaton.*

770 *Seminar.* (2) I, II, S
A review of current literature in the field. Guidance in thesis writing. Two hours lab per week. May be repeated once.

780 *Problems in Recreation.* (2) I, S
Current problems in recreation are identified and analyzed by the application of appropriate recreation technique. The course is designed for recreationists, school people and community workers. *Kauffman.*

782 *Problems in Physical Education.* (3) I, S
For school administrators and directors of physical education. Students work on individual problems applicable to their situation and interests, as well as upon general school problems. *Seaton.*

783 *Problems in the Administration of Athletics.* (2) II, S
For athletic directors, supervisors, and athletic coaches. A study of representative athletic administration procedures for colleges and public school systems. Business management is also stressed. Two hours per week. *Clay.*

PHYSICS

FACULTY

Professors: Francis Lorraine Yost (Ph.D., Wisconsin, 1936), HEAD. Lewis Wellington Cochran (Ph.D., Kentucky, 1952), Wendell Carden DeMarcus (Ph.D., Yale, 1951), Richard Hanau (Ph.D., Michigan, 1947), Bernard Donald Kern (Ph.D., Indiana, 1949, Otto Townsend Koppius (Ph.D., Chicago, 1920), special assignment. William Snyder Webb (M.S., Kentucky, 1902), Distinguished Professor, special assignment. *Associate Professors:* Roy Fletcher Gabbard, Ph.D., Rice, 1959), Lee William Gildart (Ph.D., Northwestern, 1950), Vincent Paul Kenney (Ph.D., Fordham, 1956), Marcus Thomas McEllistrem (Ph.D., Wisconsin, 1956). *Assistant Professors:* John Gordon Mowat (Ph.D., Virginia, 1961), William Danks Shephard (Ph.D., Wisconsin, 1962).

The objectives of the Department of Physics are:

to provide instruction to the end that a student, regardless of his special interests, may acquire a general understanding and appreciation of physics;

to provide a complete undergraduate curriculum with sufficient elasticity so that a graduate with a major in physics may teach in secondary schools, go on to greater specialization in physics, or use his major as a strong foundation for vocations;

to provide graduate instruction and modern facilities for research in physics leading to advanced degrees.

SUGGESTED OUTLINE OF A CURRICULUM IN THE PHYSICAL SCIENCES WITH PHYSICS AS A MAJOR:

Freshman Year

First Semester	Crs.
Mil. or Aero. Science or elective	2
Physical Education	1
English 101	3
Math. 111, Coll. Alg.	3
Math. 112, Trig.	2
Chem. 110, General Chem.	5
	16

Second Semester	Crs.
Mil. or Aero. Science or elective	2
Physical Education	1
English 102	3
Math. 113, Anal. & Calc. I	4
Chemistry 112, General Chem.	5
Phys. 111, Gen. Elem.	3
	18

Sophomore Year

First Semester	Crs.
Mil. or Aero. Science or elective	2
Math. 211, Anal. & Calc. II	4
Physics 231, General	3
Physics 241, General Lab.	2
Biological Science	3
*Foreign Language	3
	17

Second Semester	Crs.
Mil. or Aero. Science or elective	2
Math. 212, Anal. & Calc. III	4
Physics 232, General	3
Physics 242, General Lab.	2
Biological Science	3
*Foreign Language	3
Hygiene	1
	18

Junior Year

First Semester	Crs.
Physics 504, Theor. Mech.	4
Physics 508, Light	3
Math. 431, Diff. Eq.	3
Chem. 226, Anal. Chem.	5
Social Study	3
	18

Second Semester	Crs.
Physics 511, Elec. & Mag.	3
Physics 538, Exp.: Light	2
Math. 531, Diff. Eq.	3
Social Study	3
Humanities	4
	15

Senior Year

First Semester	Crs.
Physics 522, Heat & Thermo.	3
Physics 554, Atomic	3
Physics 512, Exp.: Elec. & Mag.	2
Math. 471, Adv. Calc.	3
Humanities	2
Field or Free Electives	6
	19

Second Semester	Crs.
Physics 598, Intro. to Q.M.	3
Physics 555, Nuclear	3
Math. 571, Adv. Calc.	3
Physics 535, Exp.: At. & Nucl.	2
Field or Free Electives	8
	19

* One to four semesters of foreign language depending on amount taken in high school.

Upper Division Requirements

Requirements in the Field of Concentration: Forty credits of advanced work in the field of physical science, including the major work.

Requirements for a Major. Prerequisite: Physics 231 and 232; Mathematics 111, 112, and 113. *Required:* Mathematics 211 and 212; a minimum of 19 credits of advanced work in Physics, including at least two advanced laboratory courses.

Course Descriptions

111 *General Elementary Physics.* (3) I, II, S
An elementary course covering the mechanics of solids, liquids, and gases; and heat. Lectures and recitations, four hours. Prereq: High School or College Algebra, Plane Geometry. (Open only to Physics majors.)

151 *Introduction to Physics.* (3) I
A lecture demonstration course covering the mechanics of solids, liquids, and gases; heat; and sound.

152 *Introduction to Physics.* (3) II
A lecture demonstration course covering magnetism and electricity, and light.

211 *General Elementary Physics.* (5) I, II, S
An elementary course covering the mechanics of solids, liquids, and gases; and heat. Lectures and recitations, four hours; lab, two hours. Prereq: High School or College Algebra, Plane Geometry. *Staff.*

213 *General Elementary Physics.* (5) I, II
Continuation of Physics 211, covering magnetism and electricity, sound, and light. Lectures and recitations, four hours; lab, two hours. Prereq: Physics 211 or equivalent. *Staff.*

231 *General College Physics.* (3) I, II, S
An advanced general course covering the mechanics of solids, liquids, and gases; heat and sound. Lecture and recitations, four hours. Prereq: Mathematics 111, 112, and 113; Chemistry 110 and 112; or equivalents; Mathematics 211, concurrent. *Staff.*

232 *General College Physics.* (3) I, II, S
An advanced general course covering magnetism and electricity, light and modern physics. Lecture and recitations, four hours. Prereq: Physics 231, or equivalent; Mathematics 212 or concurrent. *Staff.*

241 *General College Physics Laboratory.* (2) I, II, S
An advanced general laboratory course involving experiments on the mechanics of solids, liquids, and gases; and heat. Laboratory, four hours. Prereq: Physics 231, or concurrent. *Staff.*

242 *General College Physics Laboratory.* (2) I, II, S
An advanced general laboratory course involving experiments on magnetism and electricity, sound, and light. Laboratory, four hours. Prereq: Physics 241; Physics 232, or concurrent. *Staff.*

281 *General Physics for Students in Agriculture and Home Economics.* (4) I, II
A general elementary course summarizing in one semester the main features of a two-semester course in Physics. Recitations, three hours; lab, two hours. Prereq: Mathematics 101 or 111 or equivalent (Open only to students in the College of Agriculture and Home Economics). *Staff.*

301 *Principles of Mechanics and Electrostatics.* (4) S
A lecture and laboratory course designed to present the principles of mechanics and electrostatics in such a manner as to take advantage of the comparison between gravitational and electric systems. Lectures and recitations, five hours; lab, four hours. Prereq: Employment as a high school teacher. *Staff.*

332 *Radioisotopes Techniques.* (3)
An introductory course designed primarily for students in the biological sciences, geology, engineering and agriculture. Includes fundamental principles of radioactive decay, interaction of radiation with matter, techniques of measurements and applications. Lectures and recitations, two hours; lab, three hours. Prereq: Consent of instructor. *Staff.*

395 *Independent Work in Physics.* (3)
Prereq: Major and a standing of 3.0 in the department. May be repeated three times for a total of 12 credits. *Staff.*

401 *Structure of Physical Systems.* (3) S
A lecture course introducing the mechanical and electromagnetic principles upon which the analyses of many physical systems rest, and specific discussions of the properties of the following: the atom, crystal structure, the atomic nucleus, and nucleons. Lectures, five hours. Prereq: Employment as a high school science teacher. *Staff.*

501 *Orientation in Modern Physics for Teachers.* (3) S
Review of fundamentals of physics: mechanics, optics, electricity, magnetism, electronics. Problems associated with high school physics teaching. Prereq: Employment as high school science teacher. *Staff.*

502 *Orientation in Modern Physics for Teachers.* (3) S
Review of fundamentals of physics: heat, atomic physics, nuclear physics, solid state phenomena. Problems associated with high school physics teaching. Prereq: Employment as high school science teacher. *Staff.*

504 *Theoretical Mechanics.* (3) I
Considers the fundamental laws of mechanics and the conditions under which they hold. Topics are the dynamics and statics of a particle and rigid body, including constrained and oscillatory motion. Prereq: Physics 232, 242; Mathematics 212. *Staff.*

508 *Optics.* (3)
Considers basic phenomena of geometrical and physical optics including thick lenses, apertures, wave motion, interference, diffraction, polarization, double refraction, and the theory of selected optical instruments. Prereq: Physics 232, 242; Mathematics 212. *Hanau.*

510 *Spectroscopy.* (3)
Considers production, recording, measuring, and interpretation of spectra. Includes atomic structure, spectrographs, photometry, interpretation of spectra in fields of atomic structure and spectrographic analysis. Prereq: Physics 232, 242; Mathematics 212. *Hanau.*

511 *Electricity and Magnetism.* (3)
Considers the fundamental theory of electricity and magnetism, including conductors and dielectrics, magnetic forces and energy of current, magnetization of iron, and transient and alternating currents. Prereq: Physics 232, 242; Mathematics 212. *Staff.*

512 *Experimental Physics: Electricity and Magnetism.* (2)
Includes calibration and use of electrometers, galvanometers, and potentiometers; studies of dielectrics and magnetization; measurements of capacitance, resistance and inductance; absolute determinations of electrical quantities. Prereq: Physics 511. *Gabbard.*

514 *Vacuum Tubes and Circuit Theory.* (3)
A lecture and problem course covering the theory of vacuum tubes and associated circuits. Prereq: 232, 242; Mathematics 212. *Mowat.*

515 *Theory of Measurements.* (3)
Considers the analysis of experimental data, including finding an empirical equation to fit data, quantitative graphs, approximations, probability distributions, errors and deviations, least square solutions. Prereq: Physics 504; Mathematics 212. *Hanau.*

519 *X-rays and Crystal Structure.* (3)
Considers the production and properties of X-rays, including development of the formulae of absorption, scattering, polarization; methods of wave-length measurement; the Compton effect; quantum phenomena. Prereq: Physics 232, 242; Mathematics 212. *Staff.*

522 *Heat and Thermodynamics.* (3)
Stresses fundamental principles of heat phenomena; laws of thermodynamics; equations of state for gases; changes of state; thermodynamic relations and their applications to physics and allied sciences. Prereq: Physics 232, 242; Mathematics 212. *Staff.*

523 *Heat and Thermodynamics.* (3)
Continuation of Physics 522; thermodynamic functions; thermodynamic equilibrium; phase rule and phase equilibria; equilibrium in gaseous and liquid systems; ionic equilibrium; electromotive force and free energy; surface phenomena; radiation; Nernst's heat postulate. Prereq: Physics 522. *Staff.*

524 *Solid State Physics.* (3)
Structure of solids; bonding, solid types, lattice energy; thermal, dielectric and magnetic properties; electrons in metals and semi-conductors; theory of rectifiers, transistors and solid state devices. Prereq: Physics 232, 242; Mathematics 212. *Mowat.*

525 *Experimental Physics: Heat.* (2)
Thermal and electrical conductance in solids, photoelectric effect, rectification, transistor action, diffusion, Hayne's experiment. Prereq: Physics 524. *Staff.*

530 *Experimental Physics: Spectroscopy.* (2)
Considers the use and properties of various light sources; prism and grating spectrographs; photographic materials; photometry; qualitative analysis of unknown materials by spectrographic methods. Prereq: Physics 510 or 508. *Hanau.*

534 *Experimental Physics: Vacuum Tubes.* (2)
Considers the measurements of circuit and vacuum tube constants, and the experimental study of amplifiers, a.f. and r.f. oscillators, pulse generators, saw-tooth generators, etc. Prereq: Physics 514, or equivalent (may be taken simultaneously).

535 *Experimental Physics: Atomic and Nuclear.* (2)
Measurement of e, e/m, h/e, resonance potentials, x-ray absorption, half-lives, beta-ray and gamma-ray absorption, gamma spectra, specific activity, alpha particle ranges, and radiation dosage. Prereq: Physics 555 or concurrent. *Staff.*

538 *Experimental Physics: Light.* (2)
Considers the properties of lenses, mirrors, prisms, gratings, and combination of these elements. Important optical phenomena are studied by means of microscope, telescope, spectrometer, interferometer, polarimeter. Prereq: Physics 508. *Hanau.*

554 *Fundamental Atomic and Nuclear Physics.* (3)
Atomic models, electromagnetic radiation, special theory of relativity, x-rays and crystal structure, Compton effect, wave nature of matter, atomic spectra, vector model, Zeeman effect. Prereq: Physics 232, 242; Math. 212. *Staff.*

555 *Fundamental Atomic and Nuclear Physics.* (3)
Nuclear size; concepts of spin, parity, and statistics; alpha, beta, and gamma decay; natural radioactivity; nuclear reactions; systematics of nuclei; nuclear forces; fission and fusion. Prereq: Physics 554. *Staff.*

556 *Nuclear Reactor Physics.* (3)
A lecture and problem course covering nuclear fission and neutron diffusion as they enter into reactor theory; physical principles of reactor design; time behavior of reactors. Prereq: Physics 554. *Staff.*

598,599 *Introduction to Quantum Mechanics.* (3 ea.)
An introduction to modern quantum mechanics with primary emphasis on one-dimensional problems so that fundamental ideas can be assimilated without complications of purely mathematical nature. Basic postulates; Schrodinger's wave equation and its applications. Prereq: Phys: 232, 242; Math. 431. *Staff.*

604 *Classical Mechanics.* (3)
The methods of Lagrange and Hamilton and their application to particles, systems of particles, and continuous media; variational principles; transformation theory. Prereq: Physics 504; Mathematics 431. *Staff.*

605 *Kinetic Theory of Matter.* (3)
Classical kinetic theory of gases, including theorems of Clausius, Joule, Maxwell, and Boltzman; coefficients of viscosity and slip; Browian movements; specific heat relations; equations of changes of state. Prereq: Two "500" Physics courses; Mathematics 431. *DeMarcus.*

608 *Microwaves.* (3)
Considers electromagnetic wave theory emphasizing modern problems of microwave transmission, including plane, rectangular, and cylindrical wave guides, and special problems of transmission at hyperfrequency. Prereq: Mathematics 431; Physics 511. *Staff.*

612 *Conduction of Electricity Through Gases.* (3)
Considers basic phenomena of electrical discharge in gases, including ionic formation, mobility, diffusion, and recombination; representative discharges such as the arc, glow, spark, corona. Prereq: Physics 511, 510 or 554; Mathematics 431. *Cochran.*

613 *Electromagnetic Theory.* (3)
Applies electromagnetic theory to the optical phenomena of reflection, refraction, polarization, absorption, and dispersion. Isotropic, non-isotropic, conducting, and non-conducting media are treated. Prereq: Physics 511 and 508; Mathematics 431. *Staff.*

614 *Transient Electric and Vacuum Tube Phenomena.* (3)
Considers transient currents in circuits with variable inductance, capacitance, and resistance, coupled circuits, vacuum tube circuits. Heaviside's operational method of circuit analysis is used. Prereq: Physics 511 or 514; Mathematics 431. *Staff.*

616 *Theoretical Physics.* (3)
A course of lectures presenting the basic aspects of theoretical physics in a unified way. Representative topics: advanced dynamics; hydrodynamics; elasticity. Prereq: Two "500" courses in Physics; Mathematics 431. *DeMarcus.*

617 *Theoretical Physics.* (3)
A continuation of 616 dealing with statistical mechanics, thermodynamics, electrodynamics, relativity, quantum theory. Prereq: Physics 616 or equivalent. *DeMarcus.*

618 *Thermodynamics.* (3)
Review of the two classical laws of thermodynamics and their dynamical and statistical mechanical support; Nernst's heat theorem; applications of classical thermodynamics; relativity thermodynamics. Prereq: Physics 522; Mathematics 431. *Kern.*

624 *Theory of the Solid State.* (3)
A lecture and problem course covering the fundamental theory of the structure and properties of complex atoms, molecules, liquids and solids. Topics include mechanical, chemical, and thermal properties of matter. Prereq: Physics 714 or equivalent. *Gildart.*

629 *Nuclear Physics.* (3)
A lecture and problem course dealing with advanced experimental nuclear physics. Topics include properties of nuclei, nuclear transformations, observational methods, radioactivity and interaction of radiation with matter. Prereq: Physics 616. *McEllistrem.*

630 *Nuclear Physics.* (3)
A lecture and problem course concerned with the theories of the structure of atomic nuclei. Topics include nuclear shell structure, internuclear forces, nuclear binding energies, and theory of nuclear reactions. Prereq: Physics 714 or equivalent. *McEllistrem.*

631 *Atomic Structure.* (3)
A lecture and problem course treating the theory of atomic structure. Topics include atomic and molecular spectra, multiplet structure, interatomic and intermolecular forces, and quantum mechanical treatment of the vector model. Prereq: Physics 714. *McEllistrem.*

632 *Statistical Mechanics.* (3)
A lecture and problem course dealing with the thermal properties of matter from the standpoint of statistical mechanics. Topics include thermodynamic properties, perfect gases, and Fermi-Dirac statistics. Prereq: Physics 523 and 616. *DeMarcus.*

639,640 *Theoretical Astrophysics.* (3 ea.)
A study of those branches of physics which have thus far proved most useful in astronomical applications and a thorough treatment of several major astronomical problems which have been elucidated by these methods. Prereq: Physics 617, 554, or equivalent. *DeMarcus.*

650 *Cosmic Rays and Relativistic Phenomena.* (3)
A lecture and problem course dealing with the field of cosmic rays. Topics include relativity theory, interaction of cosmic rays with matter, shower theory, properties and production of mesons. Prereq: Physics 616 or equivalent. *Kenney.*

651 *Physics of Elementary Particles.* (3)
Lectures and problems on topics which include elementary particles, meson theory, particle interactions (pion-nucleon, nucleon-nucleon, nucleon-nucleus), strange particles. Prereq: Physics 555, 617. *Kenney.*

706 *Methods of Mathematical Physics.* (3)
Solution of physical problems systematized according to the equations they satisfy. Variational methods, boundary conditions, eigenfunctions. Green's function, integral representations, approximation procedures, with applications from electromagnetic theory, quantum mechanics, acoustics, Prereq: Consent of instructor. *Mowat.*

714 *Quantum Mechanics.* (3)
Considers the origin of quantum theories and the older theories of Bohr and Sommerfeld; mathematical techniques of quantum mechanics; general aspects of wave mechanics and matrix mechanics; the uncertainty principle. Prereq: Physics 616. *Staff.*

715 *Quantum Mechanics.* (3)
A continuation of 714 with extensions into special methods of solving problems in the theory, problems in more than one dimension, and the Pauli and Dirac theories of the electron. Prereq: 714 or equivalent. *Staff.*

768 *Residence Credit for the Master's Degree.* (0)
May be repeated once.

769 *Residence Credit for the Doctor's Degree.* (0)
May be repeated indefinitely.

770 *Seminar.* (1)
A weekly meeting of the staff and advanced students for the discussion of recent developments in physics and of work in progress in the department. Credit is given to those who satisfactorily present papers. May be repeated to a maximum of 8 credits.

781 *Independent Work in Physics.* (3)
May be repeated three times for a total of 12 credits. *Staff.*

790 *Research.* (3)
May be repeated once for a total of 6 credits. *Senior Staff.*

791 Research. (5)
May be repeated once for a total of 10 credits. *Senior Staff.*

PHYSIOLOGY

See listing under College of Medicine.

POLITICAL SCIENCE

FACULTY

Professors: Ernest Greene Trimble (Ph.D., Yale, 1927), Amry Vandenbosch (Ph.D., Chicago, 1926), Distinguished Professor. *Associate Professors:* Herbert Neal Drennon (Ph.D., Duke, 1951), Malcolm Edwin Jewell (Ph.D., Pennsylvania State, 1958), John Estill Reeves (M.A., Kentucky, 1938), Kenneth Earl Vanlandingham (Ph.D., Illinois, 1950). *Assistant Professor:* Max Milam (Ph.D., Oklahoma, 1962). *Instructors:* William Jones Chambliss (Ph.D., Michigan, 1962), Eugene Emerson Evans (M.A., Illinois, 1957), Robert Michael Rodes (Ph.D., Columbia, 1962).

The courses and facilities of the Department of Political Science are designed to serve a number of purposes. Among these purposes are: (1) To provide orientation and training in the problems of citizenship for undergraduate students. (2) Provide further special background for students majoring in journalism or preparing for admission to professional courses such as law. (3) To train social science teachers for the primary and secondary schools. (4) To provide special training for students preparing for governmental or quasi-governmental work conducted by non-governmental agencies. (5) To provide research training in the problems of government. (6) To give graduate training in Political Science and related fields in preparation for college and university teaching.

PUBLIC SERVICE COURSES

Government service is offering an ever widening field of opportunity for the college trained man and woman. The last years have seen a tremendous increase in the number of civil employees. The complexity of our public problems and the rising demand for an efficient public service have led to the demand for people qualified and trained for government positions.

Students interested in entering the Federal Civil Service through the usual channel of the Federal Service Entrance Examination find a variety of types of preparation acceptable. If a career in public administration is the student's goal a course in public administration is most advantageous. For the general part of this examination, a broad background in political science and the related fields of social sciences will be helpful. For those desiring to enter specialized fields of the public service in federal, state, or local government, combinations of courses across departmental lines can be arranged to supply the technical training required.

Upper Division Requirements

Requirements in the Field of Concentration: Forty credits of advanced work in the field of Social Studies, including the major work.

Requirements for a Major. Prerequisites: Political Science 151 and Economics 251. *Required:* At least one course in each of four fields of Political Science, including one course each in Constitutional Development and Political Theory; Political Science 390; minimum of fifteen credits of advanced work in Political Science; a comprehensive paper in the senior year.

Course Descriptions

151 *American Government.* (3) I, II, S
A survey of federal, state, and local governments in the United States, with comparisons with government on the same levels in Canada and Great Britain. *Staff.*

311 *Current Public Affairs.* (2) I, II
An analysis and discussion of the most significant contemporary problems affecting public policy. *Staff.*

390 *Seminar in Political Science.* (3) I, II
Open to major students. *Staff.*

395 *Independent Work.* (3) I, II, S
Honors course for seniors who are majors or minors in the department. Consent of the department required for admission. May be repeated three times for a total of 12 credits. Prereq: Major and standing of 3.0 in department. *Staff.*

768 *Residence Credit for the Master's Degree.* (0)
May be repeated once.

769 *Residence Credit for the Doctor's Degree.* (0)
May be repeated indefinitely.

795 *Independent Work.* (3) I, II, S
Reading course on graduate level directed by members of staff qualified to direct graduate work. It will involve selection of the material, books, research reports, etc., to be read by the student under the direction of a staff member. May be repeated to a maximum of six credits.

I. THE POLITICAL PROCESS

570 *Political Parties.* (3) I
An analysis of pressure groups; organization, methods, and functions of political parties in the United States. *Jewell.*

573 *Public Opinion.* (3) II
A study of the nature of public opinion, influence of the press, propaganda techniques and media of communication in politics. *Jewell.*

576 *Legislation.* (3) II
A functional study of legislative bodies and the process of legislation, covering the organization of legislative assemblies, operation of the committee system, procedures, bill drafting, aids, and controls over legislation. *Jewell.*

779 *Political Behavior.* (3) I
A study of recent research in the field of political behavior, with particular emphasis on voting and legislative behavior studies. Prereq: A course in Political Parties or Public Opinion. *Jewell.*

RELATED COURSES IN OTHER DEPARTMENTS

Psychology 544, Social Psychology.

II. PUBLIC ADMINISTRATION

577 *Introduction to Public Administration.* (3) I, S
A study of theories of administration and organization, problems of line management and control, the principal staff and auxiliary functions and agencies, and the problem of administrative responsibility under democratic government.

578 *Public Personnel Administration.* (3) II
A study of the history of the merit system in public administration, recruitment, position classification, pay policies, employee relations and morale, tenure, promotion, transfer, and training in the public service; the role of the personnel officer.

579 *Administrative Regulation.* (3) II, S
An examination of the regulatory movement, legal bases of regulation, the organization and administration of regulatory agencies, practice and procedure in rule making and administrative adjudication; and judicial control.

763 *National and Regional Planning.* (3) II, S
A study of the theories and principles of planning with a detailed investigation of the regional life of selected areas.

790 *Special Problems in Public Administration.* (3) I
A research course in selected problems of public administration. The problems will be chosen in accordance with the needs and desires of students registered for the course.

RELATED COURSES IN OTHER DEPARTMENTS

Economics 402. Labor Economics.
Economics 504. Public Finance.
Economics 524. State and Local Taxation.
Economics 530. Labor Legislation.
Law 542. Administrative Law.
Social Work 500. Public Welfare Administration.
Social Work 530, Community Organization.
Social Work 551. Public Assistance Programs.

III. THEORY

571 *Early Political Theory.* (3) I
The political theories of Plato and Aristotle, Roman and early Christian Political Thought. *Milam.*

572 *Modern Political Theory.* (3) II
Study of Machiavelli, Hobbes. Locke, Rousseau, Burke, and the theories of the American and French Revolutions, the English Utilitarians. *Milam.*

575 *Contemporary American Political Thought.* (3) I, S
Conceptions of the respective roles of national and local governments subsequent to the war between the states; American ideas of *laissez faire* and free enterprise; resistance to monopoly; the new nationalism, the new freedom, the new deal, American Development of Socialism and Communism; current ideas of America's role in world affairs. *Milam.*

770 *Seminar in Contemporary Political Theory.* (3) II, S
An intensive study of contemporary political ideologies. *Milam.*

RELATED COURSES IN OTHER DEPARTMENTS

Philosophy 500 and 510. History of Philosophy.

IV. COMPARATIVE GOVERNMENT

555 *Comparative Government—Parliamentary Democracies.* (3) I, S
A study of the governments of Great Britain and the Dominions, France, and Scandinavia. *Drennon.*

556 *Comparative Government—Contemporary Dictatorships.* (3) II, S
A study of the totalitarian states of Europe and Asia. *Rodes.*

568 *The Governments and Politics of Eastern Asia.* (3) I, S
An introductory study of the political institutions of China and Japan. *Chambliss.*

RELATED COURSES IN OTHER DEPARTMENTS

Diplomacy 540, Governments and Politics of South Asia.

V. PUBLIC LAW

559 *American Constitutional Development.* (3) I, S
Chronological survey of the making of the constitution and its interpretation through principal statutes and judicial decisions; some emphasis upon the economic and social interests which influenced this growth. *Trimble.*

560 *American Constitutional Development.* (3) II
From the adoption of the Civil War Amendments to the present time. Congressional policies embodied in social-economic legislation; doctrines developed by the Supreme Court; analysis and criticism of chief cases. *Trimble.*

761 *The Constitution and Civil Rights.* (3) I, S
The American conception of civil rights as expounded by the Constitutional Fathers and as interpreted by the courts. The social, economic, and political aspects and implications of these rights. *Trimble.*

762 *Federal Centralization.* (3) II
A study of the shifting of power and control from the states to the federal government as a result of the economic and social development of the country and the resulting alteration of our constitutional system. *Trimble.*

RELATED COURSES IN OTHER DEPARTMENTS

History 561, 562. English Constitutional History.
Law 529. Constitutional Law.

VI. INTERNATIONAL LAW AND DIPLOMACY

265 *World Politics.* (3) I, II, S
A study of the most significant problems of world politics, including the fundamental factors governing international relations, the techniques and instruments of power politics, and the conflicting interests in organizing world peace. *Drennon.*

501 *Latin American Relations.* (3) II, S
The relations between the United States and the Latin American counties, with emphasis on the Monroe Doctrine and Pan-Americanism. *Drennon.*

550 *International Law.* (3) II
Sources and sanctions of international law, recognition, intervention, jurisdiction; nationality; protection of citizens abroad; diplomatic intercourse of states; the making, termination, and interpretation of treaties; treatment of aliens. *Vandenbosch.*

566 *The United Nations.* (3) II, S
Background of the United Nations. Problems and issues at the San Francisco Conference; analysis of charter and comparison with League of Nations Covenant; nature, structure, and functions. *Vandenbosch.*

774 *International Relations and Organization.* (3) II
Social and economic factors leading to the establishment of international administrative organs, the International Labor Organization, the League of Nations; the United Nations and related organizations. *Vandenbosch.*

775 *Contemporary American Diplomatic Problems.* (3) I, S
An examination of the more important and basic current problems of American foreign policy. *Vandenbosch.*

RELATED COURSES IN OTHER DEPARTMENTS

Economics 527. International Economics.
History 500, 501. The Diplomacy and Foreign Policy of the United States.
History 565, 566. The British Empire.
History 583. Europe since 1919.
History 584, 587. Russian Revolutions and the Soviet System.
History 589. History of Russian Social and Political Thought, 1789-1914.
History 591, 594. Political and Diplomatic History of East Central Europe from the French Revolution.
History 595, 596. The Far East.
Law 540. Conflict of Laws.
Diplomacy 530. Conduct of American Foreign Policy.
Diplomacy 530. The Conduct of American Foreign Relations.
Diplomacy 541. The Soviet Union in World Affairs.
Diplomacy 600. Problems of Soviet Foreign Relations.

VII. STATE AND LOCAL GOVERNMENT

280 *State Government.* (3) I, II, S
A study of the forms and functions of government in operation in the states of the United States. *Reeves.*

540 *Rural Local Government.* (3) I, S
A study of the organization and functioning of units of local government, with primary emphasis on government in Kentucky counties. *Vanlandingham.*

552 *Municipal Government.* (3) I
An introductory course in the study of the structure and functions of modern city governments with some attention to other forms of local government.

574 *Kentucky Government and Constitution.* (3) II
An intensive study of government and administration in Kentucky. The course is intended primarily for teachers of civics in the secondary schools, and for teachers of government in colleges. *Reeves.*

752 *Problems in State and Local Government.* (3) II
An intensive study of the basic problems of state and local government. Added emphasis will be given to such current problems as are of fundamental importance. *Reeves and Vanlandingham.*

RELATED COURSES IN OTHER DEPARTMENTS

Economics 524. State and Local Taxation.
Sociology 220. The Community.
Sociology 519. Sociology of Urban Life.

PSYCHOLOGY

FACULTY

Professors: James S. Calvin (Ph.D., Yale, 1939), HEAD. Charles F. Diehl (Ph.D., Penn State, 1949), Graham Bennett Dimmick (Ph.D., North Carolina, 1930), Betsy Worth Estes (Ph.D., Kentucky, 1950), Parl Leslie Mellenbruch (Ph.D., Nebraska, 1924), Special Assignment, Frank Acklen Pattie (Ph.D., Princeton, 1925), Martin Marshall White (Ph.D., Chicago, 1930). *Associate Professors:* Charles Fowler Elton (Ph.D., Ohio State, 1951), Jesse Graham Harris (Ph.D., Duke, 1955), Frank Kodman, Jr. (Ph.D., Illinois, 1954), Melvin J. Lerner (Ph.D., New York University, 1957), Albert John Lott (Ph.D., Colorado, 1958), Edward Lee Newbury (Ph.D., Princeton, 1961), George Walters Rogers (Ph.D., Ohio State, 1959. *Assistant Professors:* James C. Baxter (Ph.D., University of Texas, 1959); Theodore R. Dixon (Ph.D., University of Washington, 1962); John William Donahoe (Ph.D., Kentucky, 1958), David Lee Horton (Ph.D., Minnesota, 1959), James M. Whitehouse (Ph.D., University of Colorado, 1959).

The Department's undergraduate program includes courses in general, social, experimental, animal, abnormal, and child psychology; in psychological testing, in the applications of psychology to business and industry, and in theory and techniques of speech and hearing therapy.

The Department's graduate program includes work leading to the master's degree in general psychology and to the Ph.D. degree in the field of clinical or general psychology, the latter with concentration in any of the various areas represented in the department. A program in counseling psychology is operated jointly with the College of Education. In cooperation with the Veterans Administration and the Kentucky Department of Mental Health, the Psychology Department offers graduate training in clinical psychology leading to the Ph.D. degree. Students in these programs usually

have part-time assignments in hospitals or clinics in the Veterans Administration or Department of Mental Health. Various other means of securing practical training in clinical psychology are afforded by other hospitals and clinics in the locality.

The Department operates a speech clinic and an audiology clinic. Diagnosis and corrective therapy is provided for children and adults with speech and hearing disorders, and training is offered in the techniques of speech correction and clinical audiology.

Upper Division Requirements

Requirements for a Major. Prerequisite: Psychology 100 and 201, or their equivalent. *Required:* The student may choose as his field of concentration either the Biological or the Social Science group of subjects. In either case 15 of the 40 credits in the field must be courses in Psychology not open to freshmen. In addition, students majoring in the Department must pass a comprehensive examination in the senior year.

Course Descriptions

100 *Introduction to Psychology.* (4) I, II, S
An introduction to the study of problems of human behavior. Among the topics covered are: heredity; development of the individual, motivation, emotion, learning, the senses, perception, and personality. Lecture-Recitation, three hours; lab, two hours. *Staff.*

102 *Applied Psychology.* (3) II
Practical application of psychology to business, industry, law, medicine, and everyday living. The student is led to see how he can employ psychology efficiently and how psychology in turn affects him. Prereq: 100.

200 *Psychology of the Child.* (3) I, II, S
The development of behavior from birth to maturity. The problems of conduct arising during infancy, childhood, and adolescence in relation to child care and training. Prereq: 100. *Staff.*

201 *Individual Differences.* (3) I, II, S
An introduction to the study of individual differences in relation to measurement in psychology. Effects on behavior of race, sex, heredity, physical constitution, and training will be considered. Prereq: 100. *Newbury.*

336 *Applications of Statistics in Psychology.* (3) II
An introduction to statistical procedures used in making decisions based on psychological data. Not available for credit to students who have had a previous statistics course. Prereq: 100. *Calvin.*

395 *Independent Work in Psychology.* (2) I, II, S
Designed for advanced students who undertake minor research problems to be conducted in regular consultation with the instructor. Prereq: Major in the Department with a standing of 3.0 in psychology courses. May be repeated to a maximum of 8 credits. *Staff.*

505 *Experimental Psychology.* (4) I
An experimental study of the nature of sensation and perception—of the process by which we know the world through our senses; vision; hearing; taste and smell; the skin senses. Prereq: 100. *Donahoe.*

507 *Psychology of Learning.* (4) II
An experimental study of the learning process with an analysis of various types of learning—verbal learning, form learning, conditioned-response learning, acquisition of skills, memory, problem solving, thinking. Prereq: 100. *Donahoe.*

509 *Animal Behavior.* (4) I
Experimental techniques used in investigations of animal behavior. Topics include: heredity and environemnt, activity, instinct, motivation, learning, sensory discrimination, and personality in subhuman species. Prereq: 100. *Newbury.*

511 *Experimental Child Study.* (3) II
An advanced course in the psychology of the normal child. The scientific background of experimental and observational method. Opportunities are provided to work with children. Prereq: Psy. 200. *Estes.*

520 *Mental Hygiene.* (3) I, S
A general orientation to the subject of mental hygiene, its historical development, its scope and relation to various sciences. The individual and cultural determinants of behavior will be discussed. Prereq: 100. Same as Hygiene 520.

521 *Abnormal Psychology.* (3) I, II, S
Disturbed conduct and thinking studied from both the theoretical and the practical points of view. The major psychoses and neuroses are given special consideration. Some opportunity for clinical observation. Prereq: 100. *Pattie.*

522 *Counseling Psychology.* (3) II, S
The methods of dealing with problems in counseling psychology in college and high school, including the problems of selection, classification, grading, personal adjustment, motivation, academic, vocational and personal counseling. Prereq: Psy. 520 or 521. *Elton.*

523 *Psychology of the Criminal.* (2) I
A study of psychological factors involved in criminality with special emphasis on the emotional and personality patterns underlying the life of the criminal, and the problems brought about by incarceration. Prereq: 100. *Watson.*

530 *Biology of Motivation.* (2) I
Fundamental activating and goal-seeking processes of living organisms, biologically considered, including experimental and theoretical studies on such topics as instincts, drives, motives, and taste perferences. Prereq: 100. *Newbury.*

531 *Genetic Psychology.* (3) II
Influence of hereditary factors in the development of human behavior, a critical survey of the evidence regarding psychological traits such as musical and other special abilities, intelligence, interest, insanity. Prereq: 100. *Newbury.*

535 *Psychological Testing.* (3) I, II
A general orientation to the field of psychological testing. Introduction to the principles and methods of psychological testing, and a survey of the various kinds of psychological tests. Prereq: 100, 201.

540 *Introduction to Industrial Psychology.* (3) I
Review of the functions and findings of psychology applicable to business and industry. Topics covered are: employment procedures, personnel testing, attitude analysis, motivation, and morale. Prereq: 100. *Corder.*

541 *Psychology of Industrial Personnel Procedure.* (3) II
A practical course for those preparing for personnel administration and for psychology in industry and business. A study is made of the theory and methods of position classification, job analysis, job evaluation, merit rating, supervisor selection and training, and collective bargaining. Prereq: 100. *Corder.*

544 *Social Psychology.* (3) I, S
Description and explanation of social phenomena in terms of the original and acquired reaction systems of the individual. Topics given special consideration: crowds, mob behavior, propaganda, and nationalism. Prereq: 100. Same as Sociology 544. *Lott.*

545 *Small Group Behavior.* (3) II
The course will systematically cover theoretical and empirical approaches to small groups. Attention will be given to certain group properties and how these properties affect the behavior of individuals. Prereq: One introductory course in Psychology, one introductory course in Sociology. *Lott.*

550 *Speech Pathology: A Survey.* (3) I, S
An introduction to the nature, causes, and treatment of the major disorders of speech: articulation, stuttering, voice, cleft palate, hearing, cerebral palsy and aphasia. Prereq: Psy. 100. *Diehl.*

551 *Speech Pathology: An Introduction to Therapy.* (3) II, S
Observation and discussion of and limited supervised experience with therapeutic techniques and procedures of speech therapy. Prereq: 550, or concurrent. *Diehl.*

552 *Stuttering and Its Correction.* (3) II
The nature, causes, and treatment of stuttering, with emphasis on therapeutic procedures. Prereq: 550. *Diehl.*

553 *Speech Mechanisms.* (3) I, II
A detailed investigation of the speech musculature: respiration, phonation, resonation, and articulation. Voice disorders and cleft palate will be given special emphasis. Prereq: 550. *Diehl.*

560 *Introduction to Clinical Audiology.* (3) II
Topics covered are the auditory stimulus, air and bone conduction thresholds, masking, speech audiometry and auditory rehabilitation. Prereq: 550. *Kodman.*

561 *Audiometry.* (3) S
Methods and theory underlying the evaluation of the hearing of large samples (school children, industry). Study of test instruments, calibration and variables in testing procedures. Essentials of hearing conservation. Prereq: 550 or consent of instructor. *Kodman.*

562 *Introduction to Hearing Disorders.* (3) II
Types of hearing loss. Classification of organic hearing disorders. Non-organic hearing disorders. Psychological effects of impaired hearing. Differential diagnosis. Theoretical considerations. Prereq: 560. *Kodman.*

563 *Advanced Clinical Methods for the Aurally Handicapped.* (3) S
Principles and methods of speech and hearing therapy including speech reading, auditory training, speech conservation and hearing aid counseling for children and adults. Prereq: 562 or equivalent. *Kodman.*

600 *Systems of Psychology and Their History.* (3) I
A survey of the history of Psychology and an intensive study of current systems of psychology. *Pattie.*

601 *Theories of Learning and Perception.* (3) I
An examination of theories of learning and perception and the relation of these theories to psychological research. Prereq: 505, 507 or equivalent and 600. *Horton.*

602 *Theories of Personality.* (3) II
A review of current theories of personality and research in this area. Prereq: 505, 507 or equivalent and 600.

603 *Psychopathology.* (4) II
Problems of differentiation between the various neuroses and psychoses with emphasis upon the affective and conative factors. Prereq: 521, 602. *Dimmick.*

610 *Psychometrics.* (3) I
Analysis and interpretation of human measurements. The course deals with the computation and interpretation of simple, partial, and multiple correlations, regression equations, and reliability of measures. Prereq: A course in statistics. *Calvin.*

611 *Psychological Research.* (3) II
A study of the application of experimental methods in the major areas of psychology, including sensation and perception, learning, motivation, emotion, and personality. The design of research studies will be emphasized. Prereq: Psy. 505, 507. *Donahoe.*

615 *Mental Work and Fatigue.* (3) I
A laboratory course. Two hours devoted to experiments and two hours discussion each week. Prereq: An advanced course in Experimental Psychology and Elementary Statistics or their equivalent.

617 *The Emotions.* (3) II
An experimental study of feeling and emotion. The following aspects of emotional behavior are considered: the conscious experience of emotion; behavior in emotional situations; physiological changes accompanying emotion. Prereq: Psy. 505 or equivalent.

618 *Experimental Psychopathology.* (4) I
A consideration of the research evidence of several problems in psychopathology. Prereq: One course each in abnormal psychology, statistics, and experimental psychology. Permission of instructor required.

630 *Clinical Psychology.* (4) I, S
A survey of clinical work on the diagnosis and adjustment of problem children and adults. The course gives practical training and experience with representative cases.

631 *Psychology of Language.* (2) II
A survey of semantic uses of language as related to human behavior. Special attention will be given to language problems of the brain injured: aphasic, cerebral palsied, and mentally disordered. *Diehl.*

640 *Practice in Testing: Intelligence Tests.* (3) I
This course provides advanced laboratory practice in the measurement of intelligence by individual techniques. Six hours a week. Prereq: Psy. 535 or equivalent. *Estes.*

641 *Psychological Measuring Instruments.* (3) II
A study is made of a wide variety of psychological tests including group intelligence tests, personality and interest inventories, area aptitude tests, and special aptitude tests. Prereq: Psy. 201.

642 *Principles of Test Construction.* (3) I
A survey of the principles involved in different types of standardized tests, followed by the construction and item analysis of an original test by the student. Prereq: Psy. 610.

643 *Test Standardization.* (3) II
A continuation of 642. The student will administer a revised form of his preliminary test to an adequate sampling of the appropriate population and will determine its reliability and validity. Prereq: Psy. 642.

644 *Projective Techniques I.* (3) II, S
Projective tests as instruments in obtaining information concerning thought content, attitudes, and feelings; their use in clinical diagnosis and therapy. Practice in administering, scoring, and interpretation. Prereq: 630 and 640.

645 *Projective Techniques II.* (3) I
A continuation of Psychology 644. *Dimmick.*

646 *Clinical Testing.* (2) II
Practical experience in the application of clinical diagnostic techniques to a variety of pathological subjects. Prereq: Psy. 640.

650 *Diagnosis and Counseling in Counseling Psychology.* (3) I, II
An advanced course in diagnosis and application of theories, techniques and tools in counseling psychology. Prereq: A graduate major in psychology or education.

651 *Psychotherapy.* (3) II
Theories and techniques of psychotherapeutic procedures including directive, non-directive, and play therapies. Demonstration and supervised experience in these techniques. Prereq: Completion of one year of graduate study in psychology. *Dimmick.*

652 *Medical Therapeutic Procedures I.* (1) I
Rationale, procedures, and results of four important psychiatric therapeutic methods: (1) electrical and pharmacological shock, (2) narcohypnosis of drug-analytic methods, (3) malaria and other types of fever therapy, and (4) prefrontal lobotomy.

653 *Medical Therapeutic Procedures II.* (1) II
This course presents the history, rationale, indications, procedures, and results of psycho-therapeutic methods.

661 *Practicum in Clinical Psychology.* (3) I, II
Supervised case experience in clinical psychology. Students rotate among various institutions, including neuropsychiatric hospitals, institutes for mental defectives, and child guidance clinics. Prereq: Psy. 630, 640. May be repeated to a maximum of 12 credits.

662 *Practicum in Child Psychology.* (3) I, II
Nine hours of supervised work each week. May be repeated to a maximum of 12 credits. *Dimmick and Estes.*

663 *Practicum in Industrial Psychology.* (3) I, II, S
Nine hours of supervised work each week. May be repeated to a maximum of 12 credits.

664 *Practicum in Speech Therapy.* (3) I, II, S
Practical case work in speech therapy in speech clinic, hospitals, and public schools. Training in diagnostic examination, case history methods, and group therapy. Prereq: 550 and 551. May be repeated once. *Diehl.*

665 *Practicum in Counseling Psychology.* (3) I, II
Supervised experience in application of diagnostic and interviewing techniques in a counseling service. Same as Education 665. May be repeated to a maximum of 12 credits. *Rogers.*

768 *Residence Credit for the Master's Degree.* (0)
May be repeated once.

769 *Residence Credit for the Doctor's Degree.* (0)
May be repeated indefinitely.

770 *Seminar in Psychology I.* (0) I
One two-hour discussion each week of some current systematic concepts and of research under way by graduate students and members of the staff. May be repeated indefinitely. *Staff.*

771 *Seminar in Psychology II.* (0) II
A continuation of 770. May be repeated indefinitely. *Staff.*

779 *Seminar in Social Psychology.* (3) II
Each semester some topic in the field of social psychology, such as attitudes and beliefs, structure and function of social groups, social determinants of behavior, leadership, and morale will be studied intensively. Same as Sociology 779. May be repeated to a maximum of 6 credits. *Lott and Claster.*

780 *Problems in Psychology.* (2) I, II, S
Shorter research problems are registered under this number. A minimum of six hours a week is required in consultation with the instructor. May be repeated to a maximum of 12 credits. *Staff.*

790 *Research in Psychology.* (3) I, II, S
Research or thesis work may be registered under this number. A minimum of nine hours a week is required on research conducted in consultation with the instructor. May be repeated to a maximum of 12 credits. *Staff.*

RADIO, TELEVISION & FILMS

FACULTY

Assistant Professors: O. Leonard Press (M.S., Boston, 1951), HEAD. Stuart W. Hallock (M.S., Syracuse, 1952), Elizabeth Ellis Taylor (M.A., Kentucky). *Instructor*: Ronald Russell-Tutty (M.A., Kentucky, 1958).

The Department of Radio, Television and Films provides active on-the-air experience as well as a rounded educational curriculum for the student who aspires to a position in the radio-television profession. Courses and actual experience also are available for students majoring in other fields who want to learn something about broadcasting . . . and practically every field of endeavor today utilizes this medium in one way or another. Finally, provision is made for contributing to the knowledge of the student seeking a balanced liberal education.

The radio facilities, located on the top floor of McVey Hall, are among the most extensive of college operations in the country. They include five broadcasting studios with control rooms, record library, staff room, master control, transmitter room, and a full complement of professional broadcasting equipment. Students broadcast over the facilities

of the University's own FM station, WBKY, which is operated by the Radio, Television and Films Department and covers a listening area of 40 miles around Lexington. In addition, many programs produced by student of the department go out over regular commercial stations throughout the state.

Television training, both classroom and on-the-air, is an integral part of the curriculum. Each summer a selected group of Radio majors are permitted to enroll in an eight-weeks' internship in television at either WAVE-TV or WHAS-TV, Louisville, for which credit is given under Radio 525. Training in this special television course includes work in film editing, script-writing, and floor-directing.

Motion picture photography is a course and an activity of the department. Motion picture films, sound and silent, are produced for other departments of the University . . . for research, for public relations, for specialized training. Complete 16 mm equipment includes cameras, sound and lighting systems, an editing room and a complete motion picture processing center.

COURSES FOR MAJORING IN RADIO, TELEVISION AND FILMS

	Crs.
Open to Freshmen	
Radio 101, 105, Broadcasting Today	6
Open to Sophomores	
Radio 201, Radio Announcing	2
Radio 205, Studio Operations	2
Open to Juniors and Seniors	
Radio 501, Radio Regulations	2
Radio 505, Advanced Radio Announcing	2
Radio 515, Radio Script Writing	2
Radio 510, Radio and Television Advertising	2
Radio 520, Radio Production	2
Radio 525, Radio Production	2
Radio 530, Pro-Seminar in Radio	1
Radio 535, Cinematography	2

Note: Radio majors must take 101 and 105 as prerequisites for all other Radio courses.

Upper Division Requirements

Requirements in Field of Concentration: Forty semester hours in the major and related fields in courses chosen in consultation with the advisor.

Requirements for a Major. Prerequisites: Radio 101, 105. *Required:* Radio 201, 205, 501, 505, 510, 515, 520, 530, and 535. Comprehensive examination.

Course Descriptions

101 *Broadcasting Today.* (3) I, S
A study of the organization of radio and television stations and networks, and their relationship with the F.C.C. and with each other, their methods of production and their programming philosophies. Lecture and recitation, three hours.

105 *Broadcasting Today.* (3) II
A survey of the public service programming of radio and television licensees, school broadcasting, the problems and responsibilities of the listener, how broadcasting serves the sponsor, broadcasting's future. Lecture and recitation, three hours.

201 *Radio Announcing.* (2) I, II, S
The study and practice of radio announcing, with emphasis on studio and microphone techniques, pronunciation, inflection. Workshop on WBKY. Lecture and recitation, one hour; lab, two hours. No prerequisite.

205 *Studio Operations.* (2) II
Basic study of function of broadcasting equipment and practice in fundamental operating techniques. Lecture and recitation, one hour; lab, two hours. No prerequisite.

501 *Radio Regulations.* (2) I
A study of the Rules and Regulations of the Federal Communications Commission; music licensing regulations; libel and slander; copyrights as applied to broadcasting. Lecture and recitation, two hours. No prerequisite.

505 *Advanced Radio Announcing.* (2) II
The study of news commentating, public events, man-on-the-street, the interview, round table participation and commentary moderating, and concert announcing. Workshop on WBKY. Lecture and recitation, one hour; lab, two hours. Prereq: 201.

510 *Radio and Television Advertising.* (2) II
The data and techniques of radio and television advertising, including problems of coverage and circulation, spot campaigns, testing, time buying, the agency, measuring broadcast effectiveness, merchandising radio and television advertising, and time selling. Lecture and recitation, two hours.

515 *Radio Script Writing.* (2) I, S
Practice in script writing in the various short forms; commercials, interviews, talks, and development of ideas into drama, documentary, dramatic narrative, and other. Lecture and recitation, one hour; lab, two hours.

520 *Radio Production.* (2) I, S
The tools of Production Directing. General procedures, application of procedure, including program building, studio problems and projects; casting, rehearsing and acting, on-the-air practice. Lecture and recitation, one hour; lab, two hours.

525 *Radio Production.* (2) II, S
A continuation of 520. Advanced practice in radio production involving individual research on assigned projects for radio broadcast. Conferences and lab. Prereq: Radio 515 and 520 or consent of instructor.

530 *Pro-Seminar in Radio.* (1) II
Discussion and reports on current broadcasting problems. Lecture and recitation, one hour.

535 *Cinematography.* (2) I
The art of making films for television. The mechanics of motion picture photography. A study of equipment, lenses, lighting, color, editing and set design. Lecture, two hours; lab, two hours. Prereq: Consent of instructor.

SOCIAL WORK

FACULTY

Professor: Harold E. Wetzel (M.A., Ohio State, 1937), HEAD. *Assistant Professor:* Constance Popeo Wilson (M.S., Boston, 1951). *Visiting Lecturers:* Irving A. Gail (M.D., University of Cincinnati), Beulah Theobald (M.A., University of Cincinnati).

Social Work consists of a network of services designed to meet a wide range of human needs. A career in social work offers a choice of interesting and varied activities, the challenge of community leadership, and the satisfaction of service to others as well as the security of an expanding profession.

The Department of Social Work is a member of the national Council on Social Work Education. Its curriculum, based upon the national standards in the field, leads to a

degree of Bachelor of Arts with a major in Social Work. Students, upon its completion, are encouraged to continue their technical preparation in graduate professional schools of social work. However, our graduates are currently holding responsible positions in the public social services, group work activities, and in other social agencies at the level for which they are qualified. Students majoring in social work are guided in the selection of courses giving a broad liberal arts background, an understanding of human behavior, and the social, economic, and political forces shaping our society.

Courses in the Department cover the organization, operation, and history of public and private welfare services, including the developing Social Security program. Principles of relief and rehabilitation in family and children's work and the growing range of group work and leisure time activities are studied, as well as community organization and research in social work. Personal experience with agency programs in the field is planned for each student.

Early consultation with department members is urged for students considering a major in this field. Students from other departments are eligible to take many of the courses offered; SW 124, 222, 530 and 540 are especially recommended for all students interested in social welfare.

Upper Division Requirements

Requirements in the Field of Concentration: Forty credits of advanced work in the field of social studies, including the major work in the department.

Requirements for a Major. Prerequisite: Social Work 124 and 222. A basic minimum of twenty credits in social work including 500, 513, 516, 530 and 540 plus additional courses depending on the student's area of specialization, including specified courses in sociology, psychology, hygiene and economics. Tutorial and comprehensive examination in the senior year.

Course Descriptions

124 *Orientation to Social Welfare Practice.* (3) I, II
An introduction to the organization and function of selected social work agencies in the community. Lectures, discussions, and observational visits. *Wilson.*

222 *Field of Social Work.* (3) I, II, S
Function, method, and philosophy of contemporary social work. The divisions of the field (case work, group work, community organization, institutional work, social action and research) and professional status of social work will be considered. *Wetzel.*

327 *Tutorial Work in Social Work.* (2) I
Wetzel.

328 *Tutorial Work in Social Work.* (2) II
For senior majors in the department. *Wetzel.*

344,345 *Field Participation in Group Work Programs.* (2 ea.) I, II
Supervised experience in the practice of group work in connection with a program in a local group work agency. For senior majors in group work. Prereq: SW 540, and consent of the instructor. *Wilson.*

346,347 *Field Participation in Case Work. Programs.* (2 ea.) I, II
Experience under supervision in a local case work setting. For senior majors in case work. Prereq or concur: SW 513, and consent of the instructor. *Wilson.*

348,349 *Field Practice in Community Organization.* (2 ea.) I, II
Experience, under supervision in a local community welfare setting. For senior majors in community organization. Prereq or concur: SW 530 and consent of the instructor. *Wetzel.*

395 *Independent Work.* (1) May be repeated to four credits. I, II, S
Conferences, assigned readings, reports on minor research problems. Prereq: Major and a standing of 3.0 in the department. *Staff.*

500 *Public Welfare Administration.* (3) II
Philosophy, background, and methods of tax-supported social work. Interrelationship of federal, state and local services; standards and supervision as influenced by federal welfare legislation. Prereq: two courses in social work. *Wetzel.*

505 *Child Welfare Services.* (2-3) I, S
A study of community and national programs for child care and protection, including aid to dependent children and other social security services. *Theobald.*

510 *Psychiatric Information for Social Workers.* (2) I
An analysis of personality development and behavior patterns with special reference to psychiatric interpretations and their implications for social case work. Prereq: two courses in social work. *Gail.*

513 *Introduction to Social Case Work.* (2) II
An introductory course in the generic principles of social case work. Discussions based on selected readings and case records. Prereq: two courses in social work. *Theobald.*

516 *Social Work Research and Statistics.* (3) I
A consideration of statistical and other types of research in social work problems with illustrations drawn from current studies of government and private welfare agencies. Prereq: two courses in social work. *Wetzel.*

530 *Community Organization for Social Welfare.* (3) II
Methods and techniques of social welfare planning. Analysis of needs and resources, coordination of agencies, financing and developing chest and council programs and interpretation of social work. *Wilson.*

531 *Community Organization for Social Welfare.* (3) II
A continuation of 530 with emphasis on the organization and function of social welfare agencies at the national and international level. Prereq: 530 or permission of the instructor. *Wetzel.*

540 *Principles of Social Group Work.* (3) I, II
A critical study of the theories and practices of social group work with reference to the work of public and private agencies in this field. *Wilson.*

541 *Administration and Supervision of Group Work Agency Programs.* (3) II
The group work process as applied to agency administration, supervision of staff and volunteers, statistical and process recording, evaluation of program, personnel and committee relationships. Prereq: 540 or consent of the instructor. *Wilson.*

551 *Public Assistance Programs.* (3) II
The current function of public assistance upon the federal, state, and local level with emphasis on the public assistance provisions of the Social Security Act, general relief, and work relief policies. *Wetzel.*

617 *Generic Social Case Work.* (2) I
An introductory course for graduate students with emphasis upon the application of case work principles in problems of increasing complexity. Prereq: SW 513, or special permission. *Theobald.*

625 *Social Insurance.* (2) II
A study of social insurance in Europe and the United States. Emphasis will be given to the problems in administration, financing, and coverage. *Wetzel.*

SOCIOLOGY

FACULTY

Professors: A. Lee Coleman (Ph.D., Cornell, 1950), HEAD. Thomas Robert Ford (Ph.D., Vanderbilt, 1951), James Walter Gladden (Ph.D., Pittsburgh, 1945), Robert Straus (Ph.D., Yale, 1947). *Associate Professors*: John Charles Ball (Ph.D., Vanderbilt, 1955), Jiri Thomas Kolaja (Ph.Dr., Masaryk, 1947; Ph.D., Cornell, 1959), John Hamilton Mabry (Ph.D., Iowa, 1951), Willis Anderson Sutton, Jr. (Ph.D., North Carolina, 1952). *Assistant Professors*: John Torgny Flint (Ph.D., Wisconsin, 1957), George A. Hillery, Jr. (Ph.D., Louisiana State, 1954). *Instructors*: Daniel Stuart Claster (Ph.D., Columbia, 1961), Cyrus M. Johnson (M.A., Ohio State, 1940), Earl R. Quinney (Ph.D., Wisconsin, 1962).

The courses and other training offered in Sociology supplement the work of the allied social sciences and have an important part in a broad liberal education. Basic courses dealing with the fundamental processes of group relationships, social organization, and social behavior are the foundation for more advanced courses in social analysis and research. Training is offered in recognized specialties, including criminology, the family, community organization, medical sociology, demography, intergroup relations, social psychology, and rural sociology.

An undergraduate major in Sociology is particularly useful to persons planning to enter such fields as law, social work, industrial relations, the ministry, planning and zoning, high school social science teaching, and various positions in public and governmental agencies. Every effort is made to guide students toward a broad training in the social sciences and general education. Persons who aspire to professional positions in Sociology and applied fields may expect to take postgraduate training. The graduate training program in Sociology and Rural Sociology offers the M.A. and Ph.D. degrees and prepares students for college teaching, social science analyst positions in government agencies and research organizations, and positions in community development, human relations agencies, criminology and delinquency control, and the like.

The department's Bureau of Community Service conducts research and offers advisory service and survey assistance to local communities of the state. Through the activities of the Bureau students are provided field experience in research. The Social Research Service is the major research arm of the Department of Sociology and conducts a wide variety of sociological studies. Through the activities of both agencies, students are provided opportunities for research experience.

Upper Division Requirements

Requirements in the Field of Concentration: Forty credits of advanced work in the field of Social Studies, including the major work.

Requirements for a Major. Prerequisites: Sociology 151 and 153 or 154, or equivalent. *Required:* Minimum of 15 credits of advanced work in Sociology, including Sociology 240, 265, 551, 571, 581 and a course in introductory statistics. To be considered for graduation with honors, majors must take Independent Work and must pass a comprehensive examination.

Course Descriptions

(For course descriptions of R.S. courses, see College of Agriculture and Home Economics, Department of Rural Sociology.)

I. INTRODUCTORY AND GENERAL SOCIOLOGY

151 *Introductory Sociology.* (3) I, II, S
Introduction to the concepts and methods of sociology. Investigation of socialization, group processes, social institutions and social change. Meets Social Studies requirements. *Staff.*

152 *Modern Social Problems.* (3) I, II
An introductory course involving an examination of selected social problems of the present day. Topics discussed are family, poverty, crime, race, housing, population, industrial development, etc. Not open to seniors in Arts and Sciences College. *Flint.*

153 *Societies Around the World.* (3) I, II
Meets Social Studies requirements. Comparative study of the Eskimo, Navajo, and Baganda as preliterate, primitive societies in difficult environments. (Same as Anthropology and Geography 153.) *Staff.*

154 *Societies Around the World.* (3) I, II
Meets Social Studies requirements. Comparative study of the Chinese Peasant, Cotton South, and British Midlands as more highly developed societies living in more moderate environments. (Same as Geography 154.) *Staff.*

R.S. 156 *Introduction to Rural Sociology.* (3) I, II
Brown.

265 *History of Sociology.* (3) II
A survey of the development of the science of man in society in the Western world during the last four centuries, with emphasis on the growth of sociology as a discipline. *Kolaja.*

395 *Independent Work.* (1-3) I, II, S
Study of some special topic by duly authorized students. May be repeated for a total of 4 credits. Prereq: Major and a standing of 3.0 in the department.

551 *Principles of Sociology.* (3) I, II, S
A survey of the basic elements of culture, collective behavior, communities, social institutions, and social change. Basic concepts required for the analysis of sociological data are systematically considered. *Staff.*

561 *Comparative Sociology.* (3) I
A study of the dynamics of culture as shown in a primitive, a peasant, and a modern culture system.

R.S.565 *Special Problems in Rural Life.* (1-3) I, II, S
Staff.

768 *Residence Credit for the Master's Degree.* (0) I, II, S
May be repeated once. *Staff.*

769 *Residence Credit for the Doctor's Degree.* (0) I, II, S
May be repeated indefinitely. *Staff.*

II. THEORY AND METHODOLOGY

571 *Contemporary Sociological Theory.* (3) II
A study of the leading developments in sociological theory and methodology from Comte to the present time. Prereq: two sociology courses. *Coleman.*

581 *Techniques of Social Investigation.* (3) I
A study of the practical applications of sociology in organizing, conducting, and interpreting social surveys and other forms of sociological research. Prereq: one sociology course. *Ball.*

582 *Measurement of Attitudes and Public Opinion.* (3) II

Attention is focused upon measurement procedures in the study of public opinion and attitudes. Prereq: Introductory Statistics or Soc. 581.

651 *Systematic Sociology.* (3) I (alternate years)

An intensive study of certain selected sociological theorists such as Weber, Durkheim, Simmel, Pareto, and others. *Kolaja.*

681 *Research Design and Analysis.* (3) II

Problem definition and delimitation, design appropriate to problem and data, and selection of appropriate analysis techniques; critical examination of representative research studies and students' designs. Prereq: Elementary Statistics and Sociology 581 or equivalents.

770 *Sociology Seminar.* (3) I, II

Consideration mainly of methods of research and of current sociological literature. May be repeated to a maximum of 6 credits. *Flint and Kolaja.*

772 *Topical Seminar in Sociology.* (3) I, II, S

Advanced study of topics of current importance in sociology, such as structural strain and social change, game theory, decision processes, communication and power structures. May be repeated to a maximum of 6 credits. Prereq: At least 9 hours in the social sciences, preferably in sociology. *Staff.*

R.S.773 *Topical Seminar.* (3) I, II, S

Staff.

780 *Special Problems in Sociology.* (1-6) I, II, S

May be repeated to a maximum of 10 hours. *Staff.*

R.S.790 *Research in Rural Sociology.* (1-3) I, II, S

792 *Research in Sociology.* (1-6)

Individual research and reading in particular fields of sociology, under staff supervision. Open to advanced graduate students who are prepared for intensive study beyond that offered in regular classes in each field.

III. SOCIAL ORGANIZATION AND PROCESS

220 *The Community.* (3) I, II

Social organization and process in modern communities; social techniques of community improvement. *Hillery, Sutton and Kolaja.*

501 *Population Analysis.* (3) II

Distribution and composition, fertility and mortality, migration, ecological relationships and growth of population. *Ford.*

502 *Laboratory in Methods of Demographic Analysis.* (1) II

Application of statistical techniques employed in the analysis of census and vital statistics data, including methods of population standardization, life table construction, and preparation of population estimates. Three hours weekly. Prereq: an introductory statistics course and Soc. 501.

503 *Social Classes.* (3) I

A systematic treatment of the factors underlying social differentiation and stratification, with particular attention to class and caste; social mobility in American society. Prereq: one sociology course. *Kolaja.*

509 *The Family.* (3) I, II, S

A study of the institutions of marriage and the family and an analysis of the various factors and forces at work in our time which are affecting the individual marital relationship. Prereq: one sociology course. *Gladden.*

510 *The Family.* (3) II, S

A study of the various social situations in which children grow to early adolescence with emphasis on the primary group relationships in home, neighborhood, play group, and school. Prereq: Sociology 509 or permission of instructor. *Gladden.*

R.S.513 *Rural Community Analysis.* (3) I

Ford.

R.S.514 *Rural Movements and Social Policy.* (3)

Brown.

R.S.517 *Advanced Rural Sociology.* (3) II

Staff.

519 *Sociology of Urban Life.* (3) I

This course is a study of the sociology of city life. The major emphasis is upon the ecological and social characteristics of urban life in contrast to rural community life. Prereq: an introductory sociology course or approval of instructor. *Sutton.*

520 *The Sociology of the South.* (3)

Analysis of the population and social organization of the south and of the factors influencing the development and utilization of the human resources of the region. Prereq: senior standing of social science majors; others by arrangement. *Staff.*

521 *Industrial Sociology.* (3) II

A sociological analysis of the division of labor, the characteristics of occupational groupings; principal socio-economic movements, and group relationships in modern industry. Prereq: one sociology and one economics course. *Kolaja.*

525 *Religion and Culture.* (3) I

An analysis of the structure, function, and process of religion, using the development of the Hebrew and Christian religions to show social origins of the two faiths and the effect of cultural change on their growth. *Gladden and Flint.*

527 *Health and Society.* (3) II

Historical and cross-cultural analysis of human behavior in illness; medicine as a behavior system. Relates components of contemporary medicine to pertinent concepts of social process. Prereq: Permission of instructor. *Straus.*

531 *Sociological Analysis of American Society.* (3)

A study of the contemporary U.S.A. with emphasis upon the changing relations among various aspects of American society and culture. Prereq: one sociology course. *Staff.*

532 *Intergroup Relations.* (3) S

Analysis of relationships between groups which differ in religious, ethnic, or sociocultural backgrounds; the development of educational and social techniques for reduction of tensions. (Same as Education 532.) May be repeated to a maximum of 6 credits. *Sutton.*

536 *Sociology of Deviant Behavior.* (3) II

A systematic examination of the various types of social disorganization, with particular emphasis upon the sociological explanation of underlying factors. Prereq: one sociology course. *Ball.*

537 *Criminology.* (3) I, II

A study of general conditions as to crime and delinquency, of measures of punishment and reform of offenders, of criminal procedure and its possible reform, and of measures for the prevention of crime. *Staff.*

538 *Juvenile Delinquency.* (3) I

Study of the extent, ecological distribution, and etiology of delinquency in contemporary American society, including a critical examination of trends and methods of treatment. *Ball.*

548 *The Sociology of Public Opinion.* (3) I (alternate years)

Introduction to the study of public opinion and mass communication in American society. The formation of public opinion and the effects of mass media are analyzed. *Staff.*

R.S.615 *Rural-Urban Relations.* (3)

Brown.

625 *Sociology of Religion.* (3) II (alternate years)

Critical study of reciprocal relation of religion and culture, the function of religion in society, social sources of religious concepts, religious differentiation and institutionalization, the problem of church and state. *Flint and Gladden.*

632 *Minority Groups.* (3) I

A sociological scheme of analysis is applied to the special problems of adjustment arising from ethnic group relations and culture contacts. *Coleman.*

661 *Educational Sociology.* (3) II, S
A course in the sociological foundations of education. (Same as Education 661.) *Hartford.*

750 *Problems in Educational Sociology.* (3) S
An advanced course in the application of sociological findings to education, including consideration of southern regional problems and potentialities. Prereq: 12 semester hours of graduate work including Education 661 or equivalent. (Same as Education 750.) *Hartford.*

775 *Seminar in the Family.* (2) I (alternate years)
A seminar for advanced students interested in family research, family counseling, or dealing with family relationships in some other professional capacity. *Gladden.*

R.S.776 *Seminar in Rural Organization.* (3)
Staff.

IV. PERSONALITY AND THE GROUP

240 *Collective Behavior.* (3) I, II
A sociological interpretation of group life and of certain aspects of social life, including the building up or shaping of public opinion or social control. *Staff.*

526 *Culture and Personality.* (3)
The cultural basis of personality. Personal character considered as the result of culturally fostered patterns. The ideal personality in several selected societies. Lectures, three hours. (Same as Anthropology 526.) *Essene.*

533 *Social Anthropology.* (3) II
History and theory of social anthropology with special emphasis on the comparative approach to analysis of structure, function, and change in social and cultural systems. Prereq: consent of Instructor. (Same as Anthropology 533)

R.S.541 *Group Organization and Leadership.* (3) II
Coughenour.

542 *Human Relations in Administration.* (3)
Analysis of the role of social structure, leadership, authority, power, and psychological stress in the administration of large-scale enterprises. *Staff.*

544 *Social Psychology.* (3) I, II
Description and explanation of social phenomena in terms of the original and acquired reaction systems of the individual. Topics given special consideration: crowds, mob behavior, propaganda, and nationalism. Prereq: Psychology 100. (Same as Psychology 544.) *Lott.*

546 *Social Factors in Mental Health.* (3) I
The significance of social and cultural factors in the recognition, course, and management of mental health problems; social organization of the mental hospital and cultural alternatives to hospitalization. Prereq: prior course work in sociology, anthropology, or psychology or permission of instructor. *Mabry.*

547 *The Sociology of Aging.* (3)
Analysis of demographic and institutional patterns, social roles, psychological and physiological changes, and rehabilitative and educational programs associated with aging. *Staff.*

R.S.778 *Seminar in Rural Attitudes.* (3)
Staff.

779 *Seminar in Social Psychology.* (3) II
Each semester some topic in the field of social psychology, such as attitudes and beliefs, structure and function of social groups, social determinants of behavior, leadership, and morale will be studied intensively. (Same as Psychology 779.) May be repeated to a maximum of 6 credits. *Claster and Lott.*

ZOOLOGY

FACULTY

Professors: John Melvin Carpenter (Ph.D., Texas, 1946), HEAD. Alfred Charles Brauer (Ph.D., Chicago, 1932). *Associate Professor*: Roger William Barbour (Ph.D., Cornell, 1949). *Assistant Professors*: Thomas Calhoun Barr, Jr. (Ph.D., Vanderbilt, 1959), Wayne Harry Davis (Ph.D., Illinois, 1957), James Marion Edney (M.S., Iowa, 1934), Robert Andrew Kuehne (Ph.D., Michigan, 1958). *Instructors*: Elizabeth Anne Colley (M.S., Tennessee, 1962), Clara Richards (M.A., George Washington, 1941), Dorothy Rothrock Tapp (M.S., Chicago, 1948), Thomas Tichenor (M.S., Kentucky, 1953), Elizabeth Walthall (M.A., Marshall, 1953).

Courses given in this Department are designed to offer the general student opportunity to obtain a cultural background in this field of biology and to give the student interested in this field as a livelihood the proper basic principles and training.

Students interested in careers in medicine, medical technology, wild life management, conservation, governmental work, research, teaching at the elementary, high school, and college level, as well as in many other areas, will find zoology courses which offer them the necessary training.

Courses are offered which lead to a major in zoology with emphasis in such sub-divisions of zoology as ecology, entomology, evolution, genetics, limnology, parasitology, embryology and vertebrate zoology. The proper combination of these courses enables a student to obtain the A.B. or B.S. degree with zoology as a major. The department also offers the M.S., the M.A., and the Ph.D. degrees in these various fields of zoology.

The teaching and research staff of the Department of Zoology is at the service of those students interested in careers in zoology and urges that such students confer early with the department head or another staff member in regard to training and opportunities for such careers.

Upper Division Requirements

Requirements in the Field of Concentration: Forty credits of advanced work in the field of Biological Sciences, including the major.

Requirements for a Major. Prerequisites: Junior standing; Zoology, 6 credits in biology. Required: Zoology 200, 502, 504, 506, 508, 509 (2 credits); a minimum of 15 credits of advanced work; passing a comprehensive examination before graduation.

Courses Recommended for Special Curricula: Medical Sciences: 100, 200, 504, 506, 513, 530, 532, 536, 538. Teacher Training: 100, 200, 202, 502, 504, 508, 518. Pre-Conservation Training: 100, 208, 502, 518, 520, 522, 524, 526, 534.

Course Descriptions

100 *General Zoology.* (4) I, II, S
General studies on cell structure, division, gametogenesis, ontogeny, histology, physiology, homology, ecology, taxonomy, heredity, and phylogeny. Laboratory studies of typical animal types. Two lectures and two lab periods per week for one semester. *Staff.*

200 *Comparative Anatomy.* (4) I, II
Systematic consideration of chordates with emphasis on vertebrates. Comparative studies of chordate morphology, phylogeny, ontogeny, organology, physiology, and homology. Laboratory studies on typical prochordates, cyclostomes, and gnathostomes, and the cat. Prereq: Zoology 100. *Edney.*

202 *Nature Study.* (4) II, S

Get acquainted studies of animals and plants and their relationships to human culture. Elementary materials for use of schools, Nature Clubs, Scouts, etc. Lectures, lab, field work. *Kuehne.*

206 *Invertebrate Zoology.* (4) I, S

A treatment of the main characters of the principal invertebrate phyla, including general trends in the development of body systems, and ecological and anatomical adaptations to particular modes of life. Two lectures and two laboratory periods per week. Prereq: Zoology 100. *Barr.*

208 *Vertebrate Zoology.* (4) II, S

Taxonomy, anatomy, and economics of the vertebrates. Laboratory studies of a fish, amphibian, reptile, and bird. Two lectures and two laboratory periods per week. Prereq: Zoology 100. *Barbour.*

300 *Animal Cytology.* (4) I

A study of recent concepts of the organization of protoplasm and correlated activities in animal cells. Two lectures, four hours lab. Prereq: Zoology 100, 513, 515, or satisfactory equivalents.

400 *Fundamentals of Biology for Secondary School Teachers.* (4)

A course designed to aid the teacher in the selection of subject matter and in the presentation of modern biology to high school students. Lectures, discussions, laboratories, ten hours (600 minutes) per week. Prereq: Employment as high school teacher. Same as Botany 400. *Staff.*

402 *Advanced Topics in Biology for Secondary School Teachers.* (4)

A treatment of selected topics from the point of view of modern developments designed to aid the high school teacher to keep abreast of changes in theory and practice; to increase his knowledge of subject matter, and to provide better motivation for his students. Lectures, discussions, and demonstrations, eight hours (400 minutes) per week. Prereq: Employment as high school teacher and consent of instructor. Same as Botany 402. *Staff.*

500 *Invetebrate Anatomy.* (4) I

A detailed treatment of the organization of the invertebrate body, including the origin and development of organ systems. Practical work includes laboratory and field studies involving collection, identification, culturing, and preservation of invertebrate animals. Prereq: Zoology 206. *Barr.*

502 *Animal Ecology.* (3) I

An analysis of the environment and the respective adjustments of animal life to the environmental complex. Habitats, food, respiratory needs and mechanisms, life-histories, animal associations, adaptations. Prereq: Zoology 204 or consent of instructor. *Kuehne.*

504 *Heredity.* (4) I, S

Lectures and recitations on principles of heredity, variation and eugenics. Prereq: Zoology 100. *Carpenter.*

506 *Embryology.* (4) II, S

A general course in ontogeny. Studies in maturation, fertilization, cleavage, organogenesis and anomalies of development with laboratory work based on the chick and pig. Prereq: Zoology 100. *Brauer.*

508 *Evolution.* (3) II, S

An advanced lecture course on some of the fundamental principles of organic evolution. Prereq: Zoology 100. *Carpenter.*

509 *Zoology Seminar.* (1) I, II

Reports on: technical papers in scientific journals, book reviews, recent developments in Zoology, scientific meetings. Required of all majors in Zoology. May be repeated to a maximum of 4 credits. *Staff.*

510 *Independent Work.* (3) I, II, S

Special problems for individual students who are capable of pursuing independent investigations. May be repeated to a maximum of 12 credits Prereq: Major and a standing of 3.0 in the department. *Staff.*

511 *Speciation.* (3) I

Mechanisms of Evolution. A discussion of modern theories and problems concerning the formation of animal and plant species. Three hours per week. Prereq: Zoology 508. *Carpenter and Barr.*

512 *Physiology of Development.* (3) I

A review of theories of differentiation and a consideration of the genetic environment, and correlative physiological factors in differentiation. Lectures, assigned readings and literature reports. Prereq: Zoology 200 or 506. *Brauer.*

513 *General Histology.* (4) I

A course in the technique of preparation of animal tissues for microscopic study. Practice in imbedding, staining, sectioning, mounting, and identification of tissues. Lectures, laboratories. Prereq: Zoology 100. *Brauer.*

515 *Special Histology.* (3) II

Histology of the organs. A continuation of Zoology 513 in which the studies are based on the organs. Lectures, laboratories. Prereq: Zoology 513. *Brauer.*

517 *Advanced Microtechnique.* (3) II

Special methods in histological technique for students of Zoology, Pathology or Anatomy. Prereq: Zoology 513, 518. *Brauer.*

518 *Ornithology.* (4) II

A study of the life-histories, habits, identification, structure, adaptations, and physiology of birds. Special emphasis upon migrations, songs, nests and economic importance of our native birds. Lecture; field excursions; lab studies: Prereq: Zoology 100. *Barbour.*

520 *Mammalogy.* (4) I

Designed to acquaint the student with the mammals of eastern North America, their classification, adaptations and natural history. Lecture, two hours; lab, four hours per week. Prereq: Zoology 100. *Barbour.*

522 *Herpetology.* (4) II

Designed to acquaint the student with the amphibians and reptiles of eastern North America, their classification, adaptations and natural history. Lecture, two hours; lab, four hours per week. Prereq: Zoology 100. *Barbour.*

524 *Ichthyology.* (4) II

Taxonomy of the fishes with life-histories and biology of types. Fish structure and physiology, habits, ecology. Fish-culture and economic Ichthyology; care of fishes, aquaria, etc. Elements of fresh-water fishery administration. Lectures, laboratories. Prereq: Zoology 100. *Kuehne.*

526 *Limnology.* (4) II

Detailed analysis of fresh water environment with special emphasis upon biological productivity. Two hours lecture, four hours field and laboratory. Prereq: Zoology 100, Chem. 110, 112; Physics 211, 213; consent of instructor. *Kuehne.*

528 *General Entomology.* (3) I

A beginning course in the study of this greatest group of the Animal Kingdom. Anatomy, morphology, adaptations, life-histories of representatives of the most important orders of insects and other arthropod classes. Lectures, laboratories. Prereq: Zoology 100. *Barr.*

530 *General Entomology.* (3) II

Continuation of 528. More detailed study of the orders and many representative families. Methods of making and preserving insect collections. Identification; life-history, ecology of many insect species. Making an individual collection. Lectures, laboratories. Prereq: Zoology 528. *Barr.*

532 *Medical Entomology.* (4) I, S

Study of Arthropod vectors of disease. Structure, collection, identification, control measures and life history studies. Given alternate years. Prereq: Zoology 534 or consent of instructor. *Edney.*

534 *Parasitology.* (4) I, S

Protozoan, helminth and arthropod parasites of man and domestic animals, emphasis on etiology, epidemiology, methods of diagnosis, control measures, and life histories. Techniques for host examination and preparation of material for study. Lectures, laboratories. Prereq: Zoology 100. *Edney.*

536 *Medical Protozoology.* (4) II, S

The etiology, epidemiology, pathology, diagnosis, prophylaxis and control of parasitic protozoa, with special emphasis on life cycles and detailed studies of the protozoan parasites of man. Given alternate years. Lectures, laboratories. Prereq: Zoology 534 or consent of instructor. *Edney.*

538 *Helminthology.* (4) II, S
The etiology, epidemiology, pathology, diagnosis, prophylaxis and control of trematode, cestode and nematode parasites of vertebrates, with special emphasis on those of veterinary and medical importance. Given alternate years. Lectures, laboratories. Prereq: Zoology 534 or consent of instructor. *Edney.*

540 *General Radiation Biology.* (4) I, S
A basic course devoted to a study of radiation techniques and research and their application in the various fields of biology. Lectures devoted to basic background and health hazard aspects followed by more of radioisotopes and techniques of their measurement using various radiation detectors and counters. Lectures, 2 hours per week; laboratory, 4 hours. Prereq: 2 years of biological sciences, 1 year of chemistry, and consent of instructor. *Carpenter.*

542 *Vertebrate Natural History.* (4) I
Behavior of vertebrate animals in their natural habitate as related to shelter, food, reproduction, and other aspects of survival. Adaptations contributing to behavioral patterns will be considered. Two lectures and two laboratory periods per week. Prereq: Zoology 208. *Barbour.*

COURSES PRIMARILY FOR GRADUATE STUDENTS

768 *Residence Credit for Master's Degree.* (0)
May be repeated once. *Staff.*

769 *Residence Credit for the Doctor's Degree.* (0)
May be repeated indefinitely.

790 *Research in Zoology.* (1-6) I, II, S
May be repeated indefinitely, at discretion of department. Type of research to be enclosed in parentheses, e.g. (Genetics), (Ecology), (Embryology).

SCHOOL OF JOURNALISM

FACULTY

Professor: Leonard Niel Plummer (Ph.D., Wisconsin, 1940), DIRECTOR. *Associate Professors:* J. Ardery McCauley (M.A., Kentucky, 1948), William M. Moore (Ph.D., Wisconsin, 1946). *Assistant Professor:* Victor R. Portmann (B.S.J., Wisconsin, 1932), special assignment, Robert Kent Thorp (M.A., Iowa, 1961). *Instructor:* Robert Lewis Donohew (M.A., Kentucky, 1961).

The School of Journalism is one of the 47 members of The American Association of Schools and Departments of Journalism. Since 1931 the school has been accredited and has been a member of the Association which is composed of the leading schools of journalism in the United States.

General reference materials, representative daily newspapers, and recognized trade journals of the publishing industry are available in the school. In the general library are hundreds of volumes dealing with all phases of the communications industry.

A daily 10-hour teletype service of the Associated Press supplies latest news dispatches for students and provides laboratory materials for news editing and radio news writing. The school supervises student publications activities, and maintains laboratories for instruction. In the extensive plant is a type laboratory for instruction in typography, make-up, photography, and the mechanics of publishing and advertising.

Various campus-based publications, such as the Kentucky Kernel (campus daily newspaper), The Kentuckian (student yearbook), and The Kentucky Press (official publication of The Kentucky Press Association, which maintains its state headquarters in the school), present opportunities for student practice in the publication field.

THE DEGREE OF A.B. IN JOURNALISM

The professional curriculum leading to the degree of Bachelor of Arts in Journalism is divided into four sequences to facilitate specialization by the student in the junior and senior years. These sequences are: The General Editorial, The Community-Publishing, Advertising, and Radio-Journalism. All sequences, providing a wide range of elective courses to be chosen under the guidance of a professional advisor, have as their aim a liberal education joined with professional training for men and women seeking careers in the various phases of journalism, advertising, publishing, and radio-journalism.

Pre-Journalism Requirements: Satisfaction of lower division requirements of the College of Arts and Sciences, and Journalism 203, Principles of News Writing, or its equivalent.

Core curriculum for all A.B.J. sequences for Junior and Senior years:

Journalism 241-246	Communications Practicum (4)
Journalism 501	News Reporting (3)
Journalism 503	Copyreading and Editing (3)
Journalism 561	Newspaper and Magazine Advertising (3)

GENERAL EDITORIAL SEQUENCE

Election of a minimum of eight credit hours from the following courses:

Journalism 531 (2)	Journalism 535 (3)
Journalism 533 (3)	Journalism 507 or 509 (3)
Journalism 511 (2)	Journalism 539 (3)

Election of a minimum of eight credit hours in advanced English courses.

Election of a minimum of eight credit hours in advanced Social Studies courses.

Minimum required for the degree, 128 credit hours, exclusive of physical education.

COMMUNITY-PUBLISHING SEQUENCE

Election of a minimum of eight credit hours from the following courses:

Journalism 571 (3)	Journalism 533 (3)
Journalism 573 (3)	Journalism 575 (2)
Journalism 531 (2)	Journalism 507 (3)
Journalism 511 (2)	Journalism 539 (3)

Election of a minimum of eight credit hours in advanced English courses.

Election of a minimum of eight credit hours in advanced Social Studies courses.

Minimum required for the degree, 128 credit hours, exclusive of physical education.

ADVERTISING SEQUENCE

Election of a minimum of eight credit hours from the following courses:

Journalism 573 (3)	Journalism 575 (2)
Journalism 531 (2)	Journalism 563 (3)
Journalism 533 (3)	Journalism 541 (3)

Election of a minimum of eight credit hours in advanced Economics and Commerce courses.

Election of a minimum of six credit hours in advanced Psychology courses.

Election of a minimum of four credit hours in advanced Art courses.

Minimum required for the degree, 128 credit hours, exclusive of physical education.

RADIO-JOURNALISM SEQUENCE

Election of a minimum of twelve credit hours from the following courses:

Radio Arts 201 (2)	Radio Arts 520 (2)
Radio Arts 501 (2)	Radio Arts 525 (2)
Radio Arts 505 (2)	Radio Arts 530 (1)
Radio Arts 515 (2)	Radio Arts 535 (2)
Radio Arts 510 (2)	Journalism 591 (2)

Election of a minimum of six credit hours in advanced English courses.

Election of a minimum of six credit hours in advanced Social Studies courses.

Minimum required for the degree, 128 credit hours, exclusive of physical education.

Electives taken in freshman and sophomore years cannot be used to satisfy electives required in the junior and senior years.

All electives in junior and senior years must be in courses not open to freshmen.

Upper Division Requirements

Requirements for the Degree of A.B. in Journalism: Prerequisite: Journalism 203 or its equivalent. Academic standing: minimum of 2.3. *Required:* Core curriculum for all sequences: four credits hours in Journalism 241-246; Journalism 501, 503, 504, and 561. Four sequences—General Editorial, Advertising, Community Publishing and Radio-Journalism—are offered, which lead to the A.B. in Journalism Degree.

Comprehensive Examinations. Majors and candidates for the degree in journalism are required to pass a final comprehensive examination at the end of the senior year.

Requirements for the Degree of Bachelor of Arts: See Director of School of Journalism.

Course Descriptions

101 *Introduction to Journalism.* (2) I, II
A course of lectures and readings designed to introduce prejournalism students to the opportunities in journalism and advertising, the qualifications and training implicit in journalism as a profession. *Thorp.*

201 *Etymology.* (3) I, II, S
A study of words and their fundamental values with reference to development of a writing vocabulary. *Plummer.*

203 *Principles of News Writing.* (3) I, II, S
Lectures and readings on the development of the modern news style. Practice in effective writing.

241-246 *Communications Practicum.* (1 ea.) I, II
Supervised laboratory work in the media of mass communications, with meetings for evaluation of work, study of techniques, analyses of problems, and reports. *Staff.*

501 *News Reporting.* (3) I, II
A reporting course which emphasizes special fields of information, news gathering, and news evaluation. *Thorp.*

503 *Copyreading and Editing.* (3) I, II
Instruction and practice in newspaper deskwork. Preparation of local, state, telegraph, and radio news and features; picture editing, and page make-up. Lecture, one hour; lab, four hours. Prereq: Journalism 501.

507 *Feature Writing.* (3) I, II
Instruction and practice in writing features. Lectures, readings, and reports directed toward discovering, gathering, organizing, writing, and marketing feature articles. Prereq: Senior standing or consent of instructor. *Moore.*

509 *Magazine Article Writing.* (3) II, S
Lectures, personal conferences, and practice in writing and submitting material for publication in magazines; study of the markets for this material; free-lance article writing. Prereq: Senior or graduate standing, or consent of instructor. *Moore.*

511 *Editorial Writing.* (2) I
A study of editorials, editorial columns, and editorial pages. Publication of copy encouraged. *McCauley.*

513 *Supervision of High School Publications.* (3) S
A study of the problems that confront the adviser of the high school newspaper or magazine. Open to advisers or prospective advisers with consent of the instructor. *Ashley.*

531 *Law of the Press.* (2) I, II, S
A study of the special laws of libel, copyright, and regulatory provisions that pertain to the press. *Plummer.*

533 *Influence of the Newspaper.* (3) I
A course devoted to the examination of criticism of the modern press and an evaluation of the influence of the press in the twentieth century. Prereq: Senior standing. *Donohew.*

535 *History of Journalism.* (3) II
A study of the rise and development of American journalism and newspapers. Prereq: Senior standing. *Thorp.*

537 *Seminar in Public Opinion.* (3)
A detailed examination of techniques developed and used by the press in influencing public opinion. Specific cases studied. Latter part of course devoted to the preparation of newspaper campaigns dealing with current problems of society. Prereq: Senior or graduate standing. *Moore.*

539 *Reporting Public Affairs.* (3) II
Instruction and practice in reporting the news originating in courts and other public institutions. Prereq: Journalism 501 and senior standing. *McCauley.*

541 *Public Relations.* (3) II, S
Lectures and practice dealing with the aims and methods of writing news and special articles for public relations programs of business, schools, colleges, libraries, and of social service organizations. *McCauley.*

561 *Newspaper and Magazine Advertising.* (3) I, II, S
Relation of newspapers and magazines with advertisers with emphasis upon the preparation of local display and national advertising.

563 *Advertising Typography and Layout.* (3) II
A study of the principles of typographic families and illustrations and decorations that pertain to layout in modern advertising. Practical work with merchants included in the latter part of the course. Lecture, one hour; lab, four hours.

571 *Community Journalism.* (3) I, S
A study of the problems which confront the community weekly and the small city daily. *Ashley.*

573 *Newspaper Administration.* (3) II
A study of the business, circulation, advertising, and accounting divisions of the newspaper with special emphasis on the community newspaper. *Ashley.*

575 *Typography.* (2) I
Instruction and practice in typographic composition. Use of type faces in news editing. Study of typography in the make-up of American newspapers. Lab, four hours. *Ashley.*

581 *Introduction to Press Photography.* (3) I, II, S
Use of cameras, printers, enlargers, and laboratory equipment in modern press photography, and a study of selected readings on photographic methods and skills. *Moore.*

591 *Radio News Scripts.* (2) I, II
Instruction and practice in writing news and feature material for radio presentation. *Moore.*

WILLIAM ANDREW PATTERSON SCHOOL OF DIPLOMACY & INTERNATIONAL COMMERCE

FACULTY

Distinguished Professor: Amry Vandenbosch (Ph.D., Chicago, 1926), DIRECTOR. *Professor*: Max Judd Wasserman (Doctorate in Economics, Lyons, 1925), Visiting. *Associate Professors*: Herbert Neal Drennon (Ph.D,. Duke, 1951), Enno E. Kraehe (Ph.D., Minnesota, 1948). *Assistant Professors*: Charles William Hultman (Ph.D., Iowa, 1960), William Adriance Withington (Ph.D., Northwestern, 1955), Laszlo Zsoldos (Ph.D., Ohio State, 1961). *Instructors*: William Jones Chambliss (M.A., Michigan, 1954), Robert Michael Rodes (Ph.D., Johns Hopkins, 1962).

This school has been established in pursuance of the bequest of the late James K. Patterson, president of the University from 1879-1910, as a memorial to his son. The courses and facilities of the school are designed, 1) to prepare young men and women for service in the United Nations, the Department of State and other governmental agencies with overseas activities or a career in foreign trade 2) to provide training in these fields in preparation for teaching and 3) to carry on research and to provide research training in these fields.

The school offers a curriculum leading to the bachelor's degree and graduate work for the master's and doctor's degree.

Course Descriptions

520 *International Investment.* (3)
The long-term capital accounts in the balance of payments; investment as a means of financing surpluses and deficits on the current trading accounts; role of international investment in the world economy. Prereq: Econ. 527.

521 *International Finance.* (3)
The short-term capital accounts on the balance of payments; short-term capital as a "checking account"; financing international transactions—imports and exports of goods and services. Prereq: Econ. 527.

522 *Underdeveloped Areas and Economic Policy.* (3)
Description and definitions of underdeveloped areas; income, resources and productivity in underdeveloped areas; capital, demographic, social and cultural factors in economic development. Prereq: Econ. 252 and 527.

523 *International Commercial Policy.* (3)
America's position in the world economy and its international accounts; United States tariff policies, war debts, restrictive and expansionist commercial policies. Prereq: Econ. 527.

524 *Exporting and Importing Techniques.* (3)
A study of the methods and procedures involved in the import and export of goods. Prereq: Econ. 527.

530 *The Conduct of American Foreign Relations.* (3)
The formulation, conduct, and control of American foreign policy, basic principles, comparison with other countries. Prereq: P.S. 151.

540 *Governments and Politics of South Asia.* (3)
A study of the political institutions of India, Indonesia and the smaller countries of South Asia and their position in world politics.

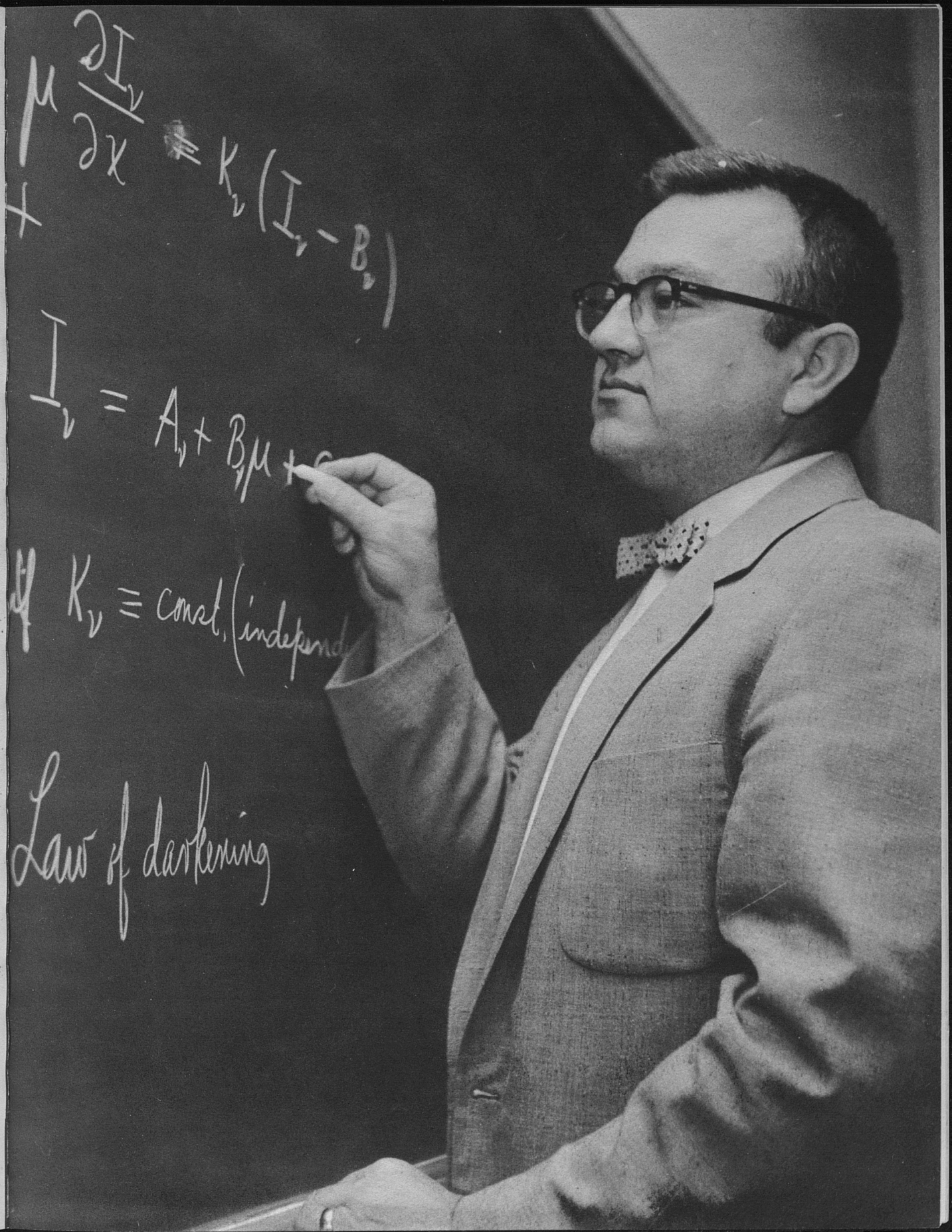
541 *The Soviet Union in World Affairs.* (3)
A factual survey of the Soviet record in foreign affairs and an introduction to the guiding concepts and principal techniques of Soviet foreign policy; the role of Communist ideology. Prereq: P.S. 556.

600 *Problems of Soviet Foreign Relations.* (3)
Subjects assigned for investigation will include such topics as the attitude of the Soviet Union toward international organizations, the relative roles of ideology and power in Soviet foreign policy. Prereq: P.S. 556, D. & I.C. 541.

601 *Theory of International Trade.* (3)
History of theories of international trade; theories of international equilibrium and the mechanism of equilibrium adjustments; tariff and other trade barriers; customs union. Prereq: Econ. 527.

602 *Analysis of International Trade.* (3)
Determination of international payments equilibrium; analysis of world trade in merchandise; patterns of world trade; the computation and analysis of the terms of trade. Prereq: Econ. 527, D. & I.C. 601.

603 *Balance of Payments: Construction and Analysis.* (3)
Concepts, construction and interpretation; types; methods and sources used in the construction of balance of payments; techniques of analysis and interpretation; balance of payments. Prereq: Econ. 527.


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Agriculture & Home Economics

AGRICULTURE WAS ONE OF THE FIRST subjects taught in the Agricultural and Mechanical College of Kentucky. The Department of Botany, Horticulture, and Agriculture was organized in 1878 and existed as such until 1908 when it became the College of Agriculture. The Department of Domestic Economy was organized in 1906 and in 1918 became the Department of Home Economics in the College of Agriculture. In 1941 the name of the College of Agriculture was changed to the College of Agriculture and Home Economics. In 1953 the Department of Home Economics was changed to School of Home Economics. The first class in agriculture was graduated in 1898 and the first class in home economics was graduated in 1913.

The College of Agriculture occupies a unique position in public education in Kentucky. It serves the entire state. Its overall program includes research, extension, and resident teaching. The close relationship between these three programs affords educational opportunities not available from other institutions in the state. As a part of the University, the College of Agriculture has access to facilities available through other colleges of the University.

The fundamental aim or purpose of the resident teaching program of the College is to provide instruction of both a scientific and practical character which will develop individuals who are technically competent in agriculture and who are capable of assuming leadership in an increasingly complex society. This will involve the attainment of such objectives as:

1. Developing the students' ability to solve technical, economic, civic, community, and personal problems.
2. Developing the students' ability to communicate orally and in writing.
3. Advancing the students' competence within agriculture and related fields.
4. Increasing the ability of the students to live a useful and satisfying life and to contribute to others.

William A. Seay, M.S., Ph.D., is dean of the college; Stanley Wall, M.S., Ed.D., is associate dean, and Abby Marlatt, B.S., Ph.D., is director of the School of Home Economics.

To accomplish these objectives, curricula have been arranged, courses planned, and teaching methods used that will accomplish the following:

1. Develop students' ability to think effectively.
2. Enable students' to acquire a knowledge and understanding of basic principles and to develop an effective ability to apply principles to real-life situations.
3. Develop students' ability to recognize factual relationships and to use facts in problem solving.
4. Encourage students to use the skills of communication.
5. Stimulate students' desire and enthusiasm for solving problems in agriculture or home economics and related fields.
6. Develop the students' understanding of the technical, economic, and social aspects of agriculture or home economics and a concept of how these are related in the solution of problems.

Faculty. To accomplish these aims and purposes the College of Agriculture and Home Economics has built up a scholarly, able, and forward looking faculty. The men and women who compose the faculty are selected because they are good teachers, have a thorough knowledge of their chosen fields, and have the ability to guide and inspire others in their study of these fields. Some devote part of their time to the Experiment Station or to the Extension Division. Many have national and international reputations in their respective fields. Some have brought distinction to themselves and to the College by their discoveries and investigations, others through books that they have written, and still others by their work on state and national problems of many kinds. The privilege of associating with and studying under men and women who know how to teach and who have the ability to contribute to the solution of current problems in agriculture and home economics is an important point to consider in the selection of a college.

Buildings and Equipment. Adequate, modern buildings and equipment are essential for good instruction in agriculture and home economics. In addition to the general University buildings the College of Agriculture and Home Economics has several buildings devoted specifically to the work of the various departments.

The Home Economics Building is modern and equipped with classroom and laboratory fixtures of the latest

design. In addition to offices and classrooms the building contains laboratories for foods, clothing, nutrition, dietetics, experimental cookery, costume design, and interior decoration. Two home management houses, and a child-care center are located near the Home Economics Building.

The Agricultural Engineering Building provides specialized laboratories for both research and teaching in farm structures, tractors and machinery, electrification, soil and water conservation and processing of agricultural products.

On the livestock farms are a modern dairy center, a service center, and barns for all kinds of livestock. Representatives of several of the more important types and breeds are kept for instructional purposes. These include Shorthorn, Hereford, Aberdeen Angus, Jersey, and Holstein cattle; Southdown and Hampshire sheep; Duroc Jersey and Hampshire hogs; poultry flocks. A modern dairy processing plant serves for instruction in the field of dairy manufacturing. Near Lexington are many large livestock and horse farms and the owners very generously permit the use of their animals for instruction.

The horticulture farms have extensive ornamental, fruit and vegetable plantings for the student to study and gain experience. Greenhouses, both plastic and glass, are also available for student use and study.

Field and greenhouse plantings of agronomic crops are used for instructional purposes. The Agronomy greenhouses are equipped to conduct cereal crop, forage crop and soil investigations.

Admission. Requirements for admission to the College of Agriculture and Home Economics, as a freshman, or with advanced standing, or as a special student, are the same as those outlined on the preceding pages for admission to the University.

Faculty Advisors. Every student entering the college is assigned a faculty advisor. The Faculty Advisor, who is a member of the teaching staff, helps the students in planning their educational goals and in planning a course of study to attain these goals. The fact that many students arrive at the University with undefined educational goals is not a serious handicap, but it can become serious if they do not begin to set up early defined goals in line with their capacities and interests soon after they arrive. As soon as a student decides on his major area of study, he is assigned an advisor in that area.

Requirements for Graduation in Agriculture

To receive the degree Bachelor of Science in Agriculture a student is required to gain a total of 140 semester credits and 280 points. These represent the minimum requirements for graduation. In all cases the student is responsible for meeting the requirements for graduation.

Transfer students, except those transferring from Eastern Kentucky State College, are required to take in the University a minimum of 68 credits, including 43 in agriculture. The College of Agriculture and Home Economics and Eastern Kentucky State College now have in operation a cooperative plan which recognizes courses in agriculture taught at Eastern as carrying course and residence credit toward the degree, Bachelor of Science in Agriculture, awarded by the University of Kentucky. Acceptance of transfer credit for courses in agriculture is limited to courses numbered 100 to 299 in the University of Kentucky catalogue and all prerequisites required by the University must have been satisfied.

Certain courses are required of all students in the various curricula; others are elective.

Changes in a curriculum to meet specific needs may be made if approved in accordance with the rules of the University Faculty. The normal academic load is 17 or 18 credits per semester; the maximum load is 23 credits; the minimum load for a full-time student is 12 credits.

Curricula & Majors in Agriculture

In order to attain the aim and objectives of the college the agricultural curricula are organized in three program areas; Agricultural Technology, Agricultural Science, and Agricultural Business. In addition, there are also pre-professional programs in Veterinary Medicine, Forestry, Theology, and a four-year professional program in Agricultural Engineering.

1. *Agricultural Technology*—The curricular program in Agricultural Technology provides an opportunity for training designed to serve those students primarily interested in such fields as agricultural extension, teaching vocational agriculture, farm operation, certain U.S.D.A. services, and various other positions requiring technical proficiency in agriculture. It is expected that students electing this program would take fewer courses in the sciences and mathematics than those following the agricultural science program. However, these students would have more courses in technical agriculture and an equal number in the humanities, communications, and social sciences.
2. *Agricultural Science*—The curricular program in Agricultural Science is primarily for students interested in graduate work in their chosen subject matter fields or professions or for those interested in scientific phases of agriculture. While providing a minimum background in general and liberal arts courses, emphasis in the curricula will be on the basic science relevant to the subject matter area, mathematics and research methods, and communications.
3. *Agricultural Business*—The curricular program in Agricultural Business provides an opportunity for training designed to serve those students interested in the wide range of jobs in the administrative, sales, and managerial aspects of the agricultural industry. Emphasis in the curricular program is given to general education in agriculture, liberal

arts, and humanities with special emphasis on communications, economics, commerce, and a subject matter area in agriculture.

All students, other than those in the pre-professional programs will follow a basic curriculum for the first two years. The first two years are to be considered, in part, as an exploratory period during which the student would decide upon a departmental or group major. By the end of his sophomore year a student is expected to choose between the program in agricultural technology, agricultural science, and agricultural business. The major and the program to be followed should be elected by the student on the basis of his individual interests and occupational or professional objectives. The student should be guided by his advisor and other sources of counsel and guidance.

The basic curriculum for the first two years for the programs in agricultural technology, agricultural science and agricultural business is as follows:

Required Courses or Course Groups	*Sem. Hrs.*
Physical Education	2
English Composition	6
General Inorganic Chemistry	8-10
Mathematics 101 or 111	3
Biological Science—to be selected from: Microbiology 100, 102, 200 Botany 101 or 125, 103, 201 Zoology 100, 200	8
Humanities—to be selected from: Philosophy 200, 220, 230 Humanities 200, 201, 202 English 161, 251, 252 Courses in Art and Music as approved by adviser Modern Foreign Language—6 hours	6
Communications—to be selected from: English 181 or 291, 203, 205 Journalism 201, 203	6
Social Studies—to be selected from: Rural Sociology 156 History 104, 105, 108, 109, 228, 240 Sociology 240 Economics 103, 251, 252 Anthropology 153 Geography 155 Psychology 100 Political Science 151	6
Introduction to Agriculture	2
Basic Agriculture Group—(Students must select five courses from at least four of the areas listed in this group.) An introductory course in Agricultural Economics or Rural Sociology. An introductory course in Agronomy (Soils, Crops, and Plant Pathology) An introductory course in Animal Science, Dairy Science, or Poultry Science. An introductory course in Agricultural Engineering, Entomology, or Animal Pathology An introductory course in Horticulture or Farm Forestry	15
Electives	8
Total	70-72

The general requirements for the junior and senior year for the program in Agricultural Technology, Agricultural Science and Agricultural Business are:

Courses in Group Options	*Study Program Area* *Agricultural Technology*	*Agricultural Science*	*Agricultural Business*
Departmental Major[1]	18[2] crs.	18 crs.	18 crs.
Specialty Support	6[3]	20[3]	26[4]
Mathematics and Statistics	....	6	....
Agricultural Plant Sciences	7	....	....
Agricultural Animal Sciences	7	....	....
Agricultural Economics & Rural Soc.	9	3	3
Electives	23[5]	23[5]	23[5]

A student may elect to follow any one of the three programs. Agricultural Technology, Agricultural Science or Agricultural Business, with a major in Agricultural Economics, Agronomy, Animal Science, Dairy, Horticulture or Poultry. Students interested in dairy manufacturing may elect a program in Agricultural Science or Agricultural Business. Students interested in Agricultural Extension or Agricultural Education will follow an Agricultural Technology program. Students may major in Rural Sociology in an Agricultural Science Program.

More detailed information relative to course requirements for each of the major areas of study is available in the College of Agriculture's Student and Advisor Handbook. Copies of this Handbook may be secured by writing to the Associate Dean, College of Agriculture and Home Economics, University of Kentucky.

AGRICULTURAL ENGINEERING CURRICULUM

The professional curriculum in agricultural engineering is basically the application of physical sciences to agriculture. It deals with the application of energy and materials to agricultural production and processing. The curriculum prepares one for *research, development* and *sales* in agricultural mechanization (design of machine systems for handling soil, tillage, harvesting, grinding, mixing and conveying), farm structures and related equipment for environmental control in animal and plant buildings, energy use such as electric and LP gas or oil for heating greenhouses, poultry brooding, houses, etc., design of processing systems, and soil and water conservation engineering.

The professional curriculum in agricultural engineering is administered jointly by the College of Agriculture and Home Economics and the College of Engineering.

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[1] A maximum of 30 hours in a department may be offered by the students in fulfilling minimum requirements for a degree. Courses in genetics and statistics in agriculture are not to be counted in this 30 hour maximum.

[2] Include subject matter departments, agricultural extension course group and agricultural education course group.

[3] To be made up of courses in science considered to be appropriate background for the departmental area in which the student is majoring.

[4] To be made up of a group of business, economics, and agricultural economics courses.

[5] To include at least one course offered at the sophomore level or above in at least three departments in the College of Agriculture outside the one in which the student is majoring. In the Agricultural Technology program, one of these three departments should be Agricultural Engineering.

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURAL ENGINEERING

Freshman Year

First Semester	Crs.
AEN 001—The Engineering Profession	0
Eng. 101—Freshmen Composition	3
MA 101 or 111—College Algebra	3
MA 112—Plane Trigonometry	2
CHE 106—General Chemistry for Engrs.	4
CE 105—Basic Engineering Graphics I	2
PE—Physical Education	1
Elective	3
	18

Second Semester	Crs.
AEN 002—The Engineering Profession	0
AEN 105—Engineering in Agriculture	3
Eng. 102—Freshman Composition	3
MA 113—Analytics and Calculus I	4
CHE 108—General Chemistry for Engrs.	4
CE 106—Civil Engineering Graphics I	2
PE—Physical Education	1
Elective	2
	19

Sophomore Year

First Semester	Crs.
AEN 003—The Engineering Profession	0
MA 211—Analytics and Calculus II	4
PHY 231—General College Physics	3
PHY 241—General College Physics Lab.	2
CE 100—Plane Surveying	3
Elective	2
AGR 206—Prin. of Field Crop Production	3
	17

Second Semester	Crs.
AEN 004—The Engineering Profession	0
MA 212—Analytics and Calculus III	4
PHY 232—General College Physics	3
PHY 242—General College Physics Lab.	2
EM 221—Statics	3
Elective	2
AGR 266—Soils	4
	18

Junior Year

First Semester	Crs.
AEN 005—The Engineering Profession	0
EM 313—Dynamics	3
EE 305—Elec. Circuits and Machinery	3
*MA 431—Differential Equations	3
ME 400—Elements of Engr. Thermodyn.	3
ECO 251—Principles of Economics	3
Non-technical Elective	3
	18

Second Semester	Crs.
AEN 006—The Engineering Profession	0
AEN 416—Energy Sources and Machinery for Agriculture	4
CE 352 and CE 351—Fluid Mechanics and Hydraulics Lab. *OR*	4
ME 330 and ME 331 Fluid Mechanics and Fluid Mechanics Lab.	4
EM 331—Strength of Materials	3
CE 301—Testing Materials	1
EE 306—Elec. & Electron, Circ. & Mach.	3
Non-technical Elective	3
	18

Senior Year

First Semester	Crs.
AEN 007—The Engineering Profession	0
AEN 425—Functional Design of Agricultural Structures	4
AEN 446—Agricultural Processing and Electrification	4
AEN 435—Principles of Soil and Water Engineering	4
Technical Elective	3
Non-technical Elective	3
	18

Second Semester	Crs.
AEN 008—The Engineering Profession	0
AEN 505—Engineering Analysis	3
**AEC 514—Current Farm Management Problems	3
Technical Elective	3
AEN Elective	3
Non-technical Electives	6
	18

FORESTRY CURRICULUM

Students interested in Forestry may enter the College of Agriculture and Home Economics and take the first two years of a forestry curriculum. Kentucky is a participating member in the Southern Regional Plan for the education of Foresters and arrangements have been made by the state for North Carolina State College to accept ten students from Kentucky each year. Students may complete requirements for a degree within two academic years and one summer of residence at North Carolina State College, providing certain minimum requirements are satisfied. In order to complete the course of study leading to a Bachelor of Science Degree in Forest Management within the prescribed time, the following listed courses must be included in the first two years.

Freshman Year

	Crs.
Botany 101 and 103—General Botany	7
Chemistry 110 and 112—Gen. Chemistry or	10
Chemistry 102 and 104—Gen. Chemistry for Agri.	8
English 101 and 102—English Composition	6
Math. 101 or 111—College Algebra	3
Math. 112—Plane Trigonometry	2
Physical Education	2
Hist. 109—History of U. S. Since 1865 or Hist. 240—History of Kentucky	3
Elective	3
Total	34 or 36

* MA 331 may be taken with approval of the head of the department.

** AEC 518 may be substituted.

Sophomore Year

	Crs.
Agronomy 266—Soils	4
Physics 151—Introduction to Physics	3
Geology 100—Elementary Geology	3
Forestry 100—Elements of Forestry	3
G.E. 101—Elem. Engr. Graphics	2
English 203—Comp. for Tech. Students or English 181—Essentials of Speech	3
Chemistry 236—Organic Chemistry	4
Economics 251—Principles of Economics	3
Civil Engr. 100—Plane Surveying	3
Botany 219—Dendrology	2
Elective	6
Total	36

To be eligible to transfer to North Carolina State College, the student must achieve a grade average of C+ or better. He will not receive credit for any course in which he has received less than a C grade.

PRE-THEOLOGICAL MAJOR FOR THE RURAL MINISTRY

Many leaders in the work of the rural town and country ministry are today suggesting that some of the men who plan to enter this field of service should consider attending a college of agriculture in which a strong curriculum in rural social science is available, as an undergraduate preparation for seminary training. A student planning to enter a theological seminary and enrolling in a regular curriculum of the College of Agriculture and Home Economics may select from the general University offering a suitable group of courses in philosophy, English literature, and ancient languages. The student planning to elect this major is advised to acquaint himself with the specific requirements of the theological seminary of his choice.

PRE-VETERINARY

Students planning to become veterinarians may enter the College of Agriculture and Home Economics and take the two-year program required for admission to the study of veterinary medicine. Kentucky is a participating member in the Southern Regional Plan for the education of veterinarians and arrangements have been made by the State for the Auburn University at Auburn to accept eleven students from Kentucky each year. The State pays a stipulated amount per student per year through the Southern Regional Education Board to the institution.

Applicants for admission to the School of Veterinary Medicine at Auburn must have a grade point average of 2.25 on all courses attempted, and also a 2.25 standing on all required courses. They must be bona fide residents of Kentucky. A grade of D on any required course will not be accepted. The Committee on Admissions of the School of Veterinary Medicine may require a personal interview with any applicant and may also require an examination on any required course. If admitted, Kentucky students have the same status as Alabama students; they do not pay out-of-state tuition.

Inquiries should be addressed to the Committee on Regional Veterinary Training, Dr. Stanley Wall, Chairman, University of Kentucky, Lexington. Admission to the School of Veterinary Medicine must be gained by making formal application through the committee not less than three months in advance of the entrance date. Applications will be considered only from students who submit evidence of satisfactory completion of all requirements. Students will be admitted at the beginning of the fall quarter only.

Students who do not enter the Auburn Veterinary School after the completion of the two-year pre-veterinary program may continue in the University for the third year of study and may then be accepted by the Auburn School. Such students will be awarded the degree Bachelor of Science in Agriculture after one year of study at Auburn if they complete the prescribed 30 semester credits required in the first year of the veterinary curriculum with a standing of 200 according to the University of Kentucky grade-point system.

PRE-VETERINARY CURRICULUM LEADING TO THE DEGREE BACHELOR OF SCIENCE IN AGRICULTURE

First Year

First Semester	Crs.
Zool. 100—Prin. of Animal Biol.	4
Math. 101 or 111—College Algebra	3
Chem. 110—Genl. Chem.	5
Eng. 101—Eng. Composition	3
Physical Education	1
	16

Second Semester	Crs.
*Agr. Ent. 100—Agr. Ent.	3
Pty. Sci. 140—Fm. Pty.	3
Math. 112—Plane Trig.	2
Chem. 112—Genl. Chem.	5
Eng. 102—Eng. Comp.	3
Physical Education	1
	17

Second Year

First Semester	Crs.
Phy. 211—Gen. Elem. Phys.	5
Che. 230—Organic Chem.	5
A.SI. 100—Farm Livestock Prod.	3
A.SI. 280—Prin. of An. Nutrition	4
Hist. 108—History of U.S. or Hist. 109—Hist. of U.S. since 1865	3
	20

Second Semester	Crs.
Phy. 213—Gen. Elem. Physics	5
Che. 232—Organ. Chem.	5
Bot. 101—Gen. Botany	4
**CL 131—Med. Term.	3
	17

° A second course in Zoology may be substituted on approval of advisor.

°° Two semesters of Modern Foreign Languages may be substituted on approval of advisor.

Third Year

First Semester	Crs.
Agr. Econ. 100—Agr. Econ.	3
Agron. 105—Introd. to Agron.	3
Agron. 266—Soils	4
Agr. Engr. 100—Principles of Agricultural Mechanics	3
Microbiology 200—Prin. of Bacteriology	4
Humanities 200, 201, 202	2
	19

Second Semester	Crs.
D.S. 120—Fund. of Dairying	3
A.SI. 260—Genetics	3
Econ. 251—Prin. of Econ.	3
Agr. Econ. 400—Agr. Mktg.	3
Humanities 203 or 204	2
Electives	3
	17

Fourth Year

(At Auburn University—Standing of 2 Required)

	Crs.
VM 101, 102, 103—Anatomy	10
VM 104, 105, 106—Histology and Embryology	10
VM 107, 108, 109—Physiology	10
	30
Minimum credits for degree	140

GRADUATE WORK

The departments in the college offer graduate work leading to the following advanced degrees in the Graduate School:

1. Master of Science in Agriculture with a major in any department or section other than Animal Pathology.
2. Doctor of Philosophy in the Departments of Animal Sciences, Agricultural Economics, and Rural Sociology.

SHORT COURSES

Short courses, conferences, and workshops, ranging in duration from one day to one week, are held for those interested in various phases of agriculture.

FARM AND HOME CONVENTION

The annual Farm and Home Convention is held on the campus of the University of Kentucky during the last week in January. Thousands of farm men and women from all over the state find these programs interesting and inspirational and of great value to them in planning and carrying on their work. A special bulletin giving the program is issued in December.

AGRICULTURAL ECONOMICS

FACULTY

Professors: Aubrey J. Brown (Ph.D., Illinois, 1946), HEAD; John H. Bondurant (Ph.D., Cornell, 1943), Lawrence Allen Bradford (M.S., Kentucky, 1939), George Boyd Byers (Ph.D., Iowa State, 1948), Dana George Card (Ph.D., Cornell, 1939), Carroll David Phillips (Ph.D., Minnesota, 1940), Hugh Bruce Price (Ph.D., Yale, 1921), special assignment, John C. Redman (Ph.D., Kentucky, 1951), John Bissell Roberts (M.S., Kansas State, 1935), Robert William Rudd (Ph.D., California, 1952). *Associate Professors*: Wendell Binkley (M.S., Kentucky, 1940), Carl M. Clark (M.S., Oklahoma State, 1929),, Dallas Milton Shuffett (Ph.D., Kentucky, 1956), Eldon Dee Smith (Ph.D., Wisconsin, 1954), James Forrest Thompson (~~M.S., Kentucky~~ Ph.D, 1951). *Assistant Professors:* James E. Criswell (M.S., Kentucky, 1948), Ernest D. Gooch, Jr. (Ph.D., Illinois, 1962), James Leslie Pearson (M.S., Kentucky, 1953), Willard H. Minton (M.S., Kentucky, 1951), Joe Eugene Fuqua (M.S., Kentucky, 1956). Instructors: Woodrow Wilson Hourigan, (M.S. Kentucky 1963)

Course Descriptions

GENERAL AGRICULTURAL ECONOMICS

100 *Agricultural Economics.* (3) I, II
An examination of the agricultural industry and of farm businesses as affected by economic forces. *Bradford and Criswell.*

AGRICULTURAL MARKETING

400 *Agricultural Marketing.* (3) I, II
Principles and methods of marketing farm products with attention to systems and agencies at both country and central markets. Prereq: Econ. 251; Agr. Econ. 100. *Binkley and Pearson.*

401 *Marketing Tobacco.* (2) II
Special emphasis on the marketing of and the market systems for tobacco. Application of marketing principles and methods to tobacco. Prereq: Agr. Econ. 400. *Clark.*

402 *Tobacco Market Grades and Grading.* (1) II
Procedures and problems in establishing market standards for tobacco, including practice in grading. Prereq. or concurrent: Agr. Econ. 401, or approval of instructor. *Clark.*

403 *Marketing Livestock and Livestock Products.* (2) II
Analysis of livestock and dairy markets; market organization, agencies, institutions, and services; and public regulations. Prereq: Agr. Econ. 400. *Brown and Pearson.*

500 *Agricultural Cooperation.* (3) II, S
Principles, methods, and problems involved in the cooperative marketing of farm products and in the purchase of farm production supplies through cooperatives. Prereq: Agr. Econ. 400. *Binkley.*

606 *Advanced Agricultural Marketing.* (3) II
A critical examination of objectives and results of various types of research in market organization, marketing functions, market management, and price analysis. Prereq: Approval of instructor. *Rudd.*

AGRICULTURAL STATISTICS AND MATHEMATICAL ECONOMICS

530 *Agricultural Statistics.* (3) I, II
Principles and methods involved in the analysis, interpretation, and use of agricultural statistics including variation, correlation, standard errors, and simple analysis of variance.

630 *Statistics for Agricultural Research: Social Sciences.* (3) I
Multiple and partial correlation, test of reliability, sample surveys, and other techniques for agricultural research. Prereq: Agr. Econ. 530 or equivalent. *Card and Shuffett.*

631 *Statistics for Agricultural Research: Plant and Animal Sciences.* (3) II
Analysis of variance and covariance; statistical considerations in the design of experiments; tests of significance and confidence limits. Prereq: Agr. Econ. 530 or equivalent. *Card.*

AGRICULTURAL POLICY AND LAND ECONOMICS

540 *Agricultural Policy.* (3) I
Historical development of principles underlying agricultural policy; objectives of agricultural policy; appraisal of current and proposed agricultural programs. Prereq: Agr. Econ. 400. *Rudd.*

545 *Land Economics.* (3) I
Institutional, technological and physical forces affecting the use of land resources in agriculture. Analysis of problems connected with land tenure, land conservation and transfer of farm real estate. Prereq: Agr. Econ. 410 or approval of instructor. *Redman.*

640 *Advanced Agricultural Policy.* (3) II
Influences of policies upon economic progress, efficiency in resource use, distribution of income, and welfare in agriculture. Prereq: Approval of instructor. *Rudd.*

FARM MANAGEMENT

410 *Farm Management.* (3) I, II
An analysis of management and of the science of organizing and operating farms; measurements of success; developing crop and livestock programs; and record keeping in the light of maximizing returns from resources. Prereq: Agr. Econ. 100; Econ. 251. *Bradford.*

415 *Farm Accounting.* (2) II
Development and analysis of farm records and farm accounts includ-

511 *Advanced Farm Management.* (3) II, S
An advanced analysis of management and managing farms. Prereq: Agr. Econ. 410. *Thompson.*

514 *Current Farm Management Problems.* (3) S
An analysis of the current economic problems in farming, such as costs, technological developments, demand changes, and resource use. An introductory course designed primarily for professional workers in agriculture. Prereq: Agr. Econ. 410, or approval of instructor. *Bradford.*
ing farm cost accounting. Prereq: Agr. Econ. 410. *Criswell.*

516 *Land Value and Appraisal* (Odd No. Years.) (3) I
The capitalization process, and other methods of valuing farm land; appraisal procedures of the Federal Land Banks and other credit institutions. Prereq: Agr. Econ. 410 or approval of instructor. *Bondurant.*

517 *Types and Systems of Farming* (Even No. Years). (3) I
Critical study of the business organization and management of Kentucky farm businesses. Field trips required. Prereq: Agr. Econ. 410, or approval of instructor. *Bondurant.*

518 *Farm Labor Utilization.* (3) I
Efficient work method fundamentals as applied to agricultural production, work simplification analysis of specific farm jobs and incentive payment plans for encouraging economic use of farm labor, are studied. Prereq. or concurrent: Agr. Econ. 410. *Byers.*

PRODUCTION ECONOMICS

520 *Production Economics.* (3) I
Economic analysis of agricultural production. A theoretical treatment of land and capital returns, costs and related functions of agricultural production at an elementary level. Prereq: Agr. Econ. 410. *Redman.*

521 *Cost, Price and Production Relationships in Agriculture.* (3) S
Relationship among production expenses, cost of production, prices paid, prices received, agricultural production, and farm income. Designed primarily for professional workers in agriculture. Prereq: Agr. Econ. 410, and approval of instructor. *Bradford.*

620 *Economics of Agricultural Production: Static Application.* (3) II
Application of economic principles to agricultural production problems of resource combination, enterprise selection, scale of operations, household-firm relationships, interregional competition, and national agricultural policies and programs. Prereq: Approval of instructor. *Thompson.*

621 *Economics of Agricultural Production: Dynamic Application.* (3) I
A continuation of 620 with application to dynamic situations. Prereq: Agr. Econ. 620 and approval of instructor. *Redman.*

AGRICULTURAL PRICES AND FINANCE

455 *Agricultural and Farm Finance.* (3) I, S
Credit needs of agriculture; problems connected with farm and market agency financing; organization and operation of agricultural credit agencies. Prereq: Econ. 251. *Clark, C. M., and Bradford.*

550 *Agricultural Prices.* (3) II
Price behavior of agricultural products including supply-price relationships and their relation to the general price level. Prereq: Econ. 251. *Johnson.*

650 *Advanced Agricultural Prices.* (3) I
Advanced study of agricultural price behavior by the application of economic theory and statistical analysis. Prereq: Approval of instructor. *Rudd.*

GENERAL AGRICULTURAL ECONOMICS COURSES

560 *Introduction of Research Methods in Agricultural Economics.* (3) I
Survey of agricultural economics research areas, methods of initiating, preparing and conducting research projects, financing agricultural research. Applicable to problems of agricultural production and marketing. Prereq: Senior standing and consent of instructor. *Smith.*

580 *Special Problems in Agricultural Economics.* (3) I, II, S
Directed independent study of a selected problem. Prereq: Approval of instructor and head of department. *Brown and Staff.*

590 *Introduction to Mathematical Economics.* (3) I
A review of mathematical approaches to economic theory. Models applicable to production, marketing and pricing problems. Prereq: Math. 201 and Economics 515 or equivalents (same as Economics 590).

660 *Research Methods in Agricultural Economics.* (3) II
An analytical examination of research methods and techniques used in agricultural economics. Prereq: Approval of instructor. *Redman.*

690 *Mathematical Economics.* (3) I
Problems of economics amenable to the mathematics of differential and difference equations, vectors, complex numbers and matrix algebra. Agricultural and business applications. Prereq: Agricultural Economics 590 and Economics 618 or equivalents (same as Economics 690).

691 *Econometrics.* (3) II
The application of statistical methods to problems of economic analysis. Building and measuring relationships among economic variables. Econometric models of the economy as a whole and of individual sectors. Prereq: Economics 618, Ag. Econ. 630 or equivalent (same as Economics 691). *Johnson.*

768 *Residence Credit for Master Degree.* (0)
Staff.

769 *Residence Credit for the Doctor's Degree.* (1 to 18 wks. residence)
May be repeated indefinitely. *Staff.*

770 *Agricultural Economic Seminars.* (0) I, II
Analysis of economic problems which affect agriculture. May be repeated three times. *Staff.*

780 *Special Problems in Agricultural Economics.* (3) I, II, S
Open to graduate students who have the necessary training and ability to conduct research on a selected problem. Prereq: Approval of head of department. May be repeated three times for a total of 9 credits. *Brown and Staff.*

AGRICULTURAL ENTOMOLOGY

FACULTY

Professors: Lee Hill Townsend (Ph.D., Illinois, 1935), HEAD. Walter Allen Price (M.S., Ohio State, 1916), special assignment, Juan Guadelupe Rodriguez (Ph.D., Ohio State, 1949). *Associate Professor*: Richard Thurston (Ph.D., Rutgers, 1952). *Assistant Professors:* Fred William Knapp (Ph.D., Kansas State, 1961), Richard Lloyd Miller (Ph.D., Iowa State, 1962).

100 *Agricultural Entomology.* (3) I, II
A general consideration of the fundamentals of insect structure, biology, and classification, with frequent discussions of current topics relating to both beneficial and destructive insects. Lectures, two hours; lab, two hours. *Townsend.*

110 *Apiculture.* (3) II
The anatomy of the bee; the colony; location and equipment of the apiary; honey production; diseases and enemies of bees. Laboratory work includes manipulation of equipment and bees. Lectures, two hours; lab, two hours. *Townsend.*

115 *Economic Entomology: Household Insects.* (2) I
Life histories, habits, and control of the common insects which are injurious and troublesome in the home. Consideration is given to certain other insects which have public health importance. Lectures, two hours.

120 *Fundamentals of Insect Pollination.* (2) I
Principles of pollination as effected by insects, with emphasis on the honeybee. The common agricultural plants are considered and the pollination described. Lectures, two hours. *Townsend.*

500 *Economic Entomology.* (3)
For those interested in agricultural teaching and extension work. Life history, control, and identification of economic insects of Kentucky are considered. Lectures, two hours; lab, two hours. Prereq: Agr. Ent. 100. *Townsend.*

510 *Economic Entomology: Fruit and Garden Insects.* (3) I, S
Life histories, habits, distribution, and control of insects injurious to fruits and vegetables, with attention to those found in Kentucky. Enemies of these species are considered. Lectures, two hours; lab, two hours. Prereq: Agr. Ent. 100. *Rodriguez.*

520 *Economic Entomology: Farm Crop Insects and Animal Parasites.* (3) II, S
Life histories, habits, distribution, and control of insects injurious to farm crops; also insect parasites of farm animals. Enemies of these species are considered. Lectures, two hours; lab, two hours. Prereq: Agr. Ent. 100. *Thurston.*

550 *Systematic and Technical Agricultural Entomology.* (2-3) I, II
Insect physiology, anatomy, ecology, and taxonomy, entomological literature and technique; studies of special groups of insects. Prereq: Agr. Ent. 100 and any of the following: 500, 510, 520. May be repeated once for a total of 6 credits. *Staff.*

620 *General Acarology.* (4)
Introduction to study of mites. Classification, morphology, physiology and ecology of mites important to the medical, veterinary and agricultural fields. Lecture, two hours; lab, four hours. Prereq: Zool. 100, Entomology 100, and consent of instructor.

768 *Residence Credit for the Master's Degree.* (1 to 9 wks. residence)
May be repeated. Maximum of six weeks can be applied toward master's degree with thesis. *Staff.*

780 *Entomological Problems.* (2-3) I, II
Investigations of chosen insect problems, including original work. Discussion and assignment of current insect subjects. Prereq: Agr. Ent. 100, 510, 520, 550. May be repeated once for a total of 6 credits. *Staff.*

AGRICULTURE—GENERAL

100 *Introduction to Agriculture.* (2) I, II
A general analysis of the changes taking place in agriculture and their implications to a student of agriculture. *Wall.*

201 *Agriculture Around the World.* (3) II
A study of the agriculture of the United States and other countries in different regions of the world. Lectures, 3 hours.

501 *Agency Relationships.* (1) II
In this course the student learns something of the objectives of public and private agricultural agencies and organizations and how they work together for the improvement of agriculture. Lecture, one hour. *Wall.*

AGRICULTURAL EXTENSION

501 *Principles of Agricultural Extension.* (3) II
Philosophy, history and development of Agricultural Extension; evaluation of instructional techniques; leadership training; and practice in use of Extension methods. Three lectures per week. Open to juniors, seniors and graduate students.

768 *Residence Credit for Master's Degree.* (0 credit)

790 *Special Problems in Agriculture or Home Economics Extension.* (1-4) I, II, S
May be repeated three times to a total of 12 credits.

AGRONOMY

FACULTY

Professors: Gilbert Theodore Webster (Ph.D., Iowa State, 1949), HEAD; Charles Eugene Bortner (M.S., Kentucky, 1932), Richard Alexander Chapman (Ph.D., Illinois, 1948), Stephen Diachun (Ph.D., Illinois, 1938), Ernest Newton Fergus (Ph.D., Chicago, 1931), special assignment, Edward Marshall Johnson (Ph.D., Minnesota, 1930), Perry Elmer Karraker (M.A., Missouri, 1913), special assignment, Edmund J. Kinney (B.S., Ohio State, 1908), special assignment, Herbert Fane Massey, Jr. (Ph.D., Wisconsin, 1952), Roy Edward Sigafus (Ph.D., Cornell, 1951), Granville Woolman Stokes (Ph.D., Wisconsin, 1953), William Gregory Survant (Ph.D., Ohio State, 1951), William Chelcy Templeton, Jr. (Ph.D., Purdue, 1960), William Dorney Valleau (Ph.D., Minnesota, 1917), Distinguished Professor, special assignment. *Associate Professors*: Harry Hudson Bailey (Ph.D., Michigan State, 1956), Robert Cecil Buckner (Ph.D., Minnesota, 1955), William Graham Duncan (Ph.D., Purdue, 1958), Verne Clifford Finkner (Ph.D., Iowa State, 1950), Joe Frank Freeman (M.S., Kentucky, 1923), Lawrence Henson (M.S., Kentucky, 1933), Thomas Barksdale Hutcheson, Jr. (Ph.D., North Carolina State, 1956), William Anderson Kendall (Ph.D., Ohio State, 1954), Frank Albert Loeffel (Ph.D., Minnesota, 1953), William Hugh Stroube (Ph.D., Louisiana State, 1953), Norman Linn Taylor (Ph.D., Cornell, 1953), Timothy Henry Taylor (Ph.D., Pennsylvania State, 1955). *Assistant Professors*: William Offutt Atkinson (M.S., Ken-

tucky, 1953), George Raymond Benoit (Ph.D., Iowa State, 1961), Robert Lynwood Blevens (M.S., Kentucky, 1958), Paul Barron Burrus, II (M.S., Kentucky, 1957), James Lewis Hamilton (M.S., Kentucky, 1951), Raymond Earl Hampton (Ph.D., Wisconsin, 1960), John Scoville Harrison (M.S., Kentucky, 1961), Albert Leon Hatfield (M.S., Kentucky, 1956), Andrew Jackson Hiatt (Ph.D., North Carolina State, 1960), John Leonard Ragland (Ph.D., North Carolina State, 1959), Richard Allyn Reinert (Ph.D., Wisconsin, 1962), Harry Randolph Richards (Ph.D., Purdue, 1960), James F. Shane (M.S., Kentucky, 1950), Jack Rudisill Todd (M.S., Kentucky, 1937), Allen Maxwell Wallace (M.S., Missouri, 1954).

General Courses

105 *Introduction to Agronomy.* (3) I, II
A scientific approach to soil and field crop relationships. *Sigafus and Survant.*

399 *Special Problems in Agronomy.* (1-4) I, II, S
Prereq: Consent of instructor. May be repeated for a maximum of 9 credits. *Staff.*

599 *Special Problems in Agronomy.* (1-4) I, II, S
Prereq: Consent of instructor. May be repeated for a maximum of 9 credits. *Staff.*

768 *Thesis.* (0) I, II, S
Staff.

770 *Agronomy Seminar.* (1) I, II
Reports and discussion of problems and investigations of problems in soils, crops and plant pathology. May be repeated three times. *Staff.*

799 *Research in Agronomy.* (1-4) I, II, S
Prereq: Consent of instructor. May be repeated for a maximum of 12 credits. *Staff.*

COURSES IN CROPS

206 *Principles of Field Crops Production.* (3) I, II
A course in scientific fundamentals underlying the production of cereal, fiber, forage and tobacco crops. Lecture and discussion, two hours; lab, two hours. Prereq: Bot. 101 or consent of instructor. *Sigafus.*

502 *Field Crop Ecology.* (3) I
A study of environmental factors affecting the yield and quality of field crops. Lecture and recitation, three hours. Prereq: Bot. 101; Agron. 206, Agron. 266 and consent of instructor. *Fergus.*

503 *Weeds.* (3) I, S
The important characteristics, identification, and control of weeds, with emphasis on identification and control of Kentucky weeds. Lecture and discussion, two hours. Prereq: Bot. 101.

506 *Field Crop Improvement.* (3) II
A study of the principles involved and the techniques used in breeding crop plants. Lecture and recitation, two hours; lab, two hours. Prereq: Agron. 206 and Bot. 530 or A.I. 260 or consent of instructor. *Loeffel.*

508 *Advanced Crops: Tobacco.* (3) I
Origin of the nicotiana species, botany, pathology, entomology, physiology, breeding, and culture of tobacco, with special emphasis on burley. Lecture and discussion, two hours; lab or field, two hours. Prereq: Bot. 101; Agron. 206 or consent of instructor. *Stokes.*

510 *Pastures and Harvested Forages.* (3) I, II
Characteristics and use of hay, pasture and silage crops: their establishment, fertilization, and management. Lecture and discussion 3 hours. Prereq: AGR 206 or equivalent, or approval of instructor. *Sigafus.*

512 *Advanced Crops: Cereals.* (3) II
A study of the grain crops of the world, in respect to adaptation, culture and uses. Lecture and recitation, two hours; lab, two hours. Prereq: Bot. 101; Agron. 206 or consent of instructor.

730 *Grassland Research.* (3) II
The conduct and interpretation of grassland experiments with emphasis on pasture research and the plant-animal complex. Lecture and discussion, 3 hours. Prereq: Approval of instructor. *Templeton.*

COURSES IN SOILS

266 *Soils.* (4) I, II
A general study of soil properties and processes with emphasis upon their influence on soil management. Lecture and discussion, three hours, lab, two hours. Prereq: Chemistry 104 or equivalent or concurrent. *Survant.*

566 *Soil Biology.* (3) I
A study of soil organisms and biological soil proceses in relation to soil productivity. Lecture, two hours; lab, two hours. Prereq: Agron. 266 and Microb. 200.

568 *Soil Conservation.* (3) II, S
The scope and nature of the soil conservation problem, and the application of soil conserving methods in the planning and management of farms. Lecture and discussion, two hours; lab, two hours. Prereq: Agron. 266. *Survant.*

570 *Soil Fertility and Fertilizers.* (3) II, S
Soil reactions of elements essential for plant growth; sources and manufacture of fertilizer materials; use of fertilizers and lime in a sound management program. Lecture and discussion, three hours. Prereq: Agron. 266. *Hutcheson.*

571 *Soil Chemistry.* (4) I
Chemical methods applicable to soil fertility and productivity; determination of plant nutrients in soil; study of chemical characteristics of soil by means of modern instrumentation. Lecture and discussion, two hours; lab, four hours. Prereq: Agr. 266 or concurrent: Chem. 226 or 220.

573 *Soil Origin, Classification and Mapping.* (3) I
Classification of Kentucky soils, use of soil survey equipment, preparation of soils maps and development of a land use plan of an assigned area. Lecture and recitation, two hours; lab, three hours. Prereq: Agron. 266 and Geol. 100 or approval of instructor. *Bailey.*

575 *Soil Physics.* (4) I, S
Physical properties of soils in relation to soil management and conservation of soils. Lecture and discussion, two hours; lab, four hours. Prereq: Agron. 266 and approval of instructor. *Survant.*

712 *Advanced Soil Fertility.* (4) I
Utilization of native and applied plant nutrients by crops; experimental methods especially applicable to research in soil fertility. Lecture-discussion, 3 hours; lab, 2 hours. Prereq: Agron. 570, Agr. Econ. 530 or special approval of instructor.

COURSES IN PLANT PATHOLOGY

397 *Special Problems in Plant Pathology.* (1-4) I, II, S
Prereq: Consent of instructor. May be repeated to a maximum of 9 credits.

541 *Plant Pathology.* (3) I, II
Significance, nature, causes, and methods of control of plant diseases. Lectures and discussion, two hours; lab, two hours. Same as Bot. 541, Plant Pathology. Prereq: Bot. 101.

543 *Diseases of Plants.* (3) II
Symptoms, causes, and control of some of the more common representative plant diseases. Students may select problems in their major field of interest. Discussion, one hour; lab, four hours. Prereq: Agron. 541 or equiv., and consent of instructor.

656 *Virus Diseases of Plants.* (4) II
Characteristics and properties of viruses that cause plant diseases; host-virus relationships; identification and control of some important virus diseases; consideration of research methods. Lecture and discussion, two hours; lab, four hours. Prereq: Agron. 541 or equiv., and consent of instructor. *Diachun.*

658 *Nematode Diseases of Plants.* (3) I

The importance, effects, recognition and control of nematodes that cause plant diseases; physiology of plant parasitic nematodes and their relations with other nematodes and plant pathogens. Lecture, 1 hour lab, 4 hours. Prereq: Agron. 541 or Bot. 541 or Zool. 534, or consent of instructor. Will be offered in fall of 1963-64 and then in first semester of alternate years.

660 *Physiology of Plant Diseases.* (3) II

Physiological aspects of plant diseases including effects of pathogenic organisms on plant metabolism; host parasite interactions; and mechanisms of disease resistance. Laboratory work emphasized methods used in investigating the physiological effects of diseases on plants. Discussion 2 hours; lab 2 hours. Prereq: AGR 541, BOT 501, or equiv. *Hampton.*

784 *Special Problems in Plant Pathology.* (1 to 3) I, II, S

Directed study of selected plant pathology problems. Prereq: Agron. 541 and consent of instructor. *Staff.*

794 *Research in Plant Pathology.* (1-4) I, II, S

Prereq: Agron. 541 or equiv., and consent of instructor. May be repeated to a maximum of 12 credits. *Staff.*

COURSES IN BOTANY

(May be used for agricultural credit, subject to the approval of advisor).

501 *Plant Physiology.* (4) I

See course description under Botany.

701 *Advanced Plant Physiology.* (4) II

See course description under Botany.

534 *Cytogenetics.* (4) II

See course description under Botany.

AGRICULTURAL ENGINEERING

FACULTY

Professor: Blaine F. Parker (Ph.D., Michigan State, 1954), HEAD. *Associate Professors*: Jesse Byron Brooks (M.S., Auburn, 1950), Wiley Hix Henson, Jr. (Ph.D., N.C. State College, 1962), Edward Manson Smith (M.S,. Kansas State, 1950), John Neal Walker (Ph.D., Purdue, 1961), Earl Robert Young (M.S., Minnesota, 1938). *Assistant Professors*: Joe Millard Bunn (Ph.D., Iowa State, 1960), James Teddie Ligon (Ph.D., Iowa State, 1961), Gerald Martin White (Ph.D., Purdue, 1960), Elmon Eugene Yoder (M.S., Oregon, 1961). *Instructors*: James Hubert Casada (B.S., Kentucky, 1960), George Arthur Duncan (B.S., Kentucky, 1961), Samuel Warren Smith (B.S., Kentucky, 1958).

001 *The Engineering Profession* (Freshman). (0) I, II

002 *The Engineering Profession* (Freshman). (0) I, II

003 *The Engineering Profession* (Sophomore). (0) I, II

004 *The Engineering Profession* (Sophomore). (0) I, II

005 *The Engineering Profession* (Junior). (0) I, II

006 *The Engineering Profession* (Junior). (0) I, II

007 *The Engineering Profession* (Senior). (0) I, II

008 *The Engineering Profession* (Senior). (0) I, II

Lectures on professional growth, conduct, and ethics. Activities of the student branches of the corresponding professional societies.

100 *Principles of Agricultural Mechanics.* (3) I, II, S

An elementary analysis of engineering principles as applied to agricultural structures, machines, equipment and systems of physical facilities for efficient and economical agricultural production and processing. Lecture, two hours, lab, two hours.

105 *Engineering in Agriculture.* (3) II

An introduction to the application of mathematical techniques to problems in agriculture. Insofar as possible the problems associated with the storage, handling, and growth of biological material will be described mathematically. The theory and use of the slide rule. Lecture, three hours. *Walker.*

212 *Tractors and Field Machinery.* (3) I, II

Principles governing the selection and application of tractors and power-driven machines. Operating principles of engines, including valves, carburetion, ignition and lubrication. Mechanical principles of machines and preventive maintenance. Lecture, two hours; lab, two hours.

252 *Farm Shop.* (3) I, II, S

Wood and metal work, including blueprint reading, oxy-acetylene and arc welding, power woodworking tools, soldering and pipe work. Lecture, one hour; lab, four hours.

400 *Farmstead Planning and Mechanization.* (3) I, II

Analysis of feed, water, and manure handling systems on the farm. The processing and storage of farm products. Farmstead layout and design. Selection and control of materials handling equipment. Lecture, one hour; lab, four hours. Prereq: AEN 100 or consent of instructor. *Walker and White.*

410 *Farm Power and Machinery.* (3) S

A study of farm tractors and implements. Operating principles of valves, carburetion, ignition, and lubrication of the engine. Use and care of selected tractor-mounted implements. Emphasis on maintenance. Class and laboratory work on tractors and implements. Lecture, two hours; lab, two hours. *Young.*

416 *Energy Sources and Machinery for Agriculture.* (4)

A study involving the use of fundamental concepts of energy and materials in analytical and experimental approaches to the development and design of energy converters and machinery for agriculture. Lecture, three hours; lab, two hours. Prereq: M.A. 431, G.E. 221, G.E. 313, G. E. 431. *E. Smith.*

425 *Functional Design of Agricultural Structures.* (4) I

Functional requirements of farm buildings and structures; planning for plant and process efficiency; selection and utilization of materials; sanitary equipment and disposal of wastes; preparation of plans, estimates, and specifications. Lecture, two hours; lab, four hours. Prereq: G.E. 431, E.G. 102. *Walker.*

426 *Farm Buildings and Equipment.* (3) I

Continuation of Agr. Engr. 425 with more advanced study devoted to several of the same topics. Lecture, two hours; lab, two hours. Prereq: Agr. Engr. 425. *Walker.*

430 *Farm Water Management.* (3) I

Elementary surveying, mapping, and determination of areas of farm land, consideration of precipitation, runoff, and soil erosion relationships, planning terraces, waterways, drainage systems, and farm reservoirs. Lecture, two hours; lab, three hours. Prereq: AEN 100 or consent of instructor. *Ligon.*

435 *Principles of Soil and Water Conservation Engineering.* (4) II

Engineering aspects of the control of surface and subsurface water to aid agricultural production. Mapping of farm land; design and construction of terraces, dams, waterways, drainage, and irrigation systems. Lecture, three hours; lab, two hours. Prereq: M.E. 330 or C.E. 350.

436 *Soil and Water Conservation Engineering.* (3) I

Continuation of Agr. Engr. 435 with more advanced study devoted to several of the same topics. Lecture, three hours. Prereq: Agr. Engr. 435.

440 *Dairy Equipment.* (2) II

Engineering principles involved in the construction, operation, and management of machinery and equipment used in processing dairy products. Lecture, two hours.

442 *Farm Electrification.* (3) II

Study of the various aspects of farmstead electrification including the fundamentals of farmstead wiring and the selection, operation and economics of farm electrical equipment. Special attention given to materials handling and crop processing equipment. Lecture, two hours; lab, two hours. Prereq: AEN 100 or consent of instructor. *White.*

446 *Agricultural Processing and Electrification.* (4) I

Application of engineering principles to the handling and processing of agricultural products. The utilization of electricity in agriculture. Instrumentation and control of agricultural processes. The analysis of processing systems on the farmstead. Lecture, three hours; lab, two hours. Prereq: E.E. 306, M.E. 330, or C.E. 350. *White.*

450 *Special Problems.* (1-3) I, II, S

This course is designed to permit advanced students to make an intensive study of some phases of Agricultural Engineering in which they are particularly interested. Approval of instructor required. May be repeated for a total of 6 credits. *Staff.*

505 *Engineering Analysis.* (3) II

A study of the professional method of dealing with engineering problems and the application of this method to problems encountered in the agricultural industry. Lecture, two hours; lab, two hours. Prereq: AEN 416, 425, 435, 445. *E. Smith.*

519 *Advanced Farm Machinery.* (3) I, II

Analysis of agricultural machines, power units, and equipment with emphasis on functional design requirements, development procedures, safety requirements, and evaluation of performance. To be offered as a formal class or as a special problems course. Prereq: Agr. Engr. 417.

548 *Advanced Agricultural Processing.* (3) I, II

Analytical study of engineering problems dealing with the handling and processing of agricultural products, such as grading, sorting, drying, and curing, and the preparation of plans for these operations. To be offered as a formal class or as a special problems course. Prereq: Agr. Engr. 425 and 445 or equivalent.

628 *Advanced Farm Buildings and Equipment.* (3) I, II

Analysis and solution of selected problems dealing with such topics as rural housing, and the maintenance of desirable environments for farm animals and for the storage of farm products. To be offered as a formal class or as a special problems course. Prereq: Agr. Engr. 425. *Walker.*

635 *Advanced Soil and Water Conservation Engineering.* (3) I, II

Analysis and solution of selected problems dealing with land improvement and the control and use of water for agricultural production, with emphasis on functional design requirements of water retarding, storage, and distribution systems. To be offered as a formal class or as a special problems course. Prereq: Agr. Engr. 435 or equivalent.

646 *Advanced Rural Electrification.* (3) I, II

Analytical study of selected topics associated with electricity in agriculture. To be offered as a formal class or as a special problems course. Prereq: Agr. Engr. 445.

657 *Research Methods in Agricultural Engineering.* (3) I, II, S

A study of research techniques and methods used in agricultural engineering. Prereq or concurrent: Agr. Econ. 530 or equivalent.

658 *Instrumentation in Agricultural Engineering Research.* (3) I, II

The principles and applications of measuring instruments and devices for obtaining experimental data. Prereq or concurrent: Agr. Engr. 657.

775 *Seminar.* (0) I, II, S

Weekly meetings with members of the staff for reports and discussion on research and current trends and practices in agricultural engineering. One class hour. *Staff.*

795 *Thesis.* (0) I, II, S

ANIMAL SCIENCE

FACULTY

Professors: Wesley Patterson Garrigus (Ph.D., Illinois, 1935), HEAD; Charles Elmer Barnhart (Ph.D., Iowa State, 1954), Ray Horn Dutt (Ph.D., Wisconsin, 1948), James Dillon Kemp (Ph.D., Illinois, 1952), Dewey G. Steele (Ph.D., Wisconsin, 1926), Patch Gregory Woolfolk (Ph.D., Cornell, 1950). *Associate Professors:* Neil Wright Bradley (Ph.D., Illinois, 1958), Charles Frank Buck (Ph.D., Cornell, 1953), George Ernest Mitchell, Jr. (Ph.D., Illinois, 1956), William York Varney (Ph.D., Michigan State, 1960). *Assistant Professors:* Herbert Brown (Ph.D., Iowa State, 1959), Nelson Gay (Ph.D., Illinois, 1962), Charles Oran Little (Ph.D., Iowa State, 1960), John Robertson (Ph.D., Kentucky, 1960).

COURSES IN ANIMAL SCIENCE

100 *Farm Livestock Production.* (3) I, S

Types, market classes, and grades of beef cattle, sheep, swine; origin, development, and characteristics of breeds; importance and place of livestock in Kentucky agriculture. Lecture, two hours; lab, two hours. *Buck.*

102 *Light Horse Husbandry.* (3) I, II

A brief study of the breeds of light horses; selection, feeding, and management; fundamental instruction in equitation. Lecture, two hours; lab, two hours. *Ryen.*

104 *Breeds of Livestock.* (3) I

A study of the identification, origin, development, adaptations and present status of the breeds of beef cattle, sheep and swine. Lecture, three hours. *Barnhart, Woolfolk, and Pinney.*

201 *Livestock Judging.* (3) II

Evaluation of purebred and commercial beef cattle, sheep, and swine; both market and breeding classes. Practice in writing reasons and giving of reasons orally. Lab, six hours. Prereq: A.Sc. 100. Not open to freshmen. *Pinney.*

203 *Livestock Management.* (1) I

Intensive training in approved livestock management practices with emphasis on the preparation of animals for show and sale. Lab, two hours. *Pinney.*

204 *Meats and Meats Processing.* (4) I, II

Slaughtering and cutting of beef, veal, hog, and lamb carcasses; correlation of breeding and feeding with carcass values, meat processing. Lecture, two hours; lab, four hours. Prereq: A.Sc. 100. Not open to freshmen. *Kemp and Varney.*

206 *Selection, Evaluation, and Use of Meats.* (3) II

History and growth of packing and meat industry; physical and chemical composition and nutritive value of meat; selection and utilization of cuts; identification; grading, cutting, processing and freezing methods; wholesale and retail sales methods. Lecture, two hours; lab, two hours. *Kemp.*

208 *Light Horse Production.* (3) I, II

Breed history, development and pedigrees; a general study of the anatomy and physiology of the horse; diagnosis, prevention and cure of common ailments; breaking, schooling and training. Lecture, two hours; lab, two hours. Prereq: A.Sc. 102. *Ryen.*

301 *Advanced Livestock Judging.* (3) I

Primarily for judging team candidates. Open only to those who have made good standings in the prerequisite courses. Lab, six hours. Prereq: ASC 100, 201, and approval of instructor. *Pinney.*

302 *Packing House Operations.* (4) S
An intensive on-the-job study of various packing house operations, includes livestock buying, slaughtering operations, cutting operations, curing, smoking, lard rendering, sausage making, packaging, inedible by-products, job relations, sales, advertising, business management, and plant maintenance. Prereq: A.H. 204, A.Sc. 206, or equivalent, and consent of instructor. *Kemp.*

303 *Meat Judging.* (2) I
Intensive instruction in the evaluation of carcasses and cuts of beef, veal, pork, and lamb. Lab, four hours. Prereq: A.Sc. 204, or A.Sc. 206. *Kemp.*

370 *Animal Science Seminar.* (1) II
An insight into the problems and opportunities in Animal Science. Presentation and discussion of current topics by students, staff and guests. Lecture, one hour. May be repeated once for a total of 2 credits. *Staff.*

395 *Special Problems in Animal Science.* (1-4) I, II, S
Approval of instructor required. May be repeated twice for a total of 9 credits. *Staff.*

500 *Animal Breeding.* (3) II
History of animal improvement; survey of hereditary traits in livestock, inbreeding and outcrossing; progeny tests and herd analysis. Lecture, three hours. Prereq: A.Sc. 100, 260. *Steele.*

502 *Applied Livestock Nutrition.* (3) S
A discussion of the specific nutritional requirements of beef cattle, sheep and swine; with emphasis on recent nutritional concepts, feed formulation, and economic consideration. Prereq: ASC 280 and approval of instructors. *Staff.*

504 *Sheep Production.* (3) II
History and importance of the sheep industry; selection, breeding, feeding, and management of sheep; production and handling of wool. Lecture, two hours; lab, two hours. Prereq: A.Sc. 100, 280. *Woolfolk.*

506 *Beef Production.* (3) II
History and importance of the beef cattle industry; selection, breeding, feeding and management of beef cattle. Lecture, two hours; lab, two hours. Prereq: A.Sc. 100, 280. *Bradley.*

508 *Pork Production.* (3) II
History and importance of the swine industry; selection, breeding, feeding, and management of swine. Lecture, two hours; lab, two hours. Prereq: A.Sc. 100, 280. *Barnhart.*

771 *Animal Industry Seminar.* (1) I, II
May be repeated twice for a total of 3 credits. *Staff.*

780 *Special Problems in Animal Science, Variable Credit.* (1-4)
May be repeated for a total of nine hours.

790 *Research in Meats.* (3) I, II, S
Problems involving original investigation. May be repeated twice for a total of 9 credits. *Kemp.*

791 *Research in Horse Husbandry.* (3) I, II, S
Problems involving original investigation. May be repeated twice for a total of 9 credits. *Ryen and Steele.*

792 *Research in Sheep Husbandry.* (3) I, II, S
Problems involving original investigation. May be repeated twice for a total of 9 credits. *Woolfolk.*

793 *Research in Beef Cattle Husbandry.* (3) I, II, S
Problems involving original investigation. May be repeated twice for a total of 9 credits. *Bradley.*

794 *Research in Swine Husbandry.* (3) I, II, S
Problems involving original investigation. May be repeated twice for a total of 9 credits. *Barnhart.*

COURSES IN ANIMAL NUTRITION

280 *Feeds and Feeding.* (4) I, II
Digestion, absorption, assimilation and utilization of nutrients by domestic animals; principal feeds, rations, and nutritive ratios. Lecture, three hours; lab, two hours. Prereq: Chem. 102 or 110. *Buck.*

580 *Principles of Animal Nutrition.* (3) I
The chemistry and physiology of animal nutrition and the nutritive requirements for growth, fattening, reproduction, lactation, and other body functions. Lecture, three hours. Prereq: Chem. 236 or equivalent. *Mitchell.*

680 *Laboratory Methods in Animal Nutrition and Meats.* (4) I
The use of laboratory techniques and equipment in the solution of fundamental problems on nutrition and meats. Lecture and recitation, one hour; lab, 6 hours. *Little.*

682 *Nutrient Metabolism.* (5) S
Present concepts of the metabolic roles of the individual nutrient components of feeds and their relation to practical feeding problems. Prereq: A.Sc. 580 or equivalent, one course in introductory physiology or biochemistry and consent of instructor. *Mitchell and Little.*

684 *Advanced Ruminant Nutrition.* (3) I
Introduction of principles of ruminant metabolism in the utilization of feedstuff for meat, milk, and wool production. Prereq: One course each in nutrition, physiology, and biochemistry and consent of instructor. *Mitchell.*

686 *Swine Nutrition.* (3) I (Alternate Years)
A study of the nutritional requirements of the non-ruminant animal with special reference to swine and their various stages of growth, lactation and reproduction. An evaluation of the relative value of feed ingredients and mixed feed formulation. Prerequisite: A.H. 580, Chem. 430. *Barnhart.*

784 *Special Problems in Animal Nutrition.* (1-3) I, II, S
Approval of instructor required. May be repeated twice for a total of 9 credits. *Animal Nutrition Staff.*

798 *Research in Animal Nutrition.* (3) I, II, S
Problems involving original investigation. May be repeated twice for a total of 9 credits. *Animal Nutrition Staff.*

COURSES IN GENETICS

260 *Genetics.* (3) I, II, S
The elementary principles of heredity and their relationship to plant and animal breeding. Attention is directed briefly to human heredity. Lecture, three hours. Prereq: Bot. 101 or Zool. 100. *Steele.*

261 *Genetics Laboratory.* (1) I, II
Technic of Drosophila breeding; analysis of Mendelian ratios in corn; observation of chromosomes in mitosis and reduction. Lab, two hours. Concurrently with A.Sc. 260, at student's option. *Steele.*

398 *Special Problems in Genetics.* (1-3) I, II, S
Approval of instructor required. May be repeated twice for a total of 9 credits. *Steele and Dutt.*

560 *Genetics.* (3) I, II, S
Lecture A.Sc. 260 and assigned readings. Primarily for graduate students. Lecture, three hours. Prereq: Bot. 101 or Zool. 100. *Steele.*

561 *Genetics Laboratory.* (1) I, II
Similar to A.Sc. 261 but additional work required. Primarily for graduate students. Lab, two hours. Concurrent with A.Sc. 560 at student's option. *Steele.*

562 *Advanced Genetics.* (3) II
Concerned chiefly with the physical basis of heredity, mutations, chromosomal aberrations, linkage, genetics and developments, and reports on current literature. Lecture, three hours. Prereq: A.Sc. 260. *Steele.*

660 *Physiology of Reproduction.* (3) II
Physiological processes of reproduction in farm animals, gonadal functions, endocrine relationships, fertility, and factors affecting reproductive efficiency. Lecture, three hours. Prereq: A.Sc. 500 or D.S. 524 or Phy. 540 and A.P. 501. *Dutt.*

662 *Population Genetics.* (3) I
Introduction to principles of static and dynamic populations; statistical concepts and tools applied to quantitative inheritance. Lecture, three hours. Prereq: One course each in statistics and genetics and consent of instructor.

783 *Special Problems in Genetics.* (1-3) I, II, S
Approval of instructor required. *Steele and Dutt.*

797 *Research in Genetics.* (3) I, II, S
Problems involving original investigation. May be repeated twice for a total of 9 credits. *Steele and Dutt.*

COURSES APPLICABLE TO ALL DIVISIONS

768 *Residence Credit for the Master's Degree.* (1 to 9 wks. residence)
May be repeated. Maximum of six weeks can be applied toward master's degree with thesis. *Staff.*

769 *Residence Credit for the Doctor's Degree.* (1 to 18 wks. residence)
May be repeated indefinitely. *Staff.*

ANIMAL PATHOLOGY

FACULTY

Professors: Elvis R. Doll (D.V.M., Michigan State, 1943), Acting Head; Robert Frank Behlow (D.V.M., Ohio State, 1953), John Thomas Bryans (Ph.D., Cornell, 1954), J. Harold Drudge (Sc.D., Johns Hopkins, 1950), Floyd Edgar Hull (D.V.M., Kansas State, 1925), special assignment, Stanley Edward Leland, Jr. (Ph.D., Michigan State, 1953), William Howard McCollum (Ph.D., Wisconsin, 1954), James Rowell Rooney (D.V.M., Cornell, 1952). *Assistant Professors*: Barbara P. Shephard (M.S., Wisconsin, 1959), Joseph Szanto (D.V.M., Illinois, 1961), James Carroll Wilson (M.S., Kentucky, 1950).

251 *Animal Hygiene.* (3) I, II
Animal Hygiene includes feed, water, housing, ventilation, yards, pastures, sanitation, and environment. All are part of the many problems to be considered in a program of animal health. Lecture, three hours.

395 *Special Problems in Animal Pathology.* (3) I, II
Prereq: An. Path. 251, 501, 502, and approval of instructor. May be repeated once for a total of 6 credits.

501 *Anatomy and Physiology of Domestic Animals.* (3) I
A study of anatomy and physiology as related to courses in livestock judging, nutrition, butchering, breeding, and infectious diseases. Lecture, three hours.

502 *Infectious Diseases of Domestic Animals.* (3) II, S
Distribution, general nature, manner of dissemination, methods of control, prevention, and eradication of infectious and parasitic diseases of animals. Lecture, three hours. Prereq: An. Path. 251, or approval of instructor.

780 *Investigations in Animal Diseases.* (3) I, II
This course is open only to persons who have degrees in veterinary medicine. May be repeated once for a total of 6 credits.

DAIRY SCIENCE

FACULTY

Professors: Dwight Moody Seath (Ph.D., Iowa State, 1939), Head; Theodore Russell Freeman (Ph.D., Penn State, 1937), Durward Olds (Ph.D., Illinois, 1956). *Associate Professors*: John Orville Barkman (B.S., Ohio State, 1919), special assignment, Don Richard Jacobson (Ph.D., Maryland, 1956), Arthur William Rudnick, Jr. (Ph.D., Minnesota, 1954). *Assistant Professors*: Wilburn Eldon Glenn (Ph.D., Washington State, 1955). *Instructor*: Arthur Paul Graden (B.S., Kentucky, 1959).

120 *Fundamentals of Dairying.* (3) I, II
Place of dairying in agriculture; factors affecting secretion, composition, physical and chemical properties of milk and cream; food value of dairy products; dairy calculations; clean milk production; farm dairy processes. Lecture, two hours; lab, two hours. *Jacobson, Rudnick, and Seath.*

221 *Judging Dairy Cattle.* (3) II
Selection of sires, cows, and heifers with due consideration for breed and dairy type, application of principles involved in the problem of herd improvement. Lab, six hours. Prereq: D.S. 120.

230 *Judging Dairy Products.* (2) I
A study of the accepted standards of judging market milk, butter, ice cream, and cheese; scoring these products in accordance with standard methods. Lecture, one hour; lab, two hours. *Freeman.*

232 *Advanced Dairy Products Judging.* (2) II
Practice in judging dairy products with especial emphasis being given to commercial methods of scoring dairy products and to procedure followed in intercollegiate judging contests. Lecture, one hour; lab, two hours. Prereq: D.S. 230 or approval of instructor. *Freeman.*

235 *Dairy Plant Testing Methods.* (3) II
Purpose, principles, technic and interpretation of results of testing procedures essential to the control of all dairy processing operations. Lab, six hours. Prereq: D.S. 120; Chem. 104. *Rudnick.*

237 *Approved Dairy Practice.* (1)
A minimum of three months practical experience in an approved dairy plant, preferably to be done between junior and senior years. *Freeman.*

321 *Advanced Dairy Cattle Judging.* (3) I
Primarily for judging team candidates. Open only to those who have made good standings in the prerequisite courses. Lectures and lab. Prereq: D.S. 120, 221.

396 *Special Problems in Dairying.* (1-4) I, II, S
Approval of instructor required. *Dairy Staff.*

520 *Dairy Cattle Feeding and Management.* (3) I
Application of principles of nutrition to dairy cattle feeding; current methods contributing to maximum production of quality dairy products on the farm. Lecture, two hours; lab, two hours. Prereq: A.SI. 280.

524 *Dairy Cattle Breeding.* (3) II
Application of genetics to problems of breed and herd improvement; progeny testing of sires; type classification, selective registration; prominent families and strains within the leading dairy breeds. Lecture, two hours; lab, two hours. Prereq: A.SI. 260.

526 *Reproduction in Dairy Cattle.* (2) II
A study of male and female reproductive processes in dairy cattle and the application of artificial breeding to the improvement of dairy herds. Lecture, one hour; lab, two hours. Prereq: D.S. 120, A.SI. 260, Zool. 100 or consent of instructor. *Olds.*

530 *Dairy Bacteriology.* (2) I
Application of bacteriological principles to production and processing of dairy products, entrance of micro-organisms into dairy products, effects of their growth and methods for control. Lecture, two hours. Prereq: Microb. 200 or 400. *Glenn.*

531 *Dairy Bacteriology Laboratory.* (2) I
Laboratory to accompany D.S. 530, Dairy Bacteriology. Lab, four hours. Prereq: or concurrent: D.S. 530. *Glenn.*

533 *Advanced Dairy Bacteriology.* (3) II
Bacteriological principles and problems relating to specific dairy products and processes. Lab, six hours. Prereq: D.S. 530, 531. *Glenn.*

534 *Principles of Dairy Technology.* (4) II
Chemical and physical characteristics of dairy products; chemical, physical, and physico-chemical principles involved in dairy processing; special methods of analysis. Lecture, one hour; lab, six hours. Prereq: Math. 101, Chem. 236, D.S. 235. *Freeman.*

536 *Dairy Processing and Plant Management.* (6) II
Methods used for processing milk, butter, ice cream, cheese, and concentrated milks; fundamentals of dairy plant management. Lecture, two hours; lab, eight hours. Prereq: D.S. 235.

572 *Dairy Seminar.* (1) I, II
May be repeated to a maximum of four credits. *Dairy Science Staff.*

622 *Current Developments in Dairy Science.* (3) II, S
A course designed to acquaint the advanced student with the more significant problems and scientific developments of current interest in the dairy field. Lecture, three hours. Prereq: Graduate standing and permission of major advisor. *Dairy Science Staff.*

662 *Population Genetics.* (3) I
Introduction to principles of static and dynamic populations; statistical concepts and tools applied to quantitative inheritance. Lecture, three hours. Prereq: one course each in statistics and genetics and consent of instructor. Same as Animal Science 662.

684 *Advanced Ruminant Nutrition.* (3) II
Introduction to principles of ruminant metabolism in the utilization of feedstuffs for meat, milk and wool production. Lecture, three hours. Prereq: One course each in nutrition, physiology and biochemistry, and/or consent of instructor. Jacobson and Mitchell. Same as Animal Science 684.

768 *Residence Credit for Master's Degree.* (0) I, II, S
May be repeated once. *Dairy Science Staff.*

769 *Residence Credit for Ph.D. Degree.* (0) I, II, S
May be repeated once. *Dairy Science Staff.*

771 *Animal Industry Seminar.* (1) I, II
May be repeated twice for a total of 3 credits. *Dairy Science Staff.*

781 *Special Problems in Dairying.* (1-3) I, II, S
May be repeated to a maximum of twelve credits. *Dairy Science Staff.*

795 *Research in Dairying.* (3) I, II, S
Problems involving original investigation in either dairy production or dairy manufacturing. May be repeated for a total of 12 credits. *Dairy Science Staff.*

HORTICULTURE

Professors: Hubert Charles Mohr (Ph.D., Texas A.&M., 1955), HEAD. Oscar Malcolm Davenport (M.S., Purdue, 1940), Norris Raymond Elliott (M.S., Cornell, 1932), special assignment, Clair Smith Waltman (Ph.D., Michigan State, 1941). *Associate Professors:* Carl Edward Chaplin (M.S., Illinois, 1948), Donald James Cotter (Ph.D., Cornell, 1956), James Watt Herron (Ph.D., Cornell, 1951), James Durrett Kelley (Ph.D., Michigan State, 1957), Dudley Carl Martin (Ph.D., Michigan State, 1954). *Assistant Professors:* Jan W. Abernathie (Ph.D., Illinois, 1959), Dean Edgar Knavel (Ph.D., Michigan State, 1959).

100 *General Horticulture.* (3) I, II
A study of the principles and practices basic to the production of fruit, flowers, and vegetable crops. Lectures, three hours. *Waltman.*

101 *Elementary Landscape.* (2) II
The elementary principles of landscape as applied to the planting of urban home grounds and farmsteads. Lectures, two hours. Offered 1963-64 and alternate years. *Abernathie.*

102 *Elementary Floriculture.* (2) II
The elementary principles of growing flowers and decorative plants, as house plants, and outdoor culture. Lectures, two hours. Offered 1962-63 and alternate years. *Abernathie.*

329 *Ornamental Plants.* (2) II
A detailed study of evergreen and deciduous plants, their identification, hardiness, growth habit, size, culture, adaptation to environmental conditions, uses, and outstanding horticultural characteristics. Lectures, one hour; lab, two hours. Prereq: Hort. 100, Bot. 101, 102, and approval of instructor. Offered 1962-63 and alternate years.

395 *Special Problems in Pomology.* (3) I, II, S
May be repeated for a total of nine credits. Prereq: Hort. 100 and one of the following: 502, or 504.

396 *Special Problems in Vegetable Crops.* (1-4) I, II, S
Prereq: Hort 100, 510, and approval of instructor. May be repeated twice for a total of 9 credits. *Emmert.*

397 *Special Problems in Ornamental Horticulture.* (1-4) I, II, S
Prereq: Hort. 100, 520, 522; Bot. 101, 103; and approval of instructor. May be repeated for a total of 12 credits. *Abernathie & Kelley.*

500 *Principles of Spray Practice.* (2) I
A study of the principles and practice of spraying for the control of pests of horticultural crops including insects, diseases and weeds. Lecture, one hour; lab, two hours. Prereq: Hort. 100, Chem. 102, Ag. Ent. 100.

502 *Pomology: Deciduous Tree Fruits.* (3) I
A course dealing with the theory and practice of commercial tree fruit production, with major emphasis on apple growing. Lectures, two hours; lab, two hours. Prereq: Hort. 100. *Waltman.*

504 *Pomology: Small Fruits.* (2) II
A detailed study of the care and management of commercial plantings of strawberries, raspberries, and other bush fruits. Lectures, one hour; lab, two hours, first half; lectures, two hours, last half. Prereq: Hort. 100. *Waltman.*

510 *The Principles of Vegetable Gardening.* (3) I
A study of the fundamental principles underlying commercial production of vegetables. Lectures, two hours; lab, two hours. Prereq: Hort. 100, Agron. 266.

512 *Growing Vegetable Plants Under Glass.* (3) II
Production of vegetable plants grown for transplanting; types of hotbeds, cold frames, and simple greenhouse structures. Lectures, two hours; lab, two hours. Prereq: Hort. 510. *Cotter.*

520 *Landscape Gardening.* (3) I
The adaptation of principles of landscape architecture; coordination of buildings with surroundings; identification and uses of decorative materials and their requirements. For ornamental majors. Lectures, two hours; lab, two hours. Prereq: Hort. 100, 101, Bot. 101, 103. Offered 1962-63 and alternate years.

522 *Advanced Landscape.* (3) II
A continuation of Horticulture 520, with special emphasis on design and use of materials. For ornamental majors. Lectures, two hours; lab, two hours. Prereq: 520. Offered 1962-63 and alternate years. *Abernathie.*

524 *Floriculture.* (2) I
A detailed study of specific groups of flowers such as bulbs, iris, and roses. Lectures, two hours. For ornamental majors. Prereq: Hort. 102. Offered 1963-64 and alternate years.

525 *Plant Propagation.* (3) I
A detailed study of the methods of propagating certain horticultural plants. Includes cuttings, grafting, and budding. Lectures, two hours; lab, two hours. Prereq: Hort. 100, 520; Bot. 101, 103. Offered 1963-64 and alternate years. *Kelley.*

527 *Plants and Planting Materials.* (2) I
A detailed study of evergreen and deciduous plants, their identification, size, shape, effects produced, the conditions required for their use and suitability for landscape uses. Lecture, one hour; lab, two hours. For ornamental majors. Prereq: Hort. 520 or approval of instructor. Offered 1962-63 and alternate years. *Kelley.*

768 *Residence Credit for Master's Degree.* (0) I, II, S
Staff.

770 *Seminar.* (1) I, II, S
May be repeated twice for a total of 3 credits. *Staff.*

780 *Special Problems in Pomology.* (3) I
Prereq: Hort. 100 and one of the following: 502 or 504. May be repeated twice for a total of 9 credits.

781 *Special Problems in Vegetable Crops.* (1-4) I, II, S
Prereq: Hort. 100, 510, and approval of instructor. *Emmert.*
May be repeated twice for a total of nine credits.

782 *Special Problems in Ornamental Horticulture.* (1-4) I, II, S
Prereq: Hort. 100, 520, 522; Bot. 101, 103; and approval of instructor. May be repeated for a total of 12 credits. *Abernathie & Kelley.*

790 *Research in Horticulture.* (1-4) I, II, S
Prereq: Approval of instructors. May be repeated twice for a total of 9 credits. *Staff.*

FORESTRY

100 *Elements of Forestry.* (3) I
A brief coverage of the general fields of forestry; development and importance; tree growth; principal forest regions and important timber species; forest management practices, utilization and products; state and federal forestry programs. Lectures, three hours. *Davenport.*

104 *Farm Forestry.* (3) I, II
The principles of forestry as applied to farm woodlands. Important trees of Kentucky. Tree structure and physiology. Reproduction, management and protection of farm woodlands. Measuring and utilization of wood products. Lectures, two hours; lab, two hours. *Davenport.*

200 *Seeding and Planting.* (3) II
Artificial regeneration for forest stands; fundamentals of forestry nursery practice; planting techniques and methods. Lectures, two hours; lab, two hours. Prereq: For. 100 or 104. *Davenport.*

300 *Elements of Forest Mensuration.* (3) I
The theory and application of measurements of logs, trees, and stands of timber. Lectures, two hours; lab, two hours. Prereq: For. 100 or 104; Math. 112; or approval of instructor. *Davenport.*

400 *Wood Identification and Technology.* (3) I
General anatomy of wood, identification of commercial species of the United States based on gross and miscroscopic features. Properties and uses. Lectures, two hours; lab, two hours. Prereq: For. 100 or 104; Bot. 101; and approval of instructor. *Davenport.*

410 *Lumber and Other Forest Products.* (3) II
Manufacture, grading, and seasoning of lumber. Forest products other than logs or lumber, their methods of utilization and markets. Lectures, three hours. Prereq: For. 100 or 104 and approval of instructor. *Davenport.*

415 *Wood Conditioning.* (3) I, S
The methods and principles involved in seasoning, changes in physical properties, and preservation of wood. Prereq: For. 100 or 104. *Davenport.*

780 *Special Problems in Forestry.* (1-4) I, II, S
Prereq: For. 400 and 415, and approval of instructor. May be repeated twice for a total of 9 credits. *Davenport.*

POULTRY SCIENCE

FACULTY

Professors: Wyatt Marion Insko (M.S., West Virginia, 1927), HEAD; Donald Wayne MacLaury (Ph.D., Iowa State, 1955). *Associate Professors*: Okra Jones Abbott (Ph.D., Wisconsin, 1956), John J. Begin (Ph.D., Pennsylvania State, 1960). *Assistant Professor*: John Carlisle White (M.S., Kentucky, 1953).

140 *Fundamentals of Poultry Science.* (3) I, II
Principles of poultry husbandry, breeds and poultry improvement; selection and culling, incubation and brooding, feeding, housing and disease control. Marketing poultry products. Lecture, two hours; lab, and demonstration, two hours. *Begin.*

242 *Poultry Judging.* (3) II
Selection of breeding stock as a basis for flock improvement, including breed type and production values. Lecture, one hour; lab, four hours. Prereq: Pty. 140. *Johnson.*

342 *Advanced Poultry Judging.* (3) I
Primarily for judging team candidates. Open only to those who have made good standing in the prerequisite courses. Lecture, one hour; lab, four hours. Prereq: Pty. 140, 242. *Johnson.*

346 *Hatchery Management.* (3) II
Principles involved in operating incubators and brooders; hatchery operation and management; factors influencing the avian embryo; operation of commercial incubators. Lecture, two hours; lab, two hours. Prereq: Pty. 140 and approval of instructor. *MacLaury.*

397 *Special Problems in Poultry.* (1-3)
Approval of instructor required. May be repeated twice for a total of 9 credits. *Staff.*

540 *Poultry Breeding.* (3) I
Genetic principles involved in poultry breeding; disease resistance; inheritance of egg production and related characters; development of breeding programs. Lecture, three hours. Prereq: Pty. 140, A.SI. 260.

542 *Advanced Poultry Production.* (3) I
Studies of control measures in poultry diseases, nutrition, marketing; flock management and replacement. Lecture, two hours; lab, and dem., two hours. Prereq: Pty. 140. *Abbott.*

548 *Poultry Nutrition.* (3) II
A study of nutrients, feed ingredients, deficiencies, formulation, and feeding practices for broilers, replacement stock, and layers. Lecture, two hours; lab, two hours. Prereq: Chem. 236 or equivalent and Pty. 140. *Begin.*

768 *Residence Credit for Master's Degree.* (0) I, II, S
May be repeated once. *Staff.*

771 *Animal Industry Seminar.* (1) I, II
Staff.

782 *Special Problems in Poultry.* (1-3) I, II, S
Prereq: Permission of instructor. May be repeated to a maximum of 9 credits.

796 *Research in Poultry.* (1-3) I, II, S
Problems involving original investigation. May be repeated twice for a total of 9 credits. *Staff.*

RURAL SOCIOLOGY

(See also Sociology Department courses, College of Arts and Sciences)

FACULTY

Professors: A. Lee Coleman (Ph.D., Cornell, 1950), HEAD; Howard Wayland Beers (Ph.D., Cornell, 1935), Distinguished Professor, on indefinite leave; Thomas

Robert Ford (Ph.D., Vanderbilt, 1951). *Associate Professors*: James Stephen Brown (Ph.D., Harvard, 1950), Charles Milton Coughenour (Ph.D., Missouri, 1953), Frank Anthony Santopolo (Ph.D., Fordham, 1956), E. Grant Youmans (Ph.D., Michigan State, 1953). *Assistant Professors*: George A. Hillery, Jr. (Ph.D., Louisiana State, 1954), Joseph Joseph Mangalam (Ph.D., Cornell, 1957), Harry Karl Schwarzweller (Ph.D., Cornell, 1958).

156 *Introduction to Rural Sociology.* (3) I, II
Agriculture and culture; family, church, school, government, and trade in rural life; the person in relation to rural neighborhoods, communities, groups, and agencies; cooperation and conflict; recreation, health, and social welfare. *Mangalam.*

513 *Rural Community Analysis.* (3) I
The nature of the town-country community, with special emphasis on the function of institutional and agency programs and their leaders in relation to the community. Same course as Home Econ. 575. *Ford.*

514 *Rural Movements and Social Policy.* (3) I
Social factors in selected rural movements, their organization and development, influence upon governmental policy, and the social needs met. Prereq: An introductory course or consent of instructor. *Brown.*

517 *Advanced Rural Sociology.* (3) II
Systematic study of the structure and function of family, informal and locality groups, social strata, religious, educational, political, and occupational groups in rural society. *Brown.*

541 *Group Organization and Leadership.* (3) II, S
A study of the dynamics of organized groups; leadership, membership participation and program planning in agricultural organization and other organized rural groups. Prereq: An introductory course or consent of instructor. *Coughenour.*

565 *Special Problems in Rural Life.* (1-3) I, II
Supervised individual study in selected sub-fields of rural sociology, population, standards of living, neighborhood and community change, and rural institutions are among the available fields for investigation. May be repeated twice for a total of 6 credits. *Staff.*

615 *Rural Urban Relations.* (3) II
Interdependence of city and country; solidarity and antagonistic relationships of city and country; the process of urbanization; problems of rural adjustment to urban influence.

768 *Residence Credit for the Master's Degree.*
(1 to 9 wks. residence)
May be repeated. Maximum of six weeks can be applied toward master's degree with thesis. *Staff.*

773 *Topical Seminar.* (3) I, II
Analysis of topics of scientific interest in rural sociology, selected from such fields as the following: criticism of research; sociological factors in land use; migration; rural social ecology of the South; highland societies. *Staff.*

776 *Seminar in Rural Organization.* (3) I
Basic theories of social organization, comparative study of selected systems of rural social organization; examples of purposeful organization.

778 *Seminar in Rural Attitudes.* (3) II
The nature and genesis of rural attitudes and their relation to rural social control; analysis of contemporary rural attitudes and opinions.

790 *Research in Rural Sociology.* (1-3) I, II, S
Individual graduate research with correlated study of rural social research types and methods. May be repeated twice for a total of 6 credits. *Staff.*

Requirements for Graduation in Home Economics

To receive the degree Bachelor of Science in Home Economics a student is required to gain a total of 136 semester credits and 272 points. These represent the minimum requirements for graduation. There are seven curricula in home economics and a student who completes the requirements of any one of these qualifies for the degree. In all cases the student is responsible for meeting requirements for graduation.

Home Economics offers education for home and family living in a contemporary society. It includes liberalizing courses in the arts, humanities, and sciences as well as technical education in the subject matter of the profession. The student in home economics receives the type of education which gives an understanding of citizenship in a community and responsibility in the family. Home economics also provides education for some of the professions that deal with the home and family living. To that end, curricula are planned to serve as guides for major emphasis in specialized fields of work.

Faculty advisors are appointed by the Director of the School of Home Economics to assist students with their academic problems. These include choice of a curriculum, selection of elective courses, preparation of class schedules, and problems of employment. The normal academic load is 17 credits per semester.

Transfer students are required to take a minimum of 18 credits of Home Economics in the University.

CURRICULA & MAJORS IN HOME ECONOMICS

In addition to the general curriculum, provision is made for majors in the following fields: (1) Child Development and Family Living: (2) Clothing, Costume Design, Textiles, and Interior Design; (3) Food and Equipment Demonstration; (4) Home Economics Extension; (5) Institution Management; and (6) Vocational Home Economics (teaching).

The electives should be chosen in accordance with a definite plan, and students should consult with their advisors concerning both Home Economics electives and general electives. The courses from which Home Economics electives are to be chosen appear under each major field.

Changes in a curriculum to meet specific needs may be made if approved in accordance with rules of the University Faculty. A student with a special interest not included in the six major fields may remain in the general curriculum and, in conference with her advisor, select appropriate groups of elective courses. Such special interests include community nutrition, and preparation for graduate study and research in foods and nutrition.

GENERAL CURRICULUM IN HOME ECONOMICS

The general curriculum constitutes a core curriculum, and courses listed are required in all curricula.

General Education		42
Freshman and Sophomore Years		
Communications and Humanities		13
Art 105—Forms of Art	2	
Art 130—Basic Design or		
Hum. 203—Art: The Renaissance to the Present	2	

**Eng. 101, 102—Freshman Composition	6	
Eng. 181—Basic Public Speaking or Jou. 201—Etymology or Jou. 203—Principles of News Writing	3	
Physical Sciences		11 or (12)
*Che. 102,104—Gen. Chemistry for Students in Agr. & Home Economics	8	
Phy. 151 or 152—Introduction to Physics or	3	
Phy. 281—Gen. Physics for Students in Agr. & H.E.	(4)	
Biological Sciences		7
Pgy. 206—Elementary Physiology	3	
Psy. 100—Introduction to Psychology	4	
Social Sciences		9
Eco. 251—Principles of Economics	3	
History or Political Science elective	3	
RS 156—Introduction to Rural Sociology or Soc. 151—Introduction to Sociology or Soc. 153 or 154—Societies Around the World	3	
Physical Education		2
Home Economics		42
Freshman and Sophomore Years		
H.E. 104—Foods	4	
H.E. 106—Foods	3	
H.E. 120—Textiles	2	
H.E. 151—Health of the Family	3	
H.E. 153—Marriage and Family Relationships	3	
H.E. 224—Clothing Selection & Costume Design	4	
H.E. 255—Child Development	3	
H.E. 261—Housing	4	
Junior and Senior Years		
H.E. 211—Foods and Nutrition	3	
H.E. 330—Interior Design	3	
H.E. 402—Dietetics	3	
H.E. 561—Consumer Problems	3	
H.E. 562,563—Home Management & Family Relations	5	
Electives		52
Home Economics Courses	18	
General Education Courses	34	
Total required for graduation		136

General Electives are to be chosen with assistance of the student's advisor. The following areas are recommended.

Agricultural Extension
Anthropology
Art
Chemistry
Commerce
Education
English
History
Horticulture
Journalism
Library Science
Microbiology
Modern Foreign Languages and Literatures
Physical Education
Psychology
Radio, Television and Films
Sociology
Zoology

* Students deficient in mathematics, as indicated by the freshman tests, are required to pass M.A. 101 with a grade of C before taking Chemistry. Students interested in foods and nutrition research or college teaching should enroll in M.A. 101 and Che. 110 during the first semester of the freshman year.

** The requirement in whole or in part for Eng. 101, 102 may be satisfied without credit by passing a departmental proficiency examination.

CURRICULUM IN CHILD DEVELOPMENT AND FAMILY LIVING

This curriculum prepares a student for homemaking, nursery school teaching fellowships, or future specialization in the field of child development and family living.

	Crs.
Core courses (see general curriculum)	84
Home Economics electives (starred courses are required)	18
H.E. 254—Psychology of the Child	3
*H.E. 350—Child Guidance	3
H.E. 395—Guiding Children's Routines	3
H.E. 529—The Child and His Clothing	3
H.E. 555—Play and Play Materials	2
H.E. 557—Infant Development	2
H.E. 516—Food for Children	3
H.E. 595—Special Problems in Child Development and Family Living	5
*H.E. 396—Supervised Nursery School Participation	3
H.E. 552—Nursery School Organization	3
H.E. 553—The Child in His Family	3
General electives	34
Total	136

CURRICULUM IN CLOTHING, COSTUME DESIGN, TEXTILES, AND INTERIOR DESIGN

This curriculum is planned for students who are interested in professional or business careers in clothing retailing, interior design, textiles and clothing research, fashion consulting and writing as well as in the teaching of clothing.

	Crs.
Core courses (see general curriculum)	84
Home Economics electives (starred courses are required for clothing majors)	18
*H.E. 227—Clothing Construction	4
*H.E. 328—Clothing and Pattern Designing	3
*H.E. 520—Adv. Textiles	2
H.E. 524—Costume Design	3
*H.E. 526—Adv. Clothing	3
H.E. 536—Int. Decoration Projects	2
H.E. 523—Fashion	2
*H.E. 522—Economics of Clothing	2
H.E. 534—Decorative Textiles	2
H.E. 528—Tailoring	2
H.E. 530—Adv. Interior Design	2
H.E. 529—The Child and His Clothing	3
H.E. 537—History of Furniture	3
H.E. 592—Special Problems	2
H.E. 597—Special Problems	2
H.E. 593—Special Problems in Interior Design	2
General electives	34
Total	136

CURRICULUM IN FOOD AND EQUIPMENT DEMONSTRATION

This curriculum prepares the student for commercial demonstration position or for experimental work in foods and equipment.

	Crs.
Core courses (see general curriculum)	84
Home Economics electives (starred courses are required)	
*H.E. 568—Household Equipment	3

*H.E. 505—Experimental Cookery	3
H.E. 517—Foods for Special Occasions	3
*H.E. 368—Demonstration Techniques	3
H.E. 514—Food Preservation	3
H.E. 503—Community Nutrition	3
H. E. 240—Institution Marketing	3
H.E. 242—Institution Foods	4
General electives	34
	136

CURRICULUM IN HOME ECONOMICS EXTENSION

This curriculum is offered for those students who wish to enter Home Economics Extension as home demonstration agents.

	Crs.
Core Courses (see general curriculum)	84
Home Economics Electives	18
H.E. 227—Clothing Construction	4
H.E. 328—Clothing and Pattern Designing	3
H.E. 505—Experimental Cookery	3
H.E. 514—Food Preservation	3
H.E. 536—Interior Decoration Projects	2
H.E. 528—Tailoring	2
H.E. 530—Adv. Int. Design	2
*H.E. 350—Child Guidance	3
H.E. 368—Demonstration Techniques	3
H.E. 503—Community Nutrition	3
H.E. 517—Food for Special Occasion	3
H.E. 520—Advanced Textiles	2
H.E. 522—Economics of Clothing	2
H.E. 537—History of Furniture	3
H.E. 540—The School Lunch	3
H.E. 553—The Child in His Family	3
H.E. 568—Household Equipment	3
General electives	34
Total	136

CURRICULUM IN INSTITUTION MANAGEMENT

This curriculum is planned to meet requirements of the American Dietetic Association for internships in hospital or administrative dietetics.

	Crs.
Core courses (see general curriculum)	84
Home Economics electives	22
H.E. 240—Institution Marketing	3
H.E. 242—Institution Foods	4
H.E. 510—Adv. Nutrition	4
H.E. 512—Nutrition in Disease	2
H.E. 546—Institution Org. and Mgt.	3
H.E. 543—Institution Equip.	3
H.E. 344—Food Service Accounting	3
Additional courses in foods, nutrition or institution management may be added if desired.	
General electives	30
Microb. 200—Principles of Bacteriology	4
Che. 236—Organic Chemistry	4
Ed. 202—Human Development and the Curriculum or	4
Ed. 548—Educational Psychology	(3)
Psy. 540—Intro. to Industrial Psychology or	
Psy. 541—Psychology of Industrial Personnel Procedure	3
Total	136

CURRICULUM IN VOCATIONAL HOME ECONOMICS

This curriculum meets requirements for a provisional high school certificate in vocational home economics.

	Crs.
Core courses (see general curriculum)	84
Home Economics electives	18
H.E. 227—Clothing Construction	4
H.E. 328—Clothing and Pattern Design	3
H.E. 350—Child Guidance	3
H.E. 536—Interior Design Projects or	2
H.E. 568—Household Equipment	(3)
Additional courses to total 18 credits.	
General electives	15
Literature	3
Humanities	2
Biological Science	4
Social Science	3
Free elective	3
Professional Electives	18 or 19
Edu. 202—Human Growth and the Curriculum	4
Edu. 586—Tech. of Teaching Home Ec.	3
Edu. 362—Student Teaching in Home Ec.	9
Edu. 588—Adult Education in Home Ec.	3
Total required for graduation	136

Graduate Work

The School of Home Economics offers graduate work leading to the degree of Master of Science in Home Economics.

SCHOOL OF HOME ECONOMICS

FACULTY

Professors: Abby Lindsey Marlatt (Ph.D., California, 1947), DIRECTOR; Statie Estelle Erikson (Ph.D., California, 1930), Distinguished Professor, special assignment; *Associate Professors*: Marie Rodes Barkley (M.A., Columbia, 1931), special assignment; Annie Richmond Brownlie (M.S., Columbia, 1948), Anne McAdams Clemmons (M.S., Kentucky, 1949). *Assistant Professors:* Mildred Harris Botsford (M.S., Oregon State, 1950), Ruth Boyden (M.A., California, 1924), Lois Blanch Combs (M.S., Tennessee, 1954), Ruth Margaret Guenther (M.A., Columbia, 1928), A. Katherine Kidd (M.A., Columbia, 1938), Agnes Lucille Magruder (M.S., Iowa State, 1928), Elsie Lee Miller (M.S., Kansas State, 1942), Shirley Newsom (Ph.D., Chicago, 1961), Jessie Wilson Ringo (M.A., Kentucky, 1954), Winnifred A. Shane (M.S., Kentucky, 1957), Gertrude Marie Skerski (M.S., California, 1953), Roberta Seat Taylor (M.A., Kentucky, 1941), Claudia Ellis Wells (M.S., Alabama, 1933), Mildred Read Wightman (M.S., Illinois, 1940, M.S., Kentucky, 1956), Helen Mildred Wilmore (M.S., Kansas State, 1937). *Instructors:* Patricia Moore Decker (M.S., Michigan State, 1962), Susan Anne Kelley (M.S., Illinois, 1959). Norma June Perry (B.A., Aurora, 1944).

Foods and Nutrition

101 *Principles of Nutrition.* (3) S
A non-technical course on the essentials of adequate diet for optimum health and on food plans to fit physiological and environmental factors. Lecture and discussion, three hours. Not open to home economics majors. *Taylor.*

102 *Nutrition and Public Health.* (2) S
Nutrition as it affects social and family problems in the field of public health. Consideration is given to family food budgets on different economic levels. Lecture, one hour; lab, two hours. *Clemmons.*

104 *Foods.* (4) I, II
An introduction to the study of food. The classification and composition of foods and study of methods of preparation and principles involved. Lecture, two hours; lab, four hours. *Staff.*

106 *Foods.* (3) I, II
Meal planning and service. The selection, purchase and preparation of food. Practice is given in different types of food service. Lecture and lab, six hours. Prereq: H.E. 104. *Staff.*

211 *Foods and Nutrition.* (3) I, II
Properties and nutritive values of food. Functions of food for maintenance of body processes. Metabolism of food in the body. Lecture, two hours; lab, three hours. Prereq: Che. 104, Pgy. 206. *Skerski*

401 *Principles of Nutrition.* (3) I, II, S
Fundamental facts of nutrition presented as basis for planning adequate diets for people of different ages, activities and needs and at different income levels. Practical aspects are emphasized. Lecture and discussion, three hours. Not open to home economics majors. *Clemmons.*

402 *Dietetics.* (3) I, II, S
Daily food requirements at different age levels and different economic levels. Practice is given in setting up normal dietaries for individuals, families, and other groups. Lecture, two hours; lab, two hours. Prereq: H.E. 106, 211. *Taylor.*

503 *Community Nutrition.* (3) I, II, S
Study of nutrition education programs on a community level. Experience is provided for presenting nutrition in health clinics, schools and state institutions. Lectures, 2 hours; lab, 2 hours. Prereq. or concurrent: H.E. 402. May be repeated once for a total of six credits. *Clemmons.*

505 *Experimental Cookery.* (3) II, S
Study of factors that affect results obtained in cooking and food preparation processes. Experimental work under controlled conditions. Lecture, one hour; lab, four hours. Prereq: H.E. 104, 211. *Brownlie.*

507 *Workshop in Applied Nutrition.* (2)
The application of scientific knowledge of nutrition to the promotion of positive health. Emphasis is given to communications techniques and their use in field work. *Clemmons.*

508 *Seminar in Nutrition.* (1) I, II, S
Investigations of recent research in nutrition. Prereq: Senior or graduate standing. May be repeated twice for a total of three credits. *Marlatt.*

510 *Advanced Nutrition.* (4) I
Application of biochemistry to understanding of the utilization of nutrients for body processes. Laboratory work includes analysis of digestive juices, blood, and urine; balance experiments. Lecture, two hours; lab, six hours. Prereq: H.E. 402, Che. 236 or approval of instructor. *Marlatt and Skerski.*

512 *Nutrition in Disease.* (2) II
Metabolic processes of the body in normal and diseased conditions correlating the metabolic changes due to disease with diet therapy. Lecture, one hour; lab, two hours. Prereq. or concurrent: H.E. 510, 402. *Marlatt.*

514 *Food Preservation.* (3) I, S
Principles of home food preservation. Canning, dehydration, and freezing of fruits, vegetables and meats; pickling of fruits and vegetables; making of jams, jellies and preserves; brining. Lecture, two hours; lab, two hours. Prereq: Microb. 200, H.E. 104.

516 *Food for Children.* (3) II, S
Experience in selection, preparation and serving of food to your children. Emphasis is placed on the pre-school age and the factors important in establishing good food habits. Prereq: H.E. 106, 211, 255. *Staff.*

517 *Food for Special Occasions.* (3) I, S
Advanced work in culinary arts and skills. Preparation of attractive and appetizing dishes to help the homemaker in planning buffet suppers, receptions, picnics, wedding parties, formal meals. Lab, six hours. Prereq: H.E. 106.

590 *Field Work in Nutrition.* (1) I, II, S
Nutrition problems at different age levels, correlated with surveys and experimental studies to show the relation between diet selection and its physical and mental effects. Lecture and laboratory. Prereq. H.E. 503, or approval of instructor. *Clemmons.*

591 *Special Problems in Foods and Nutrition.* (1-3) I, II, S
Intensive work on a specific phase of the field. Senior or graduate standing. May be repeated to a maximum of six credits.

603 *Advanced Community Nutrition.* (3) I, II, S
Study of nutrition surveys and of bases for judging community nutrition. Emphasis is placed upon economic, geographic, social and educational causes of malnutrition. Experience is given in development of nutrition programs. Prereq: H.E. 503. May be repeated once for a total of six credits. *Clemmons.*

771 *Seminar in Nutrition.* (2) II, S
May be repeated twice for a total of six hours. *Erikson and Marlatt.*

781 *Special Problems in Foods and Nutrition.* (1-3) I, II, S
Independent advanced work on a specific problem. May be repeated for a total of six credits. *Clemmons, Erikson, and Marlatt.*

CLOTHING, TEXTILES, COSTUME DESIGN, AND INTERIOR DESIGN

120 *Textiles.* (2) I, II
Fundamentals of weaves, fibers, fabrics and finishes. Simple tests for recognizing fabrics, emphasis on practical aspects. Lecture, one hour; lab, two hours.

224 *Clothing Selection and Costume Design.* (3) I, II
Selection of costume and management of the wardrobe. Clothing costs and values. Designing costumes to meet individual needs. Lecture, one hour; lab, four hours. Prereq: Art 105, H.E. 120 or approval of instructor.

227 *Clothing Construction.* (4) I, II
Basic principles of clothing construction, using commercial patterns with some modification included. Lecture, one hour; lab, six hours. Prereq: H.E. 224.

328 *Clothing and Pattern Designing.* (3) I, II, S
Application of design principles to garment. Lecture, one hour; lab, Development of foundation pattern, flat pattern designing, alteration. four hours. Prereq: H.E. 227.

330 *Interior Design.* (3) I, II, S
A study of color, line, texture as used to create effective interiors suited to modern living. Lecture, two hours; lab, two hours. Prereq: H.E. 224, 261; Art 100 or for non-majors. Approval of instructor.

520 *Advanced Textiles.* (2) I, S
Individual semester reports with emphasis on new developments in textile industry. Class project to determine color fastness, tensile strength, and other quality factors, of various types of textiles. Lecture, one hour; lab, two hours. Prereq: H.E. 120.

522 *Economics of Clothing.* (2) I, S
The clothing industry, its influence and economy. Field trips to study mass production; class project; and individual semester reports. Lecture, one hour; lab, two hours. Prereq: H.E. 227, 561, or approval of instructor. *Guenther.*

523 *Fashion.* (2) II, S
How the fashion world works. Study of French, Italian and American designers who have greatest influence on current trends. Field trips to augment lectures. Lecture, two hours. Prereq: H.E. 227 or approval of instructor. *Guenther.*

524 *Costume Design.* (3) I, S
The arts of costume today and throughout the past. Costumes are designed to meet today's needs. Lecture, one hour; lab, four hours. Prereq: H.E. 227, Art 105. *Kidd.*

526 *Advanced Clothing.* (3) II, S
The making of foundation and creative pattern designs, also creative design through draping, with emphasis on accurate fittings. Lecture, one hour; lab, four hours. Prereq: H.E. 227 *Guenther.*

528 *Tailoring.* (2) I, S
Analysis of tailoring technique in the shop and in the home. Tailored garments are planned and constructed. Lab, four hours. Prereq: H.E. 328. *Guenther.*

529 *The Child and His Clothing.* (3) S
A detailed study of the selection, cost and care of the pre-school child's clothing in relation to his needs. Lectures and occasional field trips. Prereq: H.E. 255. *Staff.*

530 *Advanced Interior Design.* (2) II, S
The art of interior decoration throughout the past and today. Interiors are planned to meet today's needs. Lecture, one hour; lab, two hours. Prereq: H.E. 330. *Kidd.*

534 *Decorative Textiles.* (2) II, S
Survey of techniques used in applying color and design to fabrics. Individual problems, demonstrating techniques, developed. Lecture, one hour; lab, two hours. Prereq: H.E. 120, Art 105. *Guenther.*

536 *Interior Decoration Projects.* (2) I, II, S
Selected projects in furnishing the home, including furniture refinishing, upholstering and slip cover making. Costs in terms of time and money are considered. Lab, four hours. Prereq: H.E. 330, or approval of instructor. *Kidd.*

537 *History of Furniture.* (3) I
Furniture design from antiquity to the present, including effects upon design of social and economic conditions, and uses of historic furnishings in contemporary interiors. Lecture, three hours. Prereq: H.E. 330, or approval of instructor. *Kidd.*

592 *Special Problems in Clothing and Costume Design.* (1-3) I, II, S
Intensive work on specific phases of the field. Senior or graduate standing. May be repeated for a total of six credits. *Guenther and Kidd.*

593 *Special Problems in Interior Design.* (1-3) I, II, S
Intensive work on specific phases of the field. Senior or graduate standing. May be repeated for a total of six credits. *Kidd.*

597 *Special Problems in Textiles.* (1-3) I, II, S
Intensive work on specific phases of the field. Senior or graduate standing. May be repeated for a total of six credits.

772 *Seminar in Textiles, Clothing, Costume Design, and Interior Design.* (2) S
Investigation of special textile, clothing, and costume design or interior design problems; lecture, two hours. May be repeated twice for a total of six credits. *Kidd.*

782 *Special Problems in Clothing and Costume Design.* (1-3) I, II, S
Independent advanced work on a specific problem. May be repeated for a total of six credits. *Guenther and Kidd.*

783 *Special Problems in Interior Design.* (1-3) I, II, S
Independent advanced work on a specific problem. May be repeated for a total of six credits. *Kidd.*

787 *Special Problems in Textiles.* (1-3) I, II, S
Independent advanced work on a specific problem. May be repeated for a total of six credits. *Guenther.*

INSTITUTION MANAGEMENT

240 *Institution Marketing.* (3) II
Economics of food and supplies for institutions. Factors that influence selection and purchase. Field trips to wholesale houses, distribution centers and food production plants. Lecture, two hours; lab, two hours. Prereq: Eco. 251. *Brownlie.*

242 *Institution Foods.* (4) I
Large quantity food preparation and service. Using modern equipment in preparation of large quantities of food. Food cost accounting, job analysis, and time studies. Lecture, two hours; lab, four hours Prereq: H.E. 104. *Brownlie.*

344 *Food Service Accounting.* (3) I
Application of accounting principles to food service in the cafeteria, lunch room, tea-room, restaurant, residence hall, hospital and other institutions. Lecture, one hour; lab, four hours. Prereq: H.E. 240.

540 *The School Lunch.* (3) I, II
Designed for teachers who manage the lunch room. Consideration is given to equipment, menus, purchase, storage, preparation and service of food. Lecture, two hours; lab, two hours. Prereq: H.E. 104, Eco. 251. *Brownlie.*

542 *Institution Equipment.* (3) I
Selection, arrangement, cost and care of equipment; problems of lighting, heating, ventilation and refrigeration. Two field trips are taken to neighboring cities to see equipment in use in institutions. Prereq: H.E. 242. *Brownlie.*

546 *Institution Organization and Management.* (3) II
Principles of institution organization, types of institution service, personnel and financial management. Legal aspects of institution management. Personal and professional qualifications of an institution manager. Prereq: H.E. 240, 242. *Brownlie.*

548 *Institution Administration.* (3) S
Application of scientific principles of institution management. Practical principles are developed in various aspects of food service management. Approval of instructor. May be repeated twice for a total of nine credits.

594 *Special Problems in Institution Management.* (1-3) I, II, S
Intensive work on specific problems. Prereq: Senior or graduate standing. May be repeated for a total of six credits. *Brownlie.*

784 *Special Problems in Institution Management.* (1-3) I, II, S
Independent, advanced work. May be repeated for a total of six credits. *Brownlie.*

CHILD DEVELOPMENT AND FAMILY LIVING

151 *Health of the Family.* (3) I, II
Factors that influence family health; agencies and forces to be utilized for health improvement; applications of modern science to family health and prevention of disease; techniques of home nursing. Lecture, three hours. *Magruder and Ringo.*

153 *Marriage and Family Relationship.* (3) I, II, S
A functional approach to the understanding of interpersonal relationships involved in courtship, marriage, and family life. Open to both men and women. Lecture, two hours; discussion lab, two hours.

156 *Workshop in Child Guidance.* (3) S
Theories and practices of guiding young children in various situations. *Staff.*

254 *Psychology of the Child.* (3) I, II, S
The development of behavior from birth to maturity. The problems of conduct arising during infancy, childhood, and adolescence in relation to child care and training. Prereq: Psy. 100. (Same as Psychology 200.) *Staff.*

255 *Child Development.* (3) I, II
Development of children from birth through primary school years with directed observation of children. Lecture two hours; lab, two hours. *Staff.*

350 *Child Guidance.* (3) I, II

Theories and practice in guiding children's development both at home and in the nursery school, with participation in nursery school guidance. Lecture, two hours; lab, two hours. Prereq: H.E. 255. *Newsom and Staff.*

395 *Guiding Children's Routines.* (3) I, II

Participation in supervised activities such as rest and food service in the nursery school. Lecture, one hour; lab, four hours. Prereq: H.E. 350. *Staff.*

396 *Supervised Nursery School Participation.* (3) I, II (3) I, II

Experience in teaching a nursery school group. Lecture, one hour; lab, four hours. Prereq: H.E. 350. May be repeated once for a total of six credits. *Staff.*

552 *Nursery School Organization.* (3) I, S

Organization and administration, including housing, equipment, program, records, parent cooperation. Field trips to nursery schools. Lecture, three hours. Prereq: H.E. 350. *Newsom.*

553 *The Child in His Family.* (3) II, S

Preparation and presentation of research reports of studies of family influences on the personality and development of children. Lecture, three hours. Prereq: H.E. 153, 350 or consent of instructor. *Newsom.*

555 *Play and Play Materials.* (2) II, S

Play activities of young children, relation of play equipment to development, and characteristics of good play materials. Construction of toys suitable for the pre-school child. Lecture, one hour; lab, two hours. Prereq: H.E. 255. *Staff.*

557 *Infant Development.* (2) S

Study of development, care and guidance of the child during prenatal, natal and infant periods. Lecture, two hours. Prereq: Pgy. 206. *Newsom.*

595 *Special Problems in Child Development and Family Living.* (1-3) I, II, S

Intensive work on specific problems. Prereq: Senior or graduate standing. May be repeated for a total of six credits. *Newsom.*

775 *Seminar in Child Development.* (2) I, II, S

Preparation and presentation of reports of current investigations in child development. *Newsom.*

785 *Special Problems in Child Development and Family Living.* (1-3) I, II, S

Independent advanced work. May be repeated for a total of six credits. *Newsom.*

HOME MANAGEMENT

261 *Housing.* (4) I, II

The course deals with social and economic problems of housing American families and problems of house buying and house planning from the standpoint of the consumer. Lecture, four hours.

368 *Demonstration Techniques.* (3) II

Emphasis on planning and presenting food and equipment demonstrations. Lecture, one hour; lab, four hours. Prereq: H.E. 568.

561 *Consumer Problems.* (3) I, II, S

Consumer buying, its social and economic aspects. Analysis of problems of manufacturer, merchant, and consumer in order to understand the needs and responsibilities of each group. Lecture, three hours. Prereq: Eco. 251, H.E. 261.

562 *Home Management and Family Relationships.* (2) I, II

Philosophy and principles of home management. Study of the mechanics of time, energy, and money management; personal development, and social and family relationships. Lecture, two hours. Prereq: Eco. 251, H.E. 261. *Wilmore.*

563 *Home Management and Family Relationships.* (3) I, II, S

A residence period in the Home Management House is required of seniors in home economics. Experience in the application of principles presented in other courses. Prereq: H.E. 562; Prereq. or concurrent: H.E. 402. *Wilmore and Combs.*

568 *Household Equipment.* (3) I, II, S

Electric and gas household equipment and small appliances; their selection, maintenance, operation and cost. Lecture, two hours; lab, two hours. Prereq: H.E. 261. Prereq. or concurrent: Phy. 151, 152, or 281. *Combs.*

596 *Special Problems in Home Management.* (1-3) I, II

Intensive work on specific phases of home management. Prereq: Senior or graduate standing. May be repeated for a total of six credits. *Wilmore.*

662 *Advanced Home Management and Family Relationships.* (3) II, S

A course affording opportunity for special study of social and economic problems affecting family life. Lecture, three hours. Prereq: H.E. 563.

786 *Special Problems in Home Management.* (2) I, II

Independent advanced work. May be repeated twice for a total of six credits. *Wilmore.*

GENERAL HOME ECONOMICS

274 *Home Economics for Men.* (2) I, II

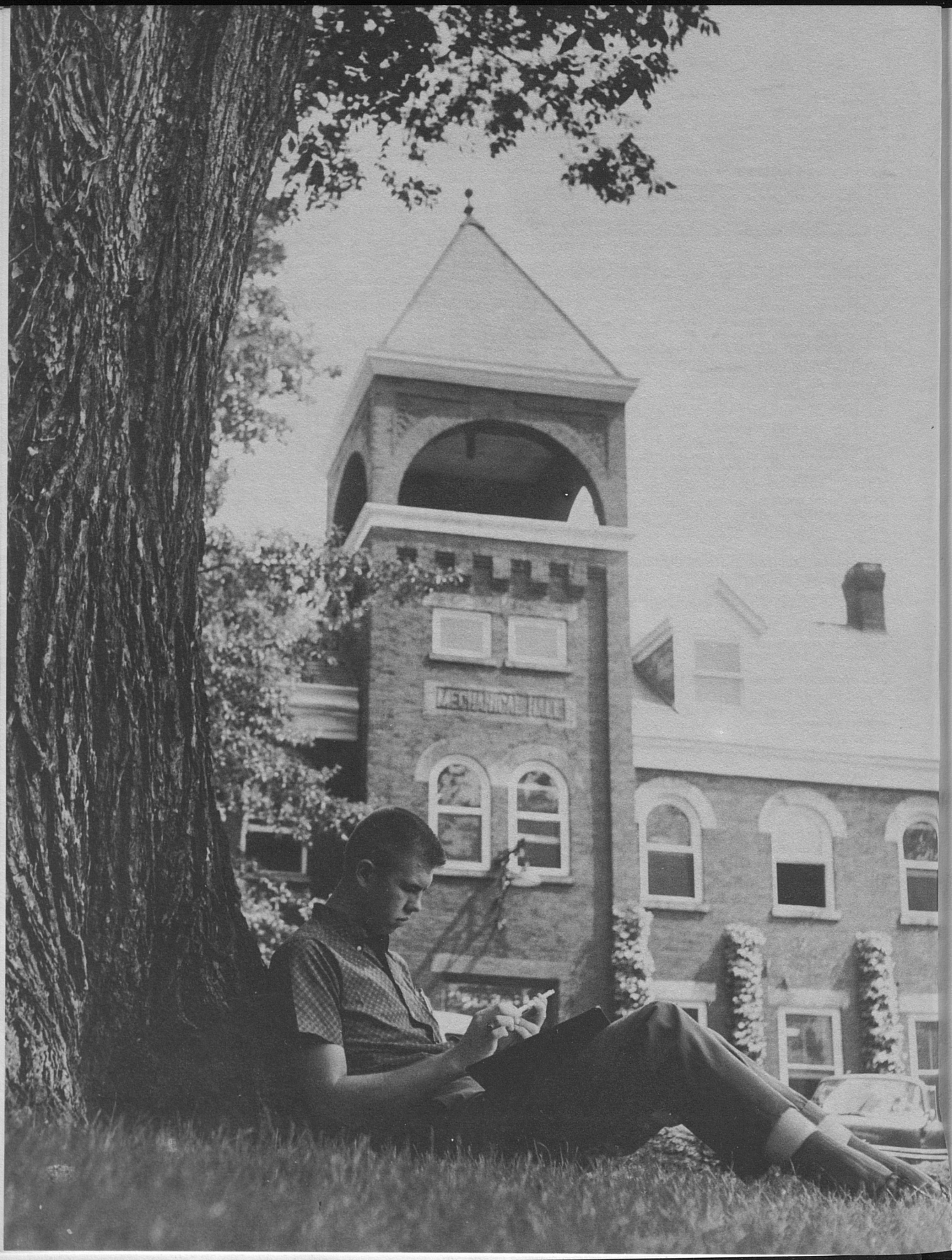
Study in selected areas of home economics dealing with values in personal and family living. *H.E. Staff.*

575 *Rural Community Analysis.* (3) I

The nature of the town-country community, with special emphasis on the function of institutional and agency programs and their leaders in relation to the community. Same course as R.S. 513. *Staff.*

768 *Residence Credit for the Master's Degree.* (0) I, II, S

May be repeated once.



Engineering

The College of Engineering was organized in 1918 by the consolidation of the College of Civil Engineering which was established in 1889, the College of Mechanical and Electrical Engineering established in 1891, and the College of Mining Engineering established in 1901.

The purpose of the College of Engineering is, first, to provide engineering education; second, to promote the development and utilization of the state's resources through organized research and through consultation with industry.

Students receive training in the fundamental and applied sciences in preparation for careers in their chosen branches of engineering. They receive instruction intended to develop a strong professional consciousness and they are encouraged to broaden their education by including courses in the fields of the humanities and social sciences as a part of their elective work.

The College endeavors to keep before its students the latest developments in science with a practical engineering approach to new problems, and promotes engineering research which deals with basic knowledge put to useful purposes. Students are trained to meet the high standards of ethics required of the professional engineer and to appreciate the moral responsibility of the engineer for the effects caused by the uses or misuses of his scientific inventions.

The physical plant consists of Anderson Hall, the Mining, Aeronautical, Highway, and Coal Research Laboratories; laboratories for Agricultural Engineering in the Agricultural Engineering Building, and also a temporary classroom and laboratory building. The College is engaged in a number of research projects, and students interested in such investigations will have ample opportunity to engage in work along the lines of their special fields of interest.

Admission. On entering the College of Engineering, each student must select the curriculum in which he expects to do his major work and register in the appropriate department. In addition to meeting the general requirements for admission to the University, the applicant for admission to the freshman class of the College of Engineering shall include in high school credits one unit of plane geometry and one and one-half units of algebra. It is recommended that the student offer one-half unit in solid geometry; otherwise this subject will be added to the requirements of the freshman year.

Students who have had sufficient mathematics in high school and who score high on the classification test may, by special examination, be excused from College Algebra and Trigonometry and begin their college mathematics with Analytics and Calculus I.

Students whose scores on the University classification tests are in the lower one-fourth, or those lacking in the requirements for mathematics, may enter the College of Engineering. The schedules of such students will be adjusted in accordance with their placement tests as directed by a special orientation committee of the College of Engineering and the Counseling Service.

Courses of Study and Degrees. The College of Engineering offers instruction leading to the following baccalaureate degrees:

Bachelor of Science in Agricultural Engineering
Bachelor of Architecture
Bachelor of Science in Chemical Engineering
Bachelor of Science in Civil Engineering
Bachelor of Science in Electrical Engineering
Bachelor of Science in Mechanical Engineering
Bachelor of Science in Metallurgical Engineering
Bachelor of Science in Mining Engineering

Options and Electives. In some of the curricula certain options or electives are allowed. All electives must be approved by the head of the department in which the student is taking his major work. In general the non-technical electives shall be selected from the following fields:—history, economics, government, literature, sociology, philosophy, psychology, and fine arts.

Co-operative Plan in Engineering. In addition to the regular four year course in Engineering, the co-operative plan is offered to those students in Engineering who have satisfactorily completed the freshman year in the College of Engineering or to those who present the equivalent as transfer students.

Students who can meet the requirements and so desire, may register, pay a suitable fee and enter the program. They will be permitted to alternate on the

Robert Ezekiel Shaver, C.E., is Dean of the College of Engineering.

semester basis between school and work. The summers will be used to the best advantage of the student for either school or work. The student must maintain a satisfactory standing to be continued in the program.

Those completing the Co-operative Plan will receive the bachelor's degree and will also gain valuable experience. The time required will depend upon the extent of the work program.

The University does not guaranteee employment to co-operative students; however, facilities are provided for locating suitable jobs. All jobs must be approved by the co-ordinator of the Co-operative Program. The students will submit to the co-ordinator a written report at the end of each work period.

The Department of Architecture does not offer a co-operative plan.

Requirements for Graduation. To receive the Bachelor of Science degree in any one of the seven branches of engineering a student must meet the following requirements:

(a) Complete a minimum of 130 semester hours, exclusive of the basic work in military science and physical education.

(b) Attain at least a 2.0 over-all standing on all work attempted.

(c) Complete the curriculum of the department in which he is taking his major work.

To receive a Bachelor of Architecture degree, a student must meet the following requirements:

(a) Complete a minimum of 168 credits, exclusive of the basic work in military science and physical education.

(b) Attain at least a 2.0 over-all standing on all work attempted.

(c) Complete the curriculum requirements of the Department of Architecture.

Graduate Degrees. The College of Engineering offers graduate work leading to the following advanced degrees:

Master of Science in Agricultural Engineering
Master of Science in Civil Engineering
Master of Science in Electrical Engineering
Master of Science in Mechanical Engineering
Master of Science in Metallurgical Engineering
Master of Science in Mining Engineering
Master of Science in Nuclear Engineering
Doctor of Engineering (Physical Metallurgy)

The College of Engineering offers to its own graduates the following professional degrees:

Ch.E. (Chemical Engineer)
C.E. (Civil Engineer)
E.E. (Electrical Engineer)
M.E. (Mechanical Engineer)
Met.E. (Metallurgical Engineer)
E.M. (Mining Engineer)

A student intending to pursue graduate work in another institution should inform himself regarding the requirements for entrance to that particular institution and plan his undergraduate work accordingly.

For further information regarding graduate work, see the graduate school section of this bulletin.

AGRICULTURAL ENGINEERING

The curriculum in Agricultural Engineering is administered jointly by the College of Engineering and the College of Agriculture and Home Economics. The course descriptions are listed under Agriculture and Home Economics.

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURAL ENGINEERING

Freshman Year

First Semester	Crs.
AEN 001—The Engineering Profession	0
ENG 001—Freshman Composition	3
MA 111—College Algebra	3
MA 112—Plane Trigonometry	2
CHE 106—General Chemistry for Engrs.	4
CE 105—Basic Engineering Graphics I	2
Elective	2
PE—Physical Education	1
	17

Second Semester	Crs.
AEN 002—The Engineering Profession	0
AEN 105—Engineering in Agriculture	3
ENG 102—Freshman Composition	3
MA 113—Analytics and Calculus I	4
CHE 108—General Chemistry for Engrs.	4
CE 106—Civil Engineering Graphics I	2
Elective	2
PE—Physical Education	1
	19

Sophomore Year

First Semester	Crs.
AEN 003—The Engineering Profession	0
MA 211—Analytics and Calculus II	4
PHY 231—General College Physics	3
PHY 241—General College Physics Lab.	2
CE 100—Plane Surveying	3
Elective	2
AGR 206—Prin. of Field Crop Production	3
	17

Second Semester	Crs.
AEN 004—The Engineering Profession	0
MA 212—Analytics and Calculus III	4
PHY 232—General College Physics	3
PHY 242—General College Physics Lab.	2
EM 221—Statics	3
Elective	2
AGR 266—Soils	4
	18

Junior Year

First Semester	Crs.
AEN 005—The Engineering Profession	0
EM 313—Dynamics	3
EE 305—Elec. Circuits and Machinery	3
*MA 431—Differential Equations	3
ME 400—Elements of Engr. Thermo.	3
ECO 251—Principles of Economics	3
Non-technical Elective	3
	18

Second Semester	Crs.
AEN 006—The Engineering Profession	0
AEN 416—Energy Sources and Machinery for Agriculture	4
CE 352 and CE 351—Fluid Mechanics and Hydraulics Laboratory OR	4
ME 330 and ME 331—Fluid Mechanics and Fluid Mechanics Laboratory	
EM 331—Strength of Materials	3
CE 301—Testing Materials	1
EE 306—Elec. & Electron Circ. & Mach.	3
Non-technical Elective	3
	18

Senior Year

First Semester	Crs.
AEN 007—The Engineering Profession	0
AEN 425—Functional Design of Agricultural Structures	4
AEN 445—Agricultural Processing and Electrification	4
AEN 435—Principles of Soil and Water Conservation Engineering	4
Technical Elective	3
Non-technical Elective	3
	18

Second Semester	Crs.
AEN 008—The Engineering Profession	0
AEN 505—Engineering Analysis	3
**AEC 514—Current Farm Management Problems	3
Technical Elective	3
AEN Elective	3
Non-technical Electives	6
	18

ARCHITECTURE

FACULTY

Professor: Charles Parker Graves (M. Arch., University of Pennsylvania, 1957), HEAD. *Associate Professors:* John William Hill (M. Arch., University of Pennsylvania, 1959), James Philip Noffsinger (D. Arch., Catholic University of America, 1955). *Assistant Professor:* George W. Gunther (M.F.A., Indiana University, 1950). *Instructors:* Milton D. Thompson (B. Arch., Massachusetts Institute of Technology, 1961), Donald Q. Wallace (B.S., University of Kentucky, 1959). *Visiting Critics & Lecturers:* Donovan Lyle Aten (B.S.L.A., University of Illinois, 1951), J. Quintin Biagi (B. Arch., University of Cincinnati, 1954), James Allan Clark (B. Arch., Georgia Institute of Technology, 1938), Carruthers A. Coleman, Jr. (B. Arch., University of California, 1958), William A. Gray (M. Arch., University of Pennsylvania, 1949), James L. Leggett, Jr. (Ph.D., Purdue University, 1953), William H. Qualls (M.C.P., Georgia Institute of Technology, 1954), Richard Schubert (B. Arch., Harvard University, 1951), Jasper D. Ward (B. Arch., Massachusetts Institute of Technology, 1948). *Foreign Lecturer's Chair:* Bunji Kobayashi (Ph.D., University of Tokyo, 1960).

*FIVE-YEAR CURRICULUM LEADING TO THE PROFESSIONAL DEGREE OF BACHELOR OF ARCHITECTURE

Year I

First Semester	Crs.
Arch. 001—The Architectural Profession	0
Arch. 110—Basic Architecture	3
Arch. 112—Architectural Graphics	2
MA 111—College Algebra	3
Engl. 101—Freshman Composition	3
—General Requirements	4
Mil.—Basic M.S. or A.S. (optional)	2
P.E.—Physical Education	1
	18

Second Semester	Crs.
Arch. 002—The Architectural Profession	0
Arch. 111—Basic Architecture	3
Arch. 113—Architectural Graphics	2
MA 112—Plane Trigonometry	2
Engl. 102—Freshmen Composition	3
C.E. 102—Construction Surveys	1
—General Requirements	3
Mil.—Basic M.S. or A.S. (optional)	2
P.E.—Physical Education	1
	17

1. All elective courses must have approval of Architecture.
2. A minimum of six (6) credits will be taken in humanities or social studies.
3. The remaining elective credits may be used for a "minor" of the student's choice, with approval of his advisor.
4. When an entering student does not show credit for high school chemistry, at least one semester of college chemistry will be required during the freshman year.
5. All students will be encouraged to obtain at least one summer's employment in the office of a registered architect and at least one summer's employment on a construction site.

° MA 331 may be taken with approval of the head of the department.

°° AEC 518 may be substituted.

* The five-year curriculum in Architecture is a requirement of the National Architectural Accrediting Board.

Year II

First Semester	Crs.
Arch. 003—The Architectural Profession	0
Arch. 210—Architectural Studio I	5
Arch. 220—Materials and Construction Methods	2
MA 113—Analytics and Calculus I	4
Physics 211—General College Physics	5
Mil.—Basic M.S. or A.S. (optional)	2
	18

Second Semester	Crs.
Arch. 004—The Architectural Profession	0
Arch. 211—Architectural Studio II	5
Arch. 221—Materials and Construction Methods	2
MA 211—Analytics and Calculus II	4
Physics 213—General College Physics	5
Mil.—Basic M.S. or A.S. (optional)	2
	18

Year III

First Semester	Crs.
Arch. 005—The Architectural Profession	0
Arch. 330—Architectural Studio III	5
Arch. 332—Theory and History of Architecture I	3
EM 221—Statics	3
M.E. 401—Mech. & Elec. Equip. of Bldgs.	2
Art 110—Drawing and Painting	2
—General Requirements	3
	18

Second Semester	Crs.
Arch. 006—The Architectural Profession	0
Arch. 331—Architectural Studio IV	5
Arch. 333—Theory & Hist. of Architecture II	3
EM 431—Strength of Materials	3
C.E. 380—Theory of Structures	3
M.E. 402—Mech. & Elec. Equip. of Bldgs.	2
—General Requirements	3
	17

Year IV

First Semester	Crs.
Arch. 007—The Architectural Profession	0
Arch. 340—Architectural Studio V	6
Arch. 342—Theory & History of Architecture III	3
Arch. 345—Planning I	2
C.E. 387—Steel Structures I	3
—General Requirements	3
	17

Second Semester	Crs.
Arch. 008—The Architectural Profession	0
Arch. 341—Architectural Studio VI	6
Arch. 343—Theory and History of Architecture IV	3
Arch. 346—Seminar	1
C.E. 392—Reinforced Concrete I	3
Art 210—Drawing and Painting	2
—General Requirements	3
	18

Year V

First Semester	Crs.
Arch. 350—Architectural Studio VII	6
Arch. 351—Thesis Research	1
Arch. 353—Theory of Architecture V	2
Arch. 356—Professional Practice I	2
Arch. 355—Planning II	2
Arch. 359—Advanced Structural Theory	2
Art 236—Sculpture	2
	17

Second Semester	Crs.
Arch. 352—Thesis	10
Arch. 357—Professional Practice II	2
Art 310—Intermediate Painting	3
—General Requirements	3
	18

CREDITS REQUIRED FOR BACHELOR OF ARCHITECTURE DEGREE

General Requirements	22
Profession and Related	147
Physical Education and electives	10
	179

Course Descriptions

001-002 *The Architectural Profession* (1st Year) (0) I, II

003-004 *The Architectural Profession* (2nd Year) (0) I, II

005-006 *The Architectural Profession* (3rd Year) (0) I, II

007-008 *The Architectural Profession* (4th Year) (0) I, II

Lectures, seminars and discussion by visiting professionals with emphasis on the student's future responsibilities to his profession, clients and community.

110 *Basic Architecture.* (3) I

Exercises in simple architectural problems. Two and three dimensional exercises in space, form, color and materials. Lecture and studio, nine hours. *Staff.*

111 *Basic Architecture.* (3) II

A continuation of Architecture 110. Beginning emphasis on human need, human scale, function and structure in architecture. Lecture and studio, nine hours. Prereq: Arch. 110 and approval of instructor. *Staff.*

112 *Architectural Graphics.* (2) I

Descriptive drawing, Architectural projections, shades, and shadows, perspective drawing, emphasis on skills in graphic media. Lecture, one hour, studio, three hours. Concurrent with Arch. 110. *Staff.*

113 *Architectural Graphics.* (2) II

A continuation of Arch. 112. Lecture, one hour; studio, three hours. Concurrent with Arch. 111. *Staff.*

210 *Architectural Studio I.* (5) I, II

Architectural problems dealing with simple space and structural requirements. Instruction by problem method on an individual critic-student basis followed throughout the entire studio sequence. Lecture, one hour; studio, twelve hours. Prereq: Arch. 111. *Staff.*

211 *Architectural Studio II.* (5) I, II

A continuation of Arch 210. Residential and small building design. Lecture, one hour; studio, twelve hours. Prereq: Arch. 210 and approval of instructor. *Staff.*

220 *Materials and Construction Methods.* (2) I

Materials of construction; their sources and characteristics manufacture, use and size classification, limitations, standards of fabrication. Lecture, one hour; studio, three hours. Concurrent with Arch. 210.

221 *Materials and Construction Methods.* (2) II

A continuation of Arch. 220. Methods of construction and choices of systems. Lecture, one hour; studio, three hours. Prereq: Arch 220.

222 *Building Construction* (3) I, II

Analysis of the architectural process, investigation of materials and construction methods. Individual and group case studies in the drawing studio. Designed for Engineering Majors. Lecture, two hours; studio, three hours. Prereq: Junior standing.

330 *Architectural Studio III.* (5) I, II

Architectural problems with emphasis on materials and detail in the design process. Lecture, one hour; studio, twelve hours. Prereq: Arch. 211. *Staff.*

331 *Architectural Studio IV.* (5) I, II

A continuation of Arch. 330 with additional emphasis on building design related to site. Lecture, one hour; studio twelve hours. Prereq: Arch. 330 and approval of instructor. *Staff.*

332 *Theory and History of Architecture I.* (3) I

A study of the development of architecture in relation to world culture with emphasis on aesthetics, principles and philosophies of design, structure, use of materials and the social and political backgrounds. Illustrated lectures, parallel reading, discussion, sketching and research.

333 *Theory and History of Architecture II.* (3) II

A continuation of Arch 332. Roman through Gothic Architecture. Lecture, three hours. Prereq: Arch. 332.

340 *Architectural Studio V.* (6) I

Collaborative and individual projects in community planning and design. Lecture, one hour; studio, fifteen hours. Prereq: Arch. 330. *Staff.*

341 *Architectural Studio VI.* (6) II

Advanced architectural problems in design. Collaborative work with Civil and Mechanical Engineering students. Lecture, one hour; studio, fifteen hours. Prereq: Arch. 340 and approval of instructor. *Staff.*

342 *Theory and History of Architecture III.* (3) I

A continuation of Arch. 333. Renaissance through 19th Century Revival Architecture. Lecture, three hours. Prereq: Arch. 333.

343 *Theory and History of Architecture IV.* (3) II

A continuation of Arch. 342. Modern Architecture. Lecture, three hours. Prereq: Arch. 342.

345 *Planning I.* (2) I

Seminar in urban planning; redevelopment and rehabilitation. Research related to project in studio course. Seminar, four hours. Prereq: Concurrent with Arch. 340. *Staff.*

346 *Seminar.* (1) II

Design Seminar. A critical evaluation by each student of his principles and philosophy, prior to final year. Seminar, two hours. Prereq: Approval of instructor. *Staff.*

350 *Architectural Studio VII.* (6) I, II

Comprehensive problems in architectural design. Lecture and studio, eighteen hours. Prereq: Arch. 340. *Staff.*

351 *Thesis Research.* (1) I, II

Research and analysis for undergraduate thesis project. Thesis topic to be submitted for approval of design faculty prior to entering course. Lecture, one hour. Prereq: approval of design faculty. *Staff.*

352 *Thesis.* (10) I, II

Independent undergraduate thesis. Credit on acceptance following visual, oral and written presentation. Studio, thirty hours. Prereq: Arch. 351. *Staff.*

353 *Theory of Architecture V.* (2) I

A continuation of Arch. 343. Seminar, four hours. Prereq: Arch. 343 and approval of instructor.

355 *Planning II.* (2) II

The design of cities through history to present. A discussion of effect of each culture on form of city with emphasis toward future forms derived from present society. Lecture, two hours. Prereq: Approval of instructor. *Staff.*

356 *Professional Practice I.* (2) I

Office administration, specifications, cost estimating, contracts, legal problems, insurance and professional ethics. Lecture, two hours. Prereq: Arch. 331. *Staff.*

357 *Professional Practice II.* (3) II

A continuation of Arch. 356. Lecture, two hours. Prereq: Arch. 356. *Staff.*

359 *Advanced Structural Theory.* (2) I

Theory and visual study of structural reactions related to new techniques and principles. Lecture, two hours. Prereq: C.E. 392, approval of instructor. *C.E. Staff.*

432 *Seminar in Architectural History.* (2) I, II

A research seminar in special problems of architectural history and philosophy. Prereq: Approval of instructor.

CHEMICAL ENGINEERING

FACULTY

Professor: Samuel Charles Hite (Ph.D., Purdue, 1951), HEAD. Associate Professor: George Franklin Crewe (Ph.D., West Virginia, 1962).

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING

Freshman Year

First Semester	Crs.
A.S. or M.S.—Aerospace or Military Science (optional)	2
Che. 110, 111—General Chemistry	5
Cm.E. 001—The Engr. Profession	0
Eng. 101—Freshman Composition	3
C.E. 105—Basic Engineering Graphics	2
M.A. 111—College Algebra	3
M.A. 112—Plane Trigonometry	2
P.E.—Physical Education	1
	18

Second Semester	Crs.
A.S. or M.S.—Aerospace or Military Science (optional)	2
Che. 112, 113—General Chemistry	5
Cm.E. 002—The Engr. Profession	0
Eng. 101—Freshman Composition	3
M.A. 113—Analytics & Calculus I	4
*Non-technical Elective	3
P.E.—Physical Education	1
	18

Sophomore Year

First Semester	Crs.
A.S. or M.S.—Aerospace or Military Science (optional)	2
Che. 226, 227—Analytical Chemistry	5
Cm.E. 003—The Engr. Profession	0
Eco. 251—Prin. of Economics	3
M.A. 211—Analytics & Calculus II	4
Phy. 231—Gen. College Physics	3
Phy. 241—Gen. College Physics Lab.	2
	19

Second Semester	Crs.
A.S. or M.S.—Aerospace or Military Science (optional)	2
Cm.E. 004—The Engr. Profession	0
Cm.E. 211—Ch. E. Calculations	4
E.M. 221—Statics	3
M.A. 212—Analytics & Calculus III	4
Phy. 232—Gen. College Physics	3
Phy. 242—Gen. College Physics Lab.	2
	18

Junior Year

First Semester	Crs.
Che. 430, 431—Organic Chemistry	4
Che. 440—Physical Chemistry	3
Che. 441—Physical Chemistry Lab.	2
Cm.E. 005—The Engr. Profession	0
Cm.E. 421—Unit Operations I	3
E.M. 331—Strength of Materials	3
*Non-technical Elective	3
	18

Second Semester	Crs.
Che. 432, 433—Organic Chemistry	4
Che. 442—Physical Chemistry	3
Che. 443—Physical Chemistry Lab.	2
Cm.E. 006—The Engr. Profession	0
Cm.E. 422—Unit Operations II	3
MET 301—Engineering Metallurgy	3
*Non-technical Elective	3
	18

Senior Year

First Semester	Crs.
Cm.E. 007—The Engr. Profession	0
Cm.E. 341—Ch. E. Thermodynamics	3
Cm.E. 371—Seminar	1
Cm.E. 431—Unit Operations Lab. I	2
Cm.E. 451—Ch. E. Process Design I	3
E.E. 305—Elec. Circuits & Machinery	3
*Non-technical Elective	3
*Technical Elective	3
	18

Second Semester	Crs.
Cm.E. 008—The Engr. Profession	0
Cm.E. 372—Seminar	1
Cm.E. 452—Ch. E. Process Design II	3
E.E. 306—Elec. & Electron Circuits & Mach.	3
Cm.E. 432—Unit Operations Lab. II	2
*Technical Elective, Ch. E	3
*Technical Elective	3
*Non-technical Elective	3
	18

Course Descriptions

001 *The Engineering Profession* (Freshmen). (0) I

002 *The Engineering Profession* (Freshmen). (0) II

003 *The Engineering Profession* (Sophomore). (0) I

004 *The Engineering Profession* (Sophomore). (0) II

005 *The Engineering Profession* (Junior). (0) I

006 *The Engineering Profession* (Junior). (0) II

007 *The Engineering Profession* (Senior). (0) I

008 *The Engineering Profession* (Senior). (0) II

Lectures on professional growth, conduct and ethics. Activities of the student branches of the corresponding professional societies. CME 001-008 may be repeated indefinitely.

211 *Chemical Engineering Calculations.* (4) II

Calculations with emphasis on material and energy balances as applied to industrial processes. Prereq: CHE 226, PHY 231 and MA 211. *Hite.*

341 *Chemical Engineering Thermodynamics.* (3) I

Fundamentals of thermodynamics, first and second laws, properties of fluids, physical and chemical equilibria, and applications to chemical engineering. Prereq: CME 211, MA 212, PHY 232. *Crewe.*

371 *Seminar.* (1) I

General discussion of chemical engineering subjects; preparation and delivery of papers and reports; extemporaneous speaking, and the abstracting of current literature. Two hours. Prereq: CME 422, CHE 432, CHE 442. *Hite.*

372 *Seminar.* (1) II

A continuation of CME 371 with a survey of the technology and economics of the chemicals industry. Prereq: CME 371. *Hite.*

395 *Special Problems in Chemical Engineering.* (1-3)

Individual work on some selected problems in the field of Chemical Engineering. May be repeated one time. Prereq: Approval of the head of the department. *Staff.*

421 *Unit Operations I.* (3) I

Principles of the unit physical operations of fluid flow, heat transfer, evaporation, and filtration with quantitative problems in the design and operation of chemical process equipment. Prereq: CME 211, MA 212. *Hite.*

422 *Unit Operations II.* (3) II

Continuation of CME 421. Principles of mass transfer—distillation, gas absorption, liquid extraction, drying, etc. Including quantitative problems in design and operation of chemical process equipment. Prereq: CME 421.

431 *Unit Operations Laboratory I.* (2) I

Quantitative study of fluid flow, heat transfer, evaporation, etc., comparing the operation of actual equipment with theory. Special consideration of problems in design and report writing; laboratory, six hours. Prereq: CME 421.

432 *Unit Operations Laboratory II.* (2) II

Continuation of CME 431, covering diffusional operations such as distillation, absorption, and drying; laboratory, six hours. Prereq: CME 422, CME 431.

451 *Chemical Engineering Process Design I.* (3) I

Introduction to process design calculations, optimum design and operation. Prereq: CME 422, CHE 432, CHE 442. *Crewe.*

452 *Chemical Engineering Process Design II.* (3) II

An introduction to applied chemical reaction kinetics with quantitative problems concerning chemical reactor design and a comprehensive design problem. Prereq: Ch. E. 451. *Crewe.*

562 *Process Control.* (3) II

The theory of automatic control devices and their application in industrial chemical plants. Lecture, two hours; laboratory three hours. Prereq: Consent of the instructor.

565 *Petroleum Refinery Engineering.* (3) I

Application of chemical engineering fundamentals to petroleum processing methods and equipment. Prereq: Consent of the instructor. *Hite.*

* All electives selected must have approval of the head of the department.

CIVIL ENGINEERING

FACULTY

Professors: David K. Blythe (M.C.E., Cornell, 1950), HEAD; Robert A. Lauderdale (Ph.D., Massachusetts Institute of Technology, 1958), William Joseph Carrel (C.E., Kentucky, 1908), special assignment; Samuel Albert Mory, Jr. (C.E., Kentucky, 1946), Daniel Voiers Terrell (D.Engr., So. Dakota School of Mines & Technology, 1954), Dean Emeritus, special assignment. *Associate Professors*: Alvin Lee Chambers (C.E., Kentucky, 1928), John Arthur Dearinger (M.S., Kentucky, 1948), Hans Gesund (D.Engr., Yale, 1958) on military leave; Bobby Ott Hardin (Ph.D., Florida, 1961), Laurence Chester Pendley (M.S., Purdue, 1949). *Assistant Professors*: Paul Hamilton King (M.S., California Institute of Technology, 1961), Samuel Preston Maggard (M.S., Kentucky, 1957), John R. Parker (M.S., Princeton, 1937). *Lecturers*: Robert C. Deen (M.S., Kentucky, 1958), William Bright Drake (M.S., Kentucky, 1949), James Hobart Havens (A.B., Transylvania, 1942), James L. Leggett, Jr. (Ph.D., Purdue, 1953).

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN CIVIL ENGINEERING

Freshman Year

First Semester	Crs.
CE 001—The Engineering Profession	0
ENG 101—Freshman Composition	3
MA 111—College Algebra	3
MA 112—Plane Trigonometry	2
CHE 106—General Chemistry for Engineers	4
CE 105—Basic Engineering Graphics	2
ROTC—Military or Aerospace Science (optional)	2
PE—Physical Education	1
	17

Second Semester	Crs.
CE 002—The Engineering Profession	0
ENG 102—Freshman Composition	3
MA 113—Analytics and Calculus I	4
CHE 108—General Chemistry for Engineers	4
CE 100—Plane Surveying	3
ROTC—Military or Aerospace Science (optional)	2
PE—Physical Education	1
	17

Sophomore Year

First Semester	Crs.
CE 003—The Engineering Profession	0
MA 211—Analytics and Calculus II	4
PHY 231—General College Physics	3
PHY 241—General College Physics Lab	2
CE 106—Civil Engineering Graphics I	2
CE 110—Engineering Problems	1
CE 210—Route Surveying	2
ROTC—Military or Aerospace Science (optional)	2
	16

Second Semester	Crs.
CE 004—The Engineering Profession	0
MA 212—Analytics and Calculus III	4
PHY 232—General College Physics	3
PHY 242—General College Physics Lab	2
EM 221—Statics	3
GLY 200—Elementary Geology for Engineers	3
ROTC—Military or Aerospace Science (optional)	2
Non-technical Elective	2
	19

Summer Camp (4 weeks)—5 credits

CE 203—Topographic Drawing	1
CE 211—Route Surveying	2
CE 213—Control Surveys	1
CE 214—Topographic Surveys	1

Junior Year

First Semester	Crs.
CE 005—The Engineering Profession	0
CE 351—Hydraulics Lab	1
CE 352—Fluid Mechanics	3
CE 380—Theory of Structures	3
EM 313—Dynamics	3
EM 331—Strength of Materials	3
MA 431—Differential Equations	3
Non-technical Elective	3
	19

Second Semester	Crs.
CE 006—The Engineering Profession	0
CE 301—Testing Materials	1
CE 355—Water Supply and Sewerage	3
CE 387—Steel Structures	3
CE 425—Soil Mechanics	3
CE 480—Theory of Structures	3
ENG 203—Composition for Tech Students	3
MET 303—General Elementary Metallurgy	2
	18

Senior Year

First Semester	Crs.
CE 007—The Engineering Profession	0
CE 340—Highway Engineering	3
CE 392—Reinforced Concrete	3
EE 301—Fundamentals of Elec. Machinery	3
Non-technical Elective	4
Technical Electives	6
	19

Second Semester	Crs.
CE 008—The Engineering Profession	0
CE 371—Seminar	1
CE 305—Contracts and Specifications	3
ARC 222—Building Construction	3
ME 400—Elements of Engr. Thermodynamics	3
Non-technical Electives	6
Technical Elective	3
	19

Non-technical Electives are to be selected from the Humanities and Social Studies in other colleges of the University and must be approved by the department head.

Technical Electives are to be approved by the department head and may be selected in specific fields such as structures, highways, sanitary engineering, or other planned objectives.

Course Descriptions

001 *The Engineering Profession* (Freshman). (0) I, II
Blythe.

002 *The Engineering Profession* (Freshman). (0) I, II
Blythe.

003 *The Engineering Profession* (Sophomore). (0) I
Chambers.

004 *The Engineering Profession* (Sophomore). (0) II
Chambers.

005 *The Engineering Profession* (Junior). (0) I
Chambers.

006 *The Engineering Profession* (Junior). (0) II
Chambers.

007 *The Engineering Profession* (Senior). (0) I
Chambers.

008 *The Engineering Profession* (Senior). (0) II
Lectures on professional growth, conduct and ethics. Activities of the student branches of the corresponding professional societies. *Chambers.*

100 *Plane Surveying.* (3) I, II
Principles, field practice and calculations. General use and care of surveying instruments. Class work, two hours; field work, three hours. Prereq: Math. 112. *Dearinger and Staff.*

101 *Field work for C.E. 100.*

102 *Construction Surveys.* (1) I, II
Care and use of surveying instruments; site mapping by coordinates, stadia and plane table methods; layout of buildings and utilities. Laboratory, three hours. Prereq: Math. 112. *Dearinger.*

105 *Basic Engineering Graphics.* (2) I, II, S
Freehand sketching and lettering. Orthographic and axonometric drawings and sketches. Use and care of instruments. Use of scales. Dimensioning. Auxiliary views. Sectioning. Fasteners. Pencil and ink techniques. Charts, maps and diagrams. Three two-hour periods a week. *Hoffmann and Morgan.*

106 *Civil Engineering Graphics I.* (2) I, II, S
Graphical solution of space problems by the application of the principles of descriptive geometry. Prereq: CE 105. *Hoffmann and Morgan.*

110 *Engineering Problems.* (1) I, II
Analysis and solution of basic civil engineering problems, including instruction in the use of the slide rule. Two hours per week. Prereq: Math. 112. *Pendley.*

203 *Topographic Drawing.* (1) S
Given at the Summer Camp. Construction of maps from field notes, reproduction and changing scale of maps, topographic symbols, contours, projected location, profile, line and grade. Prereq: Approval of head of department. *Hoffmann.*

210 *Route Surveying I.* (2) I, II
Curves, line, grade, earthwork and theory of location as it applies to railroads, highways and pipelines. Lecture and recitation, two hours. Prereq: C.E. 100. *Dearinger and Staff.*

211 *Route Surveying II.* (2) S
Given at the Summer Camp. Theory, field and office practice in route-surveys including the application of aerial photographs in this work. Prereq: Approval of the head of the department. *Blythe and Dearinger.*

213 *Control Surveys.* (1) S
Given at the Summer Camp. Theory, field and office practice in the precise measurement of angles, distances, elevations, true azimuth and geodetic position. Prereq: Approval of head of department.

214 *Topographic Surveys.* (1) S
Given at the Summer Camp. Theory, field and office practice in topographic and boundary surveys. Prereq: Approval of head of department.

301 *Testing Materials.* (1) I, II, S
Experimental investigations and tests of wood, metals, cement, concrete and other construction materials to verify the laws governing their behavior under given conditions. Laboratory, two hours. Prereq. or concur: EM 331. *Chambers and Pendley.*

305 *Contracts and Specifications.* (3) I, II
A study of the methods, procedures and principles involved in engineering analyses, contracts, specifications, estimates and valuations, and administration of engineering projects. Lecture and recitation, three hours. *Elsey.*

340 *Highway Engineering I.* (3) I, II
Highway organization, administration and finances. Planning and geometric design of highways. Soils, drainage, earthwork, soil stabilization and low type roads. Lecture, two hours; lab, three hours. Prereq: CE 425, CE 211. *Dearinger and Blythe.*

341 *Laboratory for C.E. 340.*

351 *Hydraulics Laboratory.* (1) I, II, S
Experimental investigation and application of some of the more important principles covered in C.E. 350. Laboratory, three hours. Prereq. or concur: CE 352. *King, Parker.*

352 *Fluid Mechanics.* (3) I, II
Study of the behavior of liquids and gases, at rest and in motion, with particular reference to water and to problems encountered by civil engineers. Lecture and recitation, three hours. Prereq: EM 221; Prereq or concur: EM 313. *Staff.*

355 *Water Supply and Sewerage.* (3) I, II
For general civil engineering students. Theory and design of water treatment and sewage disposal plants. Lecture, three hours. Prereq: CE 352. *Lauderdale and King.*

356 *Water and Sewage Treatment.* (3)
Theory of conventional and modified water and sewage treatment plants and their operation, analytical methods used in control and significance of test data. Lecture and recitation, three hours. Prereq: CE 355. *Lauderdale and King.*

371 *Seminar.* (1) I, II
A study of current engineering literature as related to civil engineering, assigned reading and reports. Round-table conferences. Two hours. Prereq: Senior classification. *Staff.*

380 *Theory of Structures I.* (3) I, II
Analytical and graphical analysis of stresses in simple and indeterminate structures, including beams, girders, trusses, towers and building frames. Lecture and recitation, three hours. Prereq. or concur: EM 331. *Staff.*

385 *Timber Structures.* (1) I
Design of structural beams, columns and trusses as related to timber structures. Drawing room, three hours. Prereq: CE 380. *Staff.*

387 *Steel Structures I.* (3) I, II
Design and details for various types of riveted and welded connections, riveted and welded building frames, plate girders and trusses. Lecture, one hour; drawing room, six hours. Prereq: C.E. 380. *Staff.*

392 *Reinforced Concrete I.* (3) I, II
Theory and design of beams, slabs, girders and columns as related to building frames and bridges. Introduction to pre-stressed concrete, elastic design and ultimate strength design. Lecture and recitation, three hours. Prereq: C.E. 480. *Gesund.*

425 *Soil Mechanics.* (3) I, II
A study of soil and its utilization in foundations for structures and subgrade for highways. Stabilization and improvement of bearing values. Lectures and recitations, two hours a week; lab, three hours. Prereq: Junior classification. Prereq. or concur: GLY 200 and EM 331. *Pendley.*

426 *Laboratory for C.E. 425.*

440 *Highway Engineering II.* (3) I, II

Materials, construction and maintenance of intermediate and high type roads including all types of bituminous surfaces, macadams and Portland cement concrete. Lecture, two hours; lab, three hours. Prereq: C.E. 340. *Chambers.*

441 *Laboratory for C.E. 440.*

459 *Sanitary Engineering Design.* (3) I, II

For students majoring in Sanitary Engineering. Complete design and layout of a water plant, distribution system, storm and sanitary sewer, and sewage disposal plant. Lecture, two hours; lab, three hours. Prereq: Consent of instructor. *Lauderdale.*

480 *Theory of Structures II.* (3) I, II

Continuation of C.E. 380, with emphasis on indeterminate structures and using the following methods: consistent deflections, moment distribution and slope-deflection. Introduction to computer programs. Lecture and recitation, three hours. Prereq. or concur: EM 331. *Staff.*

487 *Steel Structures II.* (2) I, II

Continuation of C.E. 387 with emphasis on floor systems, trusses and plate girders for bridges. Drawing room six hours. Prereq: CE 387, CE 580. *Maggard, Staff.*

492 *Reinforced Concrete II.* (3) II

Design of building frames, combined footings, retaining walls and pile foundations. Study of soil properties as related to structures. Lecture, three hours. Prereq: CE 392. *Staff.*

521 *Engineering Interpretation of Aerial Photographs.* (3) I, II

Fundamentals of aerial photography as applied to modern engineering surveys. Analysis and reports on soil pattern, geologic formations, and land use studies using photographs. Prereq: Consent of instructor, CE 100 and GLY 202. *Dearinger.*

542 *Traffic Engineering.* (3) I

Characteristics of traffic, drivers and vehicles. Traffic engineering investigations. Design and application of signs, signals and markings. Design of intersections, parking facilities and signal systems. Lecture and recitation, two hours; lab, three hours. Prereq: C.E. 340. *Dearinger.*

553 *Hydrology.* (2) I, II

Occurrence, control and utilization of water particularly as a problem of Civil and Sanitary Engineering. Prereq: CE 352. *Staff.*

566 *Public Health Engineering.* (3) II

Application of engineering principles to the control of the environment, as used by sanitary engineers in federal, state or international health agencies. Lecture, three hours. Prereq: Consent of instructor. *Staff.*

568 *Sanitary Engineering Laboratory.* (5) I

Lectures and laboratory practice in principles, application and interpretation of analytical tests used in sanitary engineering research and plant control. Lecture, three hours; lab, six hours. Prereq: Consent of instructor. *Staff.*

580 *Theory of Structures III.* (3) I, II

Plastic design of steel. Introduction to the theory of arches. Theory and design of continuous trusses. Lecture and recitation, three hours. Prereq. CE 480, MA 431. *Mory.*

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

625 *Advanced Soil Mechanics.* (3) I, II

Study of the physical, mechanical and engineering properties of soils. Lecture, three hours per week. Prereq: C.E. 425 or consent of instructor.

626 *Soil Testing for Engineering Purposes.* (3)

Theory and techniques of sampling and identification, classification, strength, permeability and consolidation tests on soils. Lecture and lab, seven hours. Prereq: CE 425, 625 or consent of instructor. *Staff.*

627 *Applied Soil Mechanics.* (3) I, II

Application of Soil Mechanics to the design and analysis of earth structures. Lecture, three hours per week. Prereq: C.E. 625 or consent of instructor. *Staff.*

628 *Advanced Foundation Engineering.* (3)

Application of the principles of soil mechanics to the design and analysis of foundations. Lecture, three hours. Prereq: C.E. 625 or consent of instructor.

640 *Highway Administration, Economics and Finance.* (3) I, II

A study of highway administration, economics and finance; including organization of highway departments, sources and types of revenue, road costs, classification of roads, benefits from improvements, and program planning. Lecture, three hours. Prereq: C.E. 440 or consent of instructor. *Drake.*

642 *Advanced Highway Engineering.* (3) I, II

A study of traffic, planning and geometric design including traffic surveys, traffic control, parking and design consideration. Lecture, two hours; lab, two hours. Prereq: C.E. 340 or consent of instructor. *Pendley.*

645 *Highway Design, Construction and Maintenance.* (3) I, II

A study of highway design, construction and maintenance; including physical aspects of design, drainage, road types, structural pavement design, construction methods and supervision and maintenance methods. Lecture, three hours. Prereq: Consent of instructor. *Drake.*

646 *Bituminous Paving Materials.* (3) I, II

Origin, production, use-classifications and significant engineering properties of bituminous materials; design of bituminous concrete pavements and highway wearing surfaces. Includes the most recent developments of practical and potential significance in the highway industry. Covers specifications and materials testing. Lecture, two hours; lab, three hours. Prereq: C.E. 440 or consent of instructor. *Havens.*

647 *Cements, Concretes and Aggregates.* (3) I, II

Origin, production, use-classifications and significant engineering properties of portland cements, concretes and mortars. Covers: precise methods of design and control of mixes; durability considerations; pozzolans; additions and admixtures; mineral aggregates; structural, paving and mass concretes; specifications and materials testing. Lecture, two hours; lab, three hours. Prereq: C.E. 440 or consent of instructor. *Havens.*

659 *Advanced Sanitary Engineering Design I.* (3) I, II

Application of theory of water treatment processes to the functional and hydraulic design of water treatment facilities. Lecture, two hours; lab, three hours. Prereq: Consent of instructor. *Lauderdale and King.*

660 *Advanced Sanitary Engineering Design II.* (3) I, II

Application of theory of waste treatment processes to the functional and hydraulic design of waste treatment facilities. Lecture, two hours; lab, three hours. Prereq: Consent of instructor. *Lauderdale and King.*

662 *Water Works and Water Treatment.* (3) I

Theory of water supply and purification, microbiology of fresh water, design of water works and water distribution systems. Lecture, three hours. Prereq. or concur: C.E. 568, Microb. 400 and Microb. 401. *Lauderdale and King.*

664 *Sewerage and Sewage Treatment.* (3) II

Aerobic and anaerobic methods of sewage treatment, biochemical oxygen demand, stream purification, design of sewerage and sewage treatment plants. Lecture, three hours. Prereq: C.E. 568, Microb. 400 and Microb. 401. *Lauderdale and King.*

681 *Dynamics of Structures.* (3) II

Behavior of materials under dynamic stresses, dynamic response of multidegree of freedom—concentrated mass systems, dynamic response of distributed mass structures, design of structures for earthquake, wind, traffic and machinery loads. Prereq: EM 513 or permission of instructor. *Gesund.*

688 *Advanced Structures.* (2) I, II

Preparation of design drawings of structures analyzed and proportioned in C.E. 692 and C.E. 687. Lab, four hours. Prereq: C.E. 692 and C.E. 687. *Staff.*

690 *Suspension Bridges.* (3) I, II

Theory and application of stress analysis and design as applied to suspension bridges. Lecture, three hours. Prereq: C.E. 687.

692 *Slab and Folded Plate Structures.* (3) I, II

Design and analysis of reinforced concrete floor slabs and folded plate roofs. Elastic and inelastic methods. Lecture, three hours. Prereq: CE 580, EM 531, Math. 431, or consent of instructor. *Gesund.*

693 *Shell Structures.* (3) I, II

Design and analysis of reinforced concrete shell structures, including domes, barrel shells, hyperbolic paraboloids and cylindrical tanks. Lecture, three hours. Prereq: C.E. 692 or consent of instructor. *Gesund.*

694 *Continuous Frames by the Rapid Column Analogy Method.* (3) I, II

Theory and application of the column analogy method of stress analysis and design as applied to prismatic and haunched members is continuous structures with emphasis on arches. This method has proven itself unusually efficient for programming for electronic computers. Lecture, three hours. Prereq: C.E. 480 and C.E. 492. *Mory.*

695 *Continuous Arches on Tall Piers and Lean-to Structures.* (3) I, II

Theory and application of stress analysis and design methods as applied to continuous unsymmetrical frames carrying horizontal loads; frames with haunched members and continuous arches on slender piers. The translatory and rotary elastic constants and stresses due to displacements are obtained by the column analogy. Lecture, three hours. Prereq: C.E. 694, or consent of instructor. *Mory.*

768 *Residence Credit for the Master's Degree.* (0) I, II, S

Thesis. May be repeated once. *Staff.*

771 *Seminar.* (0) I, II, S

Review of current literature in the field of Civil Engineering, general discussion and presentation of papers on departmental research. Required of all graduate students. Two hours. *Lauderdale.*

780 *Special Problems in Civil Engineering.* (3)

Individual work on some selected design problems in one of the various fields of Civil Engineering. Laboratory, six hours. May be repeated for a maximum of nine credits. Prereq: Approval of the head of department. *Staff.*

790 *Special Problems in Civil Engineering.* (3)

Individual work on some selected research problems in one of the various fields of Civil Engineering. Laboratory, six hours. May be repeated for a maximum of nine credits. Prereq: Approval of the head of department. *Staff.*

ELECTRICAL ENGINEERING

FACULTY

Professors: Harry Alex Romanowitz (Ph.D., Michigan, 1948), HEAD; Nathan B. Allison (Ph.D., Kentucky, 1948), Prasad Krishna Kadaba (Ph.D., U.C.L.A., 1950), Charles Thomas Maney (M.S., Kentucky, 1949). *Associate Professors*: Brinkley Barnett (B.M.E., Kentucky, 1913), special assignment; John Sterling Jackson, Jr. (M.S., California Institute of Technology, 1954), Silvio O. Navarro (Ph.D., Texas A. & M., 1955), Thomas M. Scott (Ph.D., Wisconsin, 1962), *Assistant Professors:* Lyle Newton Back (M.S., Kentucky, 1962), Eugene Bradford Bradley (Ph.D., Vanderbilt, 1963), Henry Jackson Daily (M.A., Kentucky, 1946), Peter John Graham (M.A., Toronto, 1950), Martin C. Krimm (M.S., Kentucky, 1962), Russell Elwood Puckett (M.S., Kentucky, 1959. *Instructor:* Raymond J. Distler (M.S., Kentucky, 1960).

CURRICULA LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

Freshman Year

First Semester	Crs.
E.E. 001—The Engineering Profession	0
Eng. 101—Freshman Composition	3
MA 111—College Algebra	3
MA 112—Plane Trigonometry	2
Che. 106—Gen. Chemistry for Engineers	4
ME 105—Basic Engineering Graphics	2
Military or Aerospace Science (optional)	2
Physical Education	1
	17

Second Semester	Crs.
E.E. 002—The Engineering Profession	0
Eng. 102—Freshman Composition	3
MA 113—Analytics and Calculus I	4
Che. 108—Gen. Chemistry for Engineers	4
Military or Aerospace Science (optional)	2
Physical Education	1
*Non-technical Elective	4
	18

Sophomore Year

First Semester	Crs.
E.E. 003—The Engineering Profession	0
PHY 231—General College Physics	3
PHY 241—General College Physics Lab.	2
MA 211—Analytics and Calculus II	4
ENG 203—Comp. for Technical Students	3
E.E. 211—Intro. to Electrical Engineering	3
Military or Aerospace Science (optional)	2
EE 251—Intro. to Use of Digital Computers	2
	19

Second Semester	Crs.
E.E. 004—The Engineering Profession	0
PHY 232—General College Physics	3
PHY 242—General College Physics Lab.	2
MA 212—Analytics and Calculus III	4
EM 221—Statics	3
E.E. 221—Circuits I	3
E.E. 222—Electrical Engineering Lab. I	2
Military or Aerospace Science (optional)	2
	19

Junior Year

First Semester	Crs.
EE 005—The Engineering Profession	0
EE 414—Circuits II	3
EE 461—Electronics & Communications I	3
EE 462—Elec. Engr. Laboratory II	2
EE 535—Circuits III	3
ME 250—Shop Theory	1
MA 431—Differential Equations	3
*Non-technical Elective	3
	18

* A list of approved non-technical electives is available at the Electrical Engineering Department Office.

Second Semester	Crs.
EE 006—The Engineering Profession	0
EE 415—Electrical Machinery I	3
EE 416—Elec. Engr. Laboratory III	2
EE 420—Engineering Analysis I	3
EE 567—Fields and Waves	3
EM 313—Dynamics	3
*Non-technical Elective	3
	17

Senior Year

First Semester	Crs.
EE 007—The Engineering Profession	0
EE 371—Seminar	1
EE 507—Electrical Controls I	3
**EE Electives	6
ME 400—Elem. of Engr. Thermodynamics	3
ENG 181—Basic Public Speaking	3
*Non-technical Elective	3
	19

Second Semester	Crs.
EE 008—The Engineering Profession	0
EM 331—Strength of Materials	3
MET 461—Physical Metallurgy	3
***EE Electives	8
*Non-technical Elective	3
	17

Course Descriptions

001 *The Engineering Profession* (Freshman). (0) I

002 *The Engineering Profession* (Freshmen). (0) II

003 *The Engineering Profession* (Sophomore). (0) I

004 *The Engineering Profession* (Sophomore). (0) II

005 *The Engineering Profession* (Junior). (0) I

006 *The Engineering Profession* (Junior). (0) II

007 *The Engineering Profession* (Senior). (0) I

008 *The Engineering Profession* (Senior). (0) II

Lectures on professional growth, conduct and ethics. Activities of the student branches of the corresponding professional societies. May be repeated indefinitely.

211 *Introduction to Electrical Engineering.* (3) I, II, S

Fundamental laws and principles; interpretations, physical concepts; background for linear analysis study. Prereq: MA 112. Concurrent: Phy. 231. *Daily.*

221 *Circuits I.* (3) I, II

R, L, C circuits; mutual inductance, coupled circuits; non-linear magnetics, resonance and anteresonance, polyphase circuits, power factor, power and energy. Prereq: E.E. 211, Phy. 231; Concurrent: E.E. 222. *Back, Daily.*

222 *Electrical Engineering Laboratory I.* (2) I, II

Laboratory exercises in the use of measuring instruments. Experiments in R-L-C circuit analysis. Lecture, one class hour; lab, three hours. Concur: E.E. 221. *Puckett, Back.*

223 *Laboratory for E.E. 222.*

Staff.

251 *Introduction to the Use of Digital Computers.* (2) I, II

Introduction to digital computers. Brief description of their internal organization. Programming with problem-oriented languages. Applications of computers to the solution of scientific problems. Lecture, one hour; laboratory, two hours per week. Prereq: MA 211. *Navarro and Riley.*

301 *Fundamentals of Electrical Machinery.* (3) I, II

A study of direct current and alternating current circuits, machinery controls and illumination equipment. Two class hours; two hours laboratory. Prereq: Physics 232. *Daily.*

303 *Electrical Laboratory for Mining Engineers.* (1) II

A laboratory study of circuits and equipment used in the servicing and operation of industrial equipment, with special emphasis on mining applications. Three hours lab. Prereq. or concurrent: E.E. 301. *Daily.*

305 *Electrical Circuits and Machinery.* (3) I, II

Study of d-c circuits, machines and control; analysis of single-phase circuits. Three class hours. Prereq: Math. 212, Physics 231. *Krimm.*

306 *Electrical and Electronic Circuits and Machinery.* (3) I, II

Three-phase circuits, a-c machinery, electronics principles and applications. Three class hours. Prereq: E.E. 305. *Krimm, Back.*

371 *Seminar.* (1) I, II

Weekly meetings with staff for oral reports on term papers. Discussion of modern practices in electrical engineering. Two class hours. Prereq: Engl. 181. *Staff.*

372 *Seminar.* (1) I, II

Continuation of E.E. 371. Two class hours. Prereq: E.E. 371. *Staff.*

414 *Circuits II.* (3) I, II

Nonsinusoidal driving voltages, variable frequency effects, network analysis, transfer functions, network theorems. Electric field theory, capacitance, energy storage. Prereq: E.E. 221, E.E. 222, M.A. 212, Phy. 232, 242. *Back, Romanowitz.*

415 *Electrical Machinery I.* (3) I, II

A study of construction, operating characteristics (by mathematical analysis), and applications of electrical machines. Three class hours. Prereq: E.E. 414. Concur: E.E. 416. *Krimm.*

416 *Electrical Engineering Laboratory III.* (2) I, II

Laboratory practice and experimental studies related to E.E. 415. Lecture, one hour; lab, three hours. Prereq: E.E. 414. Concur: E.E. 415. *Krimm.*

417 *Laboratory for E.E. 416.*

Staff.

420 *Engineering Analysis I.* (3) I, II

A study of engineering analysis stressing fundamental mathematical and physical principles; electrical duals, electrical-mechanical analog; series solution of differential equations; Bessel and hyperbolic functions, Fourier analysis. Lecture and recitation, two hours; problem session, two hours. Prereq. or concur: E.E. 414, 461. *Allison, Graham.*

461 *Electronics and Communications I.* (3) I, II

Thermionic emission; vacuum-tube and transistor characteristics. Graphical and mathematical analysis of audio amplifiers; rectifiers and smoothing filters as power supplies. Recitation, three class hours. Prereq: E.E. 221, Physics 232, Math. 212. Concur: E.E. 414, 462. *Daily, Puckett.*

462 *Electrical Engineering Laboratory II.* (2) I, II

Experimental exercises in vacuum-tube and transistor characteristics; basic A-F circuits, as voltage and power amplifiers, oscillators and rectifiers. Lecture, one class hour; lab, three hours. Prereq: E.E. 222. Concur: E.E. 461. *Puckett, Back.*

463 *Laboratory for E.E. 462.*

Staff.

* A list of approved non-technical electives is available at the Electrical Engineering Office.

** EE 520, 562, 517, 537, 580.

*** EE 523, 538, 563, 564, 565, 566, 572, 508.

507 *Electrical Controls I.* (3) I, II

Design and analysis of open-loop control components and systems. Three class hours. Prereq: E.E. 420. Prereq. or concur: E.E. 415, 416. *Jackson.*

508 *Electrical Engineering Laboratory IV.* (2) I, II

Laboratory study of control methods and systems employing magnetic and electronic components; analog computers. Lecture, one hour; lab, three hours. Prereq: E.E. 507. Concur: E.E. 572. *Staff.*

509 *Laboratory for E.E. 508.*

Staff.

517 *Electrical Machinery II.* (3) I, II

Electro-mechanical energy conversion systems studies. Development of generalized equivalent circuits for various conditions of operation. Prereq: E.E. 415, 416. *Maney, Krimm.*

520 *Engineering Analysis II.* (3) I, II

Investigation of transient and steady-state conditions in electrical and mechanical systems, using Laplace transform methods; network analysis and synthesis. Feedback system stability criteria. Lecture and recitation, two hours; problem session, two hours. Prereq: E.E. 420. *Distler, Graham.*

523 *Electrical Equipment Problems.* (2) I, II

A creative design study of comprehensive engineering problems, primarily electrical but related to engineering in general. One class hour, five hours by appointment. Prereq: Senior classification. *Maney.*

535 *Circuits III.* (3) I, II

Fundamentals of network theory in communications circuits; transmission lines and wave filters. Three class hours. Prereq: E.E. 221. *Graham, Scott.*

537 *Electric Power Transmission I.* (3) I

Transmission line parameters, generalized circuit constants; analysis of line performance. Three class hours. Prereq: 415, 416. *Maney, Krimm.*

538 *Electric Power Transmission II.* (3) II

Per-unit studies; symmetrical components; experimental studies on a-c network analyzer. Three class hours. Prereq: E.E. 537. *Maney.*

562 *Electronics and Communications II.* (3) I, II

Feedback amplifiers, tuned and untuned amplifiers; oscillators, AM and FM transmitters. Three class hours. Prereq: EE 461, 462. *Bradley, Scott.*

563 *Transistor Circuit Design.* (3)

Small- and large-signal amplifier design, cascaded amplifiers; stability, feedback; pulse circuits, switching; currently developed devices. Lecture and recitation, three class hours. Prereq: E.E. 562 or equivalent. *Scott.*

564 *Electronics and Communications III.* (3) I, II

Timing, scanning, trigger and pulse circuits; video and broad-band R-F amplifiers. Generation, transmission and radiation of V-H-F and U-H-F energy. Three class hours. Prereq: E.E. 562, 567. *Allison, Graham.*

565 *Electrical Engineering Laboratory V.* (2) I, II

Laboratory practice and experiment exercises relating to studies in E.E. 564. Lecture, one hour; lab, three hours. Concur: E.E. 564. *Kadaba, Scott.*

566 *Magnetic Amplifiers.* (3) II

Wave-form analysis of circuits with nonlinear magnetic elements; saturable reactors and self-saturating magnetic amplifiers in steady-state and transient operation; some characteristics of semiconductor diodes including Zener types; effects of negative and positive feedback on magnetic amplifiers. Three class hours. Prereq: E.E. 415, 461. *Distler.*

567 *Fields and Waves.* (3) I, II

Fundamental theory of electrostatic and magnetostatic fields using vector methods of analysis; Maxwell's equations. Time-varying fields, wave equations. Three class hours. Prereq: E.E. 414. *Allison, Romanowitz.*

568 *Laboratory for E.E. 565.*

Staff.

572 *Electrical Controls II.* (3) I, II

Analytical and graphical techniques applied to the design of linear feedback control systems, emphasizing a root-locus method. Non-linear systems are briefly discussed. Three class hours. Prereq: E.E. 520, 507. Concur: E.E. 508. *Jackson.*

580 *Logical Design of Analog and Digital Systems.* (3)

Computation elements; analysis and synthesis of systems, Boolean functions and applications to relay and electronic circuits; circuit logic, memory elements; design of counters, sequential devices, digital devices; brief treatment of programming. Three class hours. *Graham, Navarro.*

585 *Molecular Engineering.* (3) II

Fundamental particles; Quantum concepts, statistics; Crystal structure; Thermal properties of solids; Dielectric properties, optical properties; Free-electron model of metals; Band theory; Semiconductors; Solid state devices. Three class hours. Prereq: Math. 431, E.E. 567. Prereq. or concur: E.E. 520. *Kadaba.*

595 *Independent Problems.* (1) I, II

For electrical engineers. A problem, approved by the head of the department, provides an objective for study and research. May be repeated twice for a total of three credits. *Staff.*

596 *Independent Problems.* (2) I, II

Same conditions as E.E. 595. May be repeated twice for a total of six credits. *Staff.*

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

601 *Electromagnetic Energy Conversion I.* (3) I

General dynamical theories are developed for electromechanical energy systems. Various constraints are applied to the generalized equations of energy transfer. Lecture and recitation, three hours. Prereq: E.E. 517, 567 or equivalent. *Maney.*

602 *Electromagnetic Energy Conversion II.* (3) II

Continuation of E.E. 601, with special attention to specific areas of machine types. Lecture and recitation, three hours. Prereq: E.E. 601 or equivalent. *Maney.*

606 *Electric Power Transmission.* (3)

The theory underlying the calculation and operation of long distance transmission circuits. Special attention to relay control. Prereq: E.E. 538. *Maney, Navarro.*

611 *Linear Circuit Analysis I.* (3)

Laplace and Fourier transform methods of analysis of linear lumped constant systems under transient and steady state conditions; feedback amplifiers; filter networks; stability and physical realizability. Prereq: E.E. 520, 535, 572. *Jackson, Graham, Distler.*

612 *Linear Circuit Analysis II.* (3)

Continuation of E.E. 611 with an introduction to non-linear systems. Prereq: E.E. 611. *Jackson, Graham, Distler.*

613 *Servomechanisms.* (3)

Analysis and synthesis of linear and non-linear closed-loop control system; analog computer and phase-plane techniques; root-locus and Laplace transform methods applied to linear systems. Prereq: E.E. 572. *Jackson.*

622 *Gaseous Conducting Electronic Devices.* (3)

Atomic energy level diagrams; photo-electric emission and devices; electric arcs and glow discharges, plasmas and boundaries, sheaths and probes; industrial devices. Prereq: E.E. 461, 567. *Romanowitz.*

623 *Lines and Wave Guides.* (3)

Open-wire and coaxial lines, standing waves, stub matching; impedance transformation, rectangular and circular wave guides. Prereq: E.E. 535, 564, 567. *Allison, Kadaba.*

624 *Solid State Electronics.* (3) I, II

Bose and Fermi statistics. Semiconductor theory; solid-state devices; electrical properties of insulators; theory and applications of magnetic materials, including ferrites. Lecture and recitation, three hours. Prereq: E.E. 585 or equivalent. *Kadaba, Scott.*

626 *Microwave Engineering.* (3)
Generation, detection and measurement of microwave energy; vacuum tubes at ultra high frequencies, the klystron and the magnetron. Lecture, two hours; lab, three hours. Prereq: E.E. 564, 565, 567. *Allison, Kadaba.*

627 *Electromagnetic Fields.* (3)
Advanced studies in electromagnetic fields; antennas, radiation and propagation of energy. Prereq: E.E. 567. *Allison, Kadaba.*

680 *Advanced Logical Design.* (3)
Boolean Matrices; bridge circuits; bilateral, cascaded, and iterative networks; secondary assignment methods for the design of sequential circuits. Design of actual digital computers. Prereq: EE 580.

768 *Residence Credit for the Master's Degree.* (0) I, II, S
Thesis. May be repeated once. *Romanowitz.*

771 *Seminar.* (0)
Review of current literature in the field of Electrical Engineering, general discussion and presentation of papers on departmental research. Required of all graduate students. Two class hours. *Romanowitz.*

781 *Special Problems in Electrical Engineering.* (1)
Open to graduate students only. Individual work on an assignment approved by the head of the department. May be repeated once for a total of two credits. *Staff.*

782 *Special Problems in Electrical Engineering.* (2)
Open to graduate students only. Individual work on an assignment approved by the head of the department. May be repeated twice for a maximum of six credits. *Staff.*

783 *Special Problems in Electrical Engineering.* (3)
Open to graduate students only. Individual work on an assignment approved by the head of the department. May be repeated twice for a total of nine credits. *Staff.*

ENGINEERING MECHANICS

FACULTY

Professors: Norman Clifford Small (Ph.D., Brown, 1960), HEAD; Robert Dawson Hawkins (M.E., Pennsylvania, M.S., Michigan, 1939). *Associate Professors:* Staley Fields Adams (M.S., Kentucky, 1947), William Jackson Barber (M.S., Michigan, 1936). *Assistant Professors:* Stanley Dale Benton (M.S., Illinois Institute of Technology, 1961), on leave; George Land, Jr. (M.S., Kentucky, 1955), James G. Goree (M.S., Washington, 1962).

The Department of Engineering Mechanics is a new department containing the Mechanics courses formerly taught in the Department of General Engineering (which has been disbanded). The Department of Engineering Mechanics is, at present, a service department functioning for the benefit of all the other departments offering degrees in the College of Engineering.

Course Descriptions

221 *Statics.* (3) I, II, S
An introductory study of the equilibrium of engineering structures; forces, moments, equivalent force systems, equilibrium equations, friction, virtual work. Vector methods. Lecture and recitation, three hours. Prereq: Physics 231. Prereq or concur: MA 211. *Staff.*

313 *Dynamics.* (3) I, II, S
A study of the dynamic behavior of particles, systems of particles, and rigid bodies as analytical models of engineering structures and systems; the laws of motion, kinematics, work and energy, momentum. Vector methods. Lecture and recitation, three hours. Prereq: EM 221, MA 211. *Staff.*

331 *Strength of Materials.* (3) I, II, S
The engineering mechanics of simple elastic (and some plastic) bodies; stress and strain, tension, biaxial tension, bending of beams, torsion, columns, strain energy, plastic limit analysis. Lecture and recitation, three hours. Prereq: EM 221. Prereq or concur: MA 212. *Staff.*

503 *Theory of Elasticity.* (3) I
A modern study of the classical theory of the linear elastic solid; state of stress and strain; formulation of the general three dimensional boundary value problem; virtual work and variational principals; beams, torsion, plane stress and strain. Lecture and recitation, three hours. Prereq or concur: MA 432 (undergraduates admitted only with consent of instructor). *Small.*

513 *Mechanical Vibrations.* (3) I, II
Vibrations of systems of one and several degrees of freedom, critical speeds and torsional and lateral vibrations of shafts. Lecture and recitation, three hours. Prereq: EM 331 and EM 313. Prereq or concur: MA 331. *Barber and Adams.*

531 *Advanced Strength of Materials.* (3) I, II
Unsymmetrical bending of beams, thin plates, stress analysis of thick walled cylinders, and rotating discs. Theory of elastic energy, curved beams, stress concentration and fatigue. Lecture and recitation, three hours. Prereq: EM 331. *Adams.*

MECHANICAL ENGINEERING

FACULTY

Professors: Willis Merle Carter (Ph.D., Michigan, 1953), HEAD; Merl Baker (Ph.D., Purdue, 1952), John Sherman Horine (M.E., Kentucky, 1912), Special Assignment; Karl O. Lange (Dr.-Ing., Darmstadt Institute of Technology, 1930), Estel Burdell Penrod (D.Sc., Hillsdale, 1956), special assignment; Orville Watson Stewart (M.S., Kentucky, 1955. *Associate Professors:* Oliver William Gard (M.S., Georgia Institute of Technology, 1952), Maurice Keith Marshall (M.S., Kentucky, 1956), Randolph Bruce Renda (Ph.D., Purdue, 1959), James F. Thorpe (Ph.D., Pittsburgh, 1960), Warren Ware Walton (M.S., Kentucky, 1953). *Assistant Professors:* Roy Donald Burberry (M.A., Kentucky, 1958), James Francis Lafferty (M.S., Southern California, 1957), James McCleland Elliott (M.S., Kentucky, 1959), Harry Louis Mason (M.S., Kentucky, 1959).

CURRICULUM LEADING TO A BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING DEGREE

Freshman Year

First Semester	Crs.
CHE 106—General Chemistry for Engineers	4
ENG 101—Freshman Composition	3
MA 111—College Algebra	3
MA 112—Plane Trigonometry	2
ME 001—The Engineering Profession	0
PE—Physical Education	1
ROTC—Military or Aerospace Science (optional)	2
*Non-technical Elective	3
	18

* Non-technical electives must be selected from the Humanities and Social Studies in other colleges and must be approved by the student's advisor.

Second Semester	Crs.
CHE 108—General Chemistry for Engineers	4
ENG 102—Freshman Composition	3
MA 113—Analytics and Calculus I	4
ME 002—The Engineering Profession	0
ME 105—Basic Engineering Graphics	2
ROTC—Military or Aerospace Science (optional)	2
*Non-technical Elective	3
	18

Sophomore Year

First Semester	Crs.
EE 251—Introduction to the Use of Digital Computers	2
MA 211—Analytics and Calculus II	4
ME 003—The Engineering Profession	0
ME 106—Mechanical Engineering Graphics I	2
ME 250—Shop Theory	1
ME 251—Shop Practice	1
PE—Physical Education	1
PHY 231—General College Physics	3
PHY 241—General College Physics Laboratory	2
ROTC—Military or Aerospace Science (optional)	2
	18

Second Semester	Crs.
EM 221—Statics	3
MA 212—Analytics and Calculus III	4
ME 004—The Engineering Profession	0
ME 240—Mechanical Engineering Graphics II	2
ME 252—Manufacturing Methods	2
PHY 232—General College Physics	3
PHY 242—General College Physics Laboratory	2
ROTC—Military or Aerospace Science (optional)	2
	18

Junior Year

First Semester	Crs.
ECO 251—Principles of Economics	3
EM 313—Dynamics	3
EM 331—Strength of Materials	3
MA 431—Differential Equations	3
ME 005—The Engineering Profession	0
ME 241—Mechanisms	3
ME 320—Engineering Thermodynamics I	3
	18

Second Semester	Crs.
ME 006—The Engineering Profession	0
ME 310—Mechanical Laboratory I	2
ME 321—Engineering Thermodynamics II	3
ME 330—Fluid Mechanics	3
ME 331—Fluid Mechanics Laboratory	1
ME 340—Machine Design I	3
MET 301—Adaptive Metallurgy for Engineers	3
*Non-technical Elective	3
	18

Senior Year

First Semester	Crs.
EE 305—Electrical Circuits & Machinery	3
ME 007—The Engineering Profession	0
ME 311—Mechanical Laboratory II	2
ME 341—Machine Design II	3
ME 525—Elements of Heat Transfer	3

Mechanical Engineering Design Elective I (Choose one)

1. ME 510—Nuclear Reactor Engineering I	4
2. ME 530—Fluid Dynamics	4
3. ME 550—Motion and Time Study	4
4. ME 560—Internal Combustion Engines	4
5. ME 580—Air Conditioning, Heating & Ventilating	4
6. ME 590—Elements of Aerospace Tech.	4 4
*Non-technical Elective	3
	18

Second Semester	Crs.
EE 306—Electrical & Electronic Circuits & Machinery	3
EM 513—Mechanical Vibrations	3
ME 008—The Engineering Profession	0
ME 312—Mechanical Laboratory III	2
ME 371—Seminar	1
†Technical Elective	3

Mechanical Engineering Design Elective II (Choose one)

1. ME 511—Nuclear Reactor Engineering II (Prereq: ME 510)	3
2. ME 564—Propulsion System Design (Prereq: ME 530)	3
3. ME 552—Plant Layout (Prereq: ME 550)	3
4. ME 562—Reciprocating Engine Design (Prereq: ME 560)	3
5. ME 581—Air Conditioning, Heating & Ventilating Design (Prereq: ME 580)	3
6. ME 592—Aerospace Component Design (Prereq: ME 590)	3 3
*Non-technical Elective	3
	18

Course Descriptions

001 *The Engineering Profession* (Freshmen). (0) I
Staff.

002 *The Engineering Profession* (Freshmen). (0) II
Staff.

003 *The Engineering Profession* (Sophomore). (0) I
Staff.

004 *The Engineering Profession* (Sophomore). (0) II
Staff.

005 *The Engineering Profession* (Junior). (0) I
Staff.

006 *The Engineering Profession* (Junior). (0) II
Staff.

007 *The Engineering Profession* (Senior). (0) I
Staff.

008 *The Engineering Profession* (Senior). (0) II
Lectures on professional growth, conduct and ethics. Activities of the student branch of the American Society of Mechanical Engineers.
Staff.

* Non-technical Electives must be selected from the Humanities and Social Studies in other colleges and must be approved by the student's advisor.

† Technical Elective must be selected from departments of engineering, mathematics, chemistry or physics, and must be approved by the student's advisor.

105 *Basic Engineering Graphics.* (2) I, II

Freehand sketching and lettering. Orthographic and axonometric drawings and sketches. Use and care of instruments. Use of scales. Dimensioning. Auxiliary views. Sectioning. Fasteners. Pencil and ink techniques. Charts, maps and diagrams. Drawing room, six hours. *Burberry, Hobart.*

106 *Mechanical Engineering Graphics.* (2) I, II

Graphical solution of space problems by the application of the principles of descriptive geometry. Prereq: ME 105 or CE 105. Drawing room, six hours. *Burberry.*

110 *Engineering Problems.* (1) I, II

Theory and application of the slide rule. Two recitations per week. Prereq: Math. 112. *Staff.*

240 *Mechanical Engineering Graphics II.* (2) I, II

Technical sketching and working drawings of machines and machine parts. Prereq: or concurrent, ME 250 and ME 251. Drawing room, six hours. *Hobart.*

241 *Mechanisms.* (3) I, II

Movement of machine parts such as crank and link motions. Cams, gears, straight line and quick return motions. Prereq: Phys. 211 or 231. ME 240. Lecture, two hours, laboratory, three hours. *Barber.*

250 *Shop Theory.* (1) I, II, S

This course deals with machine shop theory and covers the various machines and tools used in shop work with emphasis on their uses and limitations. Lecture and visual aids, two hours. Prereq: Sophomore standing. *Staff.*

251 *Shop Practice.* (1) I, II, S

The purpose is to introduce the student to actual machine shop practice to provide a basic background in manufacturing. Machine shop, three hours. Prereq. or concurrent: M.E. 250. *Mangelsen.*

252 *Manufacturing Methods.* (2) I, II, S

This course covers other manufacturing processes including foundry practice, forging, sheet metal work, powder metallurgy, plastic molding and cold forming of metal, production machines and processes. Lecture and visual aids, three hours. Prereq: Sophomore standing. *Staff.*

299 *Analysis of Experimental Data.* (2) I, II

A study of problems and methods used in deriving empirical equations from experimental data, including periodic functions. Graphical and numerical methods of integration and differentiation. Design of special slide rules and nomographs. Prereq. or concur: Physics 231. *Elliott and Mason.*

310 *Mechanical Laboratory I.* (2) I, II, S

Fundamentals of mechanical engineering laboratory practice. Laboratory, four hours. Prereq: M.E. 320, Eng. 102. *Staff.*

311 *Mechanical Laboratory II.* (2) I, II, S

Performance tests on heating, ventilating and power plant equipment. Lab, four hours. Prereq: M.E. 321, 330, 310. *Staff.*

312 *Mechanical Laboratory III.* (2) I, II, S

Continuation of M.E. 311. Lab, four hours. Prereq: M.E. 321, 330, 310. *Staff.*

320 *Engineering Thermodynamics I.* (3) I, II, S

Fundamental principles of thermodynamics. Lecture and recitation, three hours. Prereq: Physics 232. Concur: Math. 331. *Elliott.*

321 *Engineering Thermodynamics II.* (3) I, II, S

Continuation of M.E. 320. Lecture and recitation, three hours. Prereq: ME 320 and MA 331. *Elliott.*

330 *Fluid Mechanics.* (3) I, II, S

Fundamental principles of fluid flow. Lecture and recitation, three hours. Prereq: M.E. 320. *Elliott, Renda.*

331 *Fluid Mechanics Laboratory.* (1) I, II, S

Laboratory exercises and demonstrations of fundamental fluid mechanics phenomenon. Prereq: or concurrent, ME 330. Laboratory, two hours. *Elliott, Renda, Stewart.*

340 *Machine Design I.* (3) I, II

Design of machine and structural elements. Lecture and recitation, three hours. Prereq: ME 240, EM 431. *Mason, Carter, and Gard.*

341 *Machine Design II.* (3) I, II

Continuation of M.E. 340. Lecture and recitation, one hour. Drawing room, six hours. Prereq: M.E. 340. *Mason, Carter, and Gard.*

342 *Laboratory for M.E. 341.*

350 *Safety Engineering.* (3)

A study of industrial accidents prevention, accident statistics, industrial and general hazards, fire protection, codes and standards of safety. The course is designed for those who may enter the fields of design or production engineering. Lecture and recitation, three hours per week. Prereq: ME 251 and Che. 101 or 106. *Gard.*

371 *Seminar.* (1) I, II

Studies of current engineering literature, preparation and presentation of bibliographies and reports through the use of the Engineering Index and Industrial Arts Index. Two hours a week. Prereq: Senior classification. *Staff.*

400 *Elements of Engineering Thermodynamics.* (3) I, II

(For Civil, Electrical and Mining Engineers). General energy equations, mixtures of gases and vapors, flow of fluids, vapor power cycles, internal combustion cycles, and refrigeration cycles. Recitation, three hours. Prereq: Physics 232 and MA 212. *Staff.*

401 *Mechanical and Electrical Equipment for Buildings I.* (2) I

A course for Architecture students. The principles of water supply, plumbing and drainage, air conditioning, electrical engineering, lighting and acoustics are studied. Lecture and recitation, two hours. Prereq: Physics 232. *Staff.*

402 *Mechanical and Electrical Equipment for Buildings II.* (2) II

Continuation of M.E. 401. Lecture and recitation, two hours. Prereq: M.E. 401. *Staff.*

510 *Nuclear Reactor Engineering I.* (4) I

Reactor design studies based on neutron diffusion; critical size calculation of homogeneous and heterogeneous systems. Prereq: Phys. 232, MA 431. Lecture, three hours, laboratory, two hours. *Lafferty.*

511 *Nuclear Reactor Engineering II.* (3) II

Engineering aspects of reactor kinetics and control; shielding and radiation protection; reactor design variables; nuclear fuels and reactor materials. Prereq: ME 510. Lecture, three hours. *Lafferty.*

525 *Elements of Heat Transfer.* (3) I, II, S

Fundamental principles of heat transfer. Lecture and recitation, three hours. Prereq: ME 321. *Thorpe.*

530 *Fluid Dynamics.* (4) I

Thermodynamics of flow of compressible fluids. Isentropic flow, diabatic flow, flow of friction, wave phenomena, and experimental techniques and measurement. Lecture and recitation, three hours. Lab, two hours. Prereq: M.E. 321 and M.E. 330. *Marshall.*

531 *Laboratory for M.E. 530.*

550 *Motion and Time Study.* (4) I, II

Principles and uses of motion economy and fundamentals of time study. Lecture and recitation, three hours; lab, two hours. Prereq: M.E. 21, 22, 23. *Gard.*

551 *Laboratory for M.E. 550.*

552 *Plant Layout.* (3) I

Selection of processes and machines, material handling systems, and plant requirements. Lecture, two hours; drawing room, three hours. Prereq: M.E. 550. *Gard.*

553 *Laboratory for M.E. 552.*

554 *Tool Design.* (3) II
An introduction to Tool Engineering which embodies the fundamental principles of designing jigs, fixtures, cams, gauges, punches, dies and automatic machine tools. Lecture, two hours; drawing room, three hours. Prereq: M.E. 341. *Mason, Gard and Carter*

555 *Laboratory for M.E. 554.*

560 *Internal Combustion Engines.* (4) II
A study of internal combustion engine cycles and the characteristics and performance of actual engines, valve gears, and materials of construction. Lecture and recitation, three hours; lab, two hours. Prereq: M.E. 321 or M.E. 400. *Stewart.*

561 *Laboratory for M.E. 560.*

562 *Reciprocating Engine Design.* (3) I
A brief review of basic thermodynamics of internal combustion engine cycles and a comprehensive analysis of the construction of reciprocating engines. Calculation of physical data for given design requirements. Assembly drawings of components designed. Lecture and recitation, one hour. Drawing room, six hours. Prereq: M.E. 560. *Stewart.*

563 *Laboratory for M.E. 562.*

564 *Propulsion System Design.* (3) II
Design of systems for aircraft or missile propulsion. Centrifugal compressors, axial-flow compressors, turbine and exhaust systems, and combustion chambers. Lecture, one hour. Drawing room, six hours. *Marshall.*

565 *Laboratory for M.E. 564.*

566 *Power Plant Engineering.* (3) II
Study of the characteristics of steam and internal combustion engineering generating power stations. Lecture and recitation, three hours. Prereq: M.E. 321. *Stewart.*

580 *Air Conditioning, Heating and Ventilating.* (4) I
Theory of air conditioning and the mechanical equipment of buildings. Lecture and recitation, four hours. Prereq: M.E. 321 and M.E. 330. *Walton.*

581 *Air Conditioning, Heating and Ventilating Design.* (3) II
Continuation of M.E. 580 and the complete design and layout of a year-round air conditioning system. Drawing room, nine hours. Prereq: M.E. 580. *Walton.*

582 *Refrigeration.* (3) I, S
A course which deals with compression and absorption refrigeration machines and installations. Lecture and recitation, three hours. Prereq: M.E. 321 or M.E. 400. *Walton.*

590 *Elements of Aero-Space Technology.* (4)
Flight performance of airborne and ballistic vehicles. Space vehicle propulsion and structures. The space environment. Lecture, three hours. Lab, two hours. Prereq: M.E. 321 and M.E. 330. *Lange.*

591 *Laboratory for M.E. 590.*

592 *Aero-Space Component Design.* (3)
Preparation of formal proposal on a given requirement in the aerospace field. Execution of the design. Testing of a prototype under proper environmental conditions. Lecture, one hour. Drawing room, six hours. Prereq: M.E. 590. *Lange.*

593 *Laboratory for M.E. 592.*

Prerequisite for graduate work: Students desiring to take any of the following courses should have a thorough working knowledge of chemistry, physics and mathematics. For major work, a candidate must hold a bachelor's degree in Mechanical Engineering or its equivalent. *Lange.*

620 *Advanced Engineering Thermodynamics I.* (3) I, II
Critical treatment of the laws of thermodynamics, temperature scales; applications of theory to compressors and internal combustion engines; frequent reference to research papers. Lecture, three hours. Prereq: M.E. 321 or consent of instructor. *Walton.*

621 *Advanced Engineering Thermodynamics II.* (3) II
Continuation of M.E. 620. Prereq: M.E. 620. *Walton.*

625 *Advanced Heat Conduction.* (3) I
Comprehensive study of heat conduction; derivation of governing physical and subsidiary equations; discussion of the various boundary conditions; review of classical heat conduction solutions; discussion of current problems, methods of solution and engineering applications of heat conduction. Prereq: ME 525 or equivalent or concurrent, MA 432. Lecture, three hours. *Thorpe.*

626 *Advanced Heat Convection.* (3) II
Comprehensive study of heat convection; derivation of equations of convection of mass, momentum, and energy boundary layer equations; classical solutions of laminar convection problems; review of turbulent convection; analogies between momentum and energy. Prereq: ME 625. Lecture, three hours. *Thorpe.*

627 *Radiation Heat Transfer.* (3) II
Study of thermal radiation; discussion of Planck distribution function and Stefan-Boltzmann Equation; definition of black and gray radiators; study of geometry of radiation; angle factors; study of distributed radiators. Prereq: ME 525 or equivalent, or concurrent, MA 432. Lecture, three hours. *Thorpe.*

630 *Advanced Fluid Mechanics I.* (3) I
Derivation of basic equations for continuous media. Some exact solutions of Navier-Stokes equations. Potential flow. Theory of turbulence and boundary layers. Prereq: ME 330 or equivalent, or concurrent, MA 432. Lecture, three hours. *Renda.*

631 *Advanced Fluid Mechanics II.* (3) II
One, two, and three dimensional compressible flow of fluids. Free-turbulence; jets and wakes. Superfluids. Surface phenomena. Molecular flow of gases. Prereq: ME 630. Lecture, three hours. *Renda.*

632 *Advanced Fluid Mechanics III.* (3) I
Conference course permitting latitude in choice of topics. Prereq: ME 631 and consent of instructor. Lecture, three hours. *Renda.*

640 *Advanced Machine Design.* (3)
The application of the principles of mechanics of materials, dynamics, and kinematics to the design of complete machines. This involves a knowledge of shop practice and methods of construction. *Carter.*

641 *Advanced Gear Design.* (3)
Fundamentals of gearing; involute trigonometry; design of planetary gear systems and transmission; study of gear forms such as bevel, helical, worm and spiral; study of gear manufacturing methods. Lecture and recitation, three hours. Prereq: M.E. 341. *Carter.*

642 *Advanced Kinematics of Machinery I.* (3)
Fundamentals in the analysis and synthesis of mechanisms including couple curves, guided plane systems and linkage design. Lecture, three hours. Prereq: Approval of director of graduate study. *Tao.*

643 *Advanced Kinematics of Machinery II.* (3)
A continuation of M.E. 642, dealing with the motion of rigid planes passing through 2,3,4,5 or more specified positions. Theory and application. Ability of reading technical German or Russian is preferred but not required. Lecture and recitation, three hours per week. Prereq: M.E. 642. *Tao.*

660 *Power Plant Engineering.* (3)
Advanced work in the design, selection, layout and operation of heat-power plant equipment. *Stewart.*

661 *Steam Turbines.* (3)
Steam turbine cycles, flow of steam through nozzles and blades; internal losses; re-heat factor; regenerative feed-heating; turbine performance at varying loads; mixed-pressure turbines; construction of nozzles and diaphragms. Prereq: Approval of head of department. *Stewart.*

662 *Gas Turbines and Jet Propulsion.* (3)
Momentum, energy, and thermodynamics of gas flow; performance calculations; centrifugal, axial-flow, and Lysholm compressors; gas turbine cycles and characteristics; combustion chamber; aircraft, stationary, marine, and locomotive power plants; rockets. Prereq: Approval of head of department. *Marshall.*

680 *Heating, Ventilating and Air Conditioning I.* (3)
Theoretical analysis of complex refrigeration cycles and treatment of advanced refrigeration topics; intermittent heating; advanced psychometrics and air conditioning techniques. *Walton.*

681 *Heating, Ventilating and Air Conditioning II.* (3)
Analysis of panel heating and cooling systems; theoretical developments of exact radiation equations involving multiple reflections; configuration factor analysis; exact and simplified design techniques. *Walton.*

682 *Heating, Ventilating and Air Conditioning III.* (3)
Advanced work in the design, selection, layout and operation of heating, ventilating and air conditioning equipment with emphasis on industrial application and heat pump design. *Baker.*

690 *Advanced Aeronautical Meteorology.* (3) II
Atmospheric thermodynamics, and dynamics. Adiabatic changes of moist air through vertical motion, effects on aircraft. Energy equations; equations of motion on rotating globe; rocket-spectographic studies. Lecture and recitation, three hours. Prereq: Consent of instructor. *Lange.*

768 *Residence Credit for the Master's Degree.* (0) I, II, S
May be repeated once. *Staff.*

771 *Seminar.* (0)
Review of current literature in the field of Mechanical Engineering, general discussion and presentation of papers on departmental research. Required of all graduate students. Two hours. *Carter.*

780 *Special Problems in Mechanical Engineering.* (3)
For graduate students having research ability. Each course consists of individual work in one of the various fields of Mechanical Engineering. Lab, six hours. May be repeated three times for a total of twelve credits. Prereq: Approval of the head of department. *Staff.*

MINING & METALLURGICAL ENGINEERING

FACULTY

Professors: Richard Shelby Mateer (Ph.D., Pittsburgh, 1950), HEAD; Charles Stevens Crouse (E.M., Minnesota, 1911), special assignment; Ernest Melvern Spokes (Ph.D., Pennsylvania State, 1956), Roy Erwin Swift (D.Engr., Yale, 1949). *Associate Professors*: James Graham Morris (Ph.D., Purdue, 1956), William Hayden Roll (E.M., Kentucky, 1950). *Assistant Professor:* Robert Carlisle Duncan (M.S., Kentucky, 1957).

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN METALLURGICAL ENGINEERING

Freshman Year

First Semester	Crs.
Met. 001—The Engineering Profession	0
Eng. 101—Freshman Composition	3
MA 111—College Algebra	3
MA 112—Plane Trigonometry	2
CE 105—Basic Engineering Graphics	2
Che. 110—General Chemistry	5
Military or Aerospace Science (optional)	2
Physical Education	1
	18

Second Semester	Crs.
Met. 002—The Engineering Profession	0
Eng. 102—Freshman Composition	3
MA 113—Analytics and Calculus I	4
Che. 112—General Chemistry	5
Military or Aerospace Science (optional)	2
Physical Education	1
Non-technical Elective	3
	18

Sophomore Year

First Semester	Crs.
Met. 003—The Engineering Profession	0
MA 211—Analytics and Calculus II	4
PHY 231—General College Physics	3
PHY 241—General College Physics Lab.	2
Che. 226—Analytical Chemistry	5
ECO 251—Principles of Economics	3
Military or Aerospace Science (optional)	2
	19

Second Semester	Crs.
Met. 004—The Engineering Profession	0
MA 212—Analytics and Calculus III	4
PHY 232—General College Physics	3
PHY 242—General College Physics Lab.	2
CME 211—Chem. Engineering Calculations	4
Met. 261—Elem. of Physical Metallurgy	3
Military or Aerospace Science (optional)	2
	18

Junior Year

First Semester	Crs.
Met. 005—The Engineering Profession	0
Che. 446—Physical Chemistry for Engineers	4
MA 431—Differential Equations	3
Met. 363—The Science of Metals	3
EM 221—Statics	3
Met. 321—Melting, Fabrication and Testing of Metals	3
EE 305—Electrical Circuits and Machinery	3
	19

Second Semester	Crs.
Met. 006—The Engineering Profession	0
Che. 448—Physical Chemistry for Engineers	4
Met. 351—Metallurgical Thermodynamics	3
Met. 361—Physical Metallurgy	3
EM 331—Strength of Materials	3
EE 306—Elec. and Electron Circuits and Machinery	3
Non-technical elective	2
	18

Senior Year

First Semester	Crs.
Met. 007—The Engineering Profession	0
Met. 451—Metallurgical Thermodynamics	3
Met. 461—Physical Metallurgy	3
Met. 371—Seminar	1
Met. 341—Extractive Metallurgy	3
*Technical Elective	3
*Non-technical Electives	6
	19

* All electives selected must have the approval of the head of the department.

Second Semester	Crs.
Met. 008—The Engineering Profession	0
Met. 453—Metallurgical Kinetics	3
MET 463—Structure of Alloys	3
Met. 372—Seminar	1
Met. 443—Minerals Beneficiation	3
Met. 444—Minerals Beneficiation Laboratory	1
*Technical Elective	3
*Non-technical Electives	5
	19

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN MINING ENGINEERING

Freshman Year

First Semester	Crs.
Min. 001—The Engineering Profession	0
ENG 101—Freshman Composition	3
MA 111—College Algebra	3
MA 112—Plane Trigonometry	2
Che. 106—Gen. Chemistry for Engineers	4
CE 105—Basic Engineering Graphics	2
Military or Aerospace Science (optional)	2
Physical Education	1
	17

Second Semester	Crs.
Min. 022—The Engineering Profession	0
Min. 111—Problems in Mining Engineering	1
ENG 102—Freshman Composition	3
MA 113—Analytics and Calculus I	4
Che. 108—Gen. Chemistry for Engineers	4
CE 100—Plane Surveying	3
Military or Aerospace Science (optional)	2
Physical Education	1
	18

Sophomore Year

First Semester	Crs.
Min. 003—The Engineering Profession	0
MA 211—Analytics and Calculus II	4
PHY 231—General College Physics	3
PHY 241—General College Physics Lab.	2
GLY 200—Elem. Geology for Engr.	3
Che. 226—Analytical Chemistry	5
Military or Aerospace Science (optional)	2
	19

Second Semester	Crs.
Min. 004—The Engineering Profession	0
MA 212—Analytics and Calculus III	4
PHY 232—General College Physics	3
PHY 242—General College Physics Lab.	2
GLY 202—Elem. Geology for Engr.	3
Min. 121—Elements of Mine Surveying	2
EM 221—Statics	3
Military or Aerospace Science (optional)	2
	19

Junior Year

First Semester	Crs.
Min. 005—The Engineering Profession	0
EM 331—Strength of Materials	3
Min. 241—Elements of Mining	3
E.E. 301—Fund of Elec. Machinery	3
ECO 251—Principles of Economics	3
GLY 212—Mineralogy	3
*Non-technical Elective	3
	18

Second Semester	Crs.
Min. 006—The Engineering Profession	0
Met. 201—Engineering Metallurgy	3
Met. 443—Minerals Beneficiation	3
Met. 444—Minerals Beneficiation Lab.	1
E.E. 303—Elec. Lab. for Mining Engr.	1
GLY 213—Mineralogy	3
M.E. 400—Elem. of Engr. Thermodynamics	3
C.E. 301—Testing Materials	1
*Non-technical Elective	3
	18

Senior Year

First Semester	Crs.
Min. 007—The Engineering Profession	0
C.E. 351—Hydraulics Laboratory	1
C.E. 352—Fluid Mechanics	3
C.E. 380—Theory of Structures	3
Min. 461—Mineral Industries Adm.	3
Min. 441—Mining Methods	3
*Non-technical Elective	3
*Technical Elective	3
	19

Second Semester	Crs.
Min. 008—The Engineering Profession	0
Min. 091—Mine Rescue & First Aid	0
Min. 471—Mine Ventilation	3
Min. 481—Mine Plant & Machinery	3
Min. 561—Valuation of Mineral Prop.	2
Min. 371—Seminar	1
*Non-technical Electives	6
*Technical Elective	3
	18

Course Descriptions

001 *The Engineering Profession* (Freshmen). (0) I
Mateer.

002 *The Engineering Profession* (Freshmen). (0) II
Mateer.

003 *The Engineering Profession* (Sophomore). (0) I
Duncan.

004 *The Engineering Profession* (Sophomore). (0) II
Duncan.

005 *The Engineering Profession* (Junior). (0) I
Duncan.

006 *The Engineering Profession* (Junior). (0) II
Duncan.

007 *The Engineering Profession* (Senior). (0) I
Duncan.

008 *The Engineering Profession* (Senior). (0) II
Lectures on professional growth, conduct and ethics. Activities of the student branches of the corresponding professional societies. May be repeated indefinitely. *Duncan.*

* All electives selected must have the approval of the head of the department.

261 *Elements of Physical Metallurgy.* (3) II, S
Phase diagrams through ternary metal systems; dependence of physical, mechanical, and electrical properties on microstructure and alloy distribution; structures developed in fabrication and interpretation in terms of service performance. Lecture and recitation, three hours. Prereq: CHE 110 or 112 and PHY 231. *Mateer.*

301 *Adaptive Metallurgy for Engineers.* (3) I, II
Principles of production and treatment of metals and alloys; correlation of structures, properties and applications for Mechanical and Chemical Engineers. Lecture and recitation, three hours. Prereq: Freshman Chemistry and Sophomore Physics. *Staff.*

303 *General Elementary Metallurgy.* (2) I, II
Basic principles of metallurgical property control; study of common structural alloys and relation to Civil Engineering Design and service requirements. Lecture and recitation, two hours. Co-req: EM 331 and CE 301. *Duncan.*

321 *Melting, Fabrication and Testing of Metals.* (3) I
Conventional foundry operations in aluminum, bronze and cast iron; sand control, arc-furnace refining of steel, vacuum melting of reactive metals; welding, rolling, forging, x-ray radiographic inspection and mechanical testing. Lecture, one hour; lab, six hours. Prereq: Met. 261. *Duncan.*

341 *Extractive Metallurgy.* (3) I
The principles and processes employed in the production, treatment and preparation of the various economic metals, both ferrous and non-ferrous, including a consideration of their strategic and economic importance. Lecture and recitation, three hours. Prereq: Che. 446. *Spokes.*

351 *Metallurgical Thermodynamics I.* (3) II
Application of the first, second and third laws of thermodynamics to metallurgical systems. Discussion and analysis of energy, concept of equilibrium, heat capacity, enthalpy, entropy and free energy of alloys phases. Lecture and recitation, three hours. Prereq: Che. 446. *Staff.*

361 *Physical Metallurgy.* (3) II
Crystal structure, bonding in metal crystals, lattice movements in elastic and plastic deformation, x-ray diffraction and pole figures. Lecture, two hours; lab, three hours. Prereq: Consent of instructor.

363 *Structure of Alloys.* (3) I
Elastic and plastic deformation, recovery and recrystallization of alloys; heat treatment of steel. Lecture, two hours; lab, three hours. Prereq: Met. 261. *Morris.*

371 *Seminar.* (1) I
General discussions of metallurgical subjects; preparation and delivery of papers and reports; extemporaneous speaking, and the briefing of technical books and articles in current literature. Two hours. Prereq: Permission of instructor. *Swift.*

372 *Seminar.* (1) II
General discussions of metallurgical subjects; preparation and delivery of papers and reports, extemporaneous speaking, and the briefing of technical books and articles in current literature. Two hours. Prereq: Permission of instructor. *Swift.*

443 *Minerals Beneficiation.* (3) II
Principles and mechanics of beneficiation involved in the preparation of mine products, principles of plant design and current developments. Lecture and recitation, three hours. Prereq: Phy. 232.

444 *Minerals Beneficiation Laboratory.* (1) II
Application of the principles studied in Met. 443. Lab, three hours. Prereq: or Concur: Met. 443. *Spokes.*

451 *Metallurgical Thermodynamics II.* (3) I
Application of fugacity, activity and equilibrium constants to metallurgical systems. Analysis of ideal, non-ideal and regular solutions and their relation to non-metallic solutions at elevated temperatures, molten salt solutions and slags. Discussion and application of the phase rule to metal systems. Lecture, three hours. Prereq: Met. 351. Met. 451. *Staff.*

453 *Metallurgical Kinetics.* (3) II
Rate processes in heat and mass transfer, nucleation and growth. Fluid flow in molten metal systems. Lecture, three hours. Prereq: Met. E. 451. *Morris.*

461 *Physical Metallurgy.* (3) I, II
Classical and quantum theory concept of free atom; energy states, brillouin zone theory, conduction and magnetic characteristics of solids: primary solid solutions, order-disorder reactions. Lecture and recitation, three hours. Prereq: MA 212, PHY 232. *Morris.*

463 *Structures of Alloys II.* (3) II
Age hardening and diffusion in metal systems. Lecture, two hours; lab, three hours. Prereq: Met. 363. *Morris.*

521 *The Casting of Metals.* (3) I, II
Ferrous and non-ferrous foundry practice. Theory and metallurgy of metal castings. Application of engineering principles to the design and production of castings. Lecture and recitation, three hours. Prereq: Met. 301 or 303 or 321. *Duncan.*

531 *Powder Metallurgy.* (3) I, II
The production and testing of metal powders. The theory of sintering without and with a liquid phase. The practice and theory of compacting metal powders into useful forms. Lecture and recitation, three hours. Prereq: Met. 363. *Swift.*

535 *Metals at High Temperature.* (3) I, II
Fundamental considerations involved in high temperature behavior of metals. Test methods and equipment for elevated temperature testing. A review of the commercial alloys for high temperature use and study of current literature. Lecture, three hours. *Fields.*

561 *Advanced Physical Metallurgy.* (3) I, II
Study of theory of phase transformation in metallic systems. Analysis of rate controlling processes for classical phase changes and for order-disorder reactions. Lecture, three hours. Prereq: CHE 446, 448, MET 451 (or equivalent). Co-req: MET 463. *Morris.*

Prerequisite for graduate work: Students desiring to take any of the following courses should have a thorough working knowledge of chemistry, physics and mathematics. For major work, a candidate must hold a bachelor's degree in Metallurgical Engineering or its equivalent. The Doctor of Engineering degree is offered in the field of physical metallurgy.

633 *Special-Purpose Alloy Steels.* (3) I, II
Fundamental principles of the more complicated and special alloy steels and their heat treatment. Carbon, mild alloy, N.E., S.A.E., tool and super alloys are included. Alternate alloy steels for application are considered. Lecture, three hours. *Swift.*

637 *Materials Engineering.* (3) I, II
Factors in specification and testing of materials. Materials for lightweight construction, mechanical and electrical applications, and severe service conditions are treated. Material failures, trouble shooting and testing are discussed. Lecture, two hours; lab, three hours. *Mitchell.*

639 *Nuclear Metallurgy.* (3) I, II
The physical metallurgy of materials used in components of nuclear reactors. Materials applicable to nuclear-reactor components in ceramics, metal ceramics and other fields. Lecture and recitation, three hours. Prereq: B.S. in Metallurgical Engineering or permission of instructor. *Mateer.*

641 *Advanced Production Metallurgy.* (3) I, II
Principles and practices used in the production of alloys. Lecture, two hours; lab, three hours. *Swift.*

643 *Advanced Ore Dressing I.* (3) I
Ore dressing plant design and original research in concentration problems. Lecture and recitation, one hour. Lab, six hours. *Spokes.*

645 *Advanced Ore Dressing II.* (3) II
Continuation of Met. 643. Lecture and recitation, one hour. Lab, six hours. *Spokes.*

651 *Corrosion.* (3) I, II
Corrosion mechanisms, including the electro-chemical theory, fundamentals of oxidation and tarnish, passivity and effects of crystal orientation on corrosion. Corrosion of engineering materials in various environments, and testing. Lecture, two hours; lab, three hours. *Swift.*

657 *The Physical Chemistry of Steel Making.* (3) I, II
Reactions involved in steel making processes. Slag constitution, slag control, and effects of additions to liquid metal. Influences of melting, refining, and deoxidizing practices on properties of finished steel. Lecture, three hours. *Staff.*

659 *Advanced Phase Diagrams.* (3) I, II
Review of thermodynamic fundamentals and application to binary pressure-temperature-composition diagrams. Construction and interpretation of ternary temperature-composition diagrams. Review and discussion of important ternary diagrams. Lecture and recitation, three hours. Prereq: CHE 447 and MET 261. *Mateer.*

663 *Theoretical Structural Metallurgy.* (3) I, II
Interatomic forces of crystal bonding; free electron; zone theory; equilibrium and rate of approach thereto; thermal behavior, structure and free energy of alloy phases; equilibrium diagrams; diffusion; order-disorder change; nucleation and phase growth. Lecture, three hours. *Morris.*

665 *X-ray Metallography.* (4) I, II
Crystallography; x-ray theory. Laue, rotation-crystal, powder x-ray diffraction methods; special cameras; structure-factor equations; reciprocal lattice; stereographic, gnomonic projections; pole figures; stress-strain analysis, phase diagrams; electron diffraction. Lecture, three hours; lab, three hours. Prereq: MET 361. *Mateer.*

667 *Crystal Plasticity.* (3) I, II
Fundamentals of plastic deformation in metals; Crystallography, slip, twinning, strain hardening, recovery, cold working, cold-worked and recrystallization textures; Heyns stresses and creep. Lecture and recitation, three hours. *Field.*

745 *Carbonization of Coal.* (3) I, II
The production of coke, char, gas and chemical by-products. Determination of the quality of coals and the yields of by-products of low, medium and high temperature processes. Lecture and recitation, two hours; lab, three hours. *Spokes.*

768 *Residence Credit for the Master's Degree.* (0) I, II, S
(1 to 9 weeks residence). May be repeated. Maximum of six weeks can be applied toward master's degree with thesis.

769 *Residence Credit for the Doctor's Degree.*
(1 to 18 weeks residence). May be repeated indefinitely.

771 *Seminar.* (0) I, II, S
Review of current literature in the field of metallurgical engineering and presentation of papers on departmental research. Required of all graduate students.

781 *Special Problems, Literature and Laboratory.* (1-3) I, II
Literature research and planning of research programs; shop problems and technical writing, including a term paper, are required. Consultation, laboratory and lecture by appointment. May be repeated for a total of nine credits. *Staff.*

MINING ENGINEERING

001 *The Engineering Profession* (Freshman). (0) I, II
Staff.

002 *The Engineering Profession* (Freshman). (0) II
Staff.

003 *The Engineering Profession* (Sophomore). (0) I
Staff.

004 *The Engineering Profession* (Sophomore). (0) II
Staff.

005 *The Engineering Profession* (Junior). (0) I
Staff.

006 *The Engineering Profession* (Junior). (0) II
Staff.

007 *The Engineering Profession* (Senior). (0) I
Staff.

008 *The Engineering Profession* (Senior). (0) II
Lectures on professional growth, conduct, and ethics. Activities of the student branch of the American Institute of Mining and Metallurgical Engineers. May be repeated indefinitely. *Staff.*

091 *Mine Rescue Training and First Aid.* (0) II
Required of mining engineers. Fundamental principles of mine rescue training and first aid. Given on University campus by Kentucky Department of Mines and Minerals, U.S. Bureau of Mines, or both in collaboration. *Roll.*

111 *Problems in Mining Engineering.* (1) II
An introduction to the engineering method of solving problems in mining; the use of the slide rule and the engineering library; field trips; engineering reports. Lab, three hours. *Spokes.*

121 *Elements of Mine Surveying.* (2) I
Surface and underground methods for coal and metal mine surveys. Tunnel surveys and shaft plumbing. Lecture and recitation, one hour; practical work, three hours. Prereq: C.E. 100. *Roll.*

241 *Elements of Mining.* (3) I
Fundamental mining operations, prospecting and mine development. Lecture and recitation, three hours. Prereq: Chem. 112, Phys. 231, Gly. 200. *Staff.*

371 *Seminar.* (1) I, II
The preparation and delivery of papers and reports on mining subjects, extemporaneous speaking and the briefing of technical books and articles in the current literature. Two hours. Prereq: Senior classification. *Staff.*

441 *Mining Methods.* (3) I
Surface and underground mining of coal, metallic ores and nonmetallic minerals. Economic, engineering and operating factors. Lecture and recitation, three hours. Prereq: Min. 241. *Spokes.*

461 *Mineral Industries Administration.* (3) I
The engineering aspects of mineral industries administration and management, including safety engineering. Lecture and recitation, three hours. Prereq: Junior classification. *Roll.*

471 *Mine Ventilation.* (3) II
The principles and methods of mine ventilation and air conditioning; the control of dangerous impurities. Lecture and recitation, two hours; lab, three hours. Prereq: Min. 241. *Roll and Spokes.*

481 *Mine Plant and Machinery.* (3) II
Theory and practice of mine haulage, hoisting, drainage, pumping and compressed air as power. Application of engineering principles to the mineral industries. Lecture and recitation, two hours; lab, three hours. Prereq: Min. 241. *Roll and Spokes.*

536 *Ceramic Engineering.* (3) I, II
Materials and equipment used in the ceramics industry. Physical and chemical principles relating to the manufacture of ceramic products such as pottery, tile, brick, white-ware, refractories, glass and enamels on metals. Calculations involving formulas, batches of materials and the drying and firing of ceramic ware. Lecture and recitation, three hours. *Swift.*

541 *Coal Preparation I.* (3) I
Principles and practice of coal preparation and associated operations. Lecture and recitation, two hours; lab, three hours. Prereq: Met. 443. *Spokes.*

542 *Coal Preparation II.* (3) II
A continuation of Min. 541. Lecture and recitation, two hours; lab, three hours. *Spokes.*

561 *Valuation of Mineral Properties.* (2) II
Methods of appraising the value of deposits of ores, mineral fuels and non-metallics. Lecture and recitation, two hours. Prereq: Eco. 251, Min. 241. *Roll.*

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

621 *Advanced Prospecting.* (3) I, II

Study of the principles involved in the geophysical investigation of the minerals of the earth's crust. Lecture and recitation, two hours; lab, three hours. *Spokes.*

645 *Preparation and Uses of Industrial Minerals.* (3) I, II

Sources, processing, marketing, utilization and economics of non-metallic minerals, and product specifications. Clay, limestone, asbestos, refractories. Lecture and recitation, three hours. Prereq: B.S. degree in Engineering. *Swift.*

651 *Fuels and Their Combustion.* (3) I, II

The sources and properties of natural fuels and their refined products. The chemistry and physics of combustion. Combustion equipment. Lecture and recitation, three hours. *Spokes.*

661 *Mine Organization.* (3) I, II

Detailed study of the structure and function of a mining enterprise from both the financial and the engineering standpoint. Lecture and recitation, three hours. *Roll.*

681 *Advanced Mine Engineering.* (3) I, II

Procedure and methods of collecting and recording data for the systematic development and exploitation of a mining property. Lecture and recitation, one hour; drawing and mapping, six hours. May be repeated for a total of six credits. *Roll and Spokes.*

768 *Resident Credit for the Master's Degree.* (0) I, II, S

(1 to 9 weeks residence). May be repeated. Maximum of six weeks can be applied toward master's degree with thesis.

771 *Seminar.* (0)

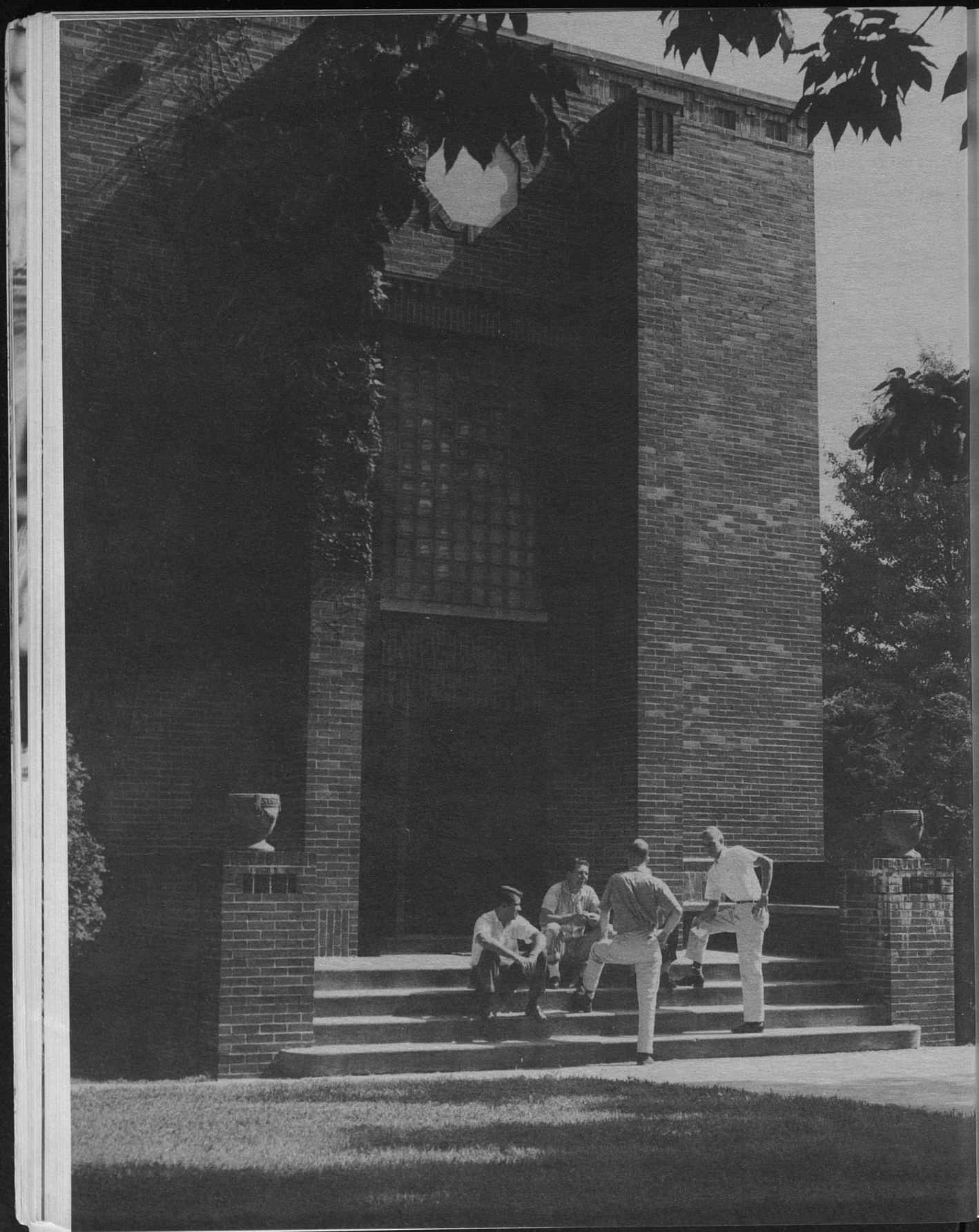
Review of current literature in the field of Mining Engineering and presentation of papers on departmental research. Required of all graduate students. *Spokes.*

780 *Special Problems in Mining Engineering.* (3) I, II, S

Literature research and planning of research programs; laboratory problems and technical writing, including a term paper, are required. Consultation, laboratory and lecture by appointment. May be repeated to a maximum of nine credits. *Spokes and Roll.*

790 *Special Problems in Mining Engineering.* (3) I, II, S

Literature, research and planning of research programs; laboratory problems and technical writing, including a term paper, are required. Consultation, laboratory and lecture by appointment. May be repeated to a maximum of nine credits. *Spokes and Roll.*



Law

THE COLLEGE OF LAW was established September 1, 1908, and the first class graduated in 1910. Through the years, as an integral part of the University, it has served the Commonwealth by sending out many graduates who have become leaders in the profession. It is a tradition of the College, however, that its opportunity for service is not limited in scope and its program is designed so that graduates of the school can practice their profession on a local, regional and national level.

The College of Law is accredited by all agencies which establish standards for law schools, including the Court of Appeals of Kentucky, the Association of American Law Schools, the American Bar Association and the bar admission authority in all 50 states.

The instructional program centers in a three-year general law curriculum designed to be completed in six 18-week semesters. Eighty-three (83) semester hours in law are necessary to qualify for the LL.B. degree. The aim of the program is to provide the individual student with a foundation education in law of lasting quality. This involves a great deal more than the mere study of substantive legal principles; and the program is arranged to assist the student in acquiring the myriad skills that solution of modern legal problems demands, to acquaint him with related and interdependent fields of knowledge, to make certain that he has an appreciation for and understanding of the legal, social and political institutions on which the administration of justice rests, to prepare him for the policy and ethical decisions he must make on behalf of the community in practicing his profession; in short, to give him broad, practical, basic legal training of unmatched excellence that will permit unlimited development of his legal capacities throughout his career.

The Faculty. The program of the College is conducted by a full-time faculty and staff composed of ten instructors and five library and secretarial personnel. They are assisted by two part-time teaching associates and certain research associates employed periodically. Members of the teaching faculty are well qualified by formal training and experience to teach law, to guide students in the solution of legal problems and to add to legal knowledge through research. All have done graduate work in law and have practiced law successfully; a majority have taught in a number of different law schools.

The Library. The College maintains an excellent and carefully selected law library collection of more than 67,000 volumes, one of the larger law libraries in the South. It is housed in the law building as an integral part of the school and includes an especially comprehensive collection of Anglo-American case and statutory materials. It also contains more than 8,000 treatises and textbooks, all major legal reference works, and some 200 legal periodicals received annually, as well as special collections in jurisprudence and international law. The law library is growing at about 1,800 volumes per year.

The Law Building. The College of Law has its own building, Lafferty Hall, located near the center of the main University campus across the walk and to the northwest of the Margaret I. King Library. Of modern architecture and built in 1936, the building contains offices, classrooms, a court room, the law library (air-conditioned) and a student lounge.

Other Facilities and Information. The College has had a chapter of the Order of the Coif since 1931. This is the academic honorary in law to which senior students are elected because of outstanding legal scholarship. Some 40 of the 167 American law schools have been granted Coif chapters on the basis of excellence in the academic program. Since 1912 the College has published continuously the Kentucky Law Journal, a leading legal periodical and the tenth oldest American law review. The Journal is published by a student staff under faculty supervision and election to the staff is based on high academic achievement and the proved ability to write and conduct research. The Journal publishes articles, notes and comments written by legal scholars, attorneys and students, and is subscribed to by members of the bar as well as all leading domestic and foreign law libraries. Practical training in trial and appellate advocacy is provided every student in the Practice Court and the Appellate Moot Court Program. The former

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William Lewis Matthews, Jr., A.B., LL.B., LL.M., S.J.D., is dean of the College of Law.

was established as an integral part of the curriculum very soon after the College itself was created and the latter has functioned for the last ten years through four student-managed Law Clubs. Teams representing these clubs compete annually to qualify as the College representative in the National Moot Court Competition. An extensive and distinctive program of training in legal research and writing is provided for every student through regular course work (described in the course offerings listed below) and through extracurricular prize projects such as the Will Drafting Competition and the Abstract of Title Competition, for which cash prizes are awarded by various corporate sponsors. In addition to these prizes, a number of valuable law books are awarded annually by law publishing companies to students receiving the highest grade in particular courses and achieving other academic honors. The College of Law has a modest scholarship fund maintained by contributions from alumni and members of the bar. A committee of the Kentucky State Bar Association selects the recipients of these "Kentucky Law Scholarships" from among the applications made. The scholarships are awarded as funds permit on the basis of scholarship, character and need. Information concerning scholarships and how to apply for them can be obtained by writing the Dean of the College of Law.

THE SUMMER SESSION

A number of courses in law are offered in the summer session of the University. Credit in the summer session is counted toward a degree and one-half semester of credit and residence may be acquired in each summer session. No beginning students are accepted for the summer session.

ADMISSION

In addition to the general requirements for admission to the University, an applicant for admission to the College of Law must be at least eighteen years of age and have completed at least three years of acceptable college work (90 semester credit hours, at least six of which must be in English and not more than nine of which may be in nontheory courses). In addition, the applicant must have made a grade point average of at least 2.3 (on a 4-point scale: A = 4, B = 3, C = 2, D = 1, E = 0) or its equivalent on *all* prelaw college work taken, provided, however, that an applicant with a grade point average between 2.0 and 2.3 may be considered for admission and may be admitted upon demonstration of special legal aptitude. An applicant who has been previously enrolled in another law school will be admitted only if he is in good standing in a law school which is a member of the Association of American Law Schools, if he meets the requirements for beginning students at the College of Law of the University of Kentucky, and if he has made an academic average in law which, had it been made in the College of Law of the University of Kentucky, would entitle him to continue his studies here.

In considering applicants who seek admission without a grade point average of at least 2.3, the demonstration of special legal aptitude involves the following factors and is determined by the University Dean of Admissions with the advice of the Law faculty: (1) The applicant must have an undergraduate degree or have completed prelaw requirements on a combined degree curriculum; (2) The grade point average on *all* prelaw work must be at least 2.0 and the nearer it is to 2.3 the better; (3) The academic record should have improved toward the end of the prelaw work, and (4) The applicant must have taken the National Law School Admission Test and scored well on it.

Beginning law students are accepted only for the first semester of the academic year, except that admission for the second semester may be granted in rare instances if the applicant holds an undergraduate degree or is on a combined degree program and has a prelaw grade point average of at least 2.5. Any applicant seeking second semester admission should consult the Dean of the College of Law in advance.

Procedure for Application. The Dean of Admissions and Registrar of the University of Kentucky is the admitting officer for the College of Law. Application for admission is made by submitting to his office a completed application form together with supporting transcript. *The application form can be obtained by writing to the Dean of Admissions and Registrar or to the Dean of the College of Law.*

The application, and supporting transcripts of all completed prelaw college work, may be submitted on or before March 15 in the year when admission is sought. If the applicant's transcript of completed work is received by this date and meets admission requirements, he will be granted provisional admission for the following fall term by May 1, subject only to satisfactory completion of his remaining prelaw work. Applications received after March 15 will be evaluated as promptly as possible and usually the applicant will be notified of his admission status within 30 days after the final transcript is received. Applications received after August 15 each year will not be considered for fall term admission except with permission of the Dean of Admissions and the Dean of the College of Law.

National Law School Admission Test. All applicants must submit a national Law School Admission Test score. Achievement of a particular test score *is not* a condition of admission for the applicant whose academic average on *all* prelaw work taken is 2.3 or better (on a 4-point scale). The test score *is* an important factor in determining admission of the applicant whose prelaw average is less than 2.3, and these applicants must have received their college degree.

The LSAT is prepared, given, and scored by the Educational Testing Service, 20 Nassau Street, Prince-

ton, New Jersey, and application to take it is made directly to the Service by mail. It is given in November, February, April, and August of each year at testing centers throughout the country according to a schedule of dates and places published well in advance by the Educational Testing Service. The University of Kentucky in Lexington usually is a testing center for all scheduled dates of the test. The test application to the Educational Testing Service should be received in Princeton at least two weeks prior to the next testing date. College of Law applicants who have not taken the test during their final year of prelaw work usually can arrange to take it in Lexington on the first Saturday in August each year.

PRELEGAL STUDY

No special prescribed curriculum or course (with the exception of six semester hours of English) is required for admission to this law school or to American law schools generally. However, prospective law students should keep in mind that a broad, basic and liberal education will equip one to study law and also prepare him for a vital role in the community once he has acquired his professional training. Thus he should pursue a *degree program* in prelaw in which he will learn to think clearly, will form sound study habits and will have an opportunity to master the methodology and knowledge of a particular field under the guidance of good instructors. The importance of a sound background in use of the English language cannot be stressed too greatly. The attention of prelaw students is further directed to the bulletin of the College of Law, which may be obtained from the Dean of the College of Law.

Combined Degree Program. Since at least a total of six years of college work (three years' prelaw and three years' law) is required for the LL.B. degree, particular attention is called to the Arts-Law combined degree program whereby both the A.B. and LL.B. degrees can be earned in six years. In this program the first year of law work (28 semester hours) is credited to both the A.B. degree earned in the College of Arts and Sciences and the LL.B. degree earned in the College of Law. Under this program, if the prelaw student during his first three years (in the College of Arts and Sciences) earns 100 hours of required work (plus physical education) for the A.B. degree, he is admitted to the College of Law at the beginning of his fourth year and receives the A.B. degree at the end of that year. He then continues in the College of Law for two more years and receives the LL.B. degree. Entrance into the College of Law with only 90 hours of work in the first three years will not satisfy the requirements of this program, and the student receives only the LL.B. degree at the end of the six years. College of Arts and Sciences degree requirements and detailed information as to the first three years of the combined program may be found in the Arts and Sciences section of this catalog.

A combined degree program which gives the undergraduate degree (A.B. or B.S.) and the law degree (LL.B.) in six years frequently can be worked out by the prelaw student who does not take his prelaw work at the University of Kentucky. If the undergraduate college concerned is willing, the College of Law will make available to it the 28 semesters hours of work in law which the student earns in his first year of law study here. If the other undergraduate degree requirements have been satisfied before admission to law school, the first year of law normally will furnish enough "elective" hours to complete the degree. Since the undergraduate degree is awarded by the undergraduate college and not by the College of Law, prelaw students should consult their college dean or prelaw adviser about arranging this program. The Dean of the College of Law will furnish additional information about this program to those interested upon request.

THE DEGREE OF BACHELOR OF LAWS

Students admitted to the College of Law as regular students will be eligible for the degree of Bachelor of Laws (LL.B.) upon completion of a minimum of three academic years (six semesters) of residence, and 83 semester hours of courses, in the College of Law, with an academic standing of 2.0 or better.

Since September 1962 the official grade in law courses is a numerical grade and the academic standing required for the Bachelor of Laws degree is a cumulative numerical average of 60 on all law courses attempted.

Courses Offered in the College of Law

FACULTY

Professors: William L. Matthews, Jr. (S.J.D., Michigan, 1950), DEAN. Richard Davenport Gilliam, Jr. (LL.B., Virginia, 1924), Willburt D. Ham (LL.M., Harvard, 1941), Thomas P. Lewis (LL.B., Kentucky, 1954), Roy Mitchell Moreland (S.J.D., Harvard, 1942), Paul Oberst (LL.M., Michigan, 1942), James R. Richardson (LL.M., Yale, 1955), Frederick W. Whiteside, Jr. (LL.B., Cornell, 1936). *Associate Professors:* John Randolph Batt (LL.M., Yale, 1960), Dorothy Salmon (LL.B., Kentucky, 1938).

The 83 semester hours for the LL.B. degree include certain required courses, certain required courses in legal research and writing, at least 2 seminars (one from a group of 4 in the second year and one from a group of 3 in the third year) and certain elective courses. The total number of hours taken in six semesters by the degree candidate can vary from 83 to 88.

All courses (including seminars and electives) are offered each year with an occasional exception to meet special needs. The fall semester offerings and the spring semester offerings are the same each year (with rare exceptions), but the courses

taught in the summer sessions will vary. Except when special permission is granted to make a particular schedule, all of the courses in the first three semesters are required courses. In the fourth and fifth semesters some of the courses are required and others are elective. Sixth semester courses are primarily elective. In general the courses should be taken in the sequence created by their classification as first year, second year, or third year courses.

A faculty committee assists all students with special schedule problems.

Below is a listing of law courses by year and semester with required and elective courses indicated. If read in order, it will show the complete course of study for the student carrying a normal load who expects to earn the LL.B. degree in six semesters.

First Year

First Semester (All Required)

Torts I	3 hours
Contracts I	3
Procedure	3
Legal Method	2
Legal Bibliography	1
Criminal Law	2
	14

Second Semester

Torts II	3 hours
Contracts II	2
Property I-II	4
Equity	3
Criminal Procedure	2
	14

Second Year

First Semester (All required)

Constitutional Law	4
Property III	3
Commercial Law	4
Trial and Appellate Procedure	3
	14

Second Semester

Corporations I	4
Taxation I	3
Evidence	4
Legal Profession	1
1 seminar of 4 offered:	2
	14
Trial Jury	
International Legislation	
Land Use and Planning	
Jurisprudence	

Third Year

First Semester

Required:	
Trusts	3
Conflict of Laws	3
Practice Court	1
Legal Research and Writing or Law Journal Note Editing	2
	9
Elective:	
Corporations II	3
Labor Law	3
Estate Planning I (Future Interests)	3

Second Semester

Required:	
1 of 2 seminars offered:	2
Office Practice	
Current Constitutional Litigation	
Elective:	
Administrative Law	3
Estate Planning II	3
Taxation II	2
Federal Courts and the Federal System	3
Modern Social Legislation	3

NOTE: Oil and Gas, Creditors' Rights, Legislation, Insurance, Credit Transactions, Agency-Partnership, and Damages are elective courses which may be offered in the fifth or sixth semester or the summer session from time to time.

Course Descriptions

(All courses are lecture and recitation unless otherwise noted.)

FIRST YEAR SUBJECTS

300 *Legislation.* (3) II

Nutting and Elliott's Cases.
Nature and scope of legislative power; organization of legislative bodies; legislative process; legislation and the courts; interpretation of statutes. *Staff.*

301 *Legal Method.* (2) I

Dowling, Patterson and Powell, Materials for Legal Method (2nd ed.).
An introductory course for first year law students, covering the sources and forms of American law, legal reasoning in judicial precedents, how to solve a legal problem, and legal writing. *Gilliam, Lewis, and Batt.*

501,502 *Contracts I-II.* (3, 2) I, II

Patterson and Goble's Cases (3rd ed.).
Formation of contracts, offer, acceptance, consideration. Statute of Frauds, parol evidence rule, contracts for benefit of third persons, assignments, performance of contracts, express and implied conditions, impossibility of performance, discharge and illegal contracts. *Ham.*

503,504 *Torts I-II.* (3, 3) I, II

Seavey, Keeton and Keeton's Cases.
Intentional torts and defenses, negligence, causation, duties of occupants of land and manufacturers and vendors of chattels, contributory negligence, strict liability, deceit, defamation, malicious prosecution, interference with advantageous relations. *Oberst.*

505,506 *Property I-II.* (4) II

Casner and Leach's Cases.
Basic course in property: possession, gifts, bona fide purchasers of personalty. Estates, uses, easements, and rights incident to ownership. *Matthews.*

507 *Procedure.* (3) I

Clark, Cases on Modern Pleading.
Keigwin, Cases on Common Law Pleading.
Common law forms, theory of the case, composition of pleadings, demurrer, aider, duplicity, traverses, pleas, motions; Code and Federal Rule pleading, Claims, answers, objection and correction of pleadings, parties and joinders of actions. *Richardson.*

509 *Criminal Law.* (2) I

Hall and Glueck's Cases on Criminal Law and Its Enforcement.
Jurisdiction; the criminal act, complete and incomplete; criminal intent, actual and constructive; duress and mistake of fact, of law; justification; parties in crime; crimes against the person and crimes against property. *Moreland.*

510 *Criminal Procedure.* (2) II
Hall and Glueck's Cases on Criminal Law and Its Enforcement.
Arrest, preliminary examination, bail, methods of prosecution, the grand jury, indictment and information, arraignment and pleas, *nolle prosequi* and motions to quash, trial and verdict, motions after trial. *Moreland.*

511 *Legal Bibliography.* (1) I
Practical problems in the use of statutes, reports, digests, encyclopedias, annotated cases, citation books, periodicals, reference tables, and indices. *Salmon.*

512 *Local Government Law.* (2) II
Fordham's Local Government Law.
Legislative control over municipal corporations; municipal powers—in general; licenses and franchises; appropriation of municipal funds; municipal contracts, indebtedness, torts, property, special assessments. *Lewis.*

534 *Equity.* (3) II
Chafee and Simpson's Cases (3d ed.)
The traditional equity materials. *Moreland.*

SECOND YEAR SUBJECTS

520 *Commercial Law.* (4) I
Braucher and Sutherland's Cases and Text.
The study of commercial law principles with special emphasis on the law of negotiable instruments and the law of sales, especially as governed by the Uniform Commercial Code. *Whiteside.*

521 *Trial and Appellate Procedure.* (3) I
McBaine's Cases on Trial Practice.
Venue, service of summons, provisional remedies, discovery and pretrial practice, summary judgment, trials, verdict, judgment and appeals, including final judgment rule, and appeal practice; *res judicata;* correction of judgments; extraordinary remedies. *Richardson.*

522 *Property III.* (3) I
Casner and Leach's Cases.
Titles and conveyancing. Contract for sale of land, deeds, the recording system, title registration, title insurance. Restrictions on the use of land: covenants, easements and constitutional limitations. *Gilliam.*

523 *Evidence.* (4) II
Morgan and Maguire's Cases (3rd ed.).
Rules of admissibility, real, circumstantial, testimonial and documentary evidence, witnesses, hearsay rule and its exceptions, procedure of admissibility, law and fact, judge and jury, burden of proof and presumption, judicial notice, and parol evidence rule. *Richardson.*

524 *Insurance.* (2) II
Goble's Cases.
Nature of contract, insurable interest, making the contract, concealment representations, warranties, implied conditions of forfeiture, waiver and estoppel, rights under the contract, and construction of the policy. *Lewis.*

525 *Oil and Gas.* (2) I
Kulp's Cases (3rd ed.).
Oil and gas leases—infants, married women, life tenants, and others as parties; the granting clause—lessee's interest, lessee's right to ejectment; the habendum clause—duration of lease; etc. *Moreland.*

526 *Damages.* (2) S
McCormick's Cases.
Nature of damages, voidable consequences, counsel fees, certainty, compensation, damage for nonpecuniary injuries, interest, damages for death, and eminent domain. *Richardson.*

528 *Agency-Partnership.* (2-3) I
Conard's Cases on Business Organization (2d ed.)
A study of traditional agency concepts and selected materials on partnership law, including the vicarious liability relationship in tort and contract, the fiduciary concept, the organization and liquidation of partnerships. *Ham.*

529 *Constitutional Law.* (4) I
Kauper's Cases and Materials.
Judicial review, relationships in the federal system, powers of Congress, powers of the President, powers of the states. Due process, procedural and substantive; obligation of contract, equal protection, civil rights, privileges, and immunities. *Oberst and Lewis.*

530 *Credit Transactions.* (3) I
Sturges' Cases (4th ed.).
Mortgages: creation, assignment, priority, foreclosure, redemption. Pledges, suretyship rights, suretyship defenses, Statute of Frauds. *Lewis.*

531 *Creditors' Rights.* (3) II
Hanna and McLachlan's Cases (4th ed.).
Enforcement of judgments; fraudulent conveyances; general assignments; creditors' agreements; receiverships; bankruptcy, assets, and distribution. *Whiteside.*

532 *Taxation I.* (3) II
Griswold's Cases on Federal Taxation (4th ed.).
Problems in federal and state income taxation. *Whiteside.*

536 *The Federal Courts and the Federal System.* (3) I
Hart and Wechsler.
The nature of the federal judicial function and its development, distribution of power among federal and state courts, Supreme Court review of state court decisions, the law applied in federal district courts, federal question and diversity jurisdiction, federal habeas corpus, removal jurisdiction and procedure. *Lewis.*

543 *The Legal Profession.* (1) II
Cheatham's Cases and Materials (2nd ed.).
A study of professional problems including: ethics, discipline, unauthorized practice, duty to court and client, bar admission and organization, fees and office procedure. *Gilliam.*

547 *Corporations I.* (4) II
Baker and Cary's Cases.
A study of basic corporation law principles, including: organizing the corporation; defective incorporation; pre-incorporation transactions; control and management of the corporation (with emphasis on the special problems of the close corporation); the corporate entity concept; duties of directors and controlling shareholders; shareholders' derivative suits and right of inspection. *Ham.*

565 *International Legislation.* (2) II
Seminar on the development and codification of international law. History of codification; promotion of codification under League of Nations and United Nations; international law and war criminal trials; genocide pact; Universal Declaration and Covenant of Human Rights and other similar topics. Political Science 150, International Law, recommended as prerequisite. *Gilliam.*

575 *Seminar.* (2-3) II
Seminar in selected legal problems. Normally, each seminar is centered upon a particular field of legal learning, such as Land Use and Planning, Jurisprudence, International Law, Trial Jury, Public Utilities Problems, etc. (May be repeated four times for a total of 10 credits.) *Staff.*

THIRD YEAR SUBJECTS

302 *Practice Court.* (1) I
Busch's Law and Tactics in Jury Trials (students' ed.).
This course, conducted mainly under the Kentucky code (but treated to give a fair understanding of like work in other states) is designed to fit students for actual court practice following training in substantive law. *Richardson.*

303 *Legal Research and Writing.* (1-3) I, II, S
Independent study of legal problems under faculty supervision, and supervised training in legal writing. (May be repeated twice for a total of six credits.) *Staff.*

304 *Law Journal Note Editing.* (1-2) I, II
This course, required of all senior members of Law Journal staff, consists of study and criticism of the notes and comments prepared for publication by the student editors of the Law Journal. (May be repeated once for a total of four credits.) *Staff.*

508 *Domestic Relations.* (2) II
Compton's Cases.
Contracts to marry; the marriage status; annulment, divorce and separation; parent and child; infants and incompetent persons. *Whiteside.*

527 *Modern Social Legislation.* (3) II

Aaron's Employment Relation and the Law.
A study of statutes, administrative reports, regulations, legislative hearings and judicial decisions relating to modern social legislation, including Social Security, Workmen's Compensation, medical care insurance, unemployment insurance, wages and hours, and public assistance. *Gilliam.*

533 *Taxation II.* (2) I

Bittker's Cases on Federal Income Taxation.
Advanced income tax problems of business organization—of corporations and their shareholders connected with dividends and other distributions, liquidation and reorganization; of partners and partnerships; and of trusts and estates. *Whiteside.*

540 *Conflict of Laws.* (3) II

Cheatham, Dowling, and Goodrich's Cases (3rd ed.).
Nature of the subject, penal laws, procedure, judgments, domicile, capacity, form, particular subjects, litigation, family law, inheritance, foreign administrators. *Moreland.*

541 *Trusts.* (3) I

Scott's Cases, (4th ed.)
Simes' Cases (2nd ed.)
Uses and Statute of Uses; trusts creation; elements; transfer of beneficiary's interest; administration, termination, and modification; charitable trusts; resulting and constructive trusts; powers. Types of future interests; construction problems; limitations to classes, rule against perpetuities, illegal restraints and conditions. *Matthews.*

542 *Administrative Law.* (3) II

Gellhorn and Byse's Cases.
Establishment of administrative tribunals, limits on discretion. Notice and hearing, orders, methods of judicial relief, scope of judicial review. *Oberst.*

544 *Labor Law.* (3) I

Cox and Bok, Cases on Labor Law.
History, organization, and structure of American labor unions; obligations and prerogatives of employers; questions of representation; privileges and obligations of unions; collective bargaining and dispute settlement. *Lewis.*

545,546 *Estate Planning I-II.* (3-4; 2-3) I, II

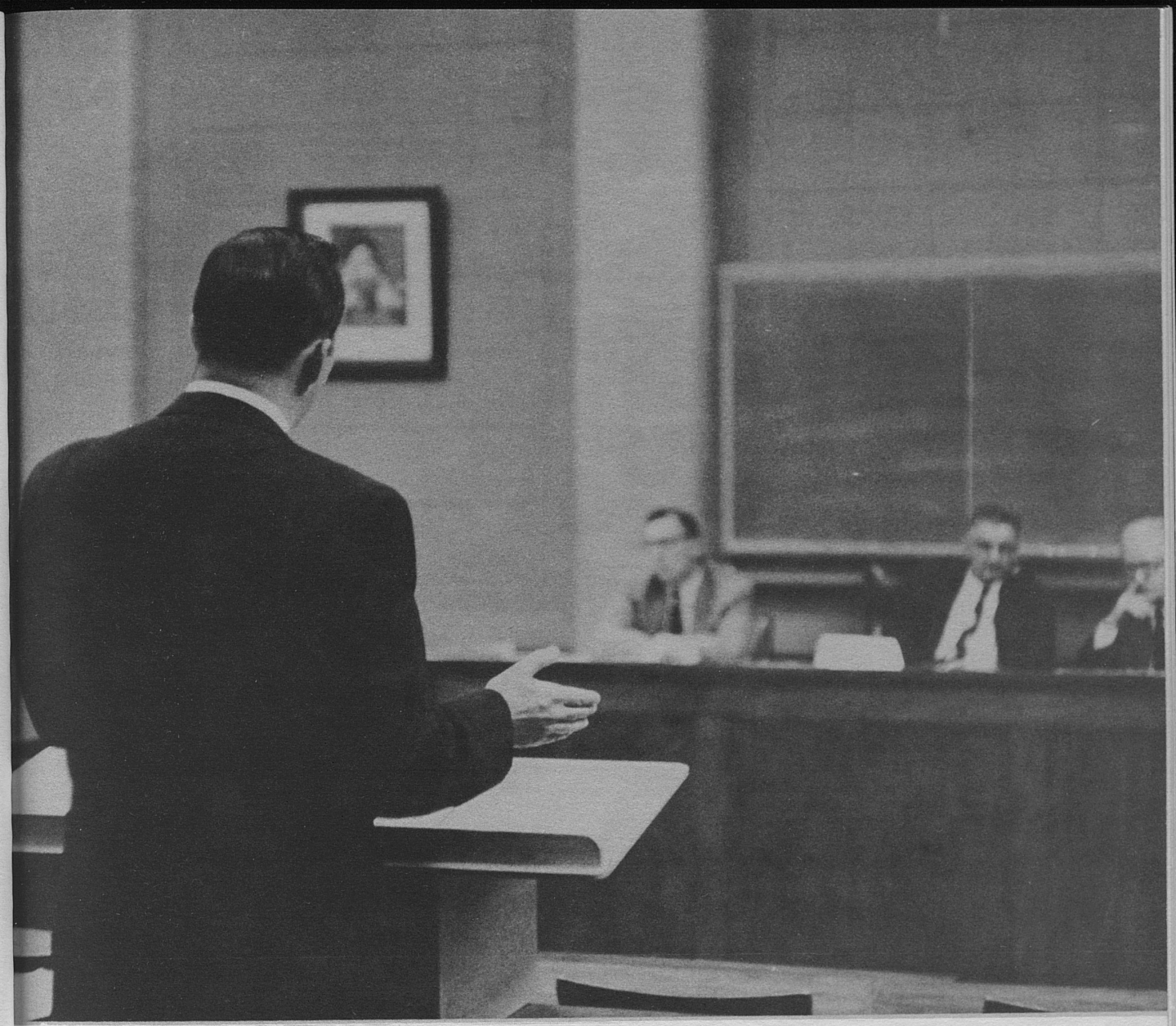
Casner's Estate Planning (2nd ed.)
Donative transfers of property, including *inter vivos* transfers and wills; income, estate and gift tax consequences of the various methods of disposition; administration of estates. Future interests in property, including an intensive study of construction problems and the rule against perpetuities. *Batt.*

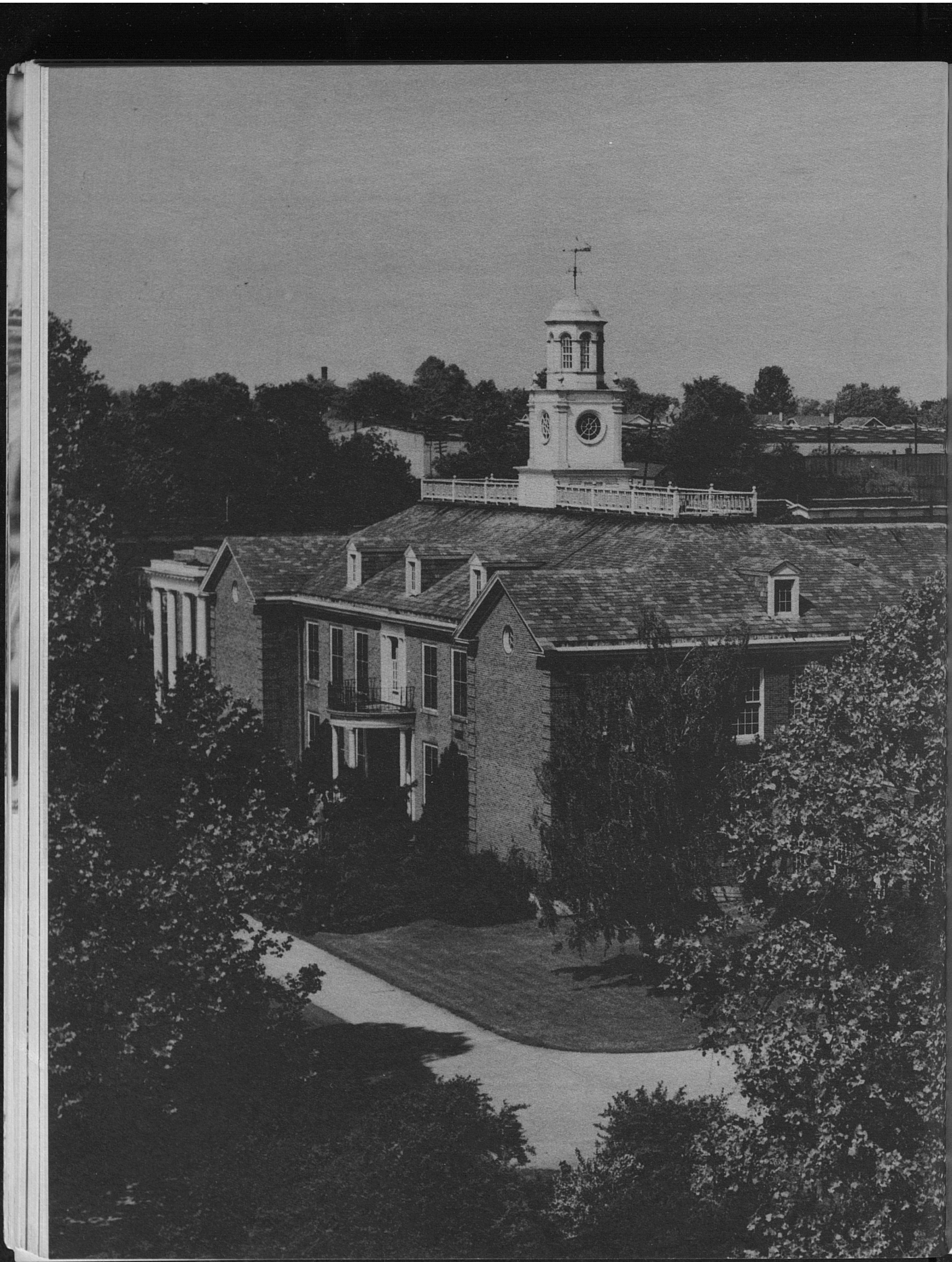
548 *Corporations II.* (3) I

Baker and Cary's Cases.
A study of selected problems in advanced corporation law, including: corporate promotion and capitalization (with special emphasis on senior securities and their characteristics); corporate distributions (dividends); recapitalizations (elimination of accrued dividends); public regulation of security issues (Securities Act of 1933 and state Blue Sky laws). *Ham.*

575 *Seminar.* (2-3) I, II

Seminar in selected legal problems. Normally, each seminar is centered upon a particular field of legal learning, such as Office Practice, Current Constitutional Litigation, etc. (May be repeated four times for a total of ten credits.) *Staff.*





Education

THE COLLEGE OF EDUCATION was established by the University to provide for the education of teachers, administrators, and other school personnel. The curricula of the College give students an opportunity to equip themselves for the kind of educational work in which they are interested.

Students in elementary education have observation and student teaching in the schools of nearby communities. Students in preparation for junior and senior high school teaching have observation and student teaching in the University High School and in other secondary schools. Each student is given an opportunity to learn accepted and desirable methods and to develop skill in teaching.

Through the cooperation of various county boards of education, students preparing to teach agriculture and home economics have an opportunity to observe and do their student teaching in the high schools near Lexington which offer vocational agriculture and vocational home economics. Students in both agriculture and home economics teach under skilled supervisors in their respective fields.

Admission. Requirements for admission to the College of Education, as a freshman, or with advanced standing, or as a special student, are the same as those outlined on the preceding pages for admission to the University.

REQUIREMENTS FOR ADMISSION TO THE TEACHER EDUCATION PROGRAM

All students, regardless of the college in which they enroll, must apply for admission to the Teacher Education Program if they expect to complete the program and be approved for certification. Application to the Teacher Education Program is made during the semester in which the student is enrolled in Education 202, Human Development and the Curriculum. Announcements as to the exact time for making application will be made in all classes in the College of Education by the Coordinator of Admissions. Transfer students should apply for admission the first semester they are enrolled in the College of Education, if they enroll after the sophomore year. To be admitted to the program, the student must have satisfactory standing (2.0 grade-point average on a 4.0 scale) in all of his college work, including his major teaching field, his minor teaching field, professional education, and over-all. He must also have completed work successfully in speech or voice development or have been approved through a proficiency test at the University Speech Clinic. Further, the student is required to secure recommendations from his advisor in his teaching field and in professional education. The student must be approved by the Committee on Admissions in the College of Education and present satisfactory scores on such examinations as may be required by the committee.

A minimum of three semesters of study is required in the regular Teacher Education Program. Admission to the program does not guarantee completion. If, for any reason, the faculty decides that the student should not continue in the Teacher Education Program, he may be required to withdraw at any time before completion. It should be noted that the action of the admissions committee is final.

REQUIREMENTS FOR ADMISSION TO STUDENT TEACHING

A student may enroll in student teaching in one of the prescribed curriculums of the College of Education (elementary education, special education, junior high, senior high), provided he has spent one semester in residence on the campus, has completed at least 18 semester hours in the field in which the student teaching is to be done, and has satisfied the following requirements:

1. Has completed all prerequisites in professional education.
2. Has a standing of 2.0 or above for his entire college program.
3. Has a standing of 2.0 or above in professional education courses.
4. Has a standing of 2.0 or above in the area of concentration or in his majors and minors.

Lyman Vernon Ginger, M.A., Ed.D., is Dean of the College of Education.

5. Has applied and been accepted for enrollment in student teaching the semester prior to the one in which he plans to do student teaching.
6. Has a schedule of not more than 15 hours of college work to be carried during student teaching.
7. Has presented evidence of having had a thorough physical examination by University physicians.

The student teacher is expected to follow the calendar of the school in which he is to do his student teaching.

Student teaching during the summer session is open only to students who have had previous experience in teaching in public schools.

Transient students and graduate students in agricultural education may take student teaching without having done a semester in residence on the campus. These students must have an over-all standing of 2.5 for the entire college period, but may not have had other courses in education. They take 18 semester hours of work the semester student teaching is done—in agricultural education, which includes student teaching.

In order to take student teaching in home economics, a student must have completed 3 hours in technique of teaching home economics.

CERTIFICATION

The University of Kentucky offers curricula for all certificates issued by the State Department of Education on the basis of four years of college education. Upon graduation from the College of Education the student is eligible for either the Provisional High School Certificate or the Provisional Elementary Certificate. In order to obtain the certificate desired, the student must make application to the State Department of Education. Application blanks may be obtained from the Dean's Office. Students desiring to teach agriculture or home economics should enroll in the College of Agriculture and Home economics and pursue curricula leading to these certificates.

ACCREDITATION

The University of Kentucky is accredited by the National Council for Accreditation of Teacher Education for the preparation of elementary and secondary teachers and school service personnel with the doctor's degree as the highest degree approved.

SPECIAL FACILITIES AND SERVICES

Special facilities and services of the College of Education include the Education Library and the Curriculum Laboratory. Also parts of the College are the Bureau of School Service and the Audio-Visual Services. The Bureau publishes reports and research studies of the College of Education, conducts school surveys, and serves as a center for information about schools for staff, students, and the public. The Audio-Visual Services, a part of the Bureau of School Service, provides film projection services for classes on campus and rents educational films to schools throughout the state. Students have access to all these facilities and services as they need them in study, research, or student teaching activities.

VOCATIONAL EDUCATION

Agriculture. The Federal Vocational Education Act, known as the Smith-Hughes Act, passed by Congress in 1917, makes provision for the education of teachers of vocational agriculture in schools below college level. The University of Kentucky has been designated as the state institution to educate white teachers for this work.

Students who complete the work for a bachelor's degree in agriculture and who present 18 semester hours in education as prescribed in the state plan for vocational education will be entitled to a state certificate to teach vocational agriculture in the public schools of Kentucky.

Home Economics. The Federal Vocational Education Act of 1917 also provides for the education of teachers of vocational home economics in schools below college level.

Students who complete the work for a bachelor's degree in home economics and who present 18 semester hours in education as prescribed in the state plan for vocational education will be entitled to a state certificate to teach vocational home economics in the public schools in Kentucky.

Industry. The Federal Vocational Education Act of 1917 also provides for the education of teachers for unit-trade and part-time programs in industrial education and for general continuation school classes. The University of Kentucky has been designated as the state institution responsible for the education of teachers for this work.

A five-year program of preparation for educational training directors and other educational training personnel for schools, business, and industry is offered in the College of Education. The last three years of this program are on a "cooperative" basis with students spending alternate semesters at the University and in work-training situations on the job in business or industry.

Distributive Occupations. The George-Barden Act of 1946 provides for the education of teachers of distributive occupations. The University of Kentucky has been designated as the state institution responsible for this service.

GRADUATION REQUIREMENTS

The College of Education grants the degree of Bachelor of Arts in Education to students who are enrolled in the College of Education, who have completed their majors and minors in approved teaching fields, and who have completed their requirements in professional education. Students who complete the

curriculum for elementary teachers also are eligible for this degree.

To graduate from the College of Education, a student must, while meeting specified requirements, complete 128 semester hours (exclusive of generally required physical education) with a standing of at least 2.0. He must also satisfy the University's requirements in physical education, military science, and residence.

The University permits as many as 32 semester hours to be taken by correspondence and/or extension toward the Bachelor's degree. The student must, however, complete 30 of the last 36 hours on the campus. This means that after a student has completed 92 semester hours he may do only 6 semester hours by correspondence or extension, or at another institution.

The student may pursue his work to prepare to teach on either the elementary, junior high, or senior high school level. The requirements for each are given in pages that follow.

Curricula

REQUIREMENTS FOR ELEMENTARY SCHOOL TEACHING

The requirements for preparation to teach in the elementary schools are outlined below:

	Sem. Hrs.
Professional Education Requirements—Total hours required	30
Ed. 98—Planning a Career in Education	0
Ed. 101—The Teacher in American Schools	3
*Ed. 202—Human Development and the Curriculum	4
Ed. 324—Teaching Science and Social Learnings in the Elementary School	4
Ed. 329—Teaching Communicative Skills in the Elementary School	4
Ed. 331—Teaching Arithmetic in the Elementary School	3
Ed. 333—Student Teaching in the Elementary School and Seminar	12
	30
Ed. 543—Teaching in the Kindergarten (Required of Kindergarten Majors)	3

Electives in Professional Education

(May be taken upon recommendation of advisor)

Ed. 120—Arts and Crafts in the Elementary School	3
Ed. 325—Teaching in the Elementary School	3
Ed. 544—Visual Teaching	3
Ed. 548—Educational Psychology	3
Ed. 550—The Role of the Teacher and the Principal in Guidance	3

General Education Requirements—Total hours required 81-82

Art	4-6
Art 170, 172—Public School Art	3 each
Suggested elective: Humanities 203, Art 105	
English and Related Areas	18
Eng. 101, 102—Freshman Composition (required)	3 each
Eng. 181—Basic Public Speaking or	3
Eng. 291—Voice Development or	
Pass a Proficiency Test	
Nine hours selected from the following. (One course in Literature is required):	
Eng. 161—Introduction to Literature	3
Eng. 512—Grammar of Structure and Usage	3
Eng. 555—The Modern American Novel	3
Eng. 556—Contemporary American Poetry	3
Eng. 560, 561—Comparative Literature	3 each
Eng. 573—General Introduction to Folklore	3
Eng. 574—American Folklore	3
Eng. 597—Survey of Theatre Principles	3
Foreign Languages (Consult advisor)	6
Humanities 200—Classicism: Graeco-Roman; Modern European	2
Humanities 201—Renaissance: Romanticism	2
Humanities 202—Realism and Naturalism: The Contemporary	2
Humanities 203—Art: The Renaissance to the Present	2
Humanities 204—Music: The Renaissance to the Present	2
Humanities 205—Aspects of Oriental Culture	2
Humanities 206—Aspects of Middle Eastern Culture	2
Health and Physical Education	8-9
P.E. Service Courses (1 hour each)	2
Home Ec. 401—Principles of Nutrition	3
P. E. 360—Physical Education in the Elementary School	2
Hyg. 101—Personal and Community Health or	1-2
Hyg. 109—Fundamentals of Health	
Library Science	3
L. S. 537—Children's Literature and Related Materials	3
Mathematics	3
M & A 201—Fundamentals of Elementary Mathematics	3
Music	4-6
Music 260—Music Education in the Primary Grades	3
Music 261—Music Education in the Intermediate Grades	3
Suggested elective: Humanities 204	
Psychology	4
Psych. 100—Introduction to Psychology	4
Suggested electives: Psych. 200—Psychology of the Child Psych. 520—Mental Hygiene	
Science (12 hours to be selected from the following)	12
Biological Sciences	
Botany 125—General Plant Biology	3
Zoology 202—Nature Study	4
Anthro. 100—Introduction to Physical Anthropology	3
Physical Sciences	
Physics 151, 152—Introduction to Physics	3 each
Geology 104, 105—Outlines of Geology	3 each
Astron. 191—Descriptive Astronomy	3
(One laboratory course required)	

* Ed. 202 and formal admission to the Teacher Education Program are prerequisites to Ed. 324, Ed. 329, and Ed. 331.

Social Science 21
- History and Political Science 6
  - Choose two of the following:
  - Hist. 108—History of U. S. Through 1865
  - or 3
  - Hist. 524—Social and Cultural History of U.S. to 1865
  - Hist. 109—History of U. S. Since 1865
  - or 3
  - Hist. 525—Social and Cultural History of U.S. Since 1865
  - P. S. 151—American Government 3
- Geography (Choose two of the following) 6
  - Geog. 151—Elements of Geography 3
  - Geog. 153—Societies Around the World 3
  - Geog. 252—Introduction to Weather and Climate
  - or 3
  - Geog. 544—Climatology

Sociology and Anthropology 3
- Chose one of the following:
  - Soc. 220—The Community 3
  - Soc. 151—Introductory Sociology 3
  - Soc. 551—Principles of Sociology 3
  - An. 121—Cultural Anthropology 3

Electives (Choose 6 hours from the following—one course should be above 400 in number) 6
- P. S. 311—Current Public Affairs 2
- Hist. 104, 105—European History 3 each
- Hist. 240—History of Kentucky 3
- Hist. 586—Russia Since 1900 3
- Hist. 590—Modern Europe 3
- Hist. 596—U. S. in the Pacific and Far East Since 1898 2
- Soc. 509 or 510—The Family 3
- Soc. 525—Religion and Culture 2
- An advanced regional geography course.
- For correct use of elective hours, consult advisor.
- Needed to graduate (including all elective and required courses) 130

REQUIREMENTS FOR JUNIOR HIGH SCHOOL TEACHING

Each student preparing for junior high school teaching is required to have a teaching major and a teaching minor. Appropriate courses taken in the general education field may be used in the teaching major and minor. See page 181 for list of majors and minors. Required seminars for all students in the Junior High School curriculum are being planned. (Consult your advisor for information about the seminars.)

The general requirements for junior high preparation are outlined below:

	Sem. Hrs.
Professional Education Requirements—Total hours required	23
Ed. 98—Planning A Career in Education	0
Ed. 101—The Teacher in American Schools (Prereq.: Ed. 202 and formal admission to the Teacher Education Program)	3
Ed. 202—Human Development and the Curriculum (Prereq.: Ed. 101)	4
Ed. 340—Teaching in the Junior High School (Prereq.: Ed. 202 and formal admission to the Teacher Education Program)	4
Student Teaching in the Junior High School	9
Student Teaching Seminar	3

For those students who enter the program as juniors, seniors, or graduate students, Ed. 301, American Public Education, 3 hours, may be substituted for Ed. 98 and Ed. 101. The minimum time recommended for completion of the program is 4 semesters. However, Ed. 301 and Ed. 202 may be taken concurrently if the student has only 3 academic periods for the completion of his work.

General Requirements

	Women, 10-11
Math. 201—Fundamentals of Mathematics	3
P.E. Service Courses (1 hour each)	2
Hyg. 101—Personal and Community Health or Hyg. 109—Fundamentals of Health	1-2
Psych. 100—Introduction to Psychology	4

It is recommended that all Junior High majors have one course in the teaching of reading. Students are requested to consult their advisors for the proper course.

General Education Requirements—Total hours required 60

Communications 15
- Required 9
  - Eng. 101, 102—Freshman Composition 6
  - Eng. 181—Essentials of Speech
  - or 3
  - Eng. 291—Voice Development
- Choose 6 hours from the following 6
  - Eng. 205—Advanced Composition 3
  - Eng. 509—Composition for Teachers 3
  - Jour. 101—Introduction to Journalism 3
  - RTF 101 or 102—Broadcasting Today 3

Humanities and Fine Arts 15
- Required 10
  - Eng. 574—American Folklore 3
  - Art 170—Public School Art 3
- Choose 2 from the following 4
  - Humanities 200—Classicism
  - Humanities 201—Renaissance
  - Humanities 202—Realism and Naturalism
  - Humanities 205—Aspects of Oriental Culture
- Choose 5 hours from the following 5
  - Art 130—Basic Design 2
  - Art 242 or 243—Graphic Design 2
  - Art 563—Art in America 2
  - Eng. 161—Introduction to Literature 3
  - Eng. 539—Victorian Literature 3
  - Eng. 568 or 569—Principles of Literary Criticism 3
  - Eng. 560 or 561—Comparative Literature 3
  - Eng. 221 or 222—Survey of English Literature 3
  - Eng. 540—19th Century British Novel 3
  - Eng. 563—Contemporary Drama 3
  - Eng. 555—The Modern American Novel 3
  - Humanities 203—Art: The Renaissance to the Present 2
  - Humanities 204—Music: The Renaissance to the Present 2
  - L.S. 536—Materials and Books for Young Adolescents 3

Mus. 260 or 261—Public School Music	3	
Languages (maximum of 6 hours)		
Physical and Biological Sciences		15
Required: (Choose 2)		8
Bot. 101—General Botany	4	
Phys. 281—General Physics	4	
Phys. 211 or 213—General Elementary Physics	5	
Zool. 100—Principles of Animal Biology	4	
Choose at least 7 hours from the following		7
Astron. 191 or 192—Descriptive Astronomy	3	
Bot. 125—General Plant Study	3	
Bot. 530—Introduction to Heredity	3	
Chem. 110, 112—General Chemistry	4	
Chem. 106, 108—General Chemistry for Engineers	4	
Geol. 100—Elementary Geology or	3	
Geol. 104, 105—Outlines of Geology		
Zool. 200, 201—Comparative Anatomy	3	
Zool. 202—Nature Study	4	
Social Sciences		15
Required:		9
Ant. 153—Societies Around the World	3	
Pol. Sci. 151—American Government	3	
Soc. 220—The Community	3	
Choose 6 hours from the following:		6
An. 121—Cultural Anthropology	3	
Econ. 251 or 252—Principles of Economics	3	
Geog. 151—Elements of Geography	3	
Geog. 152—Regional Geography of the World	3	
Geog. 522—Geography of Kentucky	3	
Geog. 538—Conservation of Natural Resources	3	
Hist. 240—History of Kentucky	3	
Hist. 524 or 525—Social and Cultural History of the U. S.	3	
Hist. 586—Russia Since 1900	3	
Hist. 590—Modern Europe	3	
Hist. 596—U.S. In The Pacific and Far East Since 1898	3	
Pol. Sci. 311—Current Public Affairs	3	
Soc. 151—Principles of Sociology	3	
Soc. 240—Collective Behavior	3	
Soc. 509 or 510—The Family	3	
Soc. 525—Religion and Culture	3	
Soc. 532 or 533—Intergroup Relations	3	
For correct use of elective hours, consult advisor.		
Needed to graduate (including all elective and required courses and major and minor requirements)		130

REQUIREMENTS FOR SENIOR HIGH SCHOOL TEACHING

Requirements for preparation to teach in the high schools, including detailed requirements for teaching in special areas or subjects in grades one through twelve, are outlined below:

Pre-professional Preparation

It is desirable that the student select a sequence of 12 to 18 hours from the courses listed below if he has not taken them as a part of the General Education pattern. Other courses may be substituted with approval of the advisor.

Chose *one* group:	Sem. Hrs.
1. Psych. 100—General Psychology	4
Psych. 200—Child Psychology	3
Psych. 520—Mental Hygiene	3
Psych. 544—Social Psychology	3
Psych. 201—Individual Differences	3
Psych. 507—Psychology of Learning	4
Psych. 535—Individual Testing	3
2. Soc. 151—Principles of Sociology	3
Soc. 220—The Community	3
Soc. 509, 510—The Family	6
Soc. 537—Juvenile Delinquency	3
3. Ant. 121—Introduction to Cultural Anthropology	3
Ant. 524—Mythology	3
Ant. 525—Applied Anthropology	3
Ant. 526—Culture and Personality	3
4. Phil. 200—Introduction to Philosophy	3
Phil. 220—Elementary Logic	3
Phil. 230—Ethics	3
Phil. 500—History of Philosophy—Ancient and Medieval	3
Phil. 510—History of Philosophy—Modern	3
Phil. 515—Contemporary Philosophy	3
Phil. 512—Representative Modern Philosophers	3
Phil. 511—The Making of the Modern Mind	3
Phil. 540—Great Religions	3

Professional Education Requirements—Total hours required 23

Students majoring in regular subject matter areas (excluding such special areas as Business Education, Vocational Agriculture and Home Economics, and Special Education) may follow one of two sequences, A or B:

A. Regular sequence for students who enter the program as freshmen or sophomores:

Ed. 98—Planning a Career in Education (First semester freshmen)	0
Ed. 101—The Teacher in American Schools (Second semester freshmen or sophomores) Prereq.: Ed. 98	3
Ed. 202—Human Development and the Curriculum Prereq.: Ed. 101	4
Ed. 344—Teaching in the Senior High School Prereq.: Ed. 202 and formal admission to the Teacher Education Program	4
Student Teaching in the Senior High School	9
Student Teaching Seminar	3

It is recommended that one of the following electives be chosen after the completion of Ed. 202:

Ed. 550 Role of the Teacher and the Principal in Guidance	3
Ed. 548—Educational Psychology	3
Ed. 544—Visual Teaching	3
Ed. 522—Educational Tests and Measurements	3

B. Sequence for those who enter the program as juniors, seniors, or graduate students:

Ed. 301—American Public Education	3
Ed. 202—Human Development and the Curriculum	4
Ed. 344—Teaching in the Senior High School Prereq.: Ed. 202 and formal admission to the Teacher Education Program	4
Student Teaching in the Senior High School	9
Student Teaching Seminar	3

The minimum time recommended for Sequence B is 4 semesters. However, Ed. 301 and Ed. 202 may be taken

concurrently if the student has only 3 academic periods for the completion of his work.

Note: In either sequence Ed. 344 should be taken the last semester prior to student teaching. No course from the required sequence can be taken with Ed. 344 or with student teaching.

Professional Courses for Business Education Majors

The following courses should be taken in sequence during the junior and senior years.

Ed. 210—Foundations of Business Education in the High School—taught during the fall semester	3
Ed. 202—Human Development and the Curriculum	4
Ed. 512—Teaching Bookkeeping and Accounting—taught during the fall semester	3
Ed. 514—Teaching General Business subjects in secondary schools—taught during the spring semester	3
Ed. 393—Student Teaching	9
Student Teaching Seminar	3
Ed. 511—Teaching Secretarial Subjects (elective)	3

Twelve-grade Certificate in Music, Art, or Physical Education

In addition to Professional Sequence A or B, students seeking a twelve-grade certificate in Music, Art, or Physical Education must take Ed. 325—Teaching in the Elementary School—after they have earned Junior classification. This means that Ed. 325 may be taken concurrently with other courses in the Professional Sequence, but the course should be completed prior to student teaching in Music, Art, or Physical Education. Also required is a course in materials and methods in the special subject at the elementary and/or 12-grade level. Half of student teaching *must be done* in an elementary school and half in a secondary school.

General Education Requirements—Total hours required 45

Communications and Humanities	**18**
Eng. 101, 102—Freshman Composition (required)	3 each
Literature (3 hours required) (The Literature requirement may be met by taking either Literature course approved by the advisor, or Humanities. If the Humanities are offered, select two from 200, 201, and 202, plus either 203 or 204.)	3-6
Electives	6-9
Foreign languages (one year of any language)	6
Phil. 200—Introduction to Philosophy	3
Phil. 230—Ethics	3
Eng. 181—Basic Public Speaking or Eng. 291—Voice Development	3
Eng. 283—Argumentation and Debate or Eng. 288—Oral Interpretation	3
Eng. 540—Nineteenth Century British Novel	3
Jour. 201—Etymology	3
Jour. 203—Principles of News Writing	3
Religion	3
Fine Arts	3
Art 554—Ancient Art	
Art 556—Medieval Art	
Music 280—History of Music	
Music 281—History of Music	
Mathematics and Natural Science (6 hours must have lab)	**12**
Group I. Six hours must be chosen from the following:	
*Chem. 101, 112—General Chemistry	3 each
*Geol. 100—Elementary Geology	3
Geol. 104, 105—Outlines of Geology (Credit will *not* be given for both Geol. 100 and 104)	3 each
*Geol. 110—Laboratory Work in Geology	1
MA 101 or 111—College Algebra	3
MA 191, 192—Descriptive Astronomy	3 each
MA 201—Fundamentals of Mathematics	3
Phy. 151, 152—Introduction to Physics	3 each
Phy. 211, 213—General Elementary Physics	3 each
Group II. Six hours must be chosen from the following:	
Ant. 100—Introduction to Physical Anthropology	3
Ant. 101—Osteometric Techniques	1
#Anat. 206—Elementary Anatomy	4
*MB. 100, 102—Elementary Microbiology	4 each
*MB. 200—Principles of Bacteriology	4
*Bot. 101—General Botany	4
Bot. 125—General Plant Biology	3
#*Pgy. 206—Elementary Physiology	3
#*Zool. 100—General Zoology or *Zool. 202—Nature Study	4
Social Science	**12**
Group I. Six hours must be chosen from the following freshman courses:	
Ant., Geog., or Soc. 153—Societies Around the World	3
Geog. or Soc. 154—Societies Around the World	3
Ant. 121—Cultural Anthropology	3
Hist. 104, 105—European History	3 each
Hist. 108, 109—American History	3 each
Pol. Sci. 151—American Government	3
Group II. Six hours must be chosen from the following advanced courses:	
Ant. or Soc. 526—Culture and Personality	3
Art 554—Ancient Art	3
Art 556—Medieval Art	3
Econ. 251, 252—Principles of Economics	3 each
Hist. 202, 203—History of the British People	3 each
Music 280, 281—History of Music	3 each
Pol. Sci. 571, 572—Political Theory	3 each
#Soc. 220—The Community	3
#Soc. 240—Collective Behavior	3
Health and Physical Education	**3-4**
Hyg. 101—Personal and Community Health or Hyg. 109—Fundamentals of Health	1-2
Physical Education Service Courses (Only 2 hours of Physical Education Service courses may count in the minimum of 130 hours required for a degree.)	2
Psy. 100—Introduction to Psychology	**4**
Needed to graduate (including all electives and required courses)	**130**

* Courses with laboratory.

Required in Physical Education Major or Area of Concentration

One required for P. E. major or Area of Concentration.

REQUIREMENTS FOR MAJORS, MINORS, AND AREAS OF CONCENTRATION

Senior High School Curriculum majors must prepare themselves by intensive study in selected areas. They have the following options in the choice of curriculums leading to certificates for teaching in special subject fields: (1) an area of concentration with a minimum of 48 semester hours; or (2) two majors, or (3) one major and two minors, or (4) one major and one minor when credit in both totals at least 48 semester hours.

An area of concentration shall consist of 48 semester hours unless otherwise specified.

A major shall consist of 24 semester hours except that a major in English or in any combination of subjects shall require 30 semester hours. In a combination of subjects, not less than 8 semester hours shall be in each subject.

A minor shall consist of 18 semester hours, except that a minor in English or in any combination of subjects shall require 24 semester hours. In a combination of subjects, not less than 6 semester hours shall be in each subject.

Subject Fields in which Areas of Concentration may be chosen:

Art
Business Education
English
Health, Physical Education and Recreation
Languages
Music
Sciences
Social Studies

Subject Fields in which Majors may be chosen:

In a combination of subjects for majors, not less than 8 semester hours shall be in each subject within the major.

Agriculture
Art
Biological Sciences
Business Education
*Accounting
*General Business
*Secretarial Practice
Chemistry
English (30 hours)
French
Geography
German
Health and Physical Education (30 hours)
History
History and Political Science (30 hours)
Home Economics
Latin
**Library Science
Mathematics
Physical Education
Physics
Political Science
Spanish
Special Education
Speech and Dramatics (30 hours)

Subject Fields in which Minors may be chosen:

In a combination of subjects for minors, not less than 6 semester hours shall be in each subject within the minor.

Agriculture
Any Foreign Language
Art
Biological Sciences
Business Education
*Accounting
*General Business
*Secretarial Practice
Chemistry
Economics
Economics and Sociology (24 hours)
English (24 hours)
Geography
Geography and Geology
History
History and Political Science (24 hours)
Latin
Journalism
**Library Science
Mathematics
Physical Education (men only)
Physics
Political Science
Psychology
Sociology
Special Education
Speech
Speech and Dramatics (24 hours)

Areas of Concentration:

(1) *Art Education*

Prerequisites: Art 100, 101, 110, 130, 200, 201, 210	12
Advanced courses:	
Art 554, 556, 558, 560, 562, 564 (choose 2)	6
Art 509	1
Art 236 or 237, 242, 310, 330, 336	12
Art Education: Art 170, 171, 172, 173, 577	9
Electives: Two of three studio areas—Painting and Printmaking, Sculpture and Ceramics, Design	8

(2) *Business Education*

A teaching area in Business Education includes all courses which are listed for a major in Business Education plus 14 additional hours in Commerce to be selected by the student with the approval of his advisor.

(3) *English:* A teaching area in English shall consist of 48 semester hours, 30 of which shall be in the following fields: Grammar, Composition, and Literature. The remaining 18 hours may be distributed among the following fields: Speech and Dramatics.

(4) *Health, Physical Education and Recreation:* A teaching area in health, physical education and recreation shall consist of 48 semester hours. (See page 184 for requirements.)

(5) *Languages:* A teaching area in foreign languages shall consist of at least 48 semester hours, distributed among the languages as follows: 18 semester hours in the leading language, 12 semester hours in each of two other languages, and 6 semester hours elective. (The 6 hours should be in one of these languages.)

(6) *Music:* A teaching area in music shall consist of at least 55 semester hours, distributed as follows:

Music Performance:	
Major	14
Minor	10
Music Theory:	
Elements of Music Theory	6
Aural Theory	4
Written Theory	4
Instrumentation	2
Musical Analysis	3
Ensemble	8
Conducting	4

(7) *Sciences:* A teaching area in science may consist of at least 48 semester hours, 15 (or more) of which shall be in Biology, Chemistry or Physics, 12 (or more) in each of the other two of these fields (Biology, Chemistry, Physics), 3 semester hours (or more) in Geology. The remainder shall be selected from the sciences.

A teaching area in science may consist of 48 semester hours which includes chemistry, physics, and mathematics, and no fewer than 15 semester hours in each.

* A major in each subject in business education shall require 24 semester hours or a major in a combination of two of these subjects shall require 30 semester hours. A minor in each subject shall require 18 semester hours or a minor in a combination of two of these subjects shall require 24 semester hours.

** A major or minor in library science shall require, in addition to the required semester hours, a minimum of 3 semester hours in library practice as a part of student teaching or in addition to student teaching.

(8) *Social Studies:* A teaching area in social studies shall consist of a minimum of 48 semester hours distributed as follows: 18 semester hours in history, including 6 semester hours in American History and 6 semester hours in European History; 30 semester hours selected from political science, economics, sociology, and geography (cultural anthropology may be included in this area) with a maximum of 12 semester hours and a minimum of 6 semester hours in any one of these subjects.

Majors and Minors:

There are many combinations of majors and minors that may be selected by majors in the senior high school curriculum; it is, therefore, difficult to set up a definite pattern of courses for all students. Below are certain suggested patterns of courses to be followed by students. Majors and minors must be taken from these curriculums. Substitutions may be made in exceptional cases upon recommendation of the academic advisor and with the approval of the Dean of the College of Education.

Art:

Art 110—Beginning Drawing and Painting	2
Art 130—Basic Design	2
Art 170, 171—Public School Art	6
Art 330—Advanced Design	2
Studio	4
Art 210—Intermediate Drawing and Painting	2
Art 236—Beginning Sculpture (Wood) or	2
Art 237—Beginning Sculpture (Clay)	
Art History	6
Art 100, 101—Introduction to Art	1 ea.
Art 200—Survey of Art History	2
Art 201—Survey of Art History	2
Art Education	2
Art 577—Art in Secondary Schools	2

Biological Sciences

Botany 101 and Zoology 100 or Biology 101 and 102 are required.

Student cannot take for credit Biology 101, 102, and Botany 101, and Zoology 100.

*Anatomy 206, Elementary Anatomy and	4
*Physiology 206, Elementary Physiology	3
MB. 100, 102—Elementary Microbiology	8
MB. 200—Principles of Bacteriology	4
Bio. 101, 102—Biology	8
Bot. 101—General Botany	4
Bot. 103—Plant Kingdom	3
Bot. 201—Local Flora	3
Bot. 219—Dendrology	2
Bot. 125—General Plant Biology	3
Bot. 530—Introduction to Heredity	3
Zoo. 100—General Zoology	4
Zool. 202—Nature Study	4
Zoo. 200—Comparative Anatomy	4
Zoo. 504—Heredity	3
Zoo. 508—Evolution	3

Business Education

Com. 107—Accounting Principles	3
Com. 108 or 109—Secretarial Accounting	3
Com. 112, 113, and 114—Secretarial Practice Shorthand	9
Com. 117, 118—Typewriting	4
Com. 119—Office Appliances	3
Econ. 251—Principles of Economics	3
Econ. 252—Principles of Economics	3
Com. 260—Marketing or	3
Com. 509—Business Law	
Com. 445—Office Management	3

Chemistry

Che. 110, 112—General Chemistry	10
Che. 225—Analytical Chemistry	5
Che. 220, 222—Analytical Chemistry	10
Che. 236—Organic Chemistry	5
Che. 430, 432—Organic Chemistry	10
Che. 444—Physical Chemistry	5

Economics and Sociology

(Required: 15 hours of Economics and 15 hours of Sociology)

Econ. 251, 252—Principles of Economics	6
Econ. 402—Labor Economics	3
Econ. 504—Public Finance	3
Econ. 505—Money and Banking	3
Soc. 153, 154—Societies Around the World	6
Soc. 509, 510—The Family	6
Soc. 220—The Community	3
Soc. 551—Principles of Sociology	3
Soc. 538—Juvenile Delinquency or	3
Soc. 521—Industrial Sociology	

English

Composition and Language Study:	Required Sem. Hrs. 9-12
Eng. 101*, 102*—Freshman Composition	6
Eng. 205—Advanced Composition	3
Eng. 512—The Gramar of Structure and Usage	3
Eng. 510—Modern British and American Usage	3
Eng. 509*—English Composition for Teachers	3
Literary Survey Courses:	Required Sem. Hrs. 12-15
Eng. 221*, 222*—Survey of English Literature	6
Eng. 161—Introduction to Literature	3
Eng. 551*, 552*—American Literature	6
Eng. 560, 561—Comparative Literature	6
Literary Type Courses:	Required Sem. Hrs. 3-6
Eng. 568—Principles of Literary Criticism	3
Eng. 527—The Nineteenth Century British Novel	3
Eng. 563—The Contemporary Drama	3
Eng. 574—American Folklore	3
Eng. 532—The Drama of the Restoration and Eighteenth Century	3
Eng. 556, 542—Contemporary Poetry (American and British)	6
Eng. 555—The Modern British Novel	3
Period and Author Courses:	Required Sem. Hrs. 6-9
Eng. 535—English Romantic Poetry	3
Eng. 526*—Shakespeare: The Comedies or	3
Eng. 527*—Shakespeare: The Tragedies	3
Eng. 523—English Literature: 1600-1660	3
Eng. 531—Age of Johnson	3
Eng. 530—The Age of Pope	3
Speech and Dramatic Arts:	Required Sem. Hrs. 3-6
Eng. 181—The Essentials of Speech	3
Eng. 291—Voice Development	3
Eng. 288—Oral Interpretation	3

* Physical Education majors must take Anat. 206 and Phys. 206.

* Starred courses normally to be regarded as required.

Eng. 597—Stage Productions in School and Community 3
Eng. 584—Teaching of Speech 3
Eng. 582—Persuasion 3

Geography

Geog. 152—Regional Geography of the World 3
Geog. 153, 154—Societies Around the World 6
Geog. 155—Economic Geography Survey 3
Geog. 544—Climatology 3
Geog. 520—Regional Geography of Anglo-America 2
Geog. 522—Geography of Kentucky 2
Geog. 521, 523—Special Problems 2
Geol. 104, 105—Outlines of Geology 6

History

Hist. 104, 105—European History 6
Hist. 108, 109—History of the United States 6
Hist. 228—The Ancient World 3
Hist. 240—History of Kentucky 3
Hist. 202, 203—History of the British People 6
Hist. 583—Europe in the Twentieth Century 3
Hist. 590—Modern Europe 3
Hist. 505—American Colonial History 3
Hist. 525—Social and Cultural History of the United States Since 1865 3
Hist. 549—Recent History of the United States 3

Languages, Classical

CL 101—Beginning Latin 3
CL 102—Elementary Latin Reading 3
CL 203—Cicero and Selections 3
CL 204—Vergil 3
CL 205—Latin Prose Selections 3
CL 206—Horace 3
CL 209, 210—Selections from Latin Literature 6
CL 217—Medieval Latin 3
CL 509, 510—Latin Literature 6
CL 514, 515—Latin Composition 2
CL 530—The Teaching of Latin 3
CL 530—Demonstration Class in Beginning High School Latin 3

Languages, Modern Foreign

French

Fr. 101, 102—Elementary French 6
Fr. 201, 202—Intermediate French 6
Fr. 203—French Conversation and Composition (Repeat for total of 4 credits) 2 ea.
Fre. 204, 205, 206—French Novel and Drama 9
Fre. 207, 208—French Phonetics 6
Fr. 502, 503—French Literature of the Nineteenth Century 6
Fr. 506, 507—Advanced French Grammar 6
Fr. 510, 511—French Literature of the Twentieth Century 6
Fr. 512—Advanced French Conversation (Can be repeated for total of 4 credits) 2 ea.

German

Ger. 121, 122—Elementary German 6
Ger. 221, 222—German Translation and Rapid Reading 6
Ger. 123—Elementary Aural-Oral Practice in German 1
Ger. 230, 231—Introduction to Classical and Nineteenth Century German Literature 6
Ger. 524, 531—Proseminars 3 ea.
Ger. 538—Advanced German Conversation and Composition 3

Spanish

Spa. 141, 142—Elementary Spanish 6
Spa. 241, 242—Intermediate Spanish 6
Spa. 143—Elementary Aural-Oral Practice in Spanish 1
Spa. 243, 244—Spanish Novel and Drama 6
Spa. 246—Spanish Conversation and Composition (Can be repeated for total of 6 credits) 3 ea.
Spa. 247—Civilization of Spain and Spanish America 2
Spa. 541, 542—Advanced Spanish Grammar and Composition 6
Spa. 545, 546—Spanish Literature of the Twentieth Century 6
Spa. 549, 550—Spanish Literature of the Nineteenth Century 6

Library Science

LS 313—Organization and Administration of the School Library 3
LS 529—Classification and Cataloging 3
LS 533—Reference and Bibliography 3
LS 536—Literature and Related Materials for Young People 3
LS 537—Children's Literature and Related Materials 3
LS 539—Library Practice 3
LS 521—Libraries and Librarianship 3
LS 586—Visual Teaching 3

Mathematics

MA 101—College Algebra 3
MA 111—College Algebra 3
MA 112—Plane Trigonometry 3
MA 113—Analytics & Calculus I 3
MA 121—Math. of Finance 3
MA 211—Analytics & Calculus II 4
MA 212—Analytics & Calculus III 4
MA 201—Fundamentals of Elementary Math. 3
MA 202—Fundamentals of Elementary Math. 3
MA 301—Advanced Analytic Geometry 3
MA 361—Advanced Algebra 3
MA 407—College Geometry 3
MA 421—Elementary Computational Methods 3
MA 431—Differential Equations 3
MA 471—Advanced Calculus 3
MA 561—Introduction to Higher Algebra 3
MA 565—Introduction to Matrices 3

Physics

Phy. 211, 213—General Elementary Physics 10
Phy. 231, 232, 241, 242—General College Physics 10
Phy. 151, 152—Introduction to Physics 6

Political Science

Pol. Sci. 151—American Government 3
Pol. Sci. 552—Municipal Government 3
Pol. Sci. 280—State Government
or 3
Pol. Sci. 574—Kentucky Government & Constitution
Pol. Sci. 559—American Constitutional Development
or 3
Pol. Sci. 560—American Constitutional Development
Pol. Sci. 572—Modern Political Theory
or 3
Pol. Sci. 575—Contemporary American Political Thought
Pol. Sci. 555—Comparative Government-Parliamentary Democracies 3
Pol. Sci. 566—The United Nations 3
Pol. Sci. 570—Political Parties 3
Pol. Sci. 571—Early Political Theory 3
Pol. Sci. 576—Legislation 3
Pol. Sci. 577—Introduction to Public Administration 3
Econ. 251—Principles of Economics 3

Physical Education—Men

	Year	P.E. Minor 18 Hrs.	P.E. Major 24 Hrs.	Health & P.E. Major 30 Hrs.	Health, P.E. & Rec. Area 48 Hrs.
P.E. 061—Field Trip	Jr	0	0	0	0
P.E. 141, 142, 143, 144—Football, Basketball, Track, Baseball					6*
P.E. 150—P.E. & Rec. Activities	Fr	2	2	2	2
P.E. 151—P.E. & Rec. Activities	Fr	2	2	2	2
P.E. 152—Tech. of Swimming	Sr			2**	2**
P.E. 250—P.E. & Rec. Activities	So	2	2	2	2
P.E. 251—P.E. & Rec. Activities	So	2	2	2	2
P.E. 280—Recreation Leadership	Sr				2
P.E. 281—Camp Leadership	So			2	2
P.E. 343—Hist. & Prin. of P.E.	Jr		3	3	3
P.E. 344—P.E. in Secondary School	Jr	3	3	3	3
P.E. 356—Sports Officiating	Sr			1***	1
P.E. 360—P.E. in Elementary School	Jr	2	2	2	2
P.E. 370—Safety, Training, First Aid	Jr	2	2	2	2
P.E. 520—Physiology of Exercise	Sr			3	3
P.E. 540—Org. & Adm. of P.E.	Sr		3	3	3
P.E. 545—Intro. to Tests & Meas.	Sr				3
P.E. 572—Kinesiology & Its Applica.	Sr				4
Electives (Approved by advisor)****		3	3	1	4

* One 2-hour athletic coaching course may be omitted.
** Or P.E. 252.
*** Or P. E. 357.
**** Selected from 300-courses or above.
Note: Home Ec. 401—Principles of Nutrition is required in all P.E. majors and areas of concentration.

Physical Education—Women

	Year	P.E. Major 24 Hrs.	Health & P.E. Major 30 Hrs.	Health, P.E. & Rec. Area 48 Hrs.
P.E. 061—Field Trip	Jr	0	0	0
P.E. 150—P.E. & Rec. Activities	Fr	2	2	2
P.E. 151—P.E. & Rec. Activities	Fr	2	2	2
P.E. 152—Tech. of Swimming	Sr		2*	2*
P.E. 250—P.E. & Rec. Activities	So	2	2	2
P.E. 251—P.E. & Rec. Activities	So	2	2	2
P.E. 280—Recreation Leadership	Sr			2
P.E. 281—Camp Leadership	So		2	2
P.E. 343—Hist. & Prin. of P.E.	Jr	3	3	3
P.E. 344—P.E. in Secondary School	Jr	6	3	6
P.E. 358—Sports Officiating for Women	Sr		1	1
P.E. 359—Sports Officiating for Women	Jr			1
P.E. 360—P.E. in Elementary School	Jr	2	2	2
P.E. 370—Safety, Training & First Aid	Jr	2	2	2
P.E. 491—Dance in Education	Jr		4	4
P.E. 520—Physiology of Exercise	Sr			3
P.E. 540—Org. & Adm. of P.E.	Sr	3	3	3
P.E. 545—Intro. to Tests & Meas.	Sr			3
P.E. 572—Kinesiology & Its Applica.	Jr			4
Electives (Approved by advisor)**				2

* Or P.E. 252.
** Selected from 300-courses or above.
Note: Home Ec. 401—Principles of Nutrition, is required in all P.E. majors and areas of concentration.

Speech and Dramatic Arts

Nine to 15 hours from this group:	
Eng. 181—The Essentials of Speech	3
Eng. 287—Speeches for Special Occasions	3
Eng. 283—Argumentation and Debate	3
Eng. 183—Parliamentary Usage	2
Eng. 288—Oral Interpretation	3
Eng. 285—Applied Phonetics	3
Eng. 580—Discussion or Eng. 584—Teaching of Speech or Eng. 582—Persuasion	3
Nine to 15 hours from this group:	
Eng. 291—Voice Development	3
Eng. 191—Stagecraft or Eng. 192—Staging Techniques	2
Eng. 596—History of the Stage	3
Eng. 597—Stage Productions in School & Community	3
Eng. 590—Theory and Techniques of Acting	3
Eng. 591—Theory and Techniques of Directing	3
Eng. 592—Theory and Technique of Theatre Production	3
Eng. 593—Scenic Design	3
Six to nine hours from this group:	
Eng. 526—Shakespeare: The Comedies or Eng. 527—Shakespeare: The Tragedies	3
Eng. 563—The Contemporary Drama	3
Eng. 525—Elizabethan Drama, Exclusive of Shakespeare	3
Eng. 532—The Drama of the Restoration & Eighteenth Century	3
Psy. 550—Speech Pathology: A Survey	3
Psy. 553—Speech Mechanisms	3

REQUIREMENTS FOR VOCATIONAL AGRICULTURAL TEACHING (SUMMARY)

College of Agriculture and Home Economics	Sem. Hrs.
Prescribed courses in agriculture	20
Group requirements in agriculture	38
Electives in agriculture	9
Total agriculture	(67)
Prescribed courses in other subjects (not education)	28-30
Group requirements in other subjects (not education)	26
Specialty support (education or related science)	6
Electives in other subjects	13
Total other subjects	(73-75)
Total required for graduation	140-142

a) Agricultural Education 580-581 and 672 are required for certification. They should be taken as a graduate student; however, 580 and 581 may be taken as an undergraduate in rare cases.

b) When Agricultural Education 580 and 581 are taken as an undergraduate, the 18 credits are to be taken from electives in agriculture and electives in other subjects.

c) The student should complete at least 9 credits in agricultural engineering and 3 credits in agricultural entomology as an undergraduate.

REQUIREMENTS FOR HOME ECONOMICS TEACHING (SUMMARY)

College of Agriculture and Home Economics
Effective entering freshman, 1960

	Sem. Hrs.
General requirements in core	42-48
Core in home economics	42
Prescribed additional courses in home economics	12-13
*H.E. 227—Clothing Construction	
H.E. 228—Clothing and Pattern Design	
H.E. 550—Child Guidance	
H.E. 536—Interior Decoration Projects or H.E. 568—Household Equipment	
General requirements beyond general requirements in core	12
Literature, humanities, foreign languages, philosophy, religion—5 sem. hrs.	
Anthropology, geography, government, history—3 sem. hrs.	
Bacteriology, botany, zoology—4 sem. hrs.	

* May be omitted by passing test.

Professional Education	18-19
Ed. 202—Human Development and the Curriculum or Ed. 301—American Public Education	
Ed. 586—Techniques of Teaching Home Economics	
*Ed. 362—Student Teaching in Home Economics	
*Ed. 588—Adult Education in Home Economics	
General electives	2-10
Total required for graduation	136

* Should be scheduled in same semester—either semester in senior year.

STUDENT TEACHING IN VOCATIONAL AGRICULTURE AND HOME ECONOMICS

Transient students and graduate students in agricultural education may take student teaching without having done a semester in residence on the campus. All students who take student teaching must have an over-all standing of at least 2.5 for the entire college period but are not required to have had other courses in education. Those transferring to the University must also have a standing of at least 2.5 for the work done at the University. They take 18 semester hours of work the semester student teaching is done—in agricultural education, which includes student teaching.

In order to take student teaching in home economics, a student must have completed 3 hours in techniques of teaching home economics and have an average standing of 2.5. Student teaching and adult education are carried on in off-campus teaching centers. Students live in the community for approximately one-half semester and carry on the activities of a teacher of the community under the guidance of a trained supervising teacher.

REQUIREMENTS FOR SPECIAL EDUCATION TEACHING

The College of Education offers programs designed to prepare teachers to work with the mentally retarded, the

orthopedically disabled (including the cerebral palsied), the hard-of-hearing, the deaf, and the speech deviate. Prospective special education teachers are required to meet the general education requirements of all teachers in the elementary, junior high, or senior high school field. Those preparing to be teachers of the orthopedically handicapped, the hard-of-hearing, the deaf, and the mentally retarded are required to meet the professional-education requirements of the elementary, junior, or senior high school program. Those programs are designed to enable the undergraduate student to obtain a broad base upon which the special education preparation can be built. Opportunity is provided for a combining of student teaching in a regular class and in a special class. Thus, within the framework of the undergraduate program the student can earn certification in elementary, junior, or senior high school *plus* certification in a special field.

All students in Special Education with the exception of those in speech and hearing must meet the general requirements for certification as elementary, junior high, or senior high school teachers.

Additional courses in Special Education are being planned. Consult with the advisor in Special Education for the complete list.

Curriculum for Teachers of the Orthopedically Disabled, Including the Cerebral Palsied — Sem. Hrs.

- Ed. 375—Introduction to Education of Exceptional Children 3
- Ed. 540—Problems in Diagnostic and Remedial Reading 3
- Ed. 525—Methods and Materials in Teaching the Orthopedically Handicapped, including the cerebral palsied 3
- Psy. 550—Speech Pathology: A Survey 3
- P.E. 572—Kinesiology 3
- Ed. 527—Survey of Physical Defects 3
- Ed. 358—Observation and Practicum in Special Education 3
- Ed. 359—Student Teaching 3 to 6 (Special Education; remainder in Elementary, Junior or Senior High School)

Curriculum for Speech and Hearing

- Ed. 375—Introduction to Education of Exceptional Children 3
- Psy. 550—Speech Pathology: A Survey 3
- Psy. 551—Speech Correction: An Introduction to Therapy 3
- Psy. 552—Stuttering and its Correction 3
- Psy. 553—Speech Mechanisms 3
- Psy. 560—Introduction to Clinical Audiology 3
- Psy. 561—Audiometry 3
- Psy. 562—Introduction to Hearing Disorders 3
- Ed. 358—Observation and Practicum in Special Education 3
- Ed. 359—Student Teaching 3 to 6

Curriculum for Teachers of the Mentally Retarded

- Ed. 375—Introduction to Education of Exceptional Children 3
- Ed. 530—Nature and Needs of Retarded Children 3
- Ed. 526—Methods and Materials of Teaching the Mentally Retarded 3
- Ed. 522—Educational Tests and Measurements 3
- Ed. 540—Problems in Diagnostic and Remedial Reading 3
- Psy. 521—Abnormal Psychology 3
- Ed. 358—Observation and Practicum in Special Education 3
- Ed. 359—Student Teaching 3 to 6 (Special Education; remainder in Elementary, Junior, or Senior High School)

Curriculum for Teachers of the Hard-of-Hearing

- Ed. 375—Introduction to Education of Exceptional Children 3
- Psy. 550—Speech Pathology: A Survey 3
- Psy. 560—Introduction to Clinical Audiology 3
- Psy. 561—Audiometry 3
- Psy. 562—Introduction to Hearing Disorders 3
- Psy. 563—Adv. Clinical Methods for Aurally Handicapped 3
- Ed. 358—Observation and Practicum in Special Education 3
- Ed. 359—Student Teaching 3 to 6 (Special Education; remainder in Elementary, Junior, or Senior High School)

Note: A balanced sequence of courses in the area of the Deaf is not now offered. The courses listed under the above headings, however, are applicable toward partial fulfillment of the state requirements.

Curriculum for Teachers of the Deaf

- Ed. 375—Introduction to Education of Exceptional Children 3
- Psy. 560—Introduction to Clinical Audiology 3
- Psy. 561—Audiometry 3
- Psy. 562—Introduction to Hearing Disorders 3
- Ed. 575—Methods of Teaching Language to the Deaf 3
- Ed. 576—Methods of Teaching Speech to the Deaf 3
- Ed. 358—Observation and Practicum in Special Education 3
- Ed. 359—Student Teaching 3 to 6 (Special Education; remainder in Elementary, Junior, or Senior High School)
- Electives: Psy. 550—Speech Pathology: A Survey 3
  Psy. 563—Clinical Audiology 3

GRADUATE PROGRAMS LEADING TO 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 his adviser. In cases of deficient preparation the committee, with the approval of the Dean, determines prerequisite undergraduate courses to be taken.

The following persons have been designated to guide graduate students in their work toward the master's degree in education.

Area	Persons
Elementary Teachers—	Banks, Dohoney, Moore, Ramsey, and Sudduth
Secondary Teachers	
General—	Burkeen, Lurry, McClure, Manker Ravitz, Reed, Shipman, and Tatum
Agriculture—	Hammonds and Binkley
Art—	Haines
Business Education—	Musselman, Thomas, and Humphreys
Home Economics—	Gorman
Industrial Education—	Baker
Music—	Nash, Osborne, and Steiden

Physical Education—	Seaton, Clay, Carr, Gilb, and Huff
Special Education—	Levy
Elementary Principal—	Moore and Swanson
Guidance Counselors—	Auvenshine and Carse
Secondary Principal—	Cierley, Kincheloe, and Powell
Supervisor—	Ogletree
Attendance Officer—	Ogletree
Superintendent—	Cierley, Kincheloe, and Ogletree
Higher Education—	Chamberlain

The candidate for the master's degree must complete the requirements for this degree under one of the two plans which follow. The second plan is permissible only with the approval of the Dean of the Graduate School, the Dean of the College of Education, and the student's adviser.

PLAN I

1. A minimum of 24 semester hours of graduate work must be completed and a thesis must be presented.
2. At least 12 semester hours of graduate work must be in education.
3. At least 15 semester hours of graduate work must be in courses numbered 600 or higher.
4. At least 12 semester hours must be outside the field of education, except for majors in Educational Administration and Vocational Agriculture. It is expected that students in Educational Administration and Vocational Agriculture will have six hours outside education. (Note: This requirement is effective for all students entering the Graduate School the second semester 1954-55 or after and for all students after September 1, 1957.)
5. At least 36 weeks of residence must be acquired as a University of Kentucky graduate student.
6. No student may satisfy more than one-half of the residence requirements for advanced degrees by part-time work. This limitation does not apply to intensive courses.
7. The total number of semester hours presented in education, undergraduate and graduate, must be at least 30.
8. A standing of 3.0 (an average of B) or better must be made on all graduate work.
9. Six semester hours (if approved by the graduate adviser) may be completed in off-campus study (that is, extension work). In such case, however, a minimum of 30 weeks of *resident-on-campus* work is required for the Master's degree.
10. The Graduate Record Examination is required of all candidates for graduate degrees. It is to be taken the first semester the student is enrolled as a full time student in the Graduate School. The National Teachers Examination will be required of all candidates for the degree of Master of Arts in Education or Master of Science in Education. The student should consult with his advisor to determine the proper time to take this Examination. In exceptional cases an additional examination, either written or oral, may be required. In this case, these examinations are to be taken just prior to or during the session in which the degree is to be conferred.
11. All graduate students must meet the requirements for a teaching certificate in Kentucky as established by the State Department of Education of Kentucky. These requirements are outlined under the undergraduate program. 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.

PLAN II

1. A minimum of 30 semester hours of graduate work must be completed.
2. At least 12 semester hours of graduate work must be in education.
3. At least 15 semester hours must be in courses numbered 600 or higher.
4. At least 12 semester hours must be outside the field of education, except for majors in Educational Administration and Vocational Agriculture. It is expected that students in Educational Administration and Vocational Agriculture will have six hours outside education. (Note: This requirement is effective for all students entering the Graduate School the second semester 1954-55 or after and for all students after September 1, 1957.)
5. At least 36 weeks of residence must be acquired as a University of Kentucky graduate student.
6. No student may satisfy more than one-half of the requirements for an advanced degree by part-time work. This limitation does not apply to intensive courses.
7. The total number of semester hours presented in education, undergraduate and graduate, must be at least 30.
8. A standing of 3.0 (an average of B) or better must be made on all graduate work.
9. Six semester hours and nine weeks of residence may be done in extension classes, off-campus study, or independent work courses with the permission of the student's advisor and the Dean of the Graduate School.
10. The Graduate Record Examination is required of all candidates for graduate degrees. It is to be taken the first semester the student is enrolled as a full time student in the Graduate School. The National Teachers Examination will be required of all candidates for the degree of Master of Arts in Education or Master of Science in Education. The student should consult with his advisor to determine the proper time to take this examination. In exceptional cases an additional examination, either written or oral, may be required. In this case, these examinations are to be taken just prior to or during the session in which the degree is to be conferred.
11. All graduate students must meet the requirements for a teaching certificate in Kentucky as established by the State Department of Education of Kentucky. These requirements are outlined under the undergraduate program. 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.

Consult the College of Education bulletin and your College of Education advisor for your final course plan.

REQUIREMENTS OF THE MASTER'S DEGREE PROGRAM IN ADMINISTRATION AND SUPERVISION

A. *Counseling and Guidance* (3 hours required):

*Ed. 756—Fundamentals of Guidance

B. *Foundations* (3 hours required):

Three additional hours such as:

Ed. 645—Foundations of Education or
Ed. 661—Educational Sociology

C. *Curriculum and Instruction* (6 hours required):

*Ed. 732—Principles of Curriculum Construction

For candidates with background in secondary education:
Ed. 712—The Elementary School

For candidates with background in elementary education:
Ed. 714—The Secondary School or
Ed. 717—The Junior High School

D. *Behavioral Sciences* (9 hours required):

*Sociology 542—Human Relations in Administration

Six additional hours such as:
Sociology 544—Social Psychology, or
Sociology 551—Principles of Sociology, or
Anthropology 526—Culture and Personality

E. *Administration and Supervision* (9 hours required):

*Ed. 99—Orientation (no credit)

*Ed. 633—The Administration of the Teaching Personnel, and

*Ed. 634—Administrative Problems in Today's Education (Offered together in block of 6 hours)

(Prerequisite: Admission to the program in Administration)
*Ed. 639—Supervision of Instruction

(Prerequisite: Ed. 633 and 634 and at least three years of teaching experience)

* Required.

It is recommended that students plan their programs in accordance with the undergraduate certificate held. For example, elementary leadership programs should be planned for teachers holding elementary certificates and secondary leadership programs should be planned for teachers holding secondary certificates.

THE SECOND-YEAR PROGRAM (NON-DEGREE) FOR STANDARD CERTIFICATION

Admission Procedure—The candidate for standard certification should:

1. Secure admission to the Graduate School.
2. Request an advisor from the Office of the Dean, College of Education.
3. Confer with the advisor.
4. Apply through the advisor for admission to the program.

Requirements of the Program for Standard Certification (non-degree)

Ed. 771—Seminar in Educational Administration, or Behavioral Sciences (6 semester hours)

Ed. 608—Internship in Educational Administration

Ed. 792—Research Problems in Educational Administration, or

Ed. 793—Research Problems in Curriculum and Supervision

Six to nine hours of electives appropriate to the field in which the applicant is specializing:

For Superintendent:

Ed. 636—State School Administration

For High School Principal:

Ed. 630—High School Administration

For Elementary Principal:

Ed. 629—The Elementary Principal

For Supervisor:

Ed. 608—Internship in Educational Administration (6 semester hours)

Standard Certification may be obtained upon completion of the "Second Year" program, and four years of experience as a school leader. Since September 1, 1962, Rank I classification under the Kentucky Minimum Foundation law requires the completion of a 30-hour program above the master's degree; and after September 1, 1964, superintendents will not be certified until a 30-hour program above the master's has been completed.

MASTER'S DEGREE PROGRAM IN GUIDANCE AND COUNSELING

General degree requirements, as outlined in this bulletin and in the *Graduate School Bulletin*, are applicable to students in the guidance and counseling curriculum.

Curriculum for Master's degree (30 semester hours required)

Required:	Sem. Hrs.
Ed. 755—Human Development and Behavior	3
Ed. 756—Fundamentals of Guidance	3
Ed. 522—Educational Tests and Measurements or	3
Psy. 535—Psychological Testing	
Ed. 758—Group Guidance Problems and Practices	3
Ed. 760—Counseling Theory and Practice	3
Ed. 761—Supervised Practice in Counseling (May be repeated to a maximum of 9 hours)	3
Ed. 661—Educational Sociology or	3
Ed. 640—Philosophy of Education	
Electives: 9 hours from the following:	
Psy. 505—Experimental Psychology	3
Psy. 507—Psychology of Learning	3
Psy. 520—Mental Hygiene	3
Psy. 521—Abnormal Psychology	3
Psy. 522—Counseling Psychology	3
Psy. 544—Social Psychology	3
Ant. 526—Culture and Personality	3
Soc. 509—The Family	3
Soc. 510—The Family	3
Soc. 538—Juvenile Delinquency	3

MASTER'S DEGREE PROGRAM FOR TEACHERS IN ELEMENTARY EDUCATION

A. Professional education courses (12 hours required)

Curriculum block (6 hours required):

Ed. 712—The Elementary School

Ed. 732—Principles of Curriculum Construction

Note: Ed. 740, Teaching Reading and Related Language Arts in the Elementary School, or a course approved by the advisor, may be substituted for Ed. 712.

Human Development, Guidance, and Test block (6 hours required):

Ed. 739—Survey of Research in Human Development and Education

One course in the area of Guidance and Testing to be approved by the advisor.

B. Courses outside Education should be related to the student's teaching field and should be planned with, and have the approval of, the student's advisor.

C. Summary of Requirements:

1. Must be eligible for a teaching certificate by the time that M.A. degree is completed.
2. Must have a total of 30 semester hours in Education at both the graduate and undergraduate levels.
3. Must have 15 hours of graduate work in courses numbered 600 or higher.
4. Must have at least 12 hours of graduate work in Education.
5. Must have at least 12 hours outside the field of Education.
6. Must have a standing of 3.0 (an average of B) or better on all graduate work and must be admitted to full graduate standing.

The student is required to take a non-credit seminar, Ed. 99, the first time he is enrolled in the Graduate School.

MASTER'S DEGREE PROGRAM FOR TEACHERS IN SECONDARY EDUCATION

A. Professional education courses (12 hours required):

Choose one: (3 hours required)
- Ed. 522—Educational Tests and Measurements
- Ed. 550—The Role of the Teacher and the Principal in Guidance
- Ed. 756—Fundamentals of Guidance

Choose one: (3 hours required)
- Ed. 645—Foundations of Education
- Ed. 658—Problems in Educational Psychology
- Ed. 661—Educational Sociology

Ed. 714—The Secondary School (3 hours required)

A 3-hour course recommended by the student's advisor

B. Courses outside Education should be related to the student's teaching field and should be planned with, and have the approval of, the student's advisor.

C. Summary of Requirements:

1. Must be eligible for a teaching certificate by the time the M.A. degree is completed.
2. Must have a total of 30 semester hours in Education at both the graduate and undergraduate levels.
3. Must have 15 hours of graduate work in courses numbered 600 or higher.
4. Must have at least 12 hours of graduate work in Education.
5. Must have at least 12 hours outside the field of Education.
6. Must have a standing of 3.0 (an average of B) or better on all graduate work and must be admitted to full graduate standing.

The student is required to take a non-credit seminar, Ed. 99, the first summer term or the first semester he is enrolled in the graduate school.

MASTER'S DEGREE PROGRAM FOR TEACHERS IN BUSINESS EDUCATION

A. *One Course in Teaching Methods* (3 hours required):
- Ed. 513—Teaching Office Practice, Clerical Practice, and Office Appliances
- Ed. 514—Teaching General Business Subjects
- Ed. 618—The Social Business Subjects in High School

B. *Two Courses Selected from the Following* (6 hours required):
- Ed. 615—Problems in Business Education
- Ed. 774—Seminar in Business Education
- Ed. 622—Business Education in Colleges and Universities
- Ed. 623—Administration and Supervision of Business Education
- Ed. 786—Independent Work in Business Education
- Ed. 626—Classification and Possible Use of Community Resources in Business Education

C. *Two Courses Selected from the Following* (6 hours required):
- Ed. 544—Visual Teaching
- Ed. 732—Principles of Curriculum Construction
- Ed. 661—Educational Sociology
- Ed. 756—Fundamentals of Guidance
- Ed. 714—The Secondary School
- Ed. 724—Organization and Supervision of Student Teaching

D. *Elective* (3 hours)

E. *Courses Outside Education* (12 hours)

These are to be selected from commerce, or the student's secondary teaching major or minor, or from areas of need as shown by his scores on the Graduate Record Examination.

For Agricultural Education Majors

Ed. 645—Foundations of Education	5
Ed. 714—The Secondary School	3
Ed. 732—Principles of Curriculum Construction	3
Ed. 670—Method in Teaching Vocational Agriculture	3
Ed. 678—Selecting Teaching Materials	3
Ed. 679—Adult Farmer Schools	3
Ed. 680—Directing Farm Practice	3
Ed. 682—Young-Farmer Schools	3

For Home Economics Education Majors

Ed. 687—Supervision in Home Economics Education	3
(For Supervisors of Student Teachers)	
Ed. 683—Current Problems in Home Economics Education	3
Ed. 684—Modern Trends in Home Economics Education	3
Ed. 685—Home Economics Curriculum Construction	3
Ed. 686—Evaluation in Home Economics Education	3
Ed. 787 or 656—Research in Home Economics Education	3

For Industrial Education Majors

Ed. 411—Principles and Philosophy of Industrial Education	3
Ed. 419—Vocational Guidance	3
Ed. 409—Methods in Industrial Education	3
Ed. 418—Organization and Operation of Part-Time and Evening Classes	3
Ed. 714—The Secondary School	3
Ed. 645—Foundations of Education	5
Ed. 630—High School Administration	3
Ed. 732—Principles of Curriculum Construction	3

GRADUATE PROGRAMS LEADING TO THE EDUCATION SPECIALIST AND DOCTORAL DEGREES

For information concerning the Education Specialist degree, the degree of Doctor of Philosophy with education as a major, or the degree of Doctor of Education, students should consult the Dean of the Graduate School and the Dean of the College of Education.

DIVISION OF COUNSELING & GUIDANCE

FACULTY

Professors: Lyman Vernon Ginger (Ed.D., Kentucky, 1950), Ernest D. McDaniel (Ph.D., Purdue, 1955), Leslie L. Martin (Ph.D., Indiana, 1952). *Associate Professors:* William Thomas Carse (Ed.D., Illinois, 1961), CHAIRMAN, George W. Rogers (Ph.D., Ohio State 1959). *Assistant Professors:* Charles Dwight Auvenshine (Ph.D., Missouri, 1962), Emmett D. Burkeen (M.A., Kentucky, 1950).

Course Descriptions

665 *Practicum in Counseling Psychology.* (3) I, II, S
Nine hours of supervised work each week in counseling psychology in the University Counseling Office. Same as Psychology 665. (May be repeated three times to a maximum of 12 credits.) *Staff.*

755 *Human Development and Behavior.* (3) I, II, S
The physiological, sociological, and psychological bases of human behavior with emphasis upon the normal school child in his environment. Findings of research in the behavioral sciences and their implications for the guidance of young persons.

756 *Fundamentals of Guidance.* (3) I, II, S
A survey of the educational, sociological, and psychological foundations of guidance in schools and colleges. Study of the basic philosophy and nature of guidance services, organization and administration of guidance programs, the role of the guidance counselor, and the relationship of guidance services to the total curriculum.

758 *Group Guidance Problems and Practices.* (3) I, II, S
Providing for the common needs of groups of students in making more effective educational, occupational, social, and personal adjustments. Special emphasis is given to the selection, organization, and effective use of group guidance materials and techniques.

759 *Identifying and Providing for Individual Student Needs.* (3) I, II, S
Research studies and reports on individual differences in the physical, intellectual, social, and emotional development of students, and of ways that have proved effective in meeting individual needs, especially in secondary schools.

760 *Counseling Theory and Practice.* (3) I, II, S
A study of the basic theories, principles, and techniques of counseling and their applications to counseling in schools and colleges. Practice in the techniques of interviewing, and the use of psychological tests, observations, records, case studies, and other procedures in the counseling process. Prereq: Ed. 755, 756.

761 *Supervised Practice in Counseling.* (3) I, II, S
(May be repeated twice to a maximum of 9 credits.)
Supervised practice in counseling in the educational setting in which the student plans to work. Requires 8 hours a week in actual counseling plus a minimum of 2 hours weekly in seminar. Prereq: Ed. 755, 756, 760, and at least 2 hours weekly in seminar.

762 *Organization and Administration of Guidance Services.* (3) I, II, S
A study of the problems of supervision, staffing, finances, effective inter-personal relationships, community participation, in-service education, and evaluation of the guidance program. Includes supervised experience in the planning and administration of guidance services. Prereq: Master's degree in counseling and guidance.

763 *Research and Evaluation in Guidance.* (3) I, II, S
Research methodology applied to the evaluation and interpretation of guidance services. May include analysis and interpretation of test data from schools and school systems, emphasizing the application of test data to local school problems and the organization of reports.

764 *Using Occupational and Educational Information in Counseling and Guidance.* (3) I, II, S
Collection, evaluation, organization, filing and use in counseling of current data. Supply and demand, working conditions, trends, entrance requirements, job families, and career fields. Schools, colleges and other agencies that prepare for advancement in productive careers.

765 *Independent Work in Counseling and Guidance.* (2) I, II, S
An independent work course for advanced graduate students who desire to investigate special problems in counseling and guidance. Prereq: One year of graduate work in Counseling and Guidance, including Ed. 755, 757 (or Psych. 610) and approval of instructor. May be repeated once to a maximum of four credits.

777 *Seminar in Counseling and Guidance.* (3) I, II, S
A seminar for advanced graduate students. Designed to develop deeper understandings and clearer insights in guidance and counseling, through critical examination and discussion of pertinent theories, research reports, case records and counseling experiences. Prereq: 36 hours in Counseling and Guidance, including Practicum (Ed. 761 or Psych. 665), approval of adviser and staff.

DIVISION OF ADMINISTRATION & SUPERVISION

FACULTY

Professors: Morris Berdyne Cierley (Ed.D., Illinois, 1953), CHAIRMAN, Leo M. Chamberlain (Ph.D., Indiana, 1931), Herman L. Donovan (Ph.D., Peabody, 1925), special assignment, Lyman V. Ginger (Ed.D., Kentucky, 1950), James Benjamin Kincheloe (Ph.D., Peabody, 1954), Leonard Ephraim Meece (Ph.D., Kentucky, 1938), special assignment, Doris M. Seward (Ph.D., Syracuse, 1953), W. Paul Street (Ph.D., Northwestern, 1947). *Associate Professors*: Charles Fowler Elton (Ph.D., Ohio State, 1951), James Robert Ogletree (Ed.D., Columbia, 1956), Louis Swanson (Ed.D., Tennessee, 1950). *Assistant Professor:* Fred Edmonds (Ed.D., Kentucky, 1961).

Course Descriptions

502 *The Administration of Pupil Personnel.* (3) S
Administrative problems relating to child accounting, including school census, attendance records and reports, social and economic factors affecting school attendance, and duties and responsibilities of school and non-school personnel and agencies.

602 *Local School Administration.* (3) I, II, S
The organization, management, and control of a local school system, including such problems as federal, state, and local relationships, board of education, pupil personnel, employed personnel, public relations, finance and business management, and school services.

603 *Constitutional and Legal Basis of Public School Administration.* (3) II, S
A study of court decisions to discover the legal principles involved in practical problems of school administration. Prereq: Ed. 602, 636, or 630.

604 *School Buildings and Equipment.* (3)
Measurement and evaluation of existing school building facilities, planning new buildings, determining suitable equipment, and financing the building program. Prereq: Ed. 636 or its equivalent.

608 *Internship in Educational Administration.* (3) I, II, S
Field experiences are provided for prospective administrators under the cooperative supervision of University personnel and principals, supervisors, and superintendents in Kentucky public school systems. (May be repeated once to a maximum of 6 credits.)

628 *Field Problems in Curriculum Supervision.* (3) I, II
A course designed to provide direct experience in dealing with educational problems in field situations. Observations, readings, and research also required. Registration only with consent of instructor. (May be repeated once to a maximum of 6 credits.)

629 *The Elementary Principal.* (3) I, S
Problems involved in the organization and administration of a modern elementary school.

630 *High School Administration.* (3) I, II, S
This course deals with organization, administration, and problems of the modern secondary schools, including such specific problems as school staff, program of studies, records and reports, school-community relationships, school plant, finance, and scheduling.

633 *Leadership Problems in Today's Education.* (3)
The common and persistent problems of public education are analyzed. Insights, procedures, and skills for solutions to these problems are developed.

634 *Effective Educational Leadership.* (3)
The leadership roles, responsibilities, understandings and behavior patterns of effective school principals, supervisors and superintendents.

635 *Business Administration and Finance of Public Education.* (3) II, S
A course for prospective superintendents. Emphasizes school support, including state, local, and federal revenues; budgetary policy; procedures for purchasing, accounting, and reporting costs; management of funds, property, equipment, and supplies; payroll procedures, records and reports.

636 *State School Administration.* (3) S
Organization, administration, and control of education at the state level, including state-federal and state-local school relationships, state support, control of the material environment, training and certification of teachers, teachers' contracts, tenure, retirement.

639 *Supervision of Instruction.* (3) II, S
Development, purposes, and organization of supervisory programs. Special emphasis on the nature of educational leadership. Consideration of various approaches to supervision with special attention to current in-service education programs.

718 *Trends in Higher Education.* (3)
A survey of modern tendencies in higher education: scope and development, objectives, organization, administration, curricula, finance, faculty and student personnel. Designed primarily for prospective college administrators, teachers, and registrars.

719 *Teaching at the College Level.* (3)
A study of approaches to instruction at the college level including principles, content, materials, methods, and procedures, and evaluation of student progress. A comprehensive course for prospective college teachers.

733 *Technique and Professional Work of the Registrar.* (3) I, II, S
A comprehensive study of the work of the registrar in institutions of higher education, including the history, literature, and present-day tendencies; rules of the University; recommendations of the American Association of Collegiate Registrars. (May be repeated once to a maximum of 6 credits.)

771 *Seminar in Administration.* (3) II, S
A critical study of selected problems in school administration. The course is designed primarily for students who have had some administrative experience. Prereq: Ed. 602 and 639. (May be repeated once to a maximum of 6 credits.)

772 *Seminar in Education.* (1) I, II, S
A course planned for graduate students majoring in education, given under the direction of the faculty of the College of Education. (May be repeated once to a maximum of 2 credits.)

785 *Independent Work in School Administration.* (3) I, II, S
Includes research on a practical problem in school administration. Open only to students with at least one semester of graduate work in education. Approval of instructor necessary before registration. (May be repeated once to a maximum of 6 credits.)

792 *Research Problems in Educational Administration.* (3) I, II, S
An independent research course for the study of special problems in educational administration. Prereq: One year of graduate work. (May be repeated once to a maximum of 6 credits.)

793 *Research Problems in Curriculum and Supervision.* (3) I, II, S
An independent research course. Students confer individually with the instructor. Prereq: One year of graduate work. (May be repeated once to a maximum of 6 credits.)

799 *Research Problems in Higher Education.* (3) I, II, S
An independent research course for the study of special problems in higher education. Prereq: One year of graduate work. (May be repeated once to a maximum of 6 credits.)

DIVISION OF FOUNDATIONS OF EDUCATION

FACULTY

Professors: Ellis F. Hartford (Ed.D., Harvard, 1942), CONSULTANT, Ernest D. McDaniel (Ph.D., Purdue, 1955), Herbert Sorenson (Ph.D., Minnesota, 1928), Distinguished Professor. *Associate Professors:* Charles C. Manker, Jr. (Ph.D., Kentucky, 1956), acting chairman; Leonard A. Ravitz (Ed.D., Maryland, 1957), Carl D. Tatum (Ed.D., Maryland, 1956), *Instructors:* Emmett Duel Burkeen (M.A., Kentucky, 1950), Nancy McClure (M.A., Kentucky, 1954).

Course Descriptions

98 *Planning a Career in Education.* (0)
A general orientation program for freshman students who expect to enter the teaching profession. It is in this course that information is supplied to students about the different programs in teaching, and information is secured from the student as to his ability, interest in and aptitude for teaching.

99 *Graduate Seminar.* (0)
An orientation course for students who are entering the Graduate School for the first time.

101 *The Teacher in American Schools.* (3) I, II, S
An introductory course in education for freshman and sophomore students. Considers basic information about the teaching profession and the role of the school in a democratic society. The student will begin to study individual differences, the learning process, the school program, the role of the teacher in the school, and current educational issues. Affords opportunity for planning individual programs of teacher education.

202 *Human Development and the Curriculum.* (4) I, II, S

Major emphasis on basic principles of human growth and development of children from Kindergarten age through high school. Consideration is given to the interaction of children and youth with their social and school environment; and the total school program as it relates to principles of human development. Laboratory work is a basic part of the course. *Ravitz.*

301 *American Public Education.* (3) I, II, S

An introductory course for juniors and seniors who have not had Ed. 101. Considers the scope and nature of the American public school system, basic questions related to the profession, organizational problems that relate to the work of the classroom teacher and pertinent educational issues.

317 *History of Education.* (3)

(Correspondence only)
A survey of historical foundations of education to modern times.

318 *History of Education.* (3)

(Correspondence only)
A study of historical foundations of education in modern times. (Continuation of 317.)

519 *The Elementary School Pupil.* (2) I, S

The psychology of the child in the primary and intermediate grades. Prereq: One course in Psychology.

520 *The Secondary School Pupil.* (3) II, S

The psychology of the pupil in junior and senior high school. Prereq: One course in Psychology.

522 *Educational Tests and Measurements.* (3) I, S

The problems of measurement in the school program, with special emphasis on standardized tests. The construction and use of new-type tests, use and limitations of traditional examinations, marking systems, etc., are also considered.

532 *Intergroup Relations.* (3) S

Analysis of relationships between groups which differ in religious, ethnic, or sociocultural backgrounds; the development of educational and social techniques for reduction of tensions. (Same as Sociology 532.) (May be repeated once to a maximum of 6 credits.)

548 *Educational Psychology.* (3) I, II, S

Application of psychology to the problems of learning and teaching.

550 *The Role of the Teacher and the Principal in Guidance.* (3) I, II, S

A first course for non-specialists, basic principles and practical approaches to guidance for prospective teachers and principals in service.

551 *The Teaching of Higher Level Study Skills.* (3) I, S

A course designed to demonstrate the teaching of study skills (including remedial work) in secondary schools. One approach to teaching these skills will include the study problems of college students.

640 *Philosophy of Education.* (3) I, II

An advanced course dealing with the philosophy of democratic education and applications to some of the larger educational problems of today. Prereq: twelve semester hours in ed. (May be repeated once to a maximum of 6 credits.)

645 *Foundations in Education.* (3) I, S

An intensive study in various foundational fields which contribute to the development of educational theory and practice. Prereq: 12 semester hours in education at the undergraduate level (May be repeated once to a maximum of 6 credits.)

649 *Review of Current Educational Literature.* (3) II, S

An extensive study of current educational literature as found in educational periodicals. Prereq: twelve semester hours in education.

650 *General History of Education.* (3)

A survey of the history of education from the Greek period to the present.

651 *History of Education in the United States.* (3)

A history of the growth and development of education in the United States from earliest Colonial times to the present, including recent movements and trends.

652 *History of Educational Thought.* (3) I, S

A study of the lives and writings of the world's great educators to acquaint the student with their major contributions to society and education.

655 *Comparative Education.* (3) II

Comparisons of modern national systems of education.

656 *Methodology of Educational Research.* (3) II

A course intended to acquaint the student with the various techniques of research and to aid him in methods of attack on his own particular research problems. Prereq: twelve semester hours in education.

657 *Educational Statistics.* (3) I

A non-mathematical study of the applications of statistical and graphical methods to educational data.

658 *Problems in Educational Psychology.* (3) II, S

A critical survey of the psychological theories and research applicable to educational practices. Prereq: One year of Psychology. *Sorenson.*

661 *Educational Sociology.* (3) II, S

A course in sociological foundations of education.

725 *Advanced Problems in Philosophy of Education.* (3)

A critical study of philosophical problems which relate to present-day education. Prereq: Teaching experience and six semester hours in philosophy of education.

739 *A Survey of Research in Human Development and Education.* (4) II

A study of the research and principles of education and allied fields which are appropriate to a consideration of education as a developmental process. Prereq: Masters degree or by permission.

750 *Problems in Educational Sociology.* (3) S

An advanced course in the application of sociological findings to education including consideration of Southern regional problems and potentialities. Prereq: twelve semester hours of graduate work including Education 661 or equivalent.

773 *Seminar in Foundations of Education.* (3) S

A critical study of selected problems in the foundations of education areas.

778 *Seminar in History of Education in Kentucky.* (3) I, II, S

A seminar for graduate students in education who are interested in developing a background and perspective upon educational problems by study of the history and development of education in Kentucky.

782 *Independent Work in Educational Psychology.* (3) I, II, S

An independent work course for students who have done a minimum of twelve semester hours of graduate work including Education 522, 520 or 658. (May be repeated once to a maximum of 6 credits.)

783 *Independent Work in Philosophy of Education.* (3 ea.) I, II, S

An independent work course for students who have done a minimum of twelve semester hours of graduate work, including Education 640, 652 and 661. (May be repeated once to a maximum of 6 credits.)

784 *Independent Work in History of Education.* (3) I, II, S

Independent work problems and topics for advanced students in history of education. (May be repeated once to a maximum of 6 credits.)

DIVISION OF CURRICULUM

FACULTY

Professors: James T. Moore, Jr. (Ed.D., Stanford, 1951), CHAIRMAN, May Kenney Duncan (M.A., Columbia, 1929), special assignment, Vernon Armor Musselman

(Ed.D., Oklahoma, 1946), Wallace Zane Ramsey (Ed.D., Missouri, 1956). *Associate Professors*: Albert S. Levy (Ed.D., Portia, 1953), Lucile Lurry (Ph.D., Ohio State, 1949), Helen Miriam Reed (D.Ed., Indiana, 1954), Denver Sloan (Ed.D., Kentucky, 1956). *Assistant Professors:* William H. Banks (M.S., Tennessee, 1953), Ollie Edward Bissmeyer, Jr. (Ed.S., Indiana, 1960), Cornelius R. Hager (M.A., Kentucky, 1941), Blenda L. Proudfoot (M.A., West Virginia, 1946), Martha Virginia Shipman (M.A., Arkansas, 1937), Martha Cooper Sudduth (Ed.D., Indiana, 1962). *Instructors:* Alma Carl (M.A., Kentucky, 1953), Dorothy Dohoney (M.A., Kentucky, 1953), Emily Huston Dawson (B.S., Western Reserve, 1937).

Course Descriptions

305 *Fundamentals of Secondary Education.* (3) I, II, S

A consideration of problems which develop in connection with student teaching at the secondary level. This course is to be taken during the same semester in which the student is engaged in student teaching.

120 *Arts and Crafts in the Elementary School.* (3) I, II, S

Designed to give experiences with materials for arts and crafts related to classroom activities such as the playhouse, panoramas, dioramas, puppet shows, friezes, mural painting, map making, booklets, and colonial crafts.

324 *Teaching Science and Social Learnings in the Elementary School.* (4) I, II, S

Content areas of social studies and science. Developing understandings and skills relative to unit teaching. Social skills and scientific concepts will be developed through professional laboratory experiences. Consideration will be given to organizing science and social learnings in the elementary school.

325 *Teaching in the Elementary School.* (3) I, II, S

A course designed to develop understandings relative to program planning, daily schedule, record keeping, evaluation, reporting to parents, professional organizations, and teacher ethics. The unit approach as a method of organizing learning experiences in the elementary school is introduced.

329 *Teaching Communicative Skills in the Elementary School.* (4) I, II, S

A study of major factors in teaching reading, writing, spelling, speaking, listening, and creative language activities. Consideration will be given to the use of materials, and diagnostic and corrective procedures for each area.

331 *Teaching Arithmetic in the Elementary School.* (3) II

A study of children's interests in, and needs for arithmetic; evaluation of practice and materials, organization of subject matter, activities involving arithmetic drill, problem solving, diagnosis and remedial instruction, and testing.

340 *Teaching in the Junior High School.* (4) I, II, S

A course designed, with laboratory experiences, to consider the philosophy and organization of the modern junior high school; approaches to teaching in the subject field areas: selection of materials and books for young adolescents, and the guidance role of the junior high school teacher.

344 *Teaching in the Senior High School.* (4) I, II, S

Description: A course emphasizing methods of teaching; utilization of resources; evaluation, selection, preparation, and use of teaching materials. Some time will be devoted to a study of services available to teachers and the professional responsibilities of teachers.

372 *The Teaching of Reading.* (3) II

A study of major factors in learning to read. Objectives, readiness, abilities needed for silent and oral reading. Methods of word attack, diagnostic and corrective techniques. Testing and materials for each level.

375 *Introduction to Education of Exceptional Children.* (3) I, II, S

A survey of education and treatment of children having inferior or superior intellectual abilities; defects of vision, hearing, speech, or physical and neurological defects. Examination of research dealing with the exceptional child.

507 *Safety Education.* (3) S

A course designed to aid in developing skills and techniques essential to improving automotive and pedestrian safety. Psycho-physical tests, classroom work, behind-the-wheel driving, and other basic safety education are presented.

525 *Methods and Materials in Teaching the Orthopedically Handicapped, Including the Cerebral Palsied.* (3) I, II, S

Analysis of the special problems involved in teaching the orthopedically handicapped children and those who are cerebral palsied. Emphasis upon team relationships, planning the school day, adjustment and adaptation of curriculum methods and materials to meet the children's individual and group needs. Interpretation and use of professional records and research.

526 *Methods and Materials of Teaching the Mentally Retarded.* (3) I, II, S

Basic organization and planning of school programs for the classroom teacher of the "educable" and "trainable" mentally retarded. Major emphasis on curriculum development and teaching techniques. Observation in classes for the mentally retarded arranged.

527 *Survey of Physical Defects.* (3) I, II, S

A survey of causes, treatment, and educational implications of crippling conditions of school age children. Attention given to rehabilitation and life adjustment problems of individuals with single or multiple handicaps. Field trips to various facilities concerned with meeting the needs of the physically disabled.

530 *The Nature and Needs of Retarded Children.* (3) I, II, S

A critical examination of pertinent research in reference to the educational, physical, and psychological nature and needs of the educable and trainable mentally retarded child, including interpretation of psychological tests. Evaluation of the physical, social, emotional and mental characteristics of the retarded, to assist the classroom teacher to recognize the social potential of each child to the degree that the child with retarded mental development may become less of a burden to himself and society.

531 *The Methods and Materials of Teaching Visually Handicapped Children.* (3) I, II, S

An examination of the methods and materials currently used in the instruction of partially seeing and blind children. Emphasis is on the partially seeing child. This course will help the classroom teacher diagnose and meet more effectively the educational needs of the partially seeing student. The student with a visual impairment should thus be enabled to develop a more effective "self-image" which should enable him to make maximum use of his physical, mental, and emotional capacities to become a more useful person, both to himself and to the community at large.

538 *Advanced Arts and Crafts in the Elementary School.* (3) I, II, S

Planned to give the elementary teacher an understanding of teaching methods involved in, and construction of, art activities which would enrich the classroom program.

539 *The Elementary Curriculum.* (3)

The philosophy and techniques of curriculum construction and some practical work in construction.

540 *Problems in Diagnostic and Remedial Reading.* (3)

Prevention, diagnosis, and corrective measures for reading difficulties. Study of investigations and literature in this field.

541 *The Teaching of Reading in the Junior and Senior High School.* (2)

Diagnosis and corrective measures for junior and senior high schools. Study of plans of organizing a corrective program and suitable materials.

542 *Children's Literature.* (3) II
Planned to acquaint students with literature for children, kindergarten through grade 8. Review of interests at different ages. Discussion of types of literature—folklore, modern fairy tales, myths and legends, realistic stories, biography, and poetry.

543 *Teaching in the Kindergarten.* (3) I
The nature, development, and education of the child of kindergarten age. Organization, equipment, curriculum, and procedures used with children of this age. Regular periods are scheduled for observing and participating in the kindergarten.

544 *Visual Teaching.* (3) I, II, S
A course in methods and techniques of visual instruction. Emphasis is on the effective use of films, film strips, pictures, maps, graphs, slides, field trips, by means of lesson plans. Surveys are made of visual materials.

558 *Modern Educational Problems: Education of Handicapped Children.* (3)
Procedures to be used in the education of children who are handicapped physically, mentally, or emotionally. Attention is given to work with individual children as well as with groups.

563-576 *Modern Educational Problems.* (3 ea.)
A brief survey of some of the problems in modern education. Subtitles for each course follow:

563 *Modern Educational Problems.*
(General Elementary Curriculum)

564 *Modern Educational Problems.*
(General Secondary Curriculum)

565 *Modern Educational Problems.*
(General Curriculum)

566 *Modern Educational Problems.*
(General Language Arts Problems)

567 *Modern Educational Problems.*
(Art Education)

568 *Modern Educational Problems.*
(Reading Problems)

569 *Modern Educational Problems.*
(Moral and Spiritual Values in Education)

570 *Modern Educational Problems.* (Guidance)

571 *Modern Educational Problems.*
(General Social Studies Problems)

572 *Modern Educational Problems.*
(Vocational Education)

573 *Modern Educational Problems.*
(Testing Program Development)

574 *Modern Educational Problems.*
(General Development of School Philosophy)

575 *Modern Educational Problems.*
(Unclassified)

576 *Modern Educational Problems.*
(Unclassified)

596 *Science in the Elementary School.* (3) I
A background of elementary science usable with children in the first six grades. Includes planning units of work, organizing and using materials and references, making bibliographies for teachers and children, use of illustrative materials, and excursions.

712 *The Elementary School.* (3) II
Recent research and modern trends in teaching the skills and content subjects in the elementary school. Planned for supervisors, superintendents, principals, and teachers for better understanding of a modern elementary school.

714 *The Secondary School.* (3) I, II, S
A course designed to acquaint the secondary teacher and the administrator with the nature and function of the secondary school.

717 *The Junior High School.* (3) I, II, S
A study of the unique functions of the junior high school. Scope and sequence of the curriculum, school organization and guidance as related to the young adolescent will be considered. A course for principals, supervisors, teachers.

730 *Problems of the School Curriculum.* (3) I, II, S
Problems in the field of the school curriculum and in the preparation of instructional materials. Students enrolling in this course are required to leave on file with the College of Education a complete report of each problem studied. (May be repeated once to a maximum of 6 credits.)

732 *Principles of Curriculum Construction.* (3) I
Study of basic principles of curriculum development. Relationship of social and psychological factors to curriculum change. Survey of current approaches to curriculum organization. Consideration of means of curriculum development in school systems.

735 *The Core Program in the Secondary Schools.* (3) I, II, S
Deals with the philosophical and psychological bases of the core program and gives major emphasis to problems of teaching in the core class. A course designed for teachers, principals, supervisors.

740 *Teaching Reading and Related Language Arts in the Elementary School.* (3) I, II, S
A study of major factors in teaching reading, writing, spelling, speaking, listening and creative language activities. Consideration of materials, diagnostic, corrective and evaluative procedures for each area.

742 *Administration and Supervision of Public School Music.* (3)
A study of current trends in school music, curricula, testing programs, and other supervisory procedures.

743 *Advanced Methods and Materials in Music Education.* (2)
Survey and evaluation of new public school music methods and materials.

744 *History and Philosophy of Music Education.* (2)
A course designed to acquaint the student with the historical developments and basic philosophies in public school music.

745 *Organization of Audio-Visual Aids.* (3) II
Operation of an audio-visual program considering budgeting, training of personnel, duties of staff, sources of materials, and use of equipment. Previews are made of many audio-visual materials.

746 *Motion Pictures in Education.* (3)
The history of the educational motion picture, technique in the use of films, educational scenario writing, grading and scoring films, and motion picture appreciation.

749 *Extra-Curricular Activities.* (3) S
The underlying principles and common practices of the co-curricular activities programs as developed in public schools. Home room activities, assembly programs, and clubs are the three major sections of the course; other activities included when necessary.

770 *Seminar in Education of Exceptional Children.* (3) I, II, S
Study of philosophy, principles, trends, and research in education of exceptional children. Students will carry on an extensive study of a problem dealing with education of exceptional child.

780 *Independent Work in Elementary Education.* (2) I, II
An independent work course for students who have done a minimum of twelve semester hours of graduate work including Education 712 or 629. (May be repeated once to a maximum of 6 credits.)

781 *Independent Work in Secondary Education.* (3) I, II, S

An independent work course for students who have done a minimum of twelve semester hours of graduate work including Education 714 or 630. (May be repeated once to a maximum of 6 credits.)

790 *Research Problems in Secondary Education.* (3) I, II, S

An independent research course. Students confer individually with the instructor. Prereq: One year of graduate work. (May be repeated once to a maximum of 6 credits.)

791 *Research Problems in Elementary Education.* (3) I, II

An independent research course. Students confer individually with the instructor. Prereq: One year of graduate work. (May be repeated once to a maximum of 6 credits.)

BUSINESS EDUCATION

210 *Foundations of Business Education in the High School.* (3) I, II, S

The origin, the status, and the objectives of business education in the secondary school. Required of business education majors. *Musselman.*

511 *Teaching Secretarial Subjects.* (3) II, S

Special techniques and devices for teaching shorthand, typewriting, and secretarial office practice. Required of business education majors. *Musselman.*

512 *Teaching Bookkeeping and Accounting.* (3) I, S

Methods, materials, and techniques used in the teaching of bookkeeping and accounting. Required of business education majors. *Musselman.*

513 *Teaching Office Practice, Clerical Practice, and Office Appliances.* (3) I, II, S

Methods and materials in teaching office practice and procedures, clerical practice and the various machines commonly used in business offices. *Musselman.*

514 *Teaching General Business Subjects in the Secondary Schools.* (3) S

The aims and purposes of the general business course are studied. Analysis is made of the objectives of the general subjects, and methods and materials used in teaching them are emphasized. *Musselman.*

605 *Teaching Consumer Courses in the High School.* (3) I, S

Methods, materials, and techniques of teaching high school pupils the various aspects of consumer education. Emphasis is placed on procedures and the student should have a background of training in economics before taking the course. *Musselman.*

615 *Problems in Business Education.* (3) I, II, S

A study of advanced problems of interest to business teachers such as testing in business subjects, guidance, job studies, placement and follow-up, equipment, and supervision. May be repeated three times to a maximum of 12 credits.) *Musselman.*

618 *The Social Business Subjects in High School.* (3) I

An examination of the various social business subjects, to determine their contribution to the objectives of business education. *Musselman.*

621 *The Commerce Curriculum.* (3) II, S

A study of business subjects offered in the high school to determine their content and the place each should occupy in high school curricula. A course of study is developed for each subject. *Musselman.*

622 *Business Education in Colleges and Universities.* (3) S

Consideration of the problems pertaining to the teaching of business subjects at the college level. Consideration is also given to the development of curricula to meet teacher certification requirements in various states. *Musselman.*

623 *Administration and Supervision of Business Education.* (3) II, S

Duties and responsibilities of city and state supervisors, department heads, and others engaged in directing business education. *Musselman.*

626 *Classification and Possible Use of Community Resources in Business Education.* (3) I

Course provides for community analysis, and the development of possible ways and means to supplement the business education course in the secondary school with a study of vital community resources. *Musselman.*

774 *Seminar in Business Education.* (1) I, II, S

A study of current literature in business education with special reference to trends in this field. (May be repeated once to a maximum of 2 credits.) *Musselman.*

786 *Independent Work in Business Education.* (3) I, II, S

An independent work course for students who have done a minimum of 12 semester hours of graduate work, one-half of which must have been in business education. (May be repeated once to maximum of 6 credits.) *Musselman.*

DIVISION OF INSTRUCTION

James H. Powell (M.A., Kentucky, 1949), CHAIRMAN; *Assistant Professors:* Grace Anderson (M.A., Chicago, 1931), special assignment, Anna B. Peck (M.A., Kentucky, 1926), special assignment, E. Leon Porter (Ed.D., Kentucky, 1960), C. Leland Smith (Ed.D., Kentucky, 1962). *Instructors:* Estelle Adams (M.A., Columbia, 1930), Catherine Lytle (M.A., Kentucky, 1949), Fannie Miller (M.A., Kentucky, 1937), Sara Thomas (M.A., Kentucky, 1950), *Critic teachers:* Lois Alderson (A.B., Transylvania, 1953), Joeann Baker (A.B., Georgetown, 1954), Olive Barrett (M.A., Kentucky, 1949), Jack Conner (M.A., Kentucky, 1961), Jess Gardner (M.A., Kentucky, 1955), Ruth Haines (M.A., Columbia, 1931), Eugene Huff (M.A., Tennessee, 1954), Ada P. Jobert (M.A., Kentucky, 1959), D. C. Kemper (M.A., Kentucky, 1933), Ruth Osborne (M.A., Kentucky, 1939), Ruth Rankin (M.A., Kentucky, 1960), Margaret Roser (M.A., Kentucky, 1953), William E. Steiden (M.A., Kentucky, 1958), Richard Stofer (M.A., Kentucky, 1949), Elizabeth Taylor (B.S., Eastern Kentucky State College, 1954), Ayleene Whitehead (M.A., Kentucky, 1961).

Course Descriptions

333 *Student Teaching in the Elementary School.* (3-12) I, II, S

A course designed to give the student experience with and practice in the program of an elementary school. Actual work with children in all learning situations is the basic part of the course.

342 *Student Teaching in Art.* (3-12) I, II

Designed to give the student practical experience through observation, planning, teaching, and evaluating procedures. The student works with children on all grade levels under the guidance of the supervising teacher.

353 *Student Teaching in English.* (3-12) I, II, S

Observation and practice in teaching high school English. Included are objectives and content of English courses in high school, planning and methods of teaching, testing, textbook analysis, audio-visual material and equipment, and safety education.

354 *Student Teaching in Languages.* (3-12) I, II, S
Aims and objectives, courses of study, materials, methods, and testing in French, Spanish, and Latin. Includes observation and practice in the content field, safety education, audio-visual aids, and planning conferences with the supervising teacher.

355 *Student Teaching in the Sciences.* (3-12) I, II, S
Aims and objectives, courses of study, methods, tests, equipment, general science, biology, physics, and chemistry. The course includes observation and practice, safety education, audio-visual aids, and planning conferences with the supervising teacher. *Kemper.*

356 *Student Teaching in Mathematics.* (3-12 I, II, S
Aims and objectives, courses of study, materials, methods, and testing in algebra, geometry, and trigonometry. Includes observation and practice in the content field, safety education, audio-visual aids, and planning conferences with the supervising teacher.

357 *Student Teaching in the Social Studies.* (3-12) I, II, S
Includes a study of the development and present status of social studies programs, classroom methods and activities, teaching materials, testing and evaluation, professional aids to teachers, safety education, and observation and participation in actual classroom experiences.

358 *Observation and Practicum in Special Education.* (3) I, II, S
Basic orientation to student teaching in special education including observation of and practical experience with public school children who are receiving special education. Approximately two hours lecture-discussion and two-three hours observation and/or practicum.

359 *Student Teaching in Special Education.* (3) I, II, S
Supervised practice teaching in the use of special techniques used in working with individuals with exceptional education problems; speech handicapped, physically handicapped, visually retarded, hearing disability, mentally retarded, and the gifted. (May be repeated once to a maximum of 6 credits.)

369 *Student Teaching in Physical Education.* (3-12) I, II
For students who expect to teach and who meet the requirements for a major in physical education. Experience in working with children in physical education activities comprises basic part of course. Safety education also included.

377 *Student Teaching in Music.* (3-12) I, II
A course planned for teachers who expect to become either instructors or supervisors of music in the public schools. Observation, teaching, work on research problems, and conferences with the supervising teacher included.

393 *Student Teaching in Business Education.* (3-12) I, II, S
Student teaching in business subjects such as general business, shorthand, typewriting, and bookkeeping. Observation and practice in the content field. Safety education, audio-visual aids, and planning conferences with the supervising teacher. *Staff.*

724 *Organization and Supervision of Student Teaching.* (3) S
A course designed for teachers preparing to become supervising teachers. The basic principles apply to both elementary and secondary education. Includes a presentation of the experiences deemed important in developing students into effective teachers.

DIVISION OF VOCATIONAL EDUCATION

FACULTY

Professors: Carsie Hammonds (Ph.D., Cornell, 1930), CHAIRMAN; Walter Maurice Baker (M.A., Kentucky, 1931), Ethel L. Parker (Ph.D., Ohio State, 1944), special assignment. *Associate Professors:* Harold Roper Binkley (Ed.D., Kentucky, 1955), Floyd Cox (M.S., Kentucky, 1942), Anna M. Gorman (Ed.D., Illinois, 1959), Carl Fletcher Lamar (Ph.D., Kentucky, 1957), George Lowell Luster (Ph.D., Ohio State, 1954), on leave. *Assistant Professors:* Evangeline Smith Kelsay (M.A., Kentucky, 1948), Alta Inez Haile (M.S., Kentucky, 1952). *Instructors:* William Ray Bingham (M.S., Kentucky, 1955), Herbert Bruce, Jr. (M.S., Kentucky, 1959), Bernard Thomas Fagan (Ed.S., Kentucky, 1960), Leonard C. McDowell (M.A., Eastern, 1956), Devert Owens (M.S., Kentucky, 1958).

Course Descriptions

580 *Teaching Vocational Agriculture.* (15) I, II
Preparation for teaching of agriculture. About one-half of the course is practice. *Hammonds, Binkley, Lamar, and Supervising Teachers.*

581 *Adult-Farmer Schools and Young-Farmer Courses in Agriculture.* (3) I, II
A general introduction to adult-farmer schools and young-farmer courses with some observation of work in both of these fields. *Hammonds, Binkley, Lamar, and Supervising Teachers.*

582 *Problems in Agricultural Education.* (3) I, II, S
Class work on current problems in agricultural education common to special groups of students (not individual-problem work). (May be repeated once to a maximum of 6 credits.) *Hammonds, Binkley, and Lamar.*

585 *Farm Practice Supervision.* (1) I, II, S
Practice and directed study in supervising farming programs in vocational agriculture. *Hammonds.*

670 *Method in Teaching Vocational Agriculture.* (3) S
The principles of method applied to the teaching of agriculture. Prereq: Experience in teaching vocational agriculture. *Hammonds.*

671 *Teaching Prevocational Agriculture.* (3)
Aims, purposes, and methods of teaching prevocational agriculture. Each student works out the content of a course, including selecting the teaching materials. *Hammonds.*

672 *Determining Content in Vocational Agriculture.* (3) S
Interpretation of local data as a basis for course building. Each student works out the content of a four-year course in vocational agriculture.

675 *Modern Problems in Agricultural Education.* (3) I, II, S
Class work (not individual-problem work) on modern problems in agricultural education. (May be repeated twice to a maximum of 9 credits.) *Hammonds.*

677 *Advanced Problems in Agricultural Education.* (3) I, II, S
Specific problems selected according to the needs of the individuals. *Staff.*

678 *Selecting Teaching Materials.* (3) S
Selection of specific references and other teaching materials to be used in the teaching of vocational agriculture. *Luster.*

679 *Adult-Farmer Schools.* (3) S
Preparation for teaching adult farmers; organization of adult-farmer schools, curriculum content, method of teaching, and follow-up work. *Lamar.*

680 *Directing Farm Practice.* (3) S
Supervised farming as a method of teaching; standards, planning, supervision, and records. *Binkley.*

681 *Teaching Farm Shop.* (3) S
A study of necessary content for shop, plans for securing and equipping the shop, and methods of teaching farm shop. *Cox.*

682 *Young-Farmer Schools.* (3) S
Content and method of teaching young-farmer courses in vocational agriculture. *Cox.*

795 *Research Problems in Agricultural Education.* (3) I, II, S
Individual problems of importance to agricultural education. (May be repeated twice to a maximum of 9 credits.) *Staff.*

DISTRIBUTIVE EDUCATION

515 *Problems in Distributive Education.* (3) I, II, S
Problems in teaching vocational distributive education in day, part-time, and evening schools. The problems are selected in accordance with the needs and desires of the students. Prereq: Ed. 400 and 405. (May be repeated once to a maximum of 6 credits.)

516 *Problems of the Coordinator in Industrial and Distributive Education.* (2) I, II, S
A course for coordinators of Industrial and Distributive Education, including planning of local programs, use of advisory committees, selection and arrangement of teaching materials, and over-all planning and operation of the program. (May be repeated once to a maximum of 6 credits.)

517 *Determining Teaching Content in Distributive Education.* (3) I, II, S
Course construction in the field of distributive education. This course is planned to meet the needs of persons engaged as instructors in the field of distributive education.

528 *Technique of Teaching Distributive Education.* (3) I, II, S
A study of the methods of teaching as applied to distributive education. The purpose of the course is to train prospective teachers to teach in the field of distributive education.

HOME ECONOMICS EDUCATION

362 *Student Teaching in Home Economics.* (9) I, II
Practical application of methods in teaching various phases of home economics. Prereq: Ed. 586.

586 *Technique of Teaching Home Economics.* (3) I, II
A study of methods of teaching as applied to home economics.

588 *Adult Education in Home Economics.* (3) I, II, S
Problems in teaching vocational homemaking in day, part-time, and evening schools. Prereq: 586; parallel 362.

590 *Problems in Home Economics Education.* (3) S
Problems in teaching home economics for high school students and adults. The course may include such subjects as teaching in, and supervision of, the school community cannery and the teaching of housing. (May be repeated twice to a maximum of 9 credits.)

683 *Current Problems in Home Economics Education.* (3) II, S
Recent developments in home economics education. Prereq: Ed. 586 and 362; experience in teaching.

684 *Modern Trends in Home Economics Education.* (3) I, S
A basic course for students in home economics education. The course includes the development of home economics education and modern trends in curriculum, methods of teaching, and evaluation.

685 *Home Economics Curriculum Construction.* (3) S
A study of the underlying principles of curriculum building for junior and senior high school and adult education in home economics. Prereq: Ed. 586 and 362.

686 *Evaluation in Home Economics Education.* (3) I, S
A course to acquaint teachers of home economics with techniques used in measuring attainment in home economics in the junior and senior high school and college.

687 *Home Economics Supervision.* (3) I, S
A course planned primarily to help prepare teacher-trainers and supervisors of home economics education. Prereq: Ed. 586 and 362; experience in teaching; approval of instructor.

693 *Directed Supervision in Home Economics Education.* (3) I, II
This course includes practice in teaching for observation by others, student teaching, and school visiting. Prereq: Two years of teaching experience and Ed. 687.

775 *Seminar in Home Economics Education.* (3) I, II, S
Individual investigations and reports on special problems in home economics education. (May be repeated twice to a maximum of 9 credits.)

787 *Independent Work in Home Economics Education.* (3) I, II, S
An independent work course for students who have done at least 12 semester hours of graduate work, one course of which must have been in home economics education. (May be repeated once to a maximum of 6 credits.)

INDUSTRIAL EDUCATION

106 *Trade Analysis.* (2) S
A course planned to meet the needs of vocational teachers in the fields of coordination, shop instruction, and related subjects in connection with day, part-time, and evening schools.

107 *Shop Management Problems.* (2) S
Industrial education in the school shop. The course evaluates all types of activities in connection with this part of the educational program and gives due weight to each factor.

108 *Conference Leader Training.* (2)
Methods of presenting subject matter so as to allow free and constructive thinking. The conference method does this by developing situations and case studies which are handled by the Box-Head Analysis system of control.

109 *Instructional Material in Industrial Education.* (2) I, II, S
Selecting and arranging course material in trade and industrial subjects. Preparation of instruction and check sheets with emphasis on their uses. Prereq: Ed. 106.

110 *Principles of Trade Teaching.* (2) I, II, S
This course deals with the fundamentals of learning and teaching that have special significance in trade and technical subjects.

116 *Audio-Visual Aids, Their Use in Teaching Industrial and Distributive Education.* (2) I, II, S
This course is designed to meet the needs of industrial and distributive education teachers. The theory of demonstration teaching will be discussed, and practice will be done by the students in the class. The course will include instruction in the use of these aids in teaching: film projectors, mock-ups, cutaways, flannelboard, bulletin board, sample specimens, tape recorders, and field trips. Instruction will be given in the selection of various aids as a part of the teaching program.

352 *Student Teaching for Industrial and Educational Training Directors.* (9) I, II
Designed to give the student practical experience through observation, planning, teaching, and evaluating procedures.

422 *Organization and Operation of Business and Industrial Education Programs.* (3) I, II, S
Training in the organization and operation of business and industrial education training programs, including theory and practice.

DIVISION OF VOCATIONAL EDUCATION

423 *Supervised Work Experience in Industry or Business.* (3) I, II, S

For students planning for careers as vocational industrial educational training directors. Includes education and training practices under the supervision of college and plant personnel. (May be repeated three times to a maximum of 12 credits.)

518 *Methods in Industrial Education.* (2) I, II, S

The most approved methods in instructional management, including lesson planning, in the field of vocational industrial education. (May be repeated once to a maximum of 4 credits.)

523 *Vocational Guidance.* (2) I, II, S

Course content includes units on aims and purposes, individual inventory, and counseling techniques. Emphasis is placed on occupational information and guidance, placement, follow-up, and organization and administration of a guidance program.

524 *Modern Industrial Analysis.* (2) I, II, S

Modern industrial organizations; trends in industrial educational policies; the proper approach to and analysis of these problems as they affect the industrial vocational teacher.

529 *Evaluation in Industrial and Distributive Education.* (2) I, II, S

The theory and practice of standardized, classroom and performance testing as a means of measuring student achievement. Opportunity to practice will be provided in keeping with each teacher's work assignment. Prereq: Must be employed as teacher in Trade or Distributive Education.

534 *Organization and Operation of Part-time and Evening Classes.* (2) I, II, S

A course for administrators, coordinators, and teachers in part-time and evening industrial education. Covers the duties of a coordinator in cooperative training programs.

535 *Principles and Philosophy of Industrial Education.* (2) I, II, S

A course planned primarily for the advanced student in industrial education. It covers the general philosophy of vocational education as it relates to the problems and principles of industrial education. (May be repeated once to a maximum of 4 credits.)

536 *Surveys in Industrial Education.* (2) I, II, S

This course deals with the basic methods and techniques used in making a survey to determine the needs for trade and industrial education. Emphasis is placed on gathering, evaluating, and interpreting the data.

537 *Special Problems in Industrial Education.* (2) I, II, S

The supervised study of approved problems in industrial education on a research basis.

VOCATIONAL EDUCATION

694 *The Administration of Vocational Education.* (3) I, II

A course designed for superintendents, high-school principals, and other administrators. Its purpose is to train for administering and supervising vocational education in schools. *Hammonds and Ginger.*

695 *Special Problems in Vocational Education.* (3) I, II, S

An independent work course for students interested in vocational education. Students make individual investigations and report on special problems. *Hammonds and Staff.*

776 *Seminar in Vocational Education.* (2) I, II, S

A critical study of selected problems in vocational education. The course is open only to students with experience in the field. (May be repeated once to a maximum of 4 credits.)





Commerce

THE COLLEGE OF COMMERCE at the University of Kentucky was established in 1925. It grew out of Economics which formerly was offered in a Department of the College of Arts and Sciences. For a number of years the four subjects of Economics, Political Science, History, and Sociology were all offered in the same Department. In 1918 the Department of Economics and Sociology was established and this Department from its inception began to offer also courses in Business Administration. In the spring of 1925 all courses in Economics and Business Administration were assigned to the newly established College of Commerce. The College occupies White Hall and parts of other buildings on the Lexington campus.

In the spring of 1928 the Board of Trustees authorized the organization and maintenance of a Bureau of Business Research. The chief purposes of this Bureau are to provide definite contacts with practical economic problems in order to vitalize the subject matter dealt with in the classroom and to serve the interests of business and of the state upon invitation.

Aims and Purposes of the College. The aims of the College of Commerce are twofold. In the first place the offerings in the field of Economics, together with some of the offerings in the fields of Commerce or Business Administration, provide an understanding of that segment of human behavior which is concerned with securing a living. Economic activity is not only a large proportion of all human activity but it is also basic in the sense that it must be adequate before artistic and other idealistic wants can be satisfied. An analysis of human wants, utilities of goods and services, costs and sacrifices of production, values and prices of commodities, and the distribution of wealth, necessarily constitutes an essential part of a liberal education.

In the second place the offerings in the two fields of Economics and Business Administration provide professional and vocational training for a great variety of positions in business and governmental bureaus. Students are afforded the opportunity of preparing themselves as professional economists or as specialists in taxation, industrial relations, finance, statistics, accounting, management, marketing, advertising, secretarial work, or as managers of their own businesses.

In the first two years of the several curricula setting forth the requirements for the degree of Bachelor of Science in Commerce, the student is called upon to take a number of basic liberal arts courses with a view to providing breadth of education and a foundation for the more specialized training that is allowed in the last two years.

A more definite understanding of the objectives of professional training will come from an examination of the various curricula and fields of specialization outlined below. It should be noted that the large amount of elective work allowed in some of the curricula makes it possible to combine a business program with other professional fields or with groups of liberal arts courses.

Admission. To be admitted to the freshman class of the College of Commerce students must meet the general admission requirements of the University.

Students transferring to the College of Commerce from another college on the campus or from another institution must have a scholastic standing of "C" or better.

Student Organization and Placement Activities. The Commerce Employment Association is an aggressive organization and operates under the supervision of a permanent secretary who is a member of the faculty. Its chief purpose is to find employment for graduates and better positions for alumni. It has been very successful.

Beta Gamma Sigma, a national honorary scholarship fraternity, was organized at the University of Kentucky in the spring of 1928. Seniors must rank in the upper ten per cent in scholarship to be eligible for membership.

REQUIREMENTS FOR GRADUATION

The degree of Bachelor of Science in Commerce is conferred upon students who meet the requirements of any one of the curricula offered by the College of Commerce. The minimum number of semester credits required for graduation is 130 except under the Industrial Administration Curriculum, which requires 142. The

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Cecil Clayton Carpenter, M.S., Ph.D., is dean of the College of Commerce.

scholarship standing must be at least 2.0. All commerce students are urged to take some foreign languages. Physical Education and ROTC are permitted as electives in all curricula.

The courses listed in the General Business Curriculum constitute a core curriculum, because with minor exceptions, these courses are required in all curricula.

Curricula

GENERAL-BUSINESS CURRICULUM

The aim of this curriculum is (1) to provide some breadth of education and the functional knowledges necessary to deal with specialized business courses (2) to assure an understanding of the fundamental subject matter of economics and business administration, and (3) to provide a liberal amount of elective work so as to enable the student (a) to pursue a specialized business program, (b) to elect courses from several fields of business, or (c) to pursue courses in fields other than economics and commerce. The electives should be taken in accordance with a definite plan, and students should, therefore, seek advice of faculty members in formulating a satisfactory program.

Freshman and Sophomore Years

	Sem. Hrs.
English 101 and 102, English Composition	6
Economics 102, Economic History of Europe or Economics 103, Economic History of the U. S.	3
Mathematics 111, College Algebra	3
Commerce 107 and 108, Principles of Accounting	6
History, American or European	3
Mathematics 121, Mathematics of Finance	3
Political Science	3
Philosophy, Psychology, Sociology	6
Natural Science	6
Economics 251, and 252, Principles of Economics	6
Commerce 260, Principles of Marketing	3
English 201, Business English	2
Electives	14
	66

Junior and Senior Years

Economics 402, Labor Economics	3
Economics 505, Money and Banking	3
Economics 507, Statistical Method	3
Commerce 517, Corporation Finance	3
Commerce 509 and 510, Business Law	6
A course in Accounting	2 or 3
Economics 504, Public Finance	3
Commerce 437, Industrial Management	3
Economics 516, Business Cycles	3
Electives including three courses in Economics or Commerce and three courses in other departments	35 or 34
	64

THE ECONOMICS CURRICULUM

The following program is offered for students wishing to become research economists, economic analysts or graduate students in economics. It is appropriate for those wanting to enter state and federal government service or private industry. It is recommended especially for those wishing to become teachers.

Freshman and Sophomore Years

	Sem. Hrs.
English 101 and 102, English Composition	6
Economics 102, Economic History of Europe, *or* Economics 103, Economic History of the United States	3
Commerce 107 and 108, Principles of Accounting	6
Mathematics 111, College Algebra	3
Natural Science or Mathematics	6
Philosophy	3
History	3
Political Science	3
Psychology or Sociology	6
Economics 251 and 252, Principles of Economics	6
Commerce 260, Principles of Marketing	3
Electives	14
	65

Junior and Senior Years

Economics 402, Labor Economics	3
Economics 504, Public Finance	3
Economics 505, Money and Banking	3
Economics 507, Statistical Method	3
Commerce 509, Business Law	3
Economics 516, Business Cycles	3
Economics 515, Intermediate Economic Analysis	3
Commerce 517, Corporation Finance	3
Economics 527, International Economics *or* Economics 565, Comparative Economic Systems	3
Economics 386, Economic Research	3
A course in Management	3
An additional course in accounting or statistics	3
Non-Commerce groups, 12 hours in each of 2 departments *or* 18 hours in 1 department outside the College of Commerce, courses to be selected upon the recommendation of the department involved and with the approval of the student's faculty advisor	18 or 24
Electives	5 or 11
Total Semester Hours: 130	65

BANKING AND FINANCE CURRICULUM

This Curriculum provides an arrangement of courses useful to those who seek employment in financial institutions. It emphasizes the economics of finance rather than the routines and procedures. Management decisions in this area require a knowledge of the subject matter listed below.

Freshman and Sophomore Years

Courses as required in the General Business Curriculum except electives	60
Commerce 296 and 297 Intermediate Accounting	6
	66

Junior and Senior Years

Economics 402, Labor Economics	3
Economics 505, Money and Banking	3

Economics 507, Statistical Method	3
Commerce 517, Corporation Finance	3
Commerce 509 and 510, Business Law	6
Commerce 437, Industrial Management	3
Economics 504, Public Finance	3
Economics 516, Business Cycles	3
Commerce 531, Investments	3
Commerce 543, Life Insurance *or* Commerce 544, Property and Casualty Insurance	3
Economics 554, Urban Real Estate	3
Electives including 3 hrs. in upper division courses outside the College	28
	64

Suggested Electives

Economics 503, Transportation	3
Commerce 529, Credit and Statement Analysis	2
Commerce 547, Income Tax Procedure	3
Commerce 556, Business Reports	2
Economics 560, Business Combinations	2

Total Semester Hours: 130

PERSONNEL MANAGEMENT CURRICULUM

An arrangement of courses to be taken by students wishing to enter the professional field of Personnel Management and Industrial Relations. This aspect of management requires an understanding of human values and personal objectives. The courses listed represent a minimum foundation for those wishing to qualify for the various personnel positions in industry and government. Typical positions in this field are: job wage analyst, interviewer, personnel director, industrial relations manager, job evaluator, wage and salary administrator.

Freshman and Sophomore Years

	Sem. Hrs.
English 101 and 102, English Composition	6
Economics 102, Economic History of Europe or Economics 103, Economic History of the U. S.	3
Mathematics 111, College Algebra	3
Commerce 107 and 108, Principles of Accounting	6
History, American or European	3
Mathematics 121, Mathematics of Finance	3
Political Science	3
Psychology	4
Natural Science	6
Economics 251 and 252, Principles of Economics	6
Commerce 260, Principles of Marketing	3
English 201, Business English	2
Electives	18
	66

Junior and Senior Years

Economics 402, Labor Economics	3
Economics 505, Money and Banking	3
Economics 507, Statistical Method	3
Economics 530, Labor Legislation	3
Economics 555, Industrial Relations	3
Economics 566, Personnel Problems	2
Economics 579, Collective Bargaining	3
Commerce 509 and 510, Business Law	6
Commerce 517, Corporation Finance	3
Commerce 437, Industrial Management	3
Commerce 445, Office Management	3
Psychology 540, Introduction to Industrial Psychology	3
Electives including two courses in Commerce	26
	64

Suggested Electives:

Economics 515, Intermediate Economic Analysis	3
Philosophy 230, Ethics	3
Political Science 578, Public Pers. Adm.	3
Psy. 201, Individual Differences	3
Psy. 544, Social Psychology	3
Psy. 541, Psych. of Indust. Pers. Proc.	3
Psy. 521, Abnormal Psychology	3
Sociology 240, Collective Behavior	3
Sociology 220, The Community	3
Commerce 543, Life Insurance	3

Total Semester Hours: 130

MARKETING, MERCHANDISING, ADVERTISING CURRICULUM

In addition to courses in these fields offered by the College of Commerce, courses offered by the Departments of Psychology, Journalism, Art, and Home Economics, are either required or suggested as electives. The student is required to select either the Marketing and Merchandising option or the Advertising option in the junior year.

Freshman and Sophomore Years

	Sem. Hrs.
Courses as required in the General Business Curriculum	66

Junior and Senior Years

Economics 402, Labor Economics	3
Economics 505, Money and Banking	3
Economics 507, Statistical Method	3
Commerce 517, Corporation Finance	3
Commerce 509 and 510, Business Law	6
Commerce 437, Industrial Management	3
Commerce 262, Principles of Advertising	3
Commerce 263, Salesmanship	2
Commerce 519, Retail Merchandising	3
Commerce 549, Market Research	3
Marketing and Merchandising *option*	
Commerce 361, Marketing Management	3
Commerce 529, Credit and Statement Analysis	2
Commerce 536, Sales Management	3
Electives	24
	64

Suggested Electives:

Commerce 539, Industrial Purchasing	3
Commerce 541, Industrial Marketing	3
Economics 503, Transportation	3
Economics 516, Business Cycles	3
Home Economics 120, Textiles	2

Advertising option:

Journalism 563 & 564, Advertising Typography and Layout	3
Journalism 201, Etymology	3
English 205, Advanced Composition	3
Art 247, Art in Advertising	2
Commerce 540, Problems in Advertising	2
Electives	19
	64

Suggested Electives:

Journalism 561, Newspaper Advertising and Promotion	3
Journalism 541, Public Relations	3
Commerce 361, Marketing Management	3
Commerce 536, Sales Management	3
Commerce 541, Industrial Marketing	3

Total Semester Hours: 130

COMMERCE

ACCOUNTING CURRICULUM

This Curriculum is intended to prepare students for either industrial or public accounting. Students wishing to take the C.P.A. examination should consult the various state laws in order to comply with experience and residence requirements.

Freshman and Sophomore Years

	Sem. Hrs.
Courses as required in the General Business Curriculum except electives	60
Commerce 296 and 297, Intermediate Accounting	6
	66

Junior and Senior Years

Economics 402, Labor Economics	3
Economics 505, Money and Banking	3
Economics 507, Statistical Method	3
Commerce 517, Corporation Finance	3
Commerce 509 and 510, Business Law	6
Commerce 437, Industrial Management	3
Economics 504, Public Finance	3
Commerce 513, Auditing	3
Commerce 518, Cost Accounting	3
Commerce 547, Income Tax Procedure	3
Commerce 546, Special Accounting Problems	3
Electives including 3 hrs. in upper division courses outside the College	28
	64

Suggested Electives:

Commerce 508, Accounting Theory	2
Commerce 529, Credit & Statement Analysis	2
Commerce 532 and 533, C.P.A. Prob.	6
Commerce 531, Investments	3
Commerce 559, Governmental Accounting	2
Commerce 544, Property & Casualty Ins.	3
Commerce 556, Business Reports	2
Commerce 570, Controllership	3
Economics 524, State and Local Taxation	3

INDUSTRIAL ADMINISTRATION CURRICULUM

This Curriculum is designed to prepare students for positions in production management. The list of required courses recognizes the necessity of providing an understanding of the primary subject matter of business administration, the principles of management, and in addition the basic principles and characteristics of the materials with which industry deals. Hence the curriculum includes courses concerned with engineering and the physical sciences in addition to required commerce subjects.

Freshman and Sophomore Years

	Sem. Hrs.
English 101 and 102, English Composition	6
Mathematics 111, College Algebra	3
Psychology 100, 101, Introduction to Psychology	4
Commerce 107 and 108, Principles of Accounting	6
Mathematics 112, Plane Trigonometry	3
Mathematics 113, Analytics and Calculus	4
Chemistry, one year course with laboratory	8-10
Physics, one year course with laboratory	8-10
Engineering 101, Engineering Graphics	2
Economics 251 and 252, Principles of Economics	6
Commerce 260, Principles of Marketing	3
English, Philosophy, Humanities	7-3
Electives	9
	69

Junior and Senior Years

English 203, Composition for Technical Students	3
Economics 402, Labor Economics	3
Economics 505, Money and Banking	3
Economics 507, Statistical Method	3
Commerce 509, Business Law	3
Commerce 517, Corporation Finance	3
Commerce 518, Cost Accounting	3
Economics 534, Advanced Economic History	3
Commerce 437, Industrial Management	3
Commerce 495, Business Policy	3
Selected upper division courses in Political Science, Philosophy, Psychology, Sociology	6
Four courses from the following:	12
Commerce 296, Intermediate Accounting 3	
Economics 516, Business Cycles 3	
Commerce 541, Industrial Marketing 3	
Economics 555, Industrial Relations 3	
Commerce 571, Statistical Quality Control 3	
Commerce 572, Sampling Techniques 3	
Commerce 573, Automatic Data Processing 3	
Economics 579, Collective Bargaining 3	
Electives in Economics or Commerce	9
Electives in Engineering, Mathematics or Physical Sciences	16
	73

Total Semester Hours: 142

SECRETARIAL CURRICULUM

The Secretarial Curriculum is designed to prepare the student for various types of office positions including secretarial, stenographic, filing, general clerical, machine operation, typewriting, and office supervision. In addition to specialized training in office techniques and skills, it provides a liberal education which is desirable in the types of work enumerated above. The electives enable a student to pursue his special aptitudes and interests.

While the curriculum is designed primarily for the training of office workers, opportunity is provided also for the training of commerce teachers. Enough electives are available to include in the program education and other courses usually required for certification. It will be necessary, however, for the student to check certification requirements in the state in which he expects to teach. The Head of the Department of Business Education and the Dean of the College of Education will counsel with him on certification requirements in the various states. Attention is specifically called to a program for commerce teachers offered by the College of Education.

Freshman and Sophomore Years

	Sem. Hrs.
English 101 and 102, English Composition	6
Commerce 107, Principles of Accounting	3
Commerce 109, Secretarial Accounting	3
English: Speech, Composition, or Literature	3
Commerce 112 and 113, Secretarial Pract., Shorthand	6
Commerce 117 and 118, Secretarial Pract., Typewriting	4
American or European History	3
Political Science	3

Philosophy, Psychology, Sociology	6
Commerce 114 and 115, Advanced Secretarial Practice	6
Economics 251 and 252, Principles of Economics	6
English 201, Business English	2
Electives	15
	66

Junior and Senior Years

Natural Science or Mathematics	6
Economics 505, Money and Banking, or Commerce 517, Corporation Finance	3
Commerce 260, Principles of Marketing	3
Economics 507, Statistical Method	3
Commerce 263, Salesmanship	2
Commerce 119, Office Appliances and Procedures	3
Commerce 301, Secretarial Job Training	1
Commerce 437, Industrial Management	3
Commerce 556, Business Reports	2
Commerce 509, Business Law	3
Electives including 21 credits outside the College (13 for men)	35
	64

Suggested Electives:

Commerce 108, Principles of Accounting	3
Mathematics 111, College Algebra	3
Mathematics 121, Mathematics of Finance	3
Commerce 262, Principles of Advertising	3
Economics 504, Public Finance	3
Commerce 445, Office Management	3
Journalism 201, Etymology	3
English 512, Current English Usage and Grammar	3
Economics 102, Economic History of Europe	3
Economics 103, Economic History of the U.S.	3
Foreign Language	3

Total Semester Hours: 130

ECONOMICS

FACULTY

Professors: Cecil Clayton Carpenter (Ph.D., Illinois, 1932), DEAN; Wendell Everett Beals (M.B.A., Northwestern, 1931), Lucian Hugh Carter (Ph.D., Virginia, 1930), Ernest Merrill DeVoe (Ph.D., Ohio State, 1946), John Douglas (Ph.D., Cornell, 1960), Herbert Walter Hargreaves (Ph.D., Duke, 1941), Robert Dee Haun (J.D., Michigan, 1939), William Warren Haynes (D.C.S., Harvard, 1952), Walter Wilson Jennings (Ph.D., Illinois, 1919), Robson Duncan McIntyre (M.S., Illinois, 1923), James W. Martin (M.A., Peabody, 1921), Distinguished Professor, Joseph Logan Massie (Ph.D., Chicago, 1955), John Talbot Masten (Ph.D., North Carolina, 1942), Ralph Russell Pickett (Ph.D., Chicago, 1930), Merrell Rodman Sullivan (Ph.D., North Carolina, 1942), Ruth Edith Thomas (Ph.D., Chicago, 1935). *Associate Professors:* Carl Cabe (Ph.D., Illinois, 1952), Virgil Langdon Christian, Jr. (Ph.D., Kentucky, 1956), Herman Adam Ellis (D.B.A., Indiana, 1954), Carlos C. Erwin (Ph.D., Illinois, 1952), Harold W. Guthrie (Ph.D., Michigan, 1955), Homer Collier Lewis (M.B.A., Michigan, 1930; L.L.B., Louisville, 1934), Don M. Soule

(Ph.D., Wisconsin, 1953), Robert H. Stroup (Ph.D., Iowa, 1953), William Allan Tolman (M.A., Kentucky, 1932). *Assistant Professors:* Robert O. Brown (M.B.A., C.P.A., Chicago, 1962), William Wallace Ecton (M.B.A., Kentucky, 1960), Charles William Hultman (Ph.D., Iowa, 1960), Margaret Bell Humphreys (M.A., Kentucky, 1943), Clyde L. Irwin (M.B.A., Kentucky, 1957), David C. McMurtry (M.A., Kentucky, 1947), Walter H. Pearce (M.A., Michigan, 1947), Lawrence X. Tarpey (M.B.A., Indiana, 1955), William Godfrey Wheeler (L.L.B., Kentucky, 1940), Laszlo Zsoldos (Ph.D., Ohio State, 1961). *Instructors:* Dorothy Seaberg Hope (M.S., North Carolina, 1948), Delores Moore (M.B.A., Ohio, 1958), Frank Dewey Peterson (A.B., Centre, 1924; LL.D., Georgetown, 1953).

Course Descriptions

102 *Economic History of Europe.* (3) I, II
A survey of conditions preceding the modern period with a more intensive study of the subsequent development of agriculture, industry, and finance. Open only to freshmen and sophomores. *Erwin.*

103 *Economic History of the United States.* (3) I, II
A brief sketch of economic life in the colonies, followed by a more detailed account of the national evolution in agriculture, manufacture, transportation, commerce, and finance. Open only to freshmen and sophomores. *Erwin.*

104 *Resources and Industries.* (3) I, II
The economic factors which govern the utilization of world resources and the exchange of products. *Erwin.*

107 *Principles of Accounting.* (3) I, II
Instruction in the science and adaptation of the accounts of going concerns, together with sufficient practice to acquire proficiency. *Brown and others.*

108 *Principles of Accounting.* (3) I, II
Continuation of Com. 107. *Brown and others.*

240 *Personal and Family Finance.* (2) I
Uses and abuses of credit, insurance on persons and property, investing what you save, wills, trusts, taxes, social security, buying versus renting, consumer information, wise buying. *Sullivan.*

251 *Principles of Economics.* (3) I, II
An introductory course: The Theory of Income and Employment and Value Theory. Not open to freshmen. *Hargreaves and others.*

252 *Principles of Economics.* (3) I, II
The major emphasis is on distribution theory and public policy. Prereq: Econ. 251. *Hargreaves and others.*

386 *Economic Research.* (3) II
The sources, uses and application of statistical information in the analysis of economic problems. Prereq: Econ. 252 and 507. *Stroup.*

395 *Individual Work in Economics.* (1-6) I, II
Students confer individually with the instructor. *Staff.*

396 *Tutorial Work in Economics.* (1) I, II
Open only to Arts and Sciences majors. *Masten.*

402 *Labor Economics.* (3) I
Insecurity, wages and income, substandard workers, industrial conflict; wage theories, the economics of collective bargaining; unionism in its structural and functional aspects; recent developments. Prereq: Econ. 252. *Carter and Cabe.*

503 *Transportation.* (3) I
Railways, waterways, highways, and airways. Rates, service, management, and regulation. Prereq: Econ. 252. *Tolman.*

504 *Public Finance.* (3) I
A study of public receipts; public expenditures; the principles of taxation with special reference to their application to the tax systems, federal and state. Prereq: Econ. 252. *Sullivan and Soule.*

505 *Money and Banking.* (3) I, II
Nature and functions of money; the importance of credit; relation of money and credit to prices, bank deposits, and loans; complete study of our national banking system. Prereq: Econ. 252. *Masten.*

507 *Statistical Method.* (3) I
Introduction to the sources of business data, the use of calculating machinery, tabulation, simple charts and graphs, the averages, dispersion, correlation, and the time series analysis. *Christian and Stroup.*

515 *Intermediate Economic Analysis.* (3) I
The output, price and factor proportion problems of firms in different market situations; some problems in industry behavior coordination of basic economic processes. *Pearce.*

516 *Business Cycles.* (3) II
The nature and characteristics of the economic factors which underlie the cyclical fluctuations in business conditions and the methods of business and investment forecasting. Prereq: Econ. 252. *Haynes.*

524 *State and Local Taxation.* (3) II
Classified property taxes; separation of sources of revenue; taxation of banks, forests, public utilities, mines, and rural and urban real estate; income, inheritance, and sales taxes. *Martin.*

525 *Economic Development.* (3) II
A comparative study of economic progress in selected countries; growth patterns, theories of development and capital formation, interaction of social and economic change. Prereq: Econ. 252. *Guthrie.*

527 *International Economics.* (3) II
Free trade, protectionism, preferential tariffs, colonial tariff policies, dumping, commercial treaties, control of raw materials, international investments and the movement of capital, international debts, and reparation. Prereq: Econ. 252. *Sullivan.*

530 *Labor Legislation.* (3) II
The status of labor law, mediation, conciliation, arbitration, the minimum wage, the eight-hour day, unemployment relief, safety and health legislation, and social insurance. Prereq: Econ. 252. *Cabe.*

534 *Advanced Economic History of the United States.* (3) II
Population growth, immigration, territorial expansion, agriculture, manufactures, tariff, labor, industrial combinations, commerce, transportation facilities, money and banking, and conservation. *Erwin.*

550 *Advanced Business and Economic Statistics.* (3) II
Advanced time series analysis, multiple and partial correlation, elementary analysis of variance and experimental design. Prereq: Econ. 507. *Christian.*

554 *Urban Real Estate.* (3) II
Urban land economics; the real estate business; essentials of real estate law and contracts; financing of real estate transactions, property valuation and appraisal, the management of real estate properties. Prereq: Econ. 252. *Pickett.*

555 *Industrial Relations.* (3) II
Historical development of industrial relations; the economic implications of job analysis, recruitment, selection and training for industry; wages, hours, promotion and health policies; employee representation, collective bargaining; union-management cooperation. Prereq: Econ. 252. *Carter.*

560 *Business Combinations.* (2) II
Forms of combinations; the problem of monopoly; federal and state anti-trust legislation and court decisions. Prereq: Econ. 252. *Tolman.*

565 *Comparative Economic Systems.* (3) I
A study of capitalism, socialism, fascism, communism, and cooperation, with attention to current experiments in economic planning. Prereq: Econ. 252. *Masten.*

566 *Personnel Problems.* (2) II
A case course in the problems of supervision of employees, and the personnel policies which promote productive efficiency. Prereq: Econ. 555. *Carter.*

579 *Collective Bargaining.* (3) II
The principles and procedures of bargaining and dispute settlement studied in detail. Includes a review of the content of labor contracts and provisions for administration. Union and management techniques are considered. *Cabe.*

590 *Introduction to Mathematical Economics.* (3) I
A review of mathematical approaches to economic theory. Models applicable to production, marketing and pricing problems. Prereq: Math. 211 and Econ. 515. (Same as Agr. Econ. 590). *Haynes and Christian.*

600 *Business Economics.* (3) II
The interrelations of economic laws with the social, political and legal framework of business, especially from the point of view of the industy and of the firm. *Haynes.*

603 *History of Economic Thought.* (3) I
A survey of the history of economic thought from the ancient period to about the end of the classical school. Prereq: Econ. 252. *Hargreaves.*

604 *Survey of Economic Theory Since the Austrian School.* (3) II
This course is virtually a continuation of course 603. *Hargreaves.*

606 *Municipal Finance.* (3) I, II
City and county budget and related problems; debt, purchasing, treasury and revenue problems are studied in reports and seminar. *Martin.*

607 *Problems in Public Finance.* (2) I
Depending on varying needs of public finance students from time to time, specific subject matter will be selected for study. Each student's report will indicate the class of problems intensively examined. *Martin.*

608 *Problems in Public Finance.* (2) II
This course is a continuation of course 607. *Martin.*

609 *History and Theory of Money and Prices.* (3) I
The evolution of money, the rise of banking processes, and the causes of fluctuations in the general price level. *Masten.*

611 *Advanced Money and Banking.* (3) II
A theoretical study of contemporary money and banking institutions with emphasis on central bank functions. *Masten.*

618 *Economic Theory.* (3) I
An intensive course covering contemporary micro-economic theory and the various analytical techniques used therein. Prereq: Econ. 252. *Guthrie.*

619 *Economic Theory.* (3) II
Macro-economic theory. National income analysis and employment theory. The theory of inflation and an introduction to theories of economic development. Prereq: Econ. 252. *Guthrie.*

650 *Research Statistics I.* (2) I
The place of statistics in research method, the theory of statistical averages, the application of advanced statistical methods to economic data; the testing of economic theory. Prereq: an elementary course in statistics. *Christian.*

651 *Research Statistics II.* (3) II
Inferences involving linear transformations of random variables; individual degrees of freedom; complex analysis of covariance. Applications to economic and business data. Prereq: Economics 650 or Agr. Econ. 630. *Guthrie.*

652 *Experimental Design.* (3) II
Role of experimentation in the scientific method, basic principles of design related to problems of randomization and replication analysis of specific designs including randomized blocks, Latin square, and elementary factorial systems. Application to economic and business problems. Prereq: Econ. 651. *Christian.*

655 *Advanced Personnel Management.* (3) II

A critical examination of the principles, methods, policies and procedures related to the effective utilization of human resources in business concerns, consideration being given to mutual relationships. *Carter.*

656 *Research and Report Writing.* (3) II

Investigations of business problems; sources, procedures, analysis, and presentation. *Tarpey.*

657 *Theory of Wages.* (3) I

A critical analysis of contemporary wage theories, trade-union wage policy, wage differentials, wage adjustment to technological change, and wages and employment. Prereq: Econ. 252. *Cabe.*

685 *Government Finance Administration.* (3) II

Government budget, accounting, debt, purchasing, treasury, revenue, and auditing administration are examined; illustrations are drawn from federal, state, and local experience. Each student makes a special report on finance-management or experience. *Martin.*

690 *Mathematical Economics.* (3) II

Problems of economics amenable to the mathematics of differential and difference equations, vectors, complex numbers and matrix algebra. Agricultural and business applications. Prereq: Econ. 618, Econ. 590 or equivalent. *Christian and Haynes.*

691 *Econometrics.* (3) I

The application of statistical methods to problems of economic analysis. Building and measuring relationships among economic variables. Econometric models of the economy as a whole and of individual sectors. Prereq: Econ. 618 and Agricultural Econ. 630 or Econ. 550, or equivalent. *Guthrie.*

770 *Seminar.* (1-6) I, II

An extended investigation of some specific topic with a view to giving training in methods of research and studying intensively a particular subject in the field of economics. *Carpenter.*

780 *Research Problems in Economics.* (1-6) I, II

May be repeated to maximum of 6.
Students confer individually with the instructor. *Staff.*

COMMERCE

107 *Principles of Accounting.* (3) I, II

Instruction in the science and adaptation of the accounts of going concerns, together with sufficient practice to acquire proficiency. *Brown and others.*

108 *Principles of Accounting.* (3) II

Continuation of Com. 107. *Brown and others.*

109 *Secretarial Accounting.* (3) II

A continuation of the practice afforded in Commerce 107; also a study of accounting systems for the professions, small business, and institutions in which the secretary ordinarily keeps the records. Prereq: Com. 107. *Thomas.*

112 *Secretarial Practice, Shorthand.* (3) I, II, S

The theory of Gregg shorthand with sufficient practice to develop skill in writing. Emphasis is placed upon a good foundation for transcription. Credit for this course will not be given until 113 is completed. Prereq. or concur: English 101. *Humphreys and Thomas.*

113 *Secretarial Practice, Shorthand.* (3) I, II, S

A continuation of Gregg shorthand with sufficient practice to develop a speed of approximately 100 words a minute in dictation. Transcription is introduced and developed to a usable skill. Prereq: Com. 112 or its equivalent. *Humphreys and Thomas.*

114 *Advanced Secretarial Practice.* (3) I, II, S

This course continues the transcription of shorthand notes and develops secretarial proficiency. Dictation speed of approximately 120 words a minute is reached. Prereq: Com. 113, 118, or their equivalent. *Humphreys and Thomas.*

115 *Advanced Secretarial Practice.* (3) I, II, S

A continuation of Commerce 114 with special emphasis on secretarial duties and traits. A speed of 140 words a minute in dictation and of 40 to 50 words a minute in transcription is developed. Prereq: Com. 114 or its equivalent. *Humphreys and Thomas.*

117 *Secretarial Practice, Typewriting.* (2) I, II

Theory and techniques in typewriting are included with a thorough study of form, style and arrangement of typewritten material. A speed of 40 words a minute is required. Prereq. or concur: English 101. *Humphreys and Thomas.*

118 *Secretarial Practice, Typewriting.* (2) I, II

A continuation of Commerce 117 with emphasis on the development of speed and accuracy sufficient for vocational use. A speed of 60 words a minute is required. Prereq. Com. 117. *Humphreys and Thomas.*

119 *Office Appliances and Procedures.* (3) I, II, S

Operation and care of dictating, duplicating, addressing, and calculating machines and other appliances; the general principles, procedures, and systems of filing. Prereq. Com. 117. *McMurtry.*

260 *Principles of Marketing.* (3) I, II

The general store, chain store, department store, and mail order house. Market finance, market risk, market news, competition and prices, market price, unfair competition, and the cost of marketing. Prereq: Econ. 251. *DeVoe and Tarpey.*

262 *Principles of Advertising.* (3) I, II

The function of advertising in its relation to the broad field of marketing. The scope and organization of advertising and its economic implications. Advertising media and various testing devices are examined. Prereq: Com. 260. *McIntyre.*

263 *Salesmanship.* (2) I, II

Among the problems considered are the formulation of selling policies, the actual selling process, the creation of effective demands, sales campaigns, selecting and training salesmen, and kindred subjects. Prereq: Econ. 252. *McIntyre.*

296 *Intermediate Accounting.* (3) I

Detailed study of valuation procedures for asset and liability items. Principles of financial statement arrangement and content. Corporation formation, and treatment of capital stock and surplus items. Prereq: Com. 108. *Beals and Ecton.*

297 *Intermediate Accounting.* (3) II

Statements from incomplete data, comparative statements, partnerships, installment sales, consignments and agency and branch accounting. Application of funds statements. Prereq: Com. 296. *Beals and Ecton.*

301 *Secretarial Job Training.* (1) I, II

This course is designed to provide laboratory and office experience for senior secretarial students. Prereq: Com. 115. *Thomas.*

302 *Secretarial Job Training.* (1) I, II

This course is designed to provide laboratory and office experience for senior secretarial students. Prereq: Com. 115. *Thomas.*

303 *Secretarial Job Training.* (1) I, II

This course is designed to provide laboratory and office experience for senior secretarial students. Prereq: Com. 115. *Thomas.*

335 *Internship in Accounting.* (3) I, II

Students are placed with cooperating firms for on-the-job training in accounting. Written reports to be submitted by the firm and the student to the instructor. Prereq: junior standing and consent of instructor. *Haun.*

361 *Marketing Management.* (3) II

The literature and problems in the retail distribution of consumers' goods, wholesale distribution of consumers' goods, industrial goods, sales organizations, sales promotion and advertising, and price policies. Prereq: Com. 260. *DeVoe.*

364 *Data Processing for Business.* (3) I, II

Introduction to machine systems of data processing and storage; theory and application of electrical punched cards equipment in the preparation of accounting and statistical reports. Prereq: Com. 108. *Solomon.*

437 *Industrial Management.* (3) I, II

Management of manufacturing operations including organization theory, physical aspects of the plant, quality control, time and motion study, production control, industrial safety and industrial relations. *Massie and Haynes.*

438 *Quantitative Analysis in Management.* (3) II
An introduction to quantitative techniques in management decisions. Includes basic linear programming, Monte Carlo, and waiting line theory. Prereq: Com. 437. *Irwin.*

445 *Office Management.* (3) II
Planning and scheduling of work; employment procedures; supervision of employees, re-training, promotion, and equipment. *McMurtry.*

462 *Small Business Operation.* (2) II
Application of management principles and techniques to the special problems of establishing and operating a small business enterprise. Prereq: Senior standing in the College of Commerce. *Massie.*

477 *College Business Management.* (2) S
Elements of management, organization, budgetary procedure, financial accounting, procurement techniques and property management as applied in the business administration of colleges. *Peterson.*

478 *College Business Management.* (2) S
Elements of personnel management, public relations, investments and finance as related to college business management. *Peterson.*

479 *College Business Management.* (2) S
Case problems in plant operation, purchasing, insurance, bookstore operation and legal aspects of college management. *Peterson.*

495 *Business Policy.* (3) II
Analysis of management problems, formulation of alternative courses of action, determination of policy decisions. Open to Commerce seniors only. *Douglas.*

508 *Accounting Theory.* (2) I
The function of accounting, asset valuation, recognition of revenue and expenses, and classification of equities, will be studied with a view to presenting a co-ordinated body of accounting theory. Prereq: Com. 297. *Haun.*

509 *Business Law.* (3) I, II
A survey of the principles of contracts, sales, bills and notes, and that portion of the law of torts applicable to business practices. Prereq: two years of Commerce Curriculum. *Haun and Lewis.*

510 *Business Law.* (3) I, II
A continuation of Commerce 509. *Haun and Lewis.*

513 *Auditing.* (3) II
The theory of auditing, the valuation of assets, analysis of accounting procedure, and the presentation of statements. Special problems applicable to particular businesses will also be presented. Prereq: Commerce 297. *Ecton.*

517 *Corporation Finance.* (3) I, II
Principles concerning the issue of securities, the management of the corporate income, the disbursement of dividends, the creation of sinking funds, and reorganization procedure. Prereq: Econ. 252 and Com. 108. *Pickett.*

518 *Cost Accounting.* (3) I, II
The place of cost accounting in the general field of accounting, special records and cost statistics, and application to particular businesses. Prereq: Commerce 108. *Beals.*

519 *Retail Merchandising.* (3) II
Selecting a business location, internal layout, departmentalization, merchandising control, store policies toward the public, training and management of personnel, and related subjects. Prereq: Commerce 260. *Tarpey.*

528 *Advanced Cost Accounting.* (3) II
The use of standard costs, estimated cost systems and procedures, nonmanufacturing costs, budgetary control, and management uses of cost data. Prereq: Commerce 518. *Beals.*

529 *Credit and Statement Analysis.* (2) I
The theory underlying credit-granting, credit administration, and analysis and interpretation of financial statements. Prereq: Commerce 107. *Haun and Beals.*

531 *Investments.* (3) II
Analysis of corporation statements for investment purposes, the security market, market influences on security prices, effect of interest changes on security prices, and the development of investment programs. Prereq: Econ. 252. *Pickett.*

532 *C.P.A. Problems.* (3) I, II
The course is designed to prepare students for C.P.A. examinations. Advanced accounting theory is stressed through the study of a wide range of problems. Prereq: Commerce 297. *Haun and Beals.*

533 *C.P.A. Problems.* (3) I, II
A continuation of Com. 532. *Haun and Beals.*

536 *Sales Management.* (3) I
The case method is used, supplemented with outside reading and written reports. Prereq: Commerce 260. Open only to seniors in the College of Commerce. *DeVoe.*

539 *Industrial Purchasing.* (3) II
Organization of purchasing; relations with other departments; qualifications and training of buyers. Purchasing procedures; sources of supply; price negotiation; stores control; value analysis. Prereq: Econ. 252. *DeVoe.*

540 *Advertising Management.* (3) I
A study of advertising from the point of view of marketing and advertising executives, problems in integrating advertising with marketing, the advertising appropriation, and advertising campaigns. Prereq: Com. 262. *DeVoe.*

541 *Industrial Marketing.* (3) I
The marketing of goods for business consumption. The structure of the industrial market with special problems in marketing raw materials, parts and machinery relative to manufacturing, agricultural, mining, construction and other industries. Prereq: Econ. 252. *Tarpey.*

543 *Life Insurance.* (3) I
Economics of life insurance, organization and control, special forms of life insurance, and fundamental principles of rate-making. Prereq: Econ. 252. *Hargreaves.*

544 *Property and Casualty Insurance.* (3) II
Public control; nature of contracts; analysis of reserve functions, and rate-making processes. Prereq: Econ. 252. *Pickett.*

546 *Specialized Accounting Problems.* (3) II
Accounting records for consolidations and mergers, preparation of consolidated statements. Insolvency and receivership records and statements. Accounting for estates and trusts. Prereq: Commerce 297. *Ecton.*

547 *Income Tax Procedure.* (3) II
The preparation of income tax returns for individuals and corporations of all classes and a practical application of principles of accounting. Prereq: Commerce 297. *Haun.*

549 *Market Research.* (3) II
Training in the application of scientific method to research in fields of marketing. A major marketing investigation will be conducted by the class. Prereq: Commerce 260 and a course in statistics. *DeVoe and Tarpey.*

556 *Business Reports.* (2) II
Major emphasis is placed upon sources of data, compilation and arrangement of data, documentation, bibliographies, and effective presentation of reports. Problems will be assigned in the various areas of interest. *Thomas.*

559 *Governmental Accounting.* (2) II
The requirements of adequate accounting systems for various governmental units, including the recording of usual transactions and the form and content of reports. Prereq: Commerce 108. *Beals.*

570 *Controllership.* (3) I
The organizational position of the Comptroller, his functions and objectives; his methods and procedures. *Haun.*

571 *Statistical Quality Control.* (3) I
Elementary probability theory, control charts, acceptance sampling plans including single, double and sequential sampling. *Christian.*

572 *Sampling Techniques.* (3) II

Application of sampling theory and significance testing in economic research, practical problems in sample design. *Christian.*

573 *Automatic Data Processing.* (3) I

Examination of the role of high speed data processing equipment in the solution of business and economic problems. The study of computer fundamentals; input, arithmetic and logical units, control, storage, and output. Includes digital computer programming. *Solomon.*

585 *Bank Management.* (3) II

A study of principles and cases in commercial banking practice. Bank management practices are studied within the economic, monetary, fiscal and legal framework of the American economy. Prereq: Econ. 505 or consent of instructor. *Masten.*

708 *Advanced Accounting Theory.* (3) II

Critical examination of accounting concepts and standards. Study of current problems and contemporary developments reflected in accounting literature and reports. Prereq: Commerce 296 or consent of instructor. *Haun.*

717 *Corporate Financial Policy.* (3) I

A study of financial management from the viewpoint of the corporate financial officer. Problems of planning the capital structure, issuing securities, the management of working capital, and policies with reference to reserve, surplus, and dividends. *Pickett.*

719 *Quantitative Methods in Business Decisions.* (3) I

Application of mathematical analysis in business decision making. Includes linear programming, total value analysis, incremental analysis, and other phases of operations research. Prereq: Math. 611 and Econ. 507. *Haynes.*

720 *Statistics in Business Decisions.* (3) I

Statistical analysis as applied to business decisions. Includes waiting line theory. Monte Carlo method, and sampling as applied to inventory control, quality control, and simple business problems. Prereq: Econ. 507. *Guthrie.*

722 *Tax Accounting Problems.* (3) II

Advanced tax accounting problems of a complex nature involved in income taxes, gift taxes, and death taxes under the federal and state laws. Prereq: Commerce 547. *Haun.*

728 *Accounting for Control and Planning.* (3) II

A study of the application of accounting and information and services in the recognition or solution of management problems in business. Prereq: Com. 107. *Haun.*

731 *Investment Management.* (3) II

Evaluation of sources of information and advice concerning securities, methods of analysis and policies of individuals and institutions in the management of investment funds. *Pickett.*

737 *Advanced Business Management.* (3) II

A functional study of business management. Control devices and procedures for carrying out and testing policies. *Massie.*

738 *Production Management.* (3) I

A study of procedures and techniques employed in manufacturing plants. An analysis of actual cases in production planning and control, time and motion study, quality control, plant layout, and budgetary control. Visits to industrial plants. *Massie.*

760 *Advanced Marketing Management.* (3) II

A critical study of significant trends, controversial issues and advanced techniques in the fields of marketing. *DeVoe.*

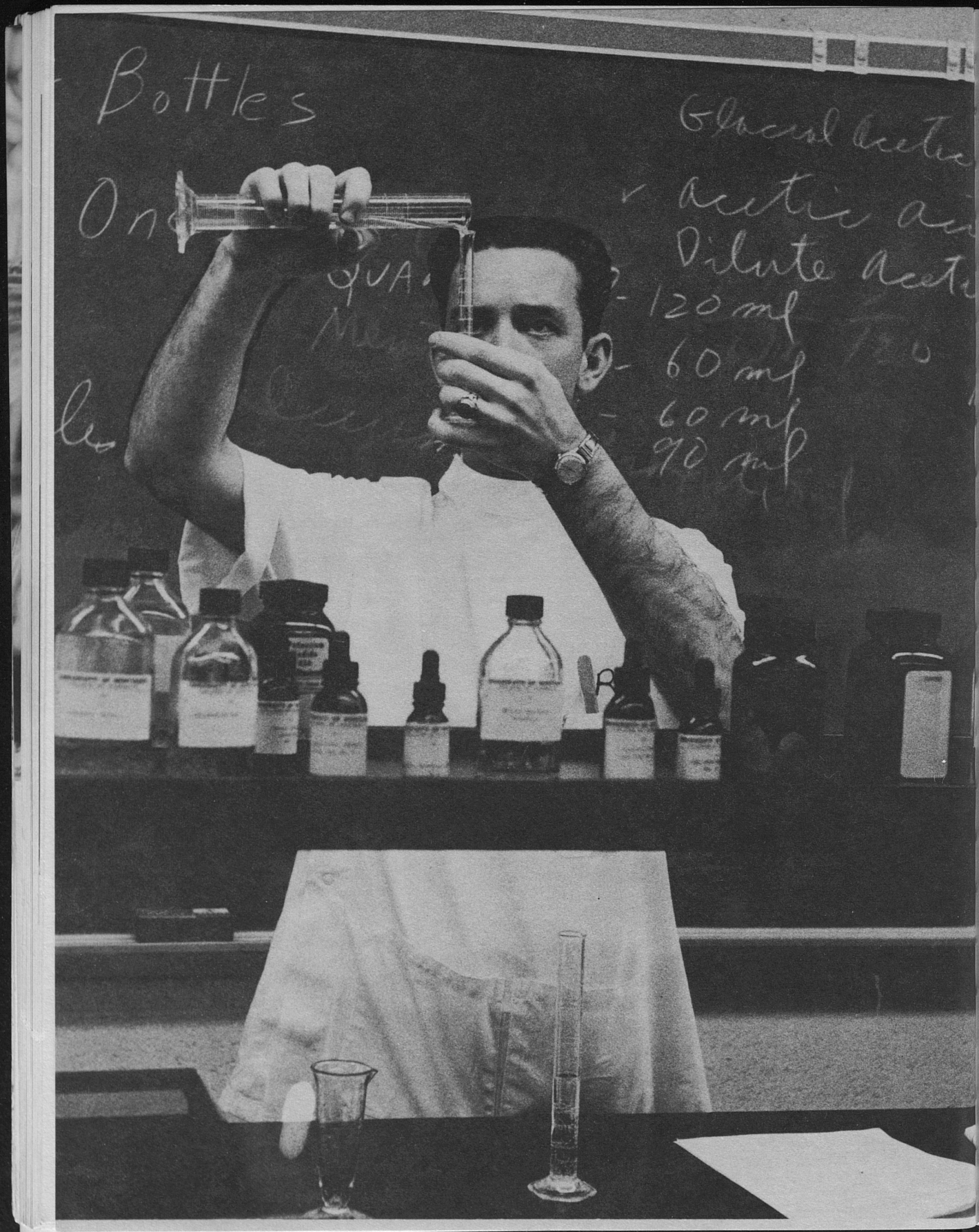
768 *Residence Credit for the Master's Degree.*

May be repeated once.

769 *Residence Credit for the Doctor's Degree.*

May be repeated indefinitely.

Courses in Mathematics of Finance, Psychology of Advertising, Industrial Psychology, and Business English are offered by departments of the College of Arts and Sciences.


Bottles
Glacial Acetic
Acetic Ac
Dilute Acet
120 ml
60 ml
60 ml
90 ml

Pharmacy

A RECENT STUDY of the needs and nature of pharmaceutical education points out that the growing responsibilities of the profession of pharmacy make it necessary for the pharmacist to adapt and adjust himself to the demands and personalities of many other persons—his employer or his employees, his creditors and his debtors, his suppliers and his customers, his professional colleagues and his non-professional friends. He must be able to effectively discharge his civic, social, and moral obligations. In view of all of his professional relationships, a pharmacist needs to understand the social and economic environment in which he practices his profession.

The objective of the College of Pharmacy is to prepare its graduates to assume, with dignity and honor, the intellectual, legal, civic, and moral responsibilities of the profession of pharmacy. Every motivation and every act of the pharmacist must be in the interest of the public. His ethical relationship with the physician, his capacity as a consultant to the public, his constant availability for dispensing of important drugs in time of emergency, and his charitable services to the needy are but a few examples of his dedication to the health, welfare, and safety of the public. Such dedication is not acquired through accident; it is the result of systematic inculcation of the highest ethical and moral standards throughout the entire curriculum of the College of Pharmacy.

Admission

All admissions to the College of Pharmacy are made through the office of the University Registrar. New students, readmission students and transfer students must file applications and transcripts of all previous college work with that office not later than 30 days before the beginning of the semester in which they desire to enter.

The most important high school requirement is the student's position in his class. If he is near the top, he has demonstrated his ability to do good work in school. He should be at least in the upper half of his class scholastically, and should have a reputation of good character. It is most essential that he have a good command of the English language, being able to read, speak, and write well. A good understanding of mathematics is most useful, with one or more years of laboratory science, especially chemistry. Foreign languages are not required and Latin is not necessary, but would be most useful.

In addition to meeting the general requirements for admission to the University, the applicant must have achieved a grade point average of at least 2.0 of a possible 4.0 in at least 67 credit hours of acceptable college work. This preparatory work may be taken at the University of Kentucky or at any other accredited institution.

Those who take their prepharmacy courses in other institutions must furnish an additional transcript of all previous college work to the Dean of the College of Pharmacy.

Prepharmacy Requirements

Admission to the College of Pharmacy requires the satisfactory completion of two years of work in liberal arts and basic sciences. The increase in technical knowledge makes it necessary for the pharmacist of the future to have a more adequate foundation in the basic sciences upon which the scientific aspects of pharmacy rest.

This work not only provides some foundation in the basic sciences which undergird pharmacy, but it is also intended to broaden and enrich the life and understanding of the pharmacist as a professional man and citizen. Such preparation is essential for the professional man in this age of increasing awareness and appreciation of culture and knowledge.

Minimum Requirements for Admission to the College of Pharmacy

1 year English Composition

1 year Biology with laboratory (General Botany, General Zoology)

1 year Mathematics (Algebra, Trigonometry)

1 year Physics with laboratory

Earl Platt Slone, Ph.G., M.A., is Dean of the College of Pharmacy.

Chemistry
- (a) General Inorganic, including qualitative analysis
- (b) Quantitative Analysis

Electives sufficient to total 67 semester hours (junior classification)

The electives are chosen from such areas as—

Ancient and Modern Languages	History
Anthropology	Humanities
Art	Mathematics
Commerce	Music
Economics	Philosophy
Education	Psychology
English and Speech	Sociology
Geography	

RECOMMENDED PRE-PHARMACY PROGRAM

First Year

Course	Cr.
Chem. 110—General Chemistry	5
Eng. 101—English Composition	3
Bot. 101—General Botany	4
Math. 101—College Algebra, or	
Math. 111—College Algebra	3
Chem. 112—General Chemistry	5
Eng. 102—English Composition	3
Zool. 100—Principles of Animal Biology	4
Math. 112—Trigonometry	2
Phil. 200—Introduction to Philosophy	3

Second Year

Course	Cr.
Physics 211—General Physics	5
Chem. 226—Analytical Chemistry	5
Phil. 220—Elementary Logic	
'or	3
Phil. 230—Ethics	
Physics 213—General Physics	5
Economics 251—Principles of Economics	3
Microbiology 200—Principles of Bacteriology	4

Additional electives chosen from the areas above to total with these requirements, 67 semester hours.

It is suggested that the student distribute his electives among several disciplines, rather than concentrate in any particular area.

All students must demonstrate a minimum proficiency in typing, must offer it as an elective, or must be concurrently registered in an elementary typing course to be eligible to begin the professional course.

Admission to the College of Pharmacy is limited to sixty students.

ADMISSION WITH ADVANCED STANDING FROM ANOTHER PHARMACY SCHOOL

Those applying with advanced standing from another college of pharmacy should apply to the Registrar, asking for an application blank. Two official transcripts of all previous college work must be submitted, one to be filed with the Registrar's office, the other with the Dean of the College.

Requirements for Graduation

The degree of Bachelor of Science in Pharmacy is offered on completion of a minimum of 177 semester hours of credit, with a quality point standing of 2.0 out of a possible 4.0.

The prepharmacy program of 67 semester hours of credit, followed by the three years of professional training with 110 semester hours of credit as shown below, constitute the requirements for graduation.

PROFESSIONAL PROGRAM

Third Year

Course	Cr.
Phar. Chem. 300—Organic Pharmaceutical Chemistry	5
Phar. 310—Theoretical Pharmacy	4
Phar. 305—Pharmaceutical Calculations	3
Phar. 300—History and Ethics of Pharmacy	3
Electives	3
	18
Phar. Chem. 302—Organic Pharmaceutical Chemistry	5
Phar. 320—Pharmaceutical Technology	4
Phar. Chem. 304—Inorganic Pharmaceutical Chemistry	3
M.M. 220—Biological Pharmaceuticals	3
Electives	3
	18

Fourth Year

Course	Cr.
Phar. Chem. 402—Drug Assay	4
M.M. 334—Physiology and Pharmacodynamics	4
M.M. 330—Pharmacognosy	3
Phar. 330—Theoretical Pharmacy	4
Phar. 335—Pharmaceutical Law	3
	18
Phar. Chem. 400—Biochemistry	4
M.M. 346—Physiology and Pharmacodynamics	4
M.M. 342—Pharmacognosy	3
Phar. 340—Pharmaceutical Technology	4
Electives	3
	18

Fifth Year

Course	Cr.
Phar. Chem. 404—Chemistry of Medicinal Products	3
M.M. 450—Pharmacology and Toxicology	5
Phar. 350—Pharmaceutical Dispensing	5
Phar. 356—Drug Store Management	3
Phar. 355—Modern Therapeutic Agents	3
	19
Phar. Chem. 406—Chemistry of Medicinal Products	3
M.M. 462—Pharmacology and Toxicology	5
Phar. 360—Pharmaceutical Dispensing	5
Phar. 366—Drug Store Merchandising	3
Phar. 365—Modern Therapeutic Agents	3
	19

History of the College

The University of Kentucky College of Pharmacy was established August 16, 1870, as the Louisville College of Pharmacy. It was incorporated by an Act of the Legislature, February 6, 1873. Organized as an outgrowth of the apprentice and preceptorial system, it was operated as a non-profit organization from its inception. On July 1, 1947, the College became one of the divisions of the University of Kentucky. It opened in its new building on the campus in the fall of 1957. This building embodies the latest ideas in arrangement and equipment for the teaching of Pharmacy. It is a highly fire-resistant structure incorporating every new device for the safety, convenience and comfort of the students and staff. The site is sufficiently large to provide space for expansion and adequate parking.

The College is accredited by the American Council on Pharmaceutical Education. It was admitted to membership in the American Association of Colleges of Pharmacy in 1917.

PLACEMENT ACTIVITIES

In addition to full cooperation with the University Placement Service, the College maintains a complete file for prospective employment. Personnel representatives of the large pharmaceutical houses visit the College twice yearly scheduling interviews with the graduates. Each year the College has a greater demand for its graduates than it can supply.

LIBRARY

The student has the complete use of the University of Kentucky Library, fourth largest library in the south and, in addition, the College's own library of over 4,000 volumes and 160 periodicals.

Student Activities

In addition to the numerous campus-wide social, religious, and cultural activities and the intramural sports program, the College of Pharmacy has some active organizations of its own, sponsoring events of a professional and social nature.

Every student enrolled in the College is eligible for membership in the American Pharmaceutical Association and is expected to join. The organization, formed in 1852, is the only existing national body representing, in its entirety, the professional interests of pharmacy. Prompt affiliation upon enrolling in the College not only serves to identify the student with the profession of pharmacy but is regarded as proof of his interest in and enthusiasm for the profession he has chosen to follow. Through the activities of the Student Branch the students become acquainted with organizational work, develop professional attitudes, with their moral and ethical values, and lay the ground work for continued growth and development after graduation.

There are three chapters of national professional pharmaceutical fraternities on the campus:

Alpha Zeta Omega, Lambda Chapter
Kappa Psi, Upsilon Chapter
Phi Delta Chi, Alpha Beta Chapter

The women of the College are represented by a national pharmaceutical sorority, Lambda Kappa Sigma, Alpha Nu Chapter.

Rho Chi, national honorary pharmaceutical society, elects to membership outstanding students who have earned at least 70 hours of professional credit with an average of "B" or above, and who are recommended by the faculty of the College of Pharmacy. In addition to high attainment in scholarship, eligibility for membership requires character, personality, and leadership. Alpha Xi Chapter is active at the University of Kentucky.

The wives of pharmacy students are eligible for membership in the Pharmacy Students' Wives' Club of the Women's Auxiliary of the American Pharmaceutical Association.

REQUIREMENTS FOR PHARMACY LICENSURE IN KENTUCKY

In order to qualify for licensure in Kentucky, the aspirant should thoroughly familiarize himself with the registration specifications. Prior to the passing of the Kentucky Board of Pharmacy examination, the final step in the licensure requirements, one must complete the curriculum requirements and obtain a degree from an accredited college of pharmacy. In addition, he must be 21 years of age, must be of good moral character, must satisfy the internship requirement of fifty-two average work weeks under the direct personal supervision of a registered pharmacist, and must present to the Kentucky Board of Pharmacy a note book covering the details of his practical training properly certified by the pharmacists who have supervised his internship. The applicant will bring his notebook to the examination and turn it in to be checked and become a part of the grade in practical work.

Boards of pharmacy will allow credit for claims of internship required under the pharmacy laws provided:

a. The period of internship is earned after completing one year of the pre-pharmacy curriculum in an accredited college.

b. The period of internship is not concurrent with college attendance. (Internship is not recognized that is obtained during Christmas, Easter, or mid-semester vacations. However, internship obtained during summer months will count when properly filed.)

c. The claim is corroborated by records on file in the Kentucky Board of Pharmacy office showing the begin-

ning and the ending of the internship claimed as supplied by the applicant during his training period, and by the pharmacist who supervised the internship. In every instance the applicant must notify the Kentucky Board of Pharmacy of the beginning and the end of his employment under the supervision of a registered pharmacist within ten days of the beginning and ending of such employment. It is also necessary for the pharmacist supervising the internship to similarly notify the Kentucky Board of Pharmacy of the commencement and termination of an intern's employment.

d. The period of internship was earned in a pharmacy acceptable to the Board.

PHARMACEUTICAL CHEMISTRY

FACULTY

Professor: Arthur C. Glasser (Ph.D., Ohio State, 1953), HEAD. *Assistant Professor:* Ronald E. Orth (Ph.D., Iowa, 1960). *Instructor*: William S. Johnson (B.S., Kentucky, 1949).

Course Descriptions

300 *Organic Pharmaceutical Chemistry.* (5) I
A comprehensive course in the preparation and properties of aliphatic compounds with emphasis on those compounds which are related to pharmacy. Lecture, three hours; lab, six hours. Prereq: Chemistry 110 and 112. *Orth.*

302 *Organic Pharmaceutical Chemistry.* (5) II
A course similar to Chemistry 300 in which the aromatic compounds are studied. Official products are emphasized in their proper sequence as the course progresses. Lecture, three hours; lab, six hours. Prereq: Pharmaceutical Chemistry 300. *Orth.*

304 *Inorganic Pharmaceutical Chemistry.* (3) II
A review of inorganic chemistry in which a comprehensive study is made of the physical and chemical properties of all official inorganic chemicals. Lecture, two hours; lab, three hours. Prereq: Chemistry 110 and 112. *Johnson.*

400 *Biochemistry.* (4) II
A fundamental course in the chemistry and interrelationships of carbohydrates, lipids, and proteins, as well as the role of enzymes, vitamins, and hormones in physiological processes. Laboratory exercises parallel the lecture material. Lecture, three hours; lab, three hours. Prereq: Pharmaceutical Chemistry 302. *Glasser.*

402 *Drug Assay.* (4) I
Modern methods of analysis of medicinal products including synthetic drugs, fixed and volatile oils, alkaloids, glycosides, vitamins, and enzymes. Laboratory exercises selected on basis of application to pharmaceutical products. Lecture, two hours; lab, six hours. Prereq: Chemistry 226. *Johnson.*

404 *Chemistry of Medicinal Products.* (3) I
A study of the official and more important non-official medicinal agents with respect to their physical and chemical properties, relationships of chemical structure to physiological activity, as well as their potential incompatabilities. Lecture, three hours. Prereq: Pharmaceutical Chemistry 400. *Glasser.*

406 *Chemistry of Medicinal Products.* (3) II
Continuation of Pharmaceutical Chemistry 404 to include considerations of such topics as alkaloids, glycosides, steroids, and other agents. Lecture, three hours. Prereq: Pharmaceutical Chemistry 404. *Orth.*

408 *Independent Problems in Pharmaceutical Chemistry.* (1-3), I, II, S
Selected problems of interest from the general field of Pharmaceutical Chemistry. Prereq: Advanced standing and permission of the instructor. May be repeated for a total of six credits. *Staff.*

*410 *Advanced Organic Pharmaceutical Chemistry.* (3) I
A study of the classification, source, properties, synthesis, and uses of organic medicinal chemicals used as therapeutic agents. Lecture, one hour; lab, four hours. Prereq: Pharmaceutical Chemistry 302. *Orth.*

*412 *Advanced Organic Pharmaceutical Chemistry.* (3) II
A continuation of Chemistry 500. Lecture, one hour; lab, four hours. Prereq: Pharmaceutical Chemistry 302. *Orth.*

PHARMACY

FACULTY

Professor: Howard Hopkins (Ph.D., Nebraska, 1959), HEAD. *Associate Professors*: Norman H. Franke (Ph.D., Wisconsin, 1956), Charles T. Lesshafft, Jr. (Ph.D., Purdue, 1955), Harry A. Smith (Ph.D., Purdue, 1959). *Assistant Professor*: Paul Frederick Parker (M.S., Michigan, 1951).

Course Descriptions

300 *History and Ethics of Pharmacy.* (3) I
A study of the development of the profession of pharmacy, emphasizing the historical background and ethical principles upon which the profession rests. The nature and place of pharmaceutical services in society are considered. The moral standards and professional conduct required of a pharmacist are stressed. Lecture, three hours. *Franke.*

305 *Pharmaceutical Calculations.* (3) I
A systematic study of arithmetical problems encountered in Pharmacy. Lecture, three hours. *Staff.*

310 *Theoretical Pharmacy.* (4) I
A study of the fundamental principles and processes used in pharmacy and the development of proper pharmaceutical technic in the laboratory. Lecture, three hours; lab, three hours. *Franke.*

320 *Pharmaceutical Technology.* (4) II
The applications of physicochemical principles to pharmaceutical systems. The course is intended to provide a basis for analyzing and interpreting the physical and chemical aspects of pharmaceutical systems. The lectures and laboratory experiments concern the theory and technology of dispersed systems and surface properties, stability and preservation of pharmaceuticals, and rate processes as they apply to pharmaceutical preparations. Lecture, three hours; lab, three hours. Prereq: Pharmacy 305 and 310. *Franke.*

330 *Theoretical Pharmacy.* (4) I
A continuation of Pharmacy 310 at a more advanced level. Lecture, three hours; lab, three hours. Prereq: Pharmacy 320; Pharmaceutical Chemistry 302, 304; Materia Medica 220. *Staff.*

* May be elected only by permission of instructor and with consent of the Dean. Hours to be arranged.

335 *Pharmaceutical Law.* (3) I

A study of legislation, regulations, and rulings governing the practice of Pharmacy and the sale of drugs, poisons, cosmetics and devices. Lecture, three hours. Prereq: Pharmacy 300. *Smith.*

340 *Pharmaceutical Technology.* (4) II

A continuation of Pharmacy 320 at a more advanced level. Lecture, three hours; lab, three hours. Prereq: Pharmacy 330. *Staff.*

350 *Pharmaceutical Dispensing.* (5) I

All aspects of prescription compounding and dispensing are studied. Emphasis is placed on the application of fundamental principles and technics to the compounding of prescriptions. The first semester's work is chiefly concerned with the compounding of solid-type prescriptions such as bulk powders, capsules, powder papers, ointments, and suppositories. Lecture, three hours; lab, four hours. Prereq: Pharmacy 335, and 340. *Lesshafft.*

355 *Modern Therapeutic Agents.* (3) I

A comprehensive study of those drugs most extensively encountered in professional practice. Their uses, properties, and proprietary forms are considered. Lecture, three hours. Prereq: Pharmacy 340; Pharmaceutical Chemistry 304, 400; Materia Medica 346. *Hopkins.*

356 *Drug Store Management.* (3) I

A study of the management and operation of a retail drug store including the position of retail pharmacy in the marketing process, location, layout, organization, policies, personnel problems, public and inter-professional relations, and the financial control applicable to retail pharmacy. Lecture, three hours. Prereq: Pharmacy 335 and Econ. 251. *Smith.*

360 *Pharmaceutical Dispensing.* (5) II

A continuation of Pharmacy 350. The second semester's work is chiefly concerned with liquid prescriptions. Lecture, three hours; lab, four hours. Prereq: Pharmacy 350. *Lesshafft.*

365 *Modern Therapeutic Agents.* (3) II

A continuation of Pharmacy 355. Lecture, three hours. Prereq: Pharmacy 355. *Hopkins.*

366 *Drug Store Merchandising.* (3) II

A study of merchandising policies and technics applicable to retail pharmacy with emphasis on special and professional departments; includes such topics as buying motives, buying of merchandise, stock control, display, advertising, salesmanship, and professional promotion. Lecture, three hours. Prereq: Pharmacy 356. *Smith.*

370 *Pharmaceutical Manufacturing.* (2-5)

Methods of larger scale manufacture of compressed tablets, solutions, mixtures, ointments and creams, and suppositories. The use and care of equipment involved. Field trips to medium sized pharmaceutical manufacturing concerns. Prereq: Permission of department head. *Staff.*

395 *Independent Problems in Pharmacy.* (1-3)

Selected problems pertaining to the various aspects of pharmacy which may include such problems as pharmaceutical procedures, pharmaceutical formulations, pharmaceutical history, and pharmaceutical economics. Prereq: Permission of the instructor. May be repeated to a maximum of six credits. *Staff.*

MATERIA MEDICA

FACULTY

Professor: Charles A. Walton (Ph.D., Purdue, 1956), HEAD. *Assistant Professors:* Richard M. Doughty (M.S., Pittsburgh, 1953), Mark M. Luckens (M.S., New York University, 1950).

Course Descriptions

220 *Biological Pharmaceuticals.* (3) II

Practical applications of microbiological techniques and principles as related to pharmacy and medicine. Special consideration is given pathogenic organisms, biological products and antibiotics. Lecture, two hours; lab, two hours. Prereq: Microb. 200. *Doughty.*

330 *Pharmacognosy.* (3) I

A study of official and non-official drugs of vegetable and animal origin. Macroscopic and microscopic examinations are made. Newer drugs and synthetics related to natural products are included. Lecture, two hours; lab, three hours. Prereq: Pharmaceutical Chemistry 300 and 302 and Botany 101. *Doughty.*

334 *Physiology and Pharmacodynamics.* (4) I

Basic human anatomy and physiology with primary emphasis on the functioning of the nervous, muscular, endocrine, excretory, respiratory, circulatory, digestive and reproductive systems, including principal anomalies of these systems and the pharmacodynamics of typical drugs. Lecture, three hours; lab, two hours. *Luckens* and *Walton.*

342 *Pharmacognosy.* (3) II

A continuation of M.M. 330. Lecture, two hours; lab, three hours. *Doughty.*

346 *Physiology and Pharmacodynamics.* (4) II

A continuation of M.M. 334. Lecture, three hours; lab, two hours. Prereq: M.M. 334. *Luckens* and *Walton.*

450 *Pharmacology and Toxicology.* (5) I

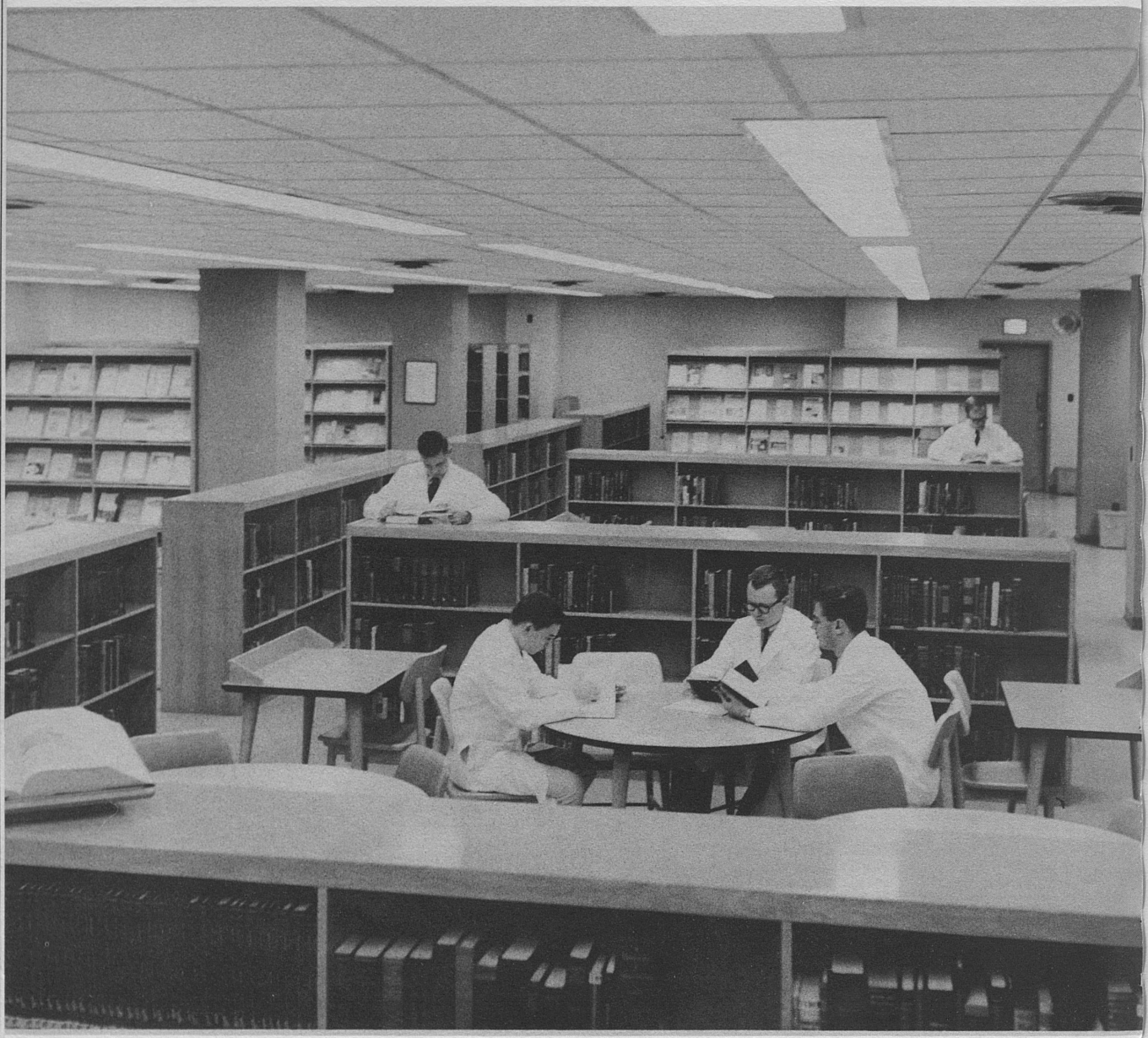
A presentation of the pharmacodynamic actions, modes of administration, toxic manifestations of drugs, and the relationship of pharmacodynamic action to therapeutic use. Lecture, four hours; lab, two hours. Prereq: M.M. 334, 346, and Pharmaceutical Chemistry 400. *Luckens* and *Walton.*

462 *Pharmacology and Toxicology.* (5) II

A continuation of 450. Lecture, four hours; lab, two hours. Prereq: M.M. 450. *Luckens* and *Walton.*

474 *Independent Problems in Materia Medica.* (1-3) I, II, S

Selected problems from the general field of Materia Medica (Pharmacology, Pharmacognosy, or Toxicology). Prereq: Permission of the Instructor. May be repeated for a total of six credits. *Staff.*



Medicine

THE COLLEGE OF MEDICINE at the University of Kentucky was authorized in 1954 by action of the Board of Trustees of the University. An initial appropriation for construction was made by the State Legislature in 1956, and definitive planning of the facilities and program was then initiated. The first class was admitted in the fall of 1960. The College will be fully accredited, according to regularly established procedure, before the first class is graduated. Class size is expected to be 75 students per year.

The College of Medicine is a unit of the University's new Medical Center, which also includes a College of Dentistry, a College of Nursing, and a 500 bed University Hospital. The Medical Center is located on a 39-acre site on the campus of the University.

The Medical Science Building includes instructional, laboratory, and administrative space for the College of Medicine, the College of Dentistry, the College of Nursing and the Medical Library. Contiguous and connecting are the University Hospital, the Outpatient Service, clinical facilities of the College of Dentistry, the University Health Service, the Rehabilitation Service, and facilities for ambulant hospital patients and other community health services.

The Medical Library houses an outstanding collection of medical literature, with approximately 1,500 journals under subscription and about 70,000 volumes now on hand.

PHILOSOPHY AND PROGRAM

A major objective of the College of Medicine is to prepare students who will be well educated in the sciences and the art of medicine, and capable, with further training and experience, to engage in the practice of general medicine or any of its specialties. Specialty training is provided through internships and residency programs. The educational program and facilities are designed to provide opportunities for integrated instruction within and among the basic and clinical sciences.

William R. Willard, B.S., M.D., Dr.P.H., D.Sc., is dean of the College of Medicine.

The educational philosophy of the College encompasses the concepts of comprehensive medicine. In addition to providing a thorough grounding in the principles of each major scientific and clinical subject, the curriculum emphasizes the relationships between medical problems and total health; the role of emotional, social, and environmental factors in human response to illness and health needs; the importance of continuity in medical supervision and health maintenance; and opportunities for independent work in areas of special interest. The schools bear a special responsibility to prepare physicians who can meet the health needs of the people of Kentucky, especially those in small towns and rural areas. Training will also be available for those who wish to pursue special interests in medical education, research, or administration.

REQUIREMENTS FOR ADMISSION

Applicants for medical college will be expected to have completed a liberal arts degree program in an accredited college of arts and sciences. Applicants with only three years of college will be considered if they present outstanding qualifications, which include personal maturity as well as academic competence. Some colleges give credit for medical school work, thus enabling three-year applicants to qualify for the baccalaureate degree upon completion of the first year in medical college. Applicants from a non-accredited program may be considered if their academic background and other credentials demonstrate superior ability.

ACADEMIC PREPARATION FOR THE STUDY OF MEDICINE

Medical science and practice involve complex relationships between physical, biological, psychological, cultural, and environmental aspects of human behavior.

In preparing for medical school, fundamental undergraduate college training in physics, chemistry, biology, and English is essential. Minimal requirements are satisfied with the equivalent of two semesters of physics; two semesters in the biological sciences; four semesters in chemistry, including organic chemistry; and at least one year of English with emphasis on communication skills such as reading, writing, and speaking.

Courses in each of the natural science areas should include laboratory work. Advanced work in mathematics is highly recommended, as are courses in the psychological and social sciences. Students are also encouraged to follow special interests which they may have in philosophy, literature, or the fine arts.

The student should demonstrate his capacity for advanced work through the concentrated study of at least one subject in a major area of his interest by completing courses beyond the introductory level which provide an opportunity for independent work. Courses in subjects such as human anatomy, medical biochemistry, medical bacteriology, and mammalian physiology will be covered in medical school, and are not essential in premedical education.

Candidates who meet admission requirements and demonstrate excellence will be given equal consideration whether they major in one of the natural sciences, the social sciences, or in the humanities.

CRITERIA OF SELECTION

The College of Medicine endeavors to select those students who show promise of making the best possible future physicians. Applicants are judged on the basis of their total qualifications and in comparison with each other.

As a State-supported school, the College of Medicine gives preference to qualified residents of Kentucky. A number of particularly well-qualified out-of-state candidates will be admitted each year and are urged to apply.

Selection from among applicants who meet the requirements for admission to the University and the general premedical education requirements of the College of Medicine will be based on a number of criteria.

A high level of academic performance in an undergraduate college is important and it is anticipated that successful applicants will have a grade point average of 2.75 or higher, based on a 4-point scale. Exceptions may be made for students whose performance in college shows consistent and impressive improvement, since a meaningful evaluation of student performance must consider many factors in addition to the grades which a student has received.

Scholastic aptitude as measured in certain objective tests also will be considered. All applicants will be required to take the Medical College Admission Test. It has been demonstrated that the scores obtained in this test provide some basis for prediction of a student's relative ability to cope with the medical sciences.

Consideration will be given to the communication skills demonstrated by each applicant. Communication is a two-way process and involves the ability to listen perceptively, as well as to speak and write clearly. Applicants will also be judged according to the personality characteristics which they demonstrate. The practice of medicine involves the physician in continual relationships with his patients and with other workers in the health field. Thus, friendliness, warmth, compassion and integrity are all essential traits. Often the physician's ability to communicate effectively will determine his degree of success in the diagnosis and management of a patient's health problem.

Because the practice of medicine and the life of the medical student require a great investment of energy and are demanding of time and interest, it is essential that a prospective medical student be in good health and that his motivation to study medicine be sufficiently strong to sustain him in the face of difficulties. The Committee on Admissions will be interested in factors influencing the applicant's choice of medicine as a career and in his depth and strength of motivation.

THE FACULTY

The College of Medicine is organized into 13 departments and will have, in full development, more than 150 full time faculty members and additional part time clinical faculty. Departments are as follows:

BASIC SCIENCE	CLINICAL SCIENCE
Anatomy	Medicine
Behavioral Science	Anesthesiology
Biochemistry	Obstetrics and Gynecology
Pathology	Pediatrics
Pharmacology	Psychiatry
Physiology and Biophysics	Radiology
	Surgery
	Community Medicine

Curriculum

During the first year, students will receive basic instruction in Anatomy, Biochemistry, Physiology, and Behavioral Science. There will also be multidiscipline teaching in the Neurological Systems, Human Growth and Development, Genetics, Statistics, and Radiology.

Second year students will continue their work in the sciences basic to medicine with major concentration in Pharmacology, Microbiology, Infectious Disease, Parasitology, and Pathology. They will also study Medical Diagnosis, Psychopathology of Behavior, Communication Interviewing, and Community Medicine.

The curriculum in the first two years will be organized to provide both concentration in the specific disciplines basic to medicine and an opportunity to integrate the concepts and principles of the basic and the clinical sciences.

During the third and fourth years, major concentration will be in the areas of clinical medicine with continuing opportunities for appropriate study of the basic sciences. Primary clinical experience will be obtained in the University Hospital and its related facilities.

Opportunities will also be available for graduate study in the sciences basic to medicine and for postgraduate intern and residency study in the clinical specialties.

First Year Courses

Courses	Crs.
Anatomy 511—Introduction to Anatomy	4
Anatomy 512—Microscopy and Ultrastructure	3
Anatomy 513—Developmental Anatomy	2
Behavioral Science 411—Health and Society	2
Biochemistry 511—Biochemistry	7
Physiology 511—Medical Physiology	7
Conjoint 112—Human Growth and Development	4
Conjoint 118—Conjoint Sciences and Systems	3
Conjoint 416—The Nervous System	6
Conjoint 119—Medical Genetics	1
Radiology 111—Radiobiology	1

Second Year Courses

Courses	Crs.
Community Medicine 221—Community Medicine	3
Conjoint 221—Fundamentals of Microbiology and Infectious Diseases	6
Conjoint 222—Parasitic Diseases of Man	2
Medicine 221—Medical Diagnosis	8*
Psychiatry 221—Psychopathology of Behavior	3
Radiology 221*—Radiobiology	1*
Pathology 421—Fundamental Human Pathology	4
Pathology 422—Systematic Human Pathology	7
Pathology 423—Case Studies in Disease	2
Behavioral Science 422**—Biological Statistics	2
Behavioral Science 421**—Biological Statistics II	2

* Number and credit pending.
** Recommended elective for Medical Students.

The Clinical Years

The objective of the third and fourth year curricula is to prepare the medical student with a sufficient practical and theoretical background in the major clinical sciences to enable him to enter further training for family practice, specialty practice, research and teaching or administrative and public health medicine. Clinical education therefore is directed to the acquisition of fundamental knowledge, skills, and attitudes requisite for additional training—it is not directed to any particular specialty. It is so formulated as to articulate logically with postgraduate education.

The student's introduction to the functions and responsibilities of the physician will take place in the University Hospital and affiliated institutions in a setting which emphasizes the comprehensive approach to medical care. The essence of clinical education is gradual increase in responsibility under careful supervision. This will be achieved as the student becomes a member of the medical care team and participates daily in the evaluation of clinical problems.

Third Year Curriculum

(1) The *Basic Clerkship* consists of three months on the general medical and surgical service and three months on the children's service. During this time, students will be assigned as members of a medical care team. The purpose of this clerkship is to acquaint them with the basic techniques of history taking, physical examination and the proper use of the laboratory, x-ray, and other ancillary diagnostic procedures in the evaluation of the needs of the patient and of a plan of rational management.

Emphasis will be placed on the approach to the total needs of the patient in such fashion that the scientific, social, emotional, and psychologic aspects of his illness will be evaluated. The student will gain experience in cooperating with the other health professionals, particularly the social worker and the nurse.

Instruction is chiefly by daily bedside teaching rounds with the full-time members of the medical care team. Teaching seminars will be conducted under the direction of the medical, psychiatric, and surgical services. A weekly management conference will focus on a consideration of the problems generated in the patient, and his family, by the disease process. The entire team will participate in these management conferences.

During this time, the student will take regular night call at the University Hospital. The number of patients assigned to any student will be limited so that he can study a few patients carefully and well.

(2) Six and one-half weeks will be spent on the psychiatric clerkship. This is a period of psychiatric experience during which time the student has the responsibility, under supervision, for the diagnostic appraisal, participation in therapeutic planning for the patient through interview of the patient and appropriate relatives, and other indicated methods. Such an assignment makes it possible for students to observe how patients' maladjustive processes create adverse environmental response, thus perpetuating the maladaptive behavior, and furthermore, how this pattern can be altered through a series of corrective emotional experiences for the patient in a therapeutically oriented milieu.

The student will gain an awareness of the impact of psychiatric illness on the family and the diagnostic knowledge and dynamic understanding necessary for eliciting effectively the therapeutic cooperation of the patient and his family.

Students will have the opportunity to learn indications and contraindications from various psychotherapeutic and somatic pharmacological treatment methods. The student will become acquainted with the indications, imitations and possible complications of the various psychotherapeutic somatic and pharmacological methods of treatment of psychiatric illness and emotional disturbance.

(3) Six and one-half weeks will be spent on an Obstetrics and Gynecology clerkship where the major emphasis will be on the understanding of the physiologic processes of pregnancy and normal labor. Experience in ante-partum and post-partum care, as well as a certain amount of experience in normal deliveries, will be provided.

(4) The last thirteen weeks will consist of the following: (a) four weeks of vacation; (b) ten weeks spent in an anatomy clerkship for half the day and an elective period for the remaining half of the day. During this period, students will be divided into small groups and will receive individualized instruction in dissection and regional anatomy. The remainder of the day during this period will be taken up by an elective chosen by the student from those offered by the clinical and basic science departments. In the choice of this elective, as in the other elective periods, the approval of the appropriate departmental chairman must be obtained.

Fourth Year Curriculum

(1) Thirteen weeks will be spent on a medical clerkship. During this period the student will be provided with the opportunity for an experience in greater depth in internal

medicine and its subspecialities. Emphasis will be on participation in the care of patients with teaching at the bedside, in seminars and in the regular conferences of the various sections in medicine.

(2) Thirteen weeks will be spent in a clerkship on the surgical service which will have the same objectives as the period spent on the medical service.

(3) The student will be assigned to a community in Kentucky and he will reside there for four weeks. The objective of this clerkship is to familiarize the student with the problems of medicine in a community and the interdependence of social, environmental and epidemiologic factors in disease.

(4) The remainder of the fourth year which is composed of sixteen weeks, will consist of a *vacation-elective period.* Great flexibility will be allowed during this time. The only requirements are as follows: The major elective may be in a clinical or basic science area but must be approved by a clinical department chairman. The minor elective may be in a related basic or clinical science. Each program will be worked out individually by the departmental chairman, student, and appropriate faculty members.

A variety of electives will be offered in all clinical and basic science departments. Students will be permitted to spend periods away from the University of Kentucky Medical Center during this time. They may take electives at other medical schools or medical institutions in this country or outside the continental United States. In the case of electives carried out at other institutions, it will be necessary for the student to submit a report to his departmental chairman summarizing his experiences in a manner outlined to him beforehand by the departmental chairman.

Out-Patient Experience: On each of the clerkships and clinical electives, the student will have out-patient experiences scheduled simultaneously and coordinated with in-patient experiences. The student will be able to follow the same patient in and out of the hospital and learn something of the importance of continuity in management, especially of the illnesses of long-term duration.

Psychiatry: Each student during his fourth year will select a patient from his outpatient cases to follow psychotherapeutically under the supervision of a staff psychiatrist. These will be patients who present themselves principally with psychosomatic complaints similar to what he will later experience as a physician in practice.

Surgical Pathology: Weekly Seminars will be conducted conjointly by the departments of pathology and surgery and will be planned around the surgical-pathologic materials from patients seen by the student. This will be supplemented by additional material from the department of Pathology.

Radiology: Time will be allotted for the purpose of a systematic presentation of the radiologic point of view in clinical medicine. These presentations are under the direction of the Department of Radiology and will consist of two-hour session on alternate weeks.

Therapeutics: Clinical Therapeutic conferences will be held for the combined third and fourth year classes. They will be coordinated by the Department of Medicine but held in conjunction with Department of Pharmacology and the other clinical departments. Sessions will be held once a month and will be two hours in length. They will be based on the presentation of a patient with a current clinical therapeutic problem. The major areas of clinical therapeutics will be systematically covered in the two-year period.

Legal Medicine and Toxicology: Consists of five two-hour periods devoted to review of basic principles. Further material in this discipline is presented in the course in Pathology and conjointly with several of the clinical departments.

Combined Clinical Conferences: These will be held once a week on Saturday morning for a two-hour period. The responsibility for organization will be rotated between the major clinical departments. The department having responsibility for any particular session will select a patient from the University In-Patient or Out-Patient Hospital services. Presentations will usually involve the participation of other clinical and basic science departments. The third and fourth year classes will attend together, as will house staff and attending physicians.

Grand Rounds: These will be conducted by each of the major clinical services once a week. Medical students will be expected to attend when serving elective or prescribed clerkships. At therapeutic conferences, combined clinical conferences, and grand rounds, one of the students will present a case he has admitted and worked up

Lectures: One hour weekly in the third and fourth year will be devoted to a formal lecture series. The clinical departments will rotate in this assignment. The subject area will be scheduled and announced before hand.

*ACADEMIC DEPARTMENTS**

ANATOMY

FACULTY

Professor: William H. Knisely (Ph.D., Medical College of South Carolina, 1954), CHAIRMAN. *Associate Professors:* Robert S. Benton (Ph.D., Duke, 1960), Lois A. Gillilan (Ph.D., Michigan, 1940; M.D., Pittsburgh, 1947), Mervyn B. Quigley (L.D.S., 1948 and H.D.D., 1951, Glasgow, Scotland; M.S., Rochester, N.Y., 1955; D.M.D., Alabama, 1959). *Assistant Professors:* Opal S. Conley (M.S., University of Kentucky, 1943), William Bryan Cotter, Jr. (Ph.D., Yale, 1956), Robert Eugene McCafferty (Ph.D., Pittsburgh, 1951), Mary Jane Showers (Ph.D., University of Michigan, 1957), Miroslava Nikitovitch-Winer (Ph.D., Duke, 1957). *Instructor:* Willis K. Mylin (D.D.S., University of Pennsylvania, 1954). *Teaching Assistant:* Phyllis D. Zwarych (M.A., University of Kansas, 1962). *Teaching and Research Assistant:* Mary Jo Gumbert (M.A., Eastern Kentucky State College, 1957).

The broad objectives of the Department of Anatomy include a presentation to the students of Medicine, Dentistry, and Nursing of the principles of organization of the body and, organized data relevant for each field, upon which the

* Including course listings for the first and second years only. For a more complete presentation of the curriculum of the third and fourth years of study, please refer to the immediately preceding section, "Clinical Curriculum." Descriptions of courses are available in the bulletin of the College of Medicine.

principles are based. A much more detailed presentation will be made to a few graduate students in Anatomy. Also, the specialized training of some post-doctoral students in specific areas of Anatomy will be carried out. A further objective is the opportunity for all members of the Department, including graduate students, to obtain more information and knowledge about anatomy through research, including scholarly study as well as laboratory investigations. Restated, a broad objective of the Department is to contribute information on normal structure.

The purpose is to aid in understanding how the body is made, how it works, what can go wrong, and how to repair what does go wrong.

Courses

206 *Elementary Anatomy.* (4) I

503 *Independent Work in Anatomy.* (3) I, II, S

511 *Introduction to Anatomy.* (4)

512 *Microscopy and Ultrastructure.* (3)

513 *Developmental Anatomy.* (2)

416 *Conjoint Nervous System.* (6)

119 *Conjoint Medical Genetics.* (1)

531 *Combined Gross and Neuroanatomy.* (6)

532 *Combined Histology and Developmental Anatomy.* (4)

533 *Oral Histology.* (2)

611 *Regional Gross Anatomy.* (8)

ANESTHESIOLOGY

FACULTY

Professor: Peter P. Bosomworth (M.D., Cincinnati, 1955), CHAIRMAN. *Instructor:* Robinson P. Kirkpatrick (M.D., Ohio State University, 1955).

The Department of Anesthesiology is at the present time beginning its activation, and the catalogue does not list the entire departmental faculty for Anesthesiology since a number of appointments are in varying stages of completion at the time of publication.

The Department of Anesthesiology will participate in undergraduate teaching in the College of Medicine, the College of Nursing, and the College of Dentistry. The course work in Anesthesiology for medical students will be presented as a portion of pharmacology, physiology, and surgery. The principles and practice of anesthesia will be presented, including a discussion of the variations in normal physiology, the pathologic conditions that arise during anesthesia and their treatment, and the pharmacology of anesthetic agents—including inhalation agents, rectal anesthetics ,and spinal and other regional anesthetics.

It is anticipated that the program of the department will include an elective clerkship in the senior year. Such a program is not intended to qualify the student in the administration of anesthesia. The student will learn the techniques of resuscitation, oxygen therapy, operative and immediate postoperative management by active participation in the patient's care.

BEHAVIORAL SCIENCE

FACULTY

Professors: Robert Straus (Ph.D., Yale, 1947), CHAIRMAN; Thomas R. Ford (Ph.D., Vanderbilt, 1951). *Associate Professors:* Albert J. Lott (Ph.D., Colorado, 1957), John Hamilton Mabry (Ph.D., Iowa, 1951), Marion Pearsall (Ph.D., California, 1950), Alan Ross (Ph.D., Iowa State, 1960). *Assistant Professors:* Carol B. Edwards (Ph.D., Iowa State, 1962), Eugene B. Gallagher (Ph.D., Harvard, 1958), Roy Kahn Jarecky (Ed.D., Columbia, 1958), Melvin J. Lerner (Ph.D., New York University, 1957).

The Department of Behavioral Science has the following major objectives: first, the delineation and synthesis of principles and content from the behavioral sciences which are specially pertinent to the understanding of human behavior in health and disease, and the correlation of these principles with those of the biological and physical sciences in the development of a conceptual frame of reference useful for the practice of comprehensive medicine; second, the application of behavioral science concepts and research findings to a further understanding of the diagnostic, treatment, and management process, to the mobilization of health resources to meet the needs of society, and to the understanding of interpersonal relationships and social structure with medical institutions themselves; third, the provision of instruction and research consultation in biostatistics; and fourth, the development of curricula and research around concepts of communication and small group human interaction. The teaching program of the Department includes the courses in Health and Society, and Statistics; participation in the conjoint courses in Human Growth and Development, Introduction to Communication and Interviewing, and Conjoint Sciences, and participation in consultation capacity in clinical conferences on invitation from the various clinical departments.

Courses

411 *Health and Society.* (2)

421 *Biological Statistics.* (2)

422 *Biological Statistics.* (2)

112 *(Conjoint) Human Growth and Development.* (4)

224 *Conjoint Introduction to Communication and Interviewing.* (1)

BIOCHEMISTRY

FACULTY

Professors: George William Schwert (Ph.D., Minnesota, 1943), CHAIRMAN; Richard S. Schweet (Ph.D., Iowa State, 1949). *Associate Professor:* Robert L. Lester (Ph.D., California Institute of Technology, 1955). *Assistant Professors:* John C. Dittmer (Ph.D., Washington, 1958), Alfred S. L. Hu (Ph.D., Oregon, 1956), David C. White (M.D., Tufts, 1955, Ph.D., The Rockefeller Institute, 1962), Alfred D. Winer (Ph.D., Duke, 1957).

The objectives of the Department of Biochemistry are:

1. To provide training for medical and dental students which is sufficiently detailed and broad in scope to provide an adequate basis for the understanding of the biochemical lesions which result in disease processes.

2. To provide sufficient coursework to enable graduate students in biochemistry and in other areas to use the concepts and methods of biochemistry as research tools.

3. To provide a vigorous research environment for students doing major graduate work in this discipline.

Biochemistry has undergone, and is still in, a period of rapid growth. The ideas and techniques of biochemistry are increasingly adopted in all fields of biology and medicine. Since it is not possible to predict which areas will be most productive in the future, introductory courses for medical and dental students differ in emphasis, rather than in breadth, from that offered to graduate students. An effort is made in all courses to provide an adequate basis for understanding future developments and also to emphasize the transitory nature of ideas in a rapidly developing experimental science.

(For a description of the curriculum leading to the Ph.D. in Biochemistry, please consult the *Bulletin* of the Graduate School of the University of Kentucky.)

Courses

511 *Biochemistry.* (7)

119 *(Conjoint) Medical Genetics.* (1)

514, 515—*General Biochemistry.* (3)
Prereq: Chemistry 112, 222, 232. One year of a biological science. Chemistry 442 and 443 are highly desirable for students majoring in biochemistry.

517—*Experimental Methods in Biochemistry.* (2) II
Prereq: Biochemistry 514 or its equivalent.

610,611—*Intermediary Metabolism.* (3)
Prereq: Biochemistry 511 or Biochemistry 514, 515.

614,615—*Biochemistry of Proteins, Nucleic Acids and Enzymes.* (3)
Prereq: Biochemistry 511 or 514, 515 and Chemistry 442. (Equivalent to 614 in Physiology).

618,619—*Seminar in Biochemistry.* (1)

640—*Research in Biochemistry (To be arranged).*
Prereq: Permission of instructor.

769—*Residence Credit for the Doctor's Degree.*
May be repeated indefinitely.

COMMUNITY MEDICINE

FACULTY

Professors: Kurt Walter Deuschle (M.D., Michigan, 1948), CHAIRMAN; Howard Lee Bost (Ph.D., Michigan, 1955), William R. Willard (M.D., Dr.P.H., Yale, 1934). *Associate Professor:* Hugh Scott Fulmer (M.D., M.P.H., State University of New York, 1951). *Assistant Professors:* Robert L. Johnson (M.S.P.H., Yale, 1951), Michael Joseph McNamara (M.D., New York University, 1955), Jesse W. Tapp, Jr. (M.D., M.P.H., Chicago, 1955). *Instructors:* Anthony Charles Irvine Adams (M.B.B.S., M.P.H., University of Adelaide, 1959), Jean French (R.N., M.A., M.P.H., John Hopkins, 1961), Donald Lee Hochstrasser (M.A., Kentucky, 1954), Herman R. Huempfner (M.S.D., University of Frankfurt, 1950), William Henniger McBeath (M.D., Louisville, 1957), Ann Elaine Pressman (M.D., New York, 1960).

The Department of Community Medicine, like others in the College of Medicine will have wide teaching, research, and service responsibilities. In teaching, the broad objective is to prepare the student to contribute effectively to the solution of the health problems of a community and to better care for individual patients.

More specific teaching objectives of the Department are:

(a) To provide the student with an understanding of the health problems and needs of the community and of the epidemiology of disease, i.e., the circumstances under which disease occurs.

(b) To help the student acquire the attitude of viewing individuals in their entirety as complex human beings in a complex and changing environment.

(c) To familiarize the student with existing community resources and organizations designed to meet these needs.

(d) To teach the student how medical care is organized, provided, and financed today, and to make him aware of the problems and trends in this area.

(e) To participate when appropriate in community health research programs.

The curriculum of the Department of Community Medicine will include lectures, seminars, demonstrations, observations and field assignments covering the concepts of health, the history of disease, biostatistics, vital statistics, epidemiology, preventive medicine, populations problems, relationships of environment of disease, community health resources, public health organization and concepts, organization and administration of health services, methods of financing medical care, and current trends in medical care.

The development of an effective teaching and a productive research and service program will depend in part on the effective use of the local, state, national and international resources. Many of the community-centered investigations will require the cooperation and active participation of local physicians, health departments, and other official and non-official agencies.

It is also anticipated that the program of the Department will include an elective assignment for carefully selected senior students to undertake study, research, and service in the international health field.

Courses

221 *Community Medicine.* (3)

Conjoint Courses

A number of courses which have interdisciplinary implications are taught as Conjoint Courses. In such courses, a chairman is appointed from one of the major departments involved in teaching the interdisciplinary subject and he is assisted by a committee which is composed of members of the participating departments. The content, methods of teaching, and student evaluation are considered in conjoint planning by this committee and the pertinent sections of the material in the course are presented by the department which has the greatest interest and experience in th area under discussion.

Certain of the seminars and laboratory and clinical sessions are conducted through participation by faculty members from several departments.

In this manner, certain fundamental courses—which are listed below for the first and second years—are taught in a way which facilitates the correlation of knowledge and techniques from their several sources.

Courses

112 *Human Growth and Development.* (4)

224 *Introduction to Communications and Interviewing.* (1)

416 *The Nervous System.* (6)

118 *Conjoint Sciences and Systems.* (3)

119 *Medical Genetics.* (1)

221 *Fundamentals of Microbiology and Infectious Diseases.* (6)

222 *Parasitic Disease of Man.* (2)

MEDICINE

FACULTY

Professor: E. D. Pellegrino (M.D., New York University, 1944), CHAIRMAN. *Associate Professors:* R. K. Noback (M.D., Cornell, 1947), Kingsley M. Stevens (M.D., Harvard, 1947), Borys Surawicz (M.D., Stephan Batory, 1939), Joseph H. Warren (M.D., Harvard, 1938), William H. Waugh (M.D., Tufts, 1948), William W. Winternitz (M.D., John Hopkins, 1945). *Assistant Professors:* Albert Balows (Ph.D., University of Kentucky, 1952), Barbara Bates (M.D., Cornell, 1953), Madison J. Cawein (M.D., Tulane, 1954), Jerome E. Cohn (M.D., Maryland, 1946), Daniel Lareau (M.D., University of Vermont, 1952), Paul Mandelstam (M.D., Harvard, 1953), Alberto Mazzoleni (M.D., University of Milan, 1952), Nicholas J. Pisacano (M.D., Hahnemanm Medical College, 1951), E. D. Rees (M.D., Yale, 1954), John T. Reeves (M.D., Pennsylvania, 1954). *Instructors:* Francis H. Bledsoe (M.D., Medical College of South Carolina, 1953), E. J. Lappat (M.D., Colorado, 1955).

Internal medicine is the broadest of all clinical disciplines. Its objective is an integrative approach to the diseases of adult life whereby all aspects of the diagnosis, causation and total care of patients can be brought together. The courses in Medicine provide for the undergraduate student an introduction to the natural history of health and disease which is the basis for later practice or research in all branches of clinical medicine. Its major intellectual function is to communicate a comprehensive attitude of mind whereby the sick human can be approached in a logical, scientific and humane manner. Its major tools are the correlation of the history, physical examination and the ancillary clinical data of X-ray and laboratory. It requires that all this information be focused for the benefit of the patient and be disciplined by the social and moral considerations implicit in the care of human beings. Its foundations are deep in the physical sciences and it draws heavily on the social and psychological sciences.

An introduction to these principles of internal medicine is provided in the first year when the student is presented with correlation clinics which emphasize the integration of clinical and basic sciences knowledge. In this year, too, the student comes in contact with the Department of Medicine in the introduction to clinical medicine and the conjoint systems courses.

In the second year, the Department is responsible for the course in medical diagnosis which consists of an elaboration of the classical methods of history and physical examination in practical and didactic sessions. These will be correlated with the essentials of laboratory diagnosis as an aid to clinical evaluation and as a method of understanding the pathophysiology of disease.

The third-year experience centers in the adult portion of the basic clerkship in which the student assumes a role in the clinical activities of the Department. Here the emphasis is on observation and study of the manifestations of disease in the individual patients, in whose care the student is participating. The basic clerkship is designed to teach an approach to meeting the totality of a patient's medical needs. A close correlation in bedside teaching between medicine, surgery and psychiatry is an essential feature. Experience under supervision in outpatient and inpatient activities is provided simultaneously. Teaching is rooted in the care of individual patients.

The fourth-year experience is designed to provide a more detailed experience in internal medicine and its various subspecialties. The students will attend specialty clinics and seminars. Opportunities for observation of clinical research activities will also be provided for fourth-year students.

In the fourth year, also, elective work will be provided in all the major subspecialties of medicine. This work is designed for those who wish to pursue individual problems or to gain further experience in a special field in preparation for practice or research.

Clinical grand rounds are held once weekly in which illustrative cases are presented and discussed from the clinical and pathophysiological points of view. Each specialty

group conducts rounds at regular intervals and students will be encouraged to attend these as well.

Therapeutics will be taught in the third and fourth year cooperatively with Pharmacology and the other clinical departments. The sessions will be designed as clinical conferences and the discussions grouped around case presentations.

The course, Fundamentals of Microbiology and Infectious Diseases, presents the basic attributes of bacteria, fungi, and viruses, and the interrelations between these organisms and man. The chairman of this conjoint course is a member of the Department of Medicine.

Courses

221 *Medical Diagnosis.* (3)

118 *(Conjoint) Conjoint Sciences and Systems.* (3)

221 *(Conjoint) Fundamentals of Microbiology and Infectious Diseases.* (6)

331 *(Conjoint) Basic Adult Clerkship.* (20)

334 *Therapeutics.* (2)

341 *Senior Clerkship.* (15)

345 *(Conjoint) Senior Elective.* (14)

PATHOLOGY

FACULTY

Professors: Wellington Buel Stewart (M.D., Rochester, 1945), CHAIRMAN; Rudolph Julius Muelling, Jr. (M.D., Louisiana State, 1950), Daniel L. Weiss (M.D., Columbia University, 1946). *Associate Professors:* John A. Shively (M.D., Indiana University, 1946), Henry Tesluk (M.D., Cornell, 1943). *Assistant Professors:* James Taylor Packer (M.D., Temple, 1952), John Arthur Koepke (M.D., Wisconsin, 1956).

The educational mission of the Department of Pathology embraces all four years of the medical curriculum; however, the largest single effort is made during the second year. This year provides considerable number of classroom hours for instruction by the Department. The major effort during this period is a systematic coverage of the body's response to injury and an introduction to disease processes and mechanisms. Instruction is by means of the tested and effective methods of demonstration, case study, and seminars, combined with laboratory work illustrating anatomical, physiological, and chemical abnormalities.

Emphasis will be placed upon personal contact and small informal group teaching, which is to be accomplished to a major degree in the student laboratories.

During the third year of study, the Department of Pathology sponsors an elective clerkship in Pathology. During this period the students have the opportunity to engage in all Departmental functions.

There are also many opportunities for instruction by the specially qualified members of the Division of Forensic Medicine and Toxicology. This instruction will include basic legal principles, professional liability, the expert witness, medical licensure, narcotics, coroners and medical examiners' systems, forensic psychiatry, rape, toxicology, forensic pathology, etc.

Courses

421 *Fundamental Human Pathology.* (4)

422 *Systematic Human Pathology.* (7)

423 *Case Studies in Disease.* (2)

222 *(Conjoint) Parasitic Diseases of Man.* (2)

PEDIATRICS

FACULTY

Professor: John Horace Githens (M.D., Temple, 1945), CHAIRMAN. *Associate Professors:* Frederick Albert Horner (M.D., Rochester, 1947), Thomas Lothian Nelson (M.D., California, 1946). *Assistant Professors:* Wylda C. Hammond (M.D., California, 1949), Jacqueline A. Noonan (M.D., Vermont, 1954). *Instructors:* John J. Boehm (M.D., Northwestern University, 1955), Robert W. Chamberlin, Jr. (M.D., Harvard, 1956), William E. Hathaway (M.D., Oklahoma, 1954), Charles Charlton Mabry (M.D., Emory, 1954), James Wayne Rackley (M.D., University of Tennessee, 1957).

The major responsibility of the Department of Pediatrics in the preclinical years is to help the student develop an understanding of the influence of growth and development in the biology of the normal individual. In addition, the Department has a responsibility for the introduction of pediatric concepts into the teaching of the basic skills of medical diagnosis.

In the third year, the students will spend half of their basic clerkship on the children's service. The majority of the clinical teaching of Pediatrics will be done at this time utilizing both medical and surgical pediatric problems. The students' experience will be both on the in-patient and out-patient service and in addition will include a rotation through the newborn nursery. By participating in combined team rounds with the Departments of Pediatrics, Surgery and Psychiatry, the student will have an opportunity to observe a comprehensive approach to the care of each patient. The emphasis in the out-patient portion of the Pediatric Basic Clerkship will be in providing training in the principles of preventive medicine and well-child care (including immunization procedures, nutrition, and an understanding of normal and abnormal physical and mental development).

In the senior year, further experience in pediatrics will be available as an elective. The opportunity will be provided for a more intensive experience with increased patient responsibility in clinical pediatrics, in one of the pediatric specialties, or in an area of research related to children.

Courses

112 *(Conjoint) Human Growth and Development.* (4)

224 *Conjoint Introduction to Communication & Interviewing.* (1)

331 *Basic Clerkship, Children.* (20)

345 *(Conjoint) Senior Elective.* (14)

PHARMACOLOGY

FACULTY

Professors: Tihamer Zoltan Csaky (M.D., Budapest, 1939), CHAIRMAN; Helmut Albert Gordon (M.D., Budapest, 1932). *Assistant Professors:* James Wendell Flesher (Ph.D., Loyola, 1958). Donald Frank Diedrich (Ph.D., Wisconsin, 1959).

Pharmacology in general is a branch of science which embraces all studies concerning drugs, such as their composition, structure, physical and chemical properties, action, toxicity, therapeutic use and preparation. In a medical curriculum the teaching of Pharmacology concentrates primarily on Pharmacodynamics, which is the study of the interaction of drugs with living matter, or the effect of change in the chemical environment upon the organism.

In the two courses offered by the Department of Pharmacology in the College of Medicine, pharmacodynamic principles are emphasized. Lectures, conferences, laboratory demonstrations, and exercises dealing with topics such as the role of chemical structure and physico-chemical properties of drugs in the biological activity, metabolism, excretion and interactions with active cellular receptors; dose-response relationships and the action of drugs on cellular and subcellular levels are included. Furthermore, the pharacodynamic properties of the various drugs frequently used in medical practice are discussed. In the laboratory, students will familiarize themselves with research techniques utilized in the process of obtaining new knowledge.

The aim of the teaching activities of the Department of Pharmacology is to give students a basic understanding of the mode of action of drugs. This understanding should help those who will enter medical practice to use the rapidly increasing number of drugs in a rational and intelligent manner.

Courses

521 *General Pharmacodynamics.*
(1, for medical students)
(2, for graduate students)

522 *Medical Pharmacology.* (3)

PHYSIOLOGY AND BIOPHYSICS

FACULTY

Professors: Loren Daniel Carlson (Ph.D., Iowa, 1941), CHAIRMAN; Richard Sweetnam Allen (M.S., Rochester, 1925), James William Archdeacon (Ph.D., Rochester, 1943), Louis Lester Boyarsky (Ph.D., Chicago, 1948). *Assistant Professors:* Joseph Engelberg (Ph.D., Pennsylvania, 1958), Judith D. Pratt (Ph.D., Duke, 1958), Robert Elphin Smith (Ph.D., Washington, 1962), Michael Friend Wilson (M.D., Pennsylvania, 1953),

Fred William Zechman, Jr. (Ph.D., Duke, 1956). *Instructor:* David Robert Wekstein (Ph.D., Rochester, 1962).

The Department of Physiology in the Medical Center, in addition to instruction for medical, dental, and nursing students, offers courses at the undergraduate level and a graduate program leading to an M.S. or Ph.D. degree. The department is equipped with modern physiological and biophysical research equipment.

The course work in physiology for medical students is directed to the objectives, (1) presentation of basic facts of physiology as they relate to human function and, (2) laboratory experience to give the student an appreciation of the manner in which facts are established and concepts formed. These objectives are accomplished by lectures, demonstrations, discussions, and project-type laboratories.

(For description of the curriculum leading to the M.S. and Ph.D. degree in Physiology, please consult the Graduate School Bulletin of the University of Kentucky.)

Courses

206,207 *Elementary Physiology.* (3) I, II, S

502,503 *Principles of Physiology.* (5) I

504 *Independent Work in Physiology.* (3) I, II, S

505,506 *Physiology of the Supporting System.* (4) II, S

507 *Introduction to Endocrinology.* (3) I, S

508,509 *Comparative Neurophysiology.* (4) I

511 *Medical Physiology.* (7)

512,513 *Cellular Physiology.* (4) I, S

602 *Physiological Technique.* (5) II

604,605 *Experimental Endocrinology.* (2) II

606,607 *Advanced Neurophysiology.* (3) II

614 *Principles of Molecular Biophysics.* (4) I
(equivalent to 614 in Biochemistry)

620 *Theoretical Biophysics.* (4) I (alternate years)

660 *Systems Biophysics.* (4) II (alternate years)

768 *Residence Credit for the Master of Science Degree.* (0) I, II, S
(1 to 9 weeks, residence). May be repeated. Maximum of six weeks can be applied toward master's degree with thesis.

769 *Residence Credit for the Doctor of Philosophy.* (0) I, II, S
(1 to 18 weeks residence). May be repeated indefinitely.

774 *Graduate Seminar in Physiology.* (1) I, II, S

791 *Research in Physiology.* (3) I, II, S

416 *(Conjoint) The Nervous System.* (6)

521 *General Pharmacodynamics.* (1)

522 *Medical Pharmacology.* (3)

PSYCHIATRY

FACULTY

Professor: Joseph B. Parker, Jr. (M.D., Tennessee, 1941), CHAIRMAN. *Associate Professors:* Jesse G. Harris, Jr. (Ph.D., Duke, 1955), Hugh A. Storrow (M.D., Southern California, 1949). *Visiting Associate Professor:* Torkel Scholander (M.D., Sweden, 1952). *Assistant Professors:* Robert G. Aug (M.D., Cincinnati, 1955), James C. Baxter (Ph.D., Texas, 1959), Roswell H. Fine (M.D., Wisconsin, 1948), David H. Looff (M.D., Maryland, 1954), Beverley T. Mead (M.D., Medical College of South Carolina, 1947), James M. Whitehouse (Ph.D., Colorado, 1959). *Instructor:* Ray H. Hayes (M.D., Georgetown University Medical Center, 1950).

The Department of Psychiatry participates in all four years of undergraduate teaching in the College of Medicine. During these four years, the medical student is offered the basic information required for him to practice medicine comprehensively in the community as a physician, by understanding the relationship to his patients and the impact of this relationship on his therapeutic procedures and the patient's responses. This is done by giving the student an opportunity to understand the influences of human psychic processes and to recognize, evaluate, and diagnose emotional and psychiatric disorders, to appreciate the impact of structural or functional defect and disease on the individual.

The student in his practical experiences will be provided with knowledge and experiences with interviewing techniques, communication processes and responses, and psychotherapeutic techniques as part of the above objectives. He will be given the opportunity to develop techniques that he as a future physician will find necessary to utilize in the practice of medicine, handling every-day emotional problems of patients, as well as the immediate handling and disposition of psychiatric emergencies.

Courses

221 *Psychopathology of Behavior.* (3)
Prereq: Conjoint 112 and Conjoint 114.

112 *(Conjoint) Human Growth and Development.* (4)

224 *(Conjoint) Introduction to Communication and Interviewing.* (1)

331 *Psychiatric Clerkship.* (8)

RADIOLOGY

FACULTY

Professor: Harold Dennis Rosenbaum (M.D., Harvard, 1944), CHAIRMAN. *Assistant Professors:* Robert H. Greenlaw (M.D., Rochester, 1952), Arthur Lieber (M.D., Louisville, 1953). *Instructor:* Daniel J. Hanson (M.D., Vermont, 1958).

Every specialty in the practice of medicine utilizes the services of the Department of Radiology in at least one of its many aspects. Only an exceptional patient will receive care at the Medical Center without receiving professional attention from radiology. Because of this, radiology, as a discipline of medical thought, cuts across standard departmental barriers. Consequently, the radiologist is intimately involved in all phases of comprehensive medical care: prevention, diagnosis and treatment. Since the medical student, regardless of the type of his future practice, will require the services of radiology in the care of his patients, the undergraduate curriculum must provide sufficient time for presentation of the fundamentals of radiology with particular emphasis on the proper utilization of radiology in comprehensive medical care.

By its nature the practice of radiology, in large part, involves cooperation with other specialties in patient management. Consequently, it is appropriate that much of the material in this field be presented in conjunction with courses formalized in other departments.

The subject matter of some aspects of radiology is sufficiently distinctive and important to warrant a formal independent course. Such is the case with Radiobiology which is being offered as a scheduled subject at the end of the first year. A separate course in clinical diagnostic radiology is indicated in the clinical years as well as an elective in radiology during the fourth year. Roentgen therapy, an essential component to the student's knowledge of malignant diseases and their management, will be taught in the conjoint discipline of oncology during the clinical years.

In all teaching procedures, including lectures, stress will be placed upon demonstrating to the student how he can use the knowledge of health and disease he has obtained in previous courses to predict or explain the phenomena revealed in radiology. The student will be encouraged to think in terms of an investigative approach to problems that arise.

Courses

111 *Radiology-Radiobiology.* (1)

334 *Radiology-Clinical Diagnostic Roentgenology.* (2)

SURGERY

FACULTY

Professors: Ben Eiseman (M.D., Harvard, 1943), CHAIRMAN; Frank Cole Spencer (M.D., Vanderbilt, 1947), Thomas C. Moore (M.D., Harvard, 1944). *Associate Professors:* Rene Menguy (M.D., Paris, 1951, Ph.D., Minnesota, 1957), Ben Rush (M.D., Yale, 1948). *Instructor:* Lester Bryant (M.D., Cincinnati, 1955).

The Department of Surgery consists of the above listed full-time faculty plus 63 volunteer faculty members from among the practicing surgeons in the community who participate fully in the medical student, intern and residency teaching programs. A major effort is being directed toward choosing men to be full-time chairmen of the surgical specialty divisions.

The Department of Surgery is responsible for teaching medical students an understanding of those diseases that are best treated or investigated by operative means. The recogni-

tion, differential diagnosis, pathophysiology and prognosis of these diseases are taught in part or in the whole by surgeons who have most frequent contact with such problems. As a part of such instruction, the medical student is taught the nature, value, limitations, and impact on the patient of the operative means employed. Instruction in actual operative techniques is minimized. The early treatment of trauma is one exception to this thesis, for it is felt that every medical student should be capable of the early treatment of the injured.

Surgeons are physicians who also know how to operate, and as such, will be available for participation in medical student instruction in each year of the curriculum, as follows:

First Year: Actively participate in conjoint teaching particularly in Anatomy and Physiology. A joint Physiology-Surgery laboratory teaching program has proven of great interest in correlating surgical methods in the more complex physiology laboratory experiments.

Second Year: Principles of Surgery—An Elective Course in Second Semester. Lecture-discussions, outside reading assignments, and simple surgical laboratory exercises.

Third Year: For 6 months the junior student is covering surgical cases as a clinical clerk half of the time in the adult, and half of the time in the pediatric age group. Emphasis is placed on learning principles of general surgery with experience with in-patient assignments.

Fourth Year: A three month straight surgery clerkship in which a majority of the emphasis is on the surgical specialties. A concentrated period of time is assigned each specialty in which the student has no other responsibilities and can therefore function as an integral part of the house staff team in patient care.

Electives: Electives in surgery are utilized by students in the first two years, cooperating with members of the Department in research activities. During the last two years either research or specialty clinical assignments may be chosen by the student. During the 3rd year, one-half day for six weeks is available for electives. During the senior year, ten weeks are available. The facilities of University Hospital and the Veterans Administration Hospital are both utilized for clinical teaching in surgery.

It is felt that every student regardless of his ultimate goal, be it general practice, psychiatry, or a surgical specialty, should be exposed to a surgical program thus oriented, since such a large segment of disease is best treated by operative means.


COLLEGE OF
NURSING

Nursing

The College of Nursing is a unit of the new Medical Center located on the main campus of the University. The Center also includes a College of Medicine, a College of Dentistry, and University Hospital facilities. Both the College of Medicine and the College of Nursing admitted their first classes of students in September, 1960. The College of Dentistry received its first class in September, 1962.

The University Hospital facilities, including outpatient clinics, and approximately 500 in-patient beds, opened in April, 1962.

NURSING

Nursing is one of the most exciting, rewarding, and demanding professions a young person can choose. A nurse learns to minister to the sick and give counsel for health. The settings in which nursing is practiced have become numerous, providing different rewards and making different demands on the nurse. Nurses work in cooperation with physicians, dentists, physical therapists, dietitians, social workers, and others to help people grasp that precious thing called health.

Unlimited opportunities exist for a well qualified nurse in hospitals, public health agencies, industry, schools, health education, and teaching in schools of nursing. To meet Kentucky's nursing needs and those of society as a whole, many young men and women are needed who will prepare themselves through sound basic and advanced nursing education to assume leadership positions in the various areas.

NURSING EDUCATION AT THE UNIVERSITY OF KENTUCKY

The baccalaureate degree program seeks to prepare nurses who will become capable of effective participation with the health team, of giving comprehensive nursing care requiring a high degree of professional judgment, of assuming leadership in planning comprehensive care for patients, and for coordinating and supervising the activities of auxiliary nursing personnel. It must be emphasized that the degree of professional competence implied in this statement may not be fully developed within the given period of formal education.

Marcia A. Dake, M.A., Ed.D., is Dean of the College of Nursing.

The baccalaureate degree program aims to prepare students for general nursing responsibilities. The philosophy of the total Medical Center is that the beginning professional program should prepare for "undifferentiated" services to patients rather than prepare students for specialties in nursing. Students will be provided opportunities for a broad educational background and for the development of ability which will enable them to perform leadership roles in nursing care as they acquire additional experience.

ACCREDITATION

The College of Nursing is approved by the Kentucky Board of Nursing Education and Nurse Registration. Another measure of accreditation is the evaluation due in 1964 by the *National League for Nursing*, which is the professional accrediting organization for schools of nursing. A college cannot request an accrediting survey until the first class of students has reached the fourth year of the program. The College of Nursing is making all necessary preparations and will apply for this recognition at the earliest feasible date. The general accreditation of the University applies, of course, to all academic courses offered in the College of Nursing.

FACULTY

Professor: Marcia A. Dake (Ed.D., Columbia, 1958), Dean. *Associate Professors:* May M. Sanders (Ed.D., Columbia, 1961), Assistant Dean, Anna Virginia Lane (M.A., Chicago, 1951), Marion E. Pool (M.S., Western Reserve University, 1947), Mildred M. Seyler (M.A., Columbia, 1951), Frances Grace Wallace (M.A., Columbia, 1955), Dolores Higgins (M.A., Columbia, 1955), Mae McPhetridge (M.A., Columbia, 1956). *Assistant Professors:* Charlotte C. Denny (M.A., Kentucky, 1959), Greta I. Fraser (M.S., Colorado, 1960), Muriel A. Poulin (M.S., Colorado, 1960), Judith D. Pratt (Ph.D., Duke, 1958), Mildred M. Hill (M.A., Pennsylvania, 1960), Mary F. O'Neill (M.A., Chicago, 1959). *Instructors:* Celia K. Zyzniewski (B.S., New Jersey State Teachers College, 1946), Ruth Bishop (M.A., Columbia, 1962), Suzanne Zachary (B.S., Pennsylvania, 1960).

The Curriculum

The College of Nursing program for high school graduates will be four academic years in length. It will lead to the degree Bachelor of Science in Nursing. A minimum of 128 semester hours credit will be required for the degree.

Course work in certain subjects such as English, sociology, psychology, history, and biological sciences is a necessary part of any college education. This type of subject matter serves as a foundation for nursing and comprises approximately one half of the total program.

The general education courses are divided into the following areas:

Physical and biological sciences—Chemistry, microbiology, physiology, and nutrition are required.

Behavioral science—Psychology, sociology, and an elective are required.

English and communication—English Composition, speech and an elective are required.

Electives—These are selected with the assistance of the student's advisor.

Opportunities to learn nursing in hospital and public health agencies will begin in the second year. The portion of nursing in each semester will increase from the second through the fourth year. Course work in general education will comprise only a small portion of the student's fourth year program.

Along with classroom instruction, nursing students will have the opportunity to learn and to apply knowledge and skills in hospitals, schools, and other community agencies as members of the health team. Some of these agencies will be in the Lexington area and some will be in more rural areas of Kentucky. Along with doctors, medical students, social workers, physical therapists, and nurses, students will be working to defeat disease and improve health.

Nursing students learn about people; why they feel and act as they do and how to work with them. Most important of all, the experiences of the baccalaureate degree program will offer to students an opportunity to learn more about themselves.

A student completing the total program will be qualified to write the required State examination for registration as a registered professional nurse.

A typical program for the first year nursing student is as follows:

Fall Semester

Course	Crs.
English 101—Freshman Composition	3
Chemistry 102-03—General Chemistry	4
Psychology 100-01—Introduction to Psychology	4
Sociology 151—Introductory Sociology	3
Nursing 110—The Nursing Profession I	1
Physical Education	1
	16

Spring Semester

English 102—Freshman Composition	3
Chemistry 104-05—General Chemistry	4
Education 202—Human Development	4
Speech 181—Basic Public Speaking	3
Nursing 120—The Nursing Profession II	1
Physical Education	1
	16

EDUCATION FOR REGISTERED NURSES

Graduates of State approved hospital schools of nursing may be admitted to the College of Nursing to complete requirements for the degree Bachelor of Science in Nursing. All students must satisfy area requirements as listed above.

Registered nurses should plan to complete a minimum 30 credit hours in non-nursing subject matter prior to registration for upper division nursing courses. Courses in non-nursing may be pursued in any accredited institution of higher education. Registered nurses beginning such work are urged to seek consultation from the College of Nursing in selection of course work which would be acceptable in fulfilling requirements for the degree.

ADMISSIONS

The College admits two groups of students—those who enter as freshmen and those who are registered nurses who are admitted with advanced standing. The student must meet the admission requirements of the University. Rank in high school, results of College Qualification Test (or its equivalent) and the Physical status and all other available data are considered in selection of nursing students. The registered nurse must be a graduate of a state approved school of nursing.

All application forms must be completed and in the Dean of Admissions Office by *April 15* for students as freshmen. Freshmen students are admitted only in the Fall semester. Registered nurses are admitted in the Fall and Spring semesters or Summer Session.

PROCEDURE FOR APPLICATION

1. Obtain application forms from Dean of Admissions, University of Kentucky, Lexington.
2. Forward completed application to Dean of Admissions, University of Kentucky, Lexington.
3. Health form must be forwarded to Dean of Admissions at time of application.
4. Applicants are urged to plan for an interview with a member of College of Nursing faculty. Appointments may be made through the Office of the Dean, College of Nursing.

TRANSFER STUDENTS

Because nursing education programs in different institution vary in content and organization, it is therefore

necessary to consider transfer to the College of Nursing on an individual basis. Students desiring information relative to transfer are advised to contact the Dean, College of Nursing, University of Kentucky, Lexington.

Students and parents are encouraged to request an appointment to visit the College of Nursing for more detailed information and career planning with a member of the faculty.

FEES AND EXPENSES

In addition to the fees required of all University students, students of nursing must plan for expenses such as uniforms (approximately $50.00) and transportation for experiences outside the University Hospital (for within the County and for rural experiences, which will occur late in the program).



Dentistry

THE COLLEGE OF DENTISTRY at the University of Kentucky was authorized in 1954 by action of the Board of Trustees of the University. The physical facilities of the College of Dentistry were completed in 1961 and represent one wing of the new University Medical Center. Included in the Medical Center are the College of Medicine, College of Nursing and University Hospital.

The College of Dentistry admitted its first class in September of 1962. When in full development the school will admit approximately 50 students per year. In addition to the dental curriculum, the College also recognizes its responsibility for the training of auxiliary personnel. A program in Dental Hygiene is anticipated and is tentatively scheduled for activation in the fall of 1964.

The clinics of the College are designed so that each student is assigned to his own operating cubicle where he renders care to patients under conditions similar to those in a private office. He also contributes to the care of patients in the University Hospital. Other facilities of the Medical Center of importance to a student of Dentistry are the teaching laboratories in the Medical Science building and the excellent Medical Center Library.

AIMS AND OBJECTIVES

The major objective of the College of Dentistry is the development of biologically oriented, technically capable, socially sensitive dental practitioners who are keenly aware of the significance of their potential contribution to the total health of their patients. Thus, the educational philosophy of the College encompasses the concepts of integrated and comprehensive dental practice. Particular emphasis is placed upon the correlation between the technical phases of dental practice and the basic sciences. In addition to providing a thorough grounding in the principles and techniques of each major scientific and clinical subject, the curriculum stresses the relationship between dental problems and total patient health. The curriculum is so designed that each student is provided with ample opportunity for independent work in areas of special interest. Graduate and postgraduate education in the dental specialties will be an important facet of the expanding dental program. Opportunities are also available for those who wish to pursue special educational and research interests.

Alvin L. Morris, D.D.S., Ph.D., is Dean of the College of Dentistry.

FACULTY

Professors: Alvin Leonard Morris (D.D.S., Michigan, 1951; Ph.D., Rochester, 1957), DEAN, Emmett R. Costich (D.D.S., Pennsylvania, 1945; Ph.D., Rochester, 1954), Chairman, Department of Oral Surgery, Judson C. Hickey (D.D.S., Ohio State, 1950), Chairman, Department of Prosthodontics. *Associate Professors:* Harry M. Bohannan (D.M.D., Louisville, 1953; M.S.D., Pennsylvania, 1961), Chairman, Department of Periodonties and Endodontics, Roy T. Durocher (D.D.S., Maryland, 1950), Director of Clinics, Harry C. Lundeen (D.D.S., Minnesota, 1952), Chairman, Department of Fixed Prosthodontics, John R. Mink (D.D.S., M.S.D., Indiana University, 1956), Mervyn B. Quigley (D.M.D., Alabama, 1959), Michael T. Romano (D.D.S., Temple, 1947), Chairman, Department of Operative Dentistry. *Assistant Professors:* Stephen F. Dachi (D.M.D., Oregon, 1956; M.S.D., Indiana University, 1961), Chairman of Oral Diagnosis and Oral Medicine, Sheldon Rovin (D.D.S., Michigan, 1957), Chairman, Department of Oral Pathology, Stanley R. Saxe (D.M.D., Harvard, 1958, M.S.D., Washington, 1960). *Instructor:* Willis K. Mylin (D.D.S., Pennsylvania, 1954).

Academic Preparation

In preparing for dental school, fundamental undergraduate college training in physics, chemistry, biology and English is essential. Minimal requirements are satisfied with the equivalent of two semesters of study in physics; two semesters in the biological sciences; three semesters in chemistry, including one semester of organic chemistry; and at least one year of English with emphasis on communication skills. All science courses

must include both class and laboratory instruction. Advanced work in mathematics is highly recommended, as are courses in the humanities and behavioral sciences. Candidates who meet admission requirements and demonstrate excellence will be given equal consideration whether they major in one of the natural, social or behavioral sciences, or in the humanities.

The student should demonstrate his capacity for advanced work through the concentrated study of at least one subject in a major area of his interest by completing courses beyond the introductory level. Preferably, such courses should provide an opportunity for independent work. Subjects such as human anatomy, biochemistry, bacteriology and mammalian physiology will be covered in dental school and it is therefore suggested that they not be taken as part of pre-dental education. Undergraduate experience could more profitably include such courses as genetics and advanced chemistry. Courses which offer a better understanding of human behavior such as psychology and sociology can be recommended.

Admission

Applicants for the College of Dentistry are expected upon matriculation to have completed a minimum of two full academic years (60 semester hours) in an accredited college of arts and sciences. Applicants with this minimal college experience will be considered only if they present outstanding qualifications, indicating personal maturity as well as academic competence. Definite preference will be given to those students having completed three or four years of pre-dental education. Some colleges give credit for courses completed in the College of Dentistry, thus enabling three year applicants to qualify for the baccalaureate degree upon completion of the first year of professional education.

As a State-supported school, the College of Dentistry will give preference to qualified residents of Kentucky. A number of well-qualified out-of-state candidates will be admitted each year, however, and they are urged to apply.

For further information a bulletin entitled "How to Apply for Admission" is available from the Committee on Dental College Admissions, Medical Center, Office of Student Services.

Courses

Anatomy 531, *Combined Gross and Neuroanatomy.* (6)

Anatomy 532, *Combined Histology and Embryology.* (4)

Anatomy 533, *Oral Histology.* (2)

Behavioral Science 310, *Concepts of Behavioral Science and Biostatistics.* (2)

Community Dentistry 310, *Practice Management.* (1)

Community Dentistry 311, *Dental Literature.* (1)

Conjoint Dental Sciences 310, *Preventive Dentistry.* (1)

Conjoint Dental Sciences 311, *Dental Morphology.* (2)

Conjoint Dental Sciences 312, *Principles of Occlusion.* (3)

Conjoint Dental Sciences 313, *Dental Physical Sciences.* (2)

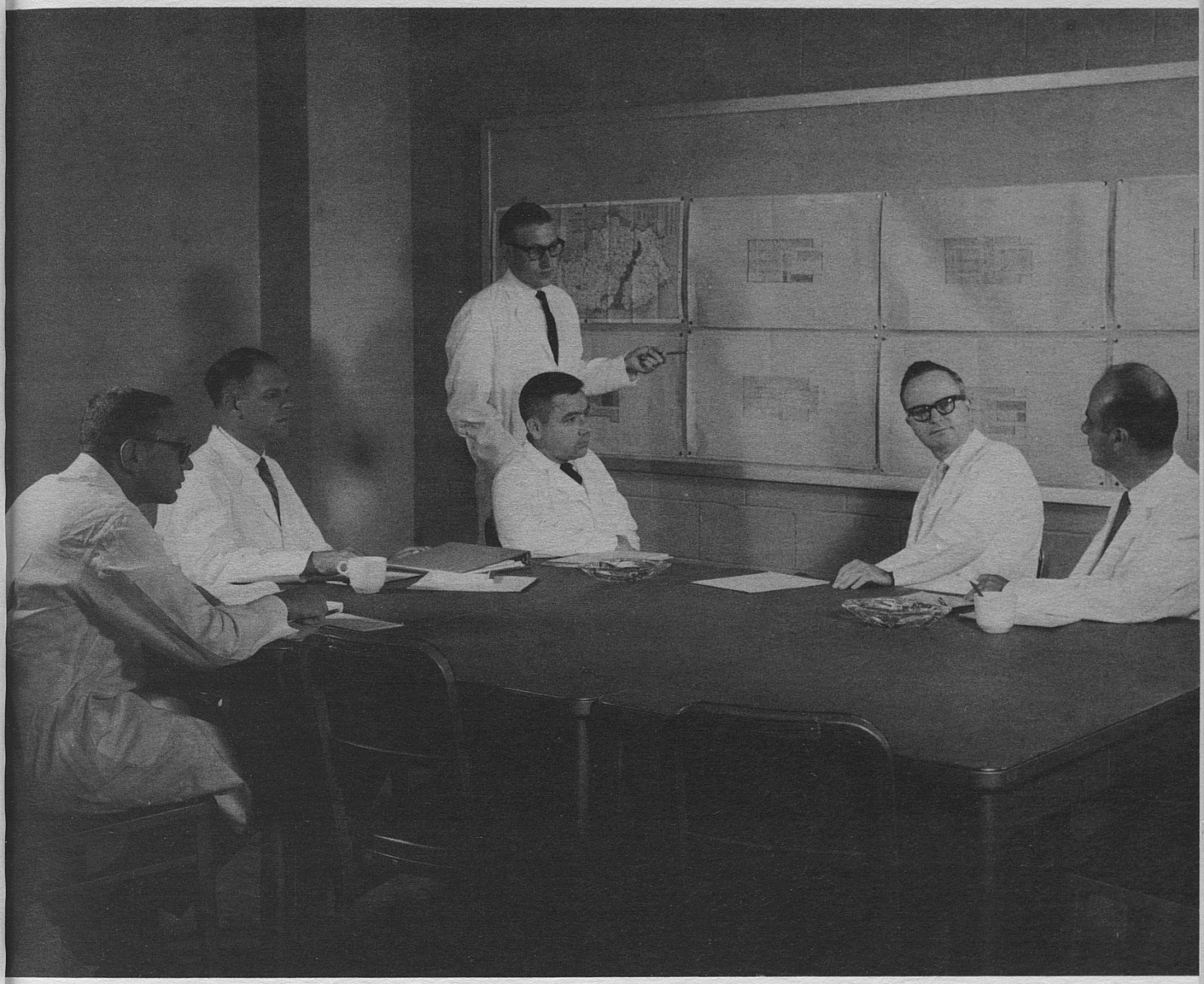
Conjoint Dental Sciences 314, *Dental Practice.* (3)

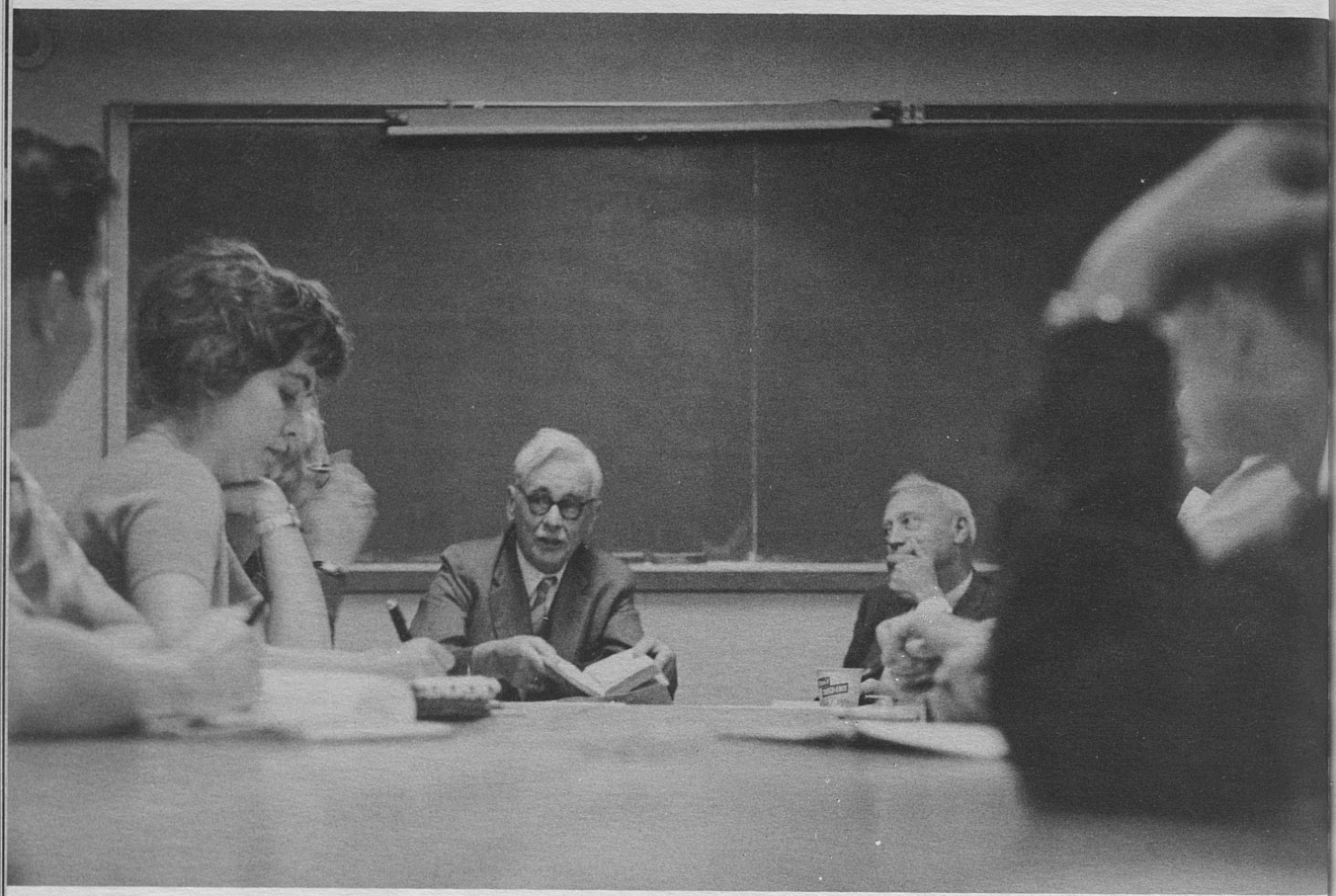
Fixed Prosthodontics 310, *Fixed Partial Denture Prosthesis.* (2)

Operative Dentistry 310, *Operative Dentistry.* (4)

Oral Diagnosis-Oral Medicine 310, *Diagnosis.* (3)

Prosthodontics 310, *Removable Partial Denture Prosthesis.* (2)





Graduate School

GRADUATE WORK is offered in all colleges in the University. Approximately a thousand courses acceptable for graduate credit are listed in the catalog, under the various departments.

The following advanced degrees are conferred by the University:

Master of Arts
Master of Science
Master of Science in Library Science
Master of Science in Public Health
Master of Science in Agriculture
Master of Science in Agricultural Engineering
Master of Science in Home Economics
Master of Science in Civil Engineering
Master of Science in Electrical Engineering
Master of Science in Mechanical Engineering
Master of Science in Metallurgical Engineering
Master of Science in Mining Engineering
Master of Science in Nuclear Engineering
Chemical Engineer (Ch.E.)
Civil Engineer (C.E.)
Electrical Engineer (E.E.)
Mechanical Engineer (M.E.)
Metallurgical Engineer (Met.E.)
Mining Engineer (E.M.)
Master of Arts in Education
Master of Science in Education
Master of Business Administration
Master of Music
Specialist in Education
Doctor of Education (Ed.D.)
Doctor of Engineering (Engr.D.)
Doctor of Philosophy

The degree of Doctor of Philosophy is offered with major work in the following fields: Agricultural Economics, Animal Science, Biochemistry, Biology, Chemistry, Dairy Science, Diplomacy and International Commerce, Economics, Education, English, History, Mathematics, Microbiology, Physics, Physiology, Psychology, Political Science, Guidance and Counseling, and in the combined fields of Sociology and Rural Sociology. Minor work may be carried in any department offering graduate courses.

The degree Doctor of Engineering is offered in Metallurgical Engineering.

Admission. A student who is a graduate of a fully accredited institution of higher learning and has an overall standing of 2.5 on a basis of 4.0 may apply for admission to the Graduate School by submitting to the Registrar of the University two official transcripts of undergraduate courses and a written application. Blanks for the latter may be obtained from the Registrar or from the office of the Graduate School. A student without an average of 2.5, if admitted, is designated as an "unclassified" student and may attain candidacy for a degree only upon conditions stated in the section "Application for Full Graduate Standing", below.

It should be clearly understood that a graduate student may not be able to begin immediately a full graduate program leading to the degree he desires. It may be necessary for him to satisfy certain prerequisites which he omitted in his undergraduate curriculum. These will be determined by the department in which the major work is to be done. In brief it may be stated that a graduate student may begin a full program in the fields in which he has the equivalent of a balanced undergraduate major; in some cases the equivalent of an undergraduate minor is adequate.

Admission to the Graduate School by the Registrar entitles a student to take such courses as he or she desires, provided the necessary preparatory courses have been taken. *However, admission does not automatically make a student an applicant for a graduate degree.*

ADVANCED DEGREES FOR FACULTY MEMBERS

Members of the faculty of the University of Kentucky having a rank higher than that of instructor may not be considered as candidates for advanced degrees from this institution.

THE GRADUATE RECORD EXAMINATION

All students working for graduate degrees must take three parts of the Graduate Record Examination (the Area Tests, the Aptitude Test, and the Advanced Test

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Albert Dennis Kirwan, M.A., LL.B., Ph.D., is dean of the Graduate School.

in the major subject). This should be done during the first term of graduate work.

APPLICATION FOR FULL GRADUATE STANDING

A graduate student desiring to earn a graduate degree must be approved as an applicant and as a candidate for a degree by the department in which he intends to major and by the Graduate School. This application should be made as soon as scores on the Graduate Record Examination are available and in any case prior to the beginning of the semester or term in which the degree is sought.

To be admitted as a candidate for a master's degree or an applicant for a doctor's degree a student must have met the following requirements: (1) an average of at least 2.5 (midway between B and C) on a scale of 4.0 on all previous college work; (2) satisfactory scores (in the opinion of the department concerned and the Dean of the Graduate School) on three parts of the Graduate Record Examination (the Area Tests, the Aptitude Test, and the Advanced Test, if there is one, suitable to the student's major); and (3) a B average or better on all work taken while registered as a graduate student at the University of Kentucky. A student not having a 2.5 average on all previous college work may be admitted as a candidate for a master's degree or an applicant for a doctor's degree provided: (1) his performance on the Graduate Record Examination (in the opinion of the major area and the Dean of the Graduate School) is sufficiently high; or (2) in the judgment of the major area and the Dean of the Graduate School, he has demonstrated his competence in graduate work. (The Graduate Record Examination may be taken either before admission or during the first semester after admission.)

Graduate work taken before students are admitted as "applicants for degrees" will be evaluated by the major area and the Graduate School at the time the application for full graduate standing is considered, and the remaining requirements for the degree will be indicated, insofar as is feasible.

GRADUATING SENIORS AS PART-TIME GRADUATE STUDENTS

Seniors of the University of Kentucky lacking no more than six semester hours for graduation and having an undergraduate average of at least 2.5 may register in the Graduate School with the consent of their college deans and the Dean of the Graduate School. Approval of the appropriate director of graduate study is required if the students are to be applicants for degrees. The total load of such a student shall not exceed twelve credits. The graduate residence assigned shall be one and one-half weeks for each semester hour of graduate work beyond the six or less credits needed to complete undergraduate requirements. The incidental fee shall be that of a full-time student in the school in which more than half of the work is taken. In cases where the load is evenly divided between the schools, the larger fee, if any, shall be assessed. Requirements for the undergraduate degree must be completed during the semester in which the student is allowed to register for part-time graduate work. Students desiring to do this should fill out in duplicate a petition requesting such and listing the course or courses to be taken to complete undergraduate requirements. Such a petition must be approved by both deans concerned.

General Requirements for All Advanced Degrees

COURSES AND GRADES

All courses listed in the Graduate School Bulletin (both those numbered 400-599 and those numbered 600-799 may be counted as credit toward a graduate degree provided they are approved as an appropriate part of the student's graduate program by his graduate adviser or committee. An overall average of B on graduate work must be attained before an advanced degree may be awarded. An "incomplete" (I) must be converted within one calendar year after the close of the term in which the I is assigned. The grade S may be recorded as a permanent mark for graduate students in courses carrying no academic credit.

No work is given graduate credit unless the student was enrolled in the Graduate School at the time the work was taken.

REGISTRATION AND CLASSIFICATION

Before registering each semester a graduate student should confer with the director of graduate study in his major subject. If convenient, this conference should come in advance of the day of registration and classification; in any case it must come prior to the completion of classification and the beginning of classes. For all regular graduate students the Graduate Office will require for each registration the signature of the director of graduate study indicating approval of the proposed program.

STUDENT LOADS AND SHORT COURSES

The normal load of a graduate student during any semester is twelve semester hours if he is working for a master's degree under Plan A, or if he is working for a doctor's degree. In no case may this load for a semester exceed fifteen semester hours. In the summer session the normal load is six hours and the maximum nine. Graduate students serving in the University as assistants or part-time instructors should register for less than the normal load, as determined by their advisers. Persons holding full-time working or professional assignments, whether employed by the University or not, may not take for graduate credit toward a degree in any single semester or term more than 3 or 4 credits. Two short courses of four weeks or less in length, or one short course of four weeks or less in length and two full term courses shall not be carried concurrently. A short course may not carry credit greater than the number of weeks it is offered.

RESIDENCE

A load for full-time residence comprises a minimum of 9 semester hours of graduate course work, or the equivalent in thesis research. In the summer session the corresponding load

is 6 semester hours. Part-time residence during any semester is computed on the basis of one and one-half weeks of residence for each semester hour earned. Part-time students in the summer session receive one and one-half weeks per semester hour except for short courses of less than eight weeks, in which case residence shall not exceed the actual number of weeks involved.

Masters' candidates who wish to do research on their thesis problems and who need additional residence credit should register for course No. 768 in the appropriate department. In order to be eligible for veteran's subsistence the student may register in Course 768 for as much as nine weeks residence in any semester; however, not more than six weeks residence credit can be applied toward the requirements for the master's degree under the thesis plan.

Doctoral candidates working on their dissertations and in need of residence should register for 769, with a note of the amount of residence recommended by their graduate supervisors.

TIME LIMIT FOR DEGREES

No course or residence credit is given for graduate study completed more than eight years prior to the date of the commencement at which the student expects to take his degree unless such credit or residence is specifically validated by the Graduate Council on written recommendation of the director of graduate study. No course or residence credit may be validated in this manner if completed more than twelve years prior to the commencement date.

PROFICIENCY IN ENGLISH

No student shall be approved for a graduate degree until he has demonstrated his ability to write accurate and effective English. A decision on this matter shall be based on the student's rating on the Graduate Record or equivalent examination and such other evidence as the director of graduate study or special committee and Graduate Council shall deem necessary.

GRADUATION

Advanced degrees may be conferred at the close of any semester or summer session, although commencement exercises are held only at the close of the academic year. *A student who is scheduled to receive his degree at the close of the academic year is expected to attend the commencement exercises unless he is excused in writing by the Dean of the Graduate School.* Students who are eligible to receive degrees at the end of a first semester or a summer session may elect to defer their graduation and participate in commencement exercises. Appropriate academic costume must be worn. The graduation fee covers the cost of the diploma, the hood, and, in the case of the master's degree (with thesis), the binding of the thesis.

Students intending to graduate at a given semester or term must make formal application (at the Office of the Dean of the Graduate School) for the degree within the first two weeks of the semester or term of the commencement.

FEES

Registration fees per semester are $110.00 for residents of Kentucky; $260.00 for non-residents. Part-time graduate students who are legal residents of the state pay $13.00 per semester hour; non-residents pay $31.00 per semester hour. Students carrying full loads in the summer sessions pay one-half the regular semester fee. Those taking less than full loads pay the regular semester credit-hour fee.

Graduate students holding University fellowships and scholarships, graduate assistants, and instructors pay the fees assigned to Kentucky residents.

General Requirements for All Masters' Degrees

TRANSFER OF CREDITS

With the approval of his graduate advisor, the dean, and the registrar, a student may transfer up to six credits (but no residence) toward the satisfaction of the minimum requirements for masters' degrees, provided the work in question was taken while enrolled in a Graduate School.

To be eligible for such transfer, the student must have taken the courses in residence (rather than by extension) as an enrollee of an accredited graduate school.

EXTENSION AND CORRESPONDENCE WORK

Under certain conditions, up to six of the credits and nine weeks of the residence required for any master's degree in course may be satisfied by extension courses given in person by University of Kentucky instructors. No graduate credit is given for courses taken by correspondence.

M.A. OR M.S. DEGREE

Whether a candidate selects a Master of Arts or Master of Science degree is left to the option of the candidate and his major department. In general it may be said that a candidate with major work in the natural sciences should take the M.S. degree; others, the M.A.

COURSES AND CURRICULA

All courses listed in the Graduate School Bulletin are open to graduate students if approved by their directors of graduate study.

Graduate students are eligible to take (1) regular courses which meet as organized classes and (2) independent-study or research courses in which each student carries on investigations independent of class meetings; but at least one-half, and preferably three-fourths, of the minimum requirements for the master's degree shall be in regular courses.

All candidates for masters' degrees shall earn at least nine semester hours in courses numbered 600 or above. Exceptions to this rule may be made only with the approval of the Graduate Council.

SUSTAINED RESIDENCE

Normally candidates for masters' degrees shall spend at least two full summer terms or one semester in full-time study at the University. The minimum full load for a summer term is 6 semester hours and for a semester 9 semester hours. For individual superior students this requirement may be waived if recommended by the director of graduate study in the student's major subject and approved by the graduate dean. Minimum eligibility for being so recommended includes: (1) the satisfactory completion of 12 semester hours of graduate work, (2) the attainment of national average (or better) scores on the Aptitude and Advanced Test portions of the

Graduate Record Examination, and (3) appropriateness of employment facilities and conditions which make feasible satisfactory completion of degree requirements while fully employed. A total graduate program may not be made up entirely of courses offered in short terms of 3 or 4 weeks each, or in classes which meet only once a week.

EXAMINATIONS

A final oral examination is given all candidates for masters' degrees in course, not later than eight days before the close of the semester. The Dean of the Graduate School appoints examining committees of at least three members each for the purposes, electing the members from the major and minor professors under whom the work was done. The Dean is, ex-officio, a member of all such examining committees. The candidate is asked to defend his thesis, if one has been written, and is examined on any subject matter related to his field.

APPLICATION FOR THE DEGREES

Within the first two weeks of the final semester or term the student must make formal application in the Office of the Dean of the Graduate School for his degree.

FEES

Before any master's degree is conferred, a commencement fee of $20.00 must be paid at the Bursar's Office of the University.

REQUIREMENTS FOR THE DEGREES OF MASTER OF ARTS AND MASTER OF SCIENCE

THE TWO PLANS

The Graduate School authorizes all departments which are approved for graduate work and which wish to do so to permit students to satisfy the requirements for the M.A. and the M.S. degrees by either of two plans. The option rests with the department.

Plan A

CREDITS AND COURSES

The candidate must complete at least 24 semester hours of graduate course work with a standing of 3.0 (B) or better. At least 9 of these hours (except when excused in rare individual cases by special permission of the Graduate Council) must be in courses limited to graduate students (in courses numbered 600 or above).

The candidate shall have a major field which shall comprise at least two-thirds of the course work; the other one-third may be taken in that field or in fields which have graduate relationship with it. In education and agriculture only one-half of the work must be in the major field.

RESIDENCE

The minimum residence required is one academic year of 36 weeks. This residence may be fulfilled by any combination of semesters or summer sessions which totals the required number of weeks, provided at least one full semester or two complete summer terms are spent in residence (See "Sustained Residence" above).

This does not mean that the work prescribed for each individual can always be completed in the minimum length of time. Inadequate preparation or assistance in departments very frequently makes a longer period necessary.

THESIS

Two typewritten, unbound copies of the thesis, approved by the thesis director and the appropriate director of graduate study, and in a form acceptable to the Graduate School, and on 100% rag content paper must be presented to the Graduate School Office not later than two weeks before the last day on which grades may be reported to the Registrar's Office. The candidate must also submit an abstract of his thesis not exceeding two hundred words and suitable for publication. The final oral examination may not be taken before the thesis has been accepted by the Graduate School Office. Information about this thesis deadline may be obtained from the Graduate School Office.

Theses and dissertations must be developed under the direction of a member of the Graduate Faculty.

Each thesis or dissertation is to be judged by the final committee on its merits as presented to it at the examination.

Collaborative group effort by two or more graduate students is not forbidden; but there must be enough independent effort to enable each one to make a separate contribution and to prepare an individual thesis or dissertation.

Masters' theses must have the signed approval of the thesis director and the appropriate director of graduate study. If these are the same person, the thesis must be signed by another professor in the major department.

The University protects the rights of thesis and dissertation authors by placing certain restrictions upon borrowers' use of them as long as they are unpublished. Before the title-page of every thesis and dissertation a copy of the following *Rules for the Use of Theses* is placed. The student prepares this page for each copy of his thesis and submits it as part of the thesis.

RULES FOR THE USE OF THESES

Unpublished theses submitted for the masters' and doctors' degrees and deposited in the University of Kentucky Library are as a rule open for inspection, but are to be used only with due regard to the rights of the authors. Bibliographical references may be noted, but quotations or summaries of parts may be published only with the permission of the authors, and if granted, proper credit must be given in subsequent written or published work.

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.

This thesis has been used by the following persons, whose signatures attest their acceptance of the above restrictions.

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

Name and Address Date

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LANGUAGE REQUIREMENTS

A reading knowledge of at least one modern foreign language is required. This language should be pertinent to the program of the student and approved by his adviser. The language requirement must be satisfied by an examination given by the foreign language department of the University offering instruction in the language concerned. The passing of this examination may satisfy one of the two language requirements for the doctorate if approved by the student's special committee.

Plan B

Plan B (which is not necessarily available in all departments that have Plan A) has the same minimum requirements as Plan A except that six or more semester hours of course work may be substituted for a thesis and that in a few departments a reading knowledge of a foreign language may not be required. A student may follow this plan only with the approval of the department concerned. Additional requirements, if any, set up by an area of study may be found in the area announcements in the Graduate School Bulletin.

REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS OR MASTER OF SCIENCE IN EDUCATION

See College of Education and general requirements for all advanced degrees.

REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN AGRICULTURE, MASTER OF SCIENCE IN AGRICULTURAL ENGINEERING, AND MASTER OF SCIENCE IN HOME ECONOMICS

(See also general requirements.)

A student holding a bachelor's degree from a standard agricultural college may obtain the degree of Master of Science in Agriculture or Master of Science in Home Economics by satisfying the following requirements:

1. The completion of 24 semester hours of graduate work with an average standing of 3.0 or better, 36 weeks in residence, and a thesis, or (except in Agricultural Engineering) the completion of 36 semester hours of graduate work with a standing of 3.0 or better, 45 weeks in residence, and no thesis. At least 9 hours must be on the 600 level or above.
2. Under either plan no grade below C may be counted.
3. One-half of the work must be in one department, the remainder in any other department or departments approved by the major professor.
4. There is no language requirement for either of these professional degrees.

In either case a final oral examination is given the candidate not later than 8 days before the close of the semester in which the degree is to be secured. The candidate is expected to show a comprehensive knowledge of the subject matter related to the field of his major work and in case a thesis has been prepared to defend it.

REQUIREMENTS FOR THE DEGREE OF MASTER OF MUSIC

MASTER OF MUSIC WITH A MAJOR IN APPLIED MUSIC

A minimum of twenty-four graduate hours.
Eight to twelve graduate hours in Applied Music.

In the event the student is not sufficiently prepared to do graduate work in Applied Music, or if there is a deficiency in repertoire, he must study without credit until fully prepared to do graduate work. Candidates in Applied Music (Voice) must have completed one year of study in each of two modern foreign languages.

Twelve to sixteen hours from at least two of the following: Music literature, music theory, music education, or non-music subjects.

A public recital of music major proportion passed upon by the music faculty and a comprehensive examination in the area of concentration.

MASTER OF MUSIC IN MUSIC EDUCATION

A minimum of twenty-four graduate hours and an acceptable thesis, or a minimum of thirty hours and no thesis requirement.

Twelve hours in the field of music education and closely allied areas.
Two to four hours in graduate theoretical subjects.
Four to six hours in music literature.
Electives in music education, education, applied music, theory or non-music areas.
Comprehensive examination.

MASTER OF MUSIC IN COMPOSITION

A minimum of twenty-four hours and an acceptable composition of major proportion.
Ten hours of Composition and allied subjects.
Four hours of Advanced Musical Analysis.
Six hours of music literature electives.
A minimum of four hours of approved electives.
Comprehensive examination.

MASTER OF MUSIC IN THEORY

A minimum of twenty-four hours and an acceptable thesis.
Four hours of Pedagogy of Theory.
Four hours of Advanced Musical Analysis.
Six hours of music literature electives.
Two hours of Sixteenth Century Counterpoint.
A minimum of eight hours of approved electives.
Comprehensive examination.

REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN LIBRARY SCIENCE

(See also General Requirements for Advanced Degrees.)

A student holding a bachelor's degree from a fully accredited institution may obtain the degree of Master of Science in Library Science by satisfying the following requirements:

1. Nine hours of prerequisite work in library science.
2. Thirty semester hours in graduate courses. (12 in courses numbered 600 or above)
3. An average standing of 3.0 or better on all work taken as a graduate student.
4. Thirty-six weeks in residence.
5. At least one year of college credit (six semester hours with a grade of C or better) in a modern foreign language or a reading knowledge as demonstrated by the usual graduate examination

REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN PUBLIC HEALTH

A student holding a bachelor's degree from a fully accredited institution or the M.D. degree from a recognized Medical School may obtain the degree of Master of Science in Public Health by satisfying the following requirements:

1. Twenty-four semester hours in graduate courses with an average standing of 3.0 or better.
2. No grade below C may be counted.
3. Thirty-six weeks in residence.
4. An acceptable thesis.
5. There is no language requirement for this degree.

REQUIREMENTS FOR ADVANCED DEGREES IN ENGINEERING

Two classes of advanced degrees are offered in the College of Engineering, the masters' degrees and the professional degrees.

The Masters' Degrees in Engineering. The master's degree in engineering may be obtained by satisfying the following requirements:

1. Twenty-four semester hours in graduate courses with an average standing of 3.0 or better.
2. No grade below C may be counted.
3. Thirty-six weeks in residence.
4. An acceptable thesis.
5. Two-thirds of the work must be in the major subject.
6. There is no language requirement for these degrees.

The candidate must hold the corresponding Bachelor of Science degree in engineering or the equivalent from this institution or from another engineering school of recognized standing. The degrees offered are Master of Science in Agricultural Engineering, Master of Science in Civil Engineering, Master of Science in Electrical Engineering, Master of Science in Mechanical Engineering, Master of Science in Metallurgical Engineering, Master of Science in Mining Engineering, and Master of Science in Nuclear Engineering.

THE PROFESSIONAL DEGREES IN ENGINEERING

The professional degrees of Chemical Engineer (Ch.E.), Civil Engineer (C.E.), Electrical Engineer (E.E.), Mechanical Engineer (M.E.), Metallurgical Engineer (Met.E.), or Mining Engineer (E.M.) will be granted only to graduates of the University of Kentucky, College of Engineering, who present satisfactory evidence of professional work of creditable quality in the engineering fields of their choice, extending over a period of five years, and who submit satisfactory theses as further evidence of their professional attainments.

A candidate holding a master's degree in engineering shall be considered to have fulfilled two years of the five-year requirement for the corresponding professional degree.

An application for a professional degree must be made to the Dean of the Graduate School and have the approval of the director of graduate study in his engineering field not less than one academic year before the degree may be granted.

The Graduate Committee will pass on the qualifications of each applicant. It may, at its discretion, require an oral examination. The applicant is expected to submit a record of his engineering experience, which should include a complete list of his professional engagements, showing in each case the length of time employed and the position held. He should give for reference the names of at least three persons who are familiar with his engineering work. Preferably these persons should be connected with the organizations by whom he has been employed.

A thesis is required of each candidate. It may be in the field of research, design, invention, or engineering processes and methods. It must contain some original thought and be the product of the individual submitting it. Quotations and references with proper credit may be used. In general, the thesis should be of such a nature that it will be of value to the engineering profession.

A candidate holding a bachelor's degree in one field of engineering may apply for a professional degree in another field of engineering if he has attained unusual prominence and success in that field.

FEES

The fees for a professional degree in engineering are $15.00 for registration and $20.00 for graduation.

REQUIREMENTS FOR THE DOCTOR OF ENGINEERING DEGREE

These are the same as those for the Doctor of Philosophy. (See below.)

Requirements for the Degree of Doctor of Philosophy

The degree of Doctor of Philosophy is conferred upon a candidate who, after completing not less than three years of graduate work devoted to the study of a special field of knowledge, presents a satisfactory dissertation and passes a comprehensive examination, thus qualifying for recognition as a scholar of high attainments in his chosen province.

The doctor's degree is intended to represent not a specified amount of work covering a specified time, but the attainment, through long study, of independent and comprehensive scholarship in a special field. Such scholarship should be shown by a thorough acquaintance with present knowledge in a particular field of learning and a marked capacity for research.

ADMISSION

For information concerning admission see opening page, this section.

ADVISORS AND THE SPECIAL COMMITTEE

The director of graduate study in the student's major area will be the student's advisor until he has selected his dissertation director and has been accepted by him. When the dissertation director has been chosen, the student's special committee will be set up by the Dean after he has conferred with the student, the director of graduate study, and the dissertation director. This committee should be set up as soon as the student has adjusted himself to the University environment and has found a suitable dissertation problem. Until the

special committee is formed, the director of graduate study will advise the applicant as to his schedule of study, and he must initial each schedule before it is presented to the Dean.

The special committee will consist of the dissertation director as chairman, two or three other members from the major area, and one or two members from the minor academic area—in all, five members. This committee will advise the applicant and will set the requirements which the student must meet before he will be admitted to the final examination.

The special committee keeps minutes of all meetings and sends abbreviated copies to the Dean's Office to be made a part of the student's record. This committee determines when the qualifying examinations are to be administered, and the chairman schedules the examinations in writing, sending a copy of the announcement to the Dean. The appointed special committee will be the final judge on a majority basis of the questions to be asked on the qualifying examinations and of the result of the examinations. This committee may be advised by colleagues when it thinks it is desirable.

COURSES OF STUDY AND STUDENT LOADS

Every applicant for the degree must select one major area of study and no more than two minor subjects, at least one of which must be outside the major area. The major subject shall be one in which he intends to concentrate his efforts; the minor subjects must be approved by the major area and by the representative of the minor on the special committee.

The applicant's principal work must be in the major subject. Although the regulations are somewhat elastic respecting the time to be devoted to the major and minor subjects, the major subject should represent approximately two-thirds of the student's entire time. The other one-third should be devoted to the minor subject(s). At least one-sixth of the total time must be devoted to a minor outside of the major academic department, and at least one member of the special committee from outside the major area must represent this outside minor. Only the Graduate Council may authorize departures from this rule.

A full-time course load for any semester ranges from 9 to 15 semester hours of credit; in the summer, from 6 to 9 semester hours.

RESIDENCE

A minimum of three collegiate years of resident graduate is required for the doctorate. At least two semesters, exclusive of summer sessions, of the required residence above the master's (or its residence equivalent) must be earned at the University of Kentucky in full-time devotion to graduate study, or to a combination of graduate study, research, and part-time teaching at the University. "Residence equivalent" to the master's degree is interpreted as thirty-six weeks of official residence. The amount of residence to be transferred on account of prior graduate work at some other institution is determined jointly by the Special Committee, the Registrar, and the Dean of the Graduate School.

A doctoral student's schedule may include an assignment to work on his dissertation, and appropriate residence may be allowed for such study, but in no case shall the residence allowed exceed the number of weeks spent in such dissertation research.

A year of residence is normally required after the qualifying examinations before the degree is conferred. If a student has completed his minimum residence requirements and his course requirements, and wishes to complete his dissertation in absentia, he may petition the Graduate Council for permission to do this out of residence and without payment of the usual registration fees. In rare individual cases, if material to complete a dissertation must be sought away from this University, the student may petition the Council to receive residence credit during the last year while registered here but working on his dissertation elsewhere. Even if such permission is granted, at least a year must elapse between the qualifying examinations and the awarding of the degree.

While it is expected that a well-prepared student of good ability may secure the degree upon completion of three years of full-time study, it should be understood that this requirement is a minimum and is wholly secondary to the matter of scholarship. Time spent in study, however long, the accumulation of facts, however great in amount, and the completion of courses, however numerous, cannot be substituted for independent thinking and original research.

LANGUAGE REQUIREMENTS

The applicant must give evidence of having a good reading knowledge of, and of being able to translate at sight, at least two modern foreign languages. This proficiency is determined by examinations conducted by the respective language departments at the University of Kentucky. While ordinarily French and German are acceptable, the final choice should be made under the guidance of the student's special committee, which will recommend what languages are to count. The language requirements must be satisfied before the applicant can be admitted to the qualifying examinations.

QUALIFYING EXAMINATIONS

Qualifying examinations are required of all applicants for the doctorate to determine whether the applicant should be admitted to candidacy. The examinations probably should be taken during the student's fourth semester of full-time graduate study, or the equivalent, but in no case later than the thirtieth day of the academic year in which the degree is expected. These examinations shall be both written and oral and shall cover both major and minor subjects. The Special Committee shall report to the dean the result of the examinations, including the time schedule. If the result is failure, the committee shall recommend the conditions to be met before the examinations may be repeated. The minimum time before repeating the examinations is six months. The same committee, or as many of the members as are available, plus those added by the dean to fill vacancies, shall give the second series of examinations. Additional examinations shall not be allowed.

DISSERTATION

Each candidate must present a dissertation covering his thesis work. This dissertation must give evidence of the candidate's ability to carry on independent investigation and must be satisfactory in style and composition and must be on 100% rag content paper. It must represent a definite contribution to the knowledge of his subject, must be the result of independent work, must include original research, and must in some way add to or otherwise modify what was previously known on the subject. Unless the director of the dissertation specifically recommends departures from

the instructions in the thesis manual recommended by the Graduate School, the thesis must be in conformity with advice in this manual.

Before the dissertation is formally submitted, the student should bring it to the Graduate Office to have it checked for form. Two typewritten copies of the dissertation (along with a check for the binding fee) and two typewritten copies of an abstract, usually of not less than 400 words nor more than 600 words, must be presented to the Dean of the Graduate School at least two weeks before the final date on which the Registrar's Office will receive grades of candidates for degrees at the next commencement. An approval sheet signed by a majority of the special committee (including the director of the thesis) must accompany the dissertation. When dissertations are submitted a standard form containing *The Rules for Use of Theses* must be prepared and submitted with the manuscript, before the title page.) (See *Rules* elsewhere in this section.)

It is expected that every doctoral dissertation will be worthy of publication either in its entirety in book form or as articles in the leading journals and periodicals of the field, and the candidate is urged to use every reasonable effort to obtain such publication for his own sake and in the interest of the Graduate School. In order to insure availability of such contributions, the following arrangements are provided:

1. A candidate may elect in writing to have his dissertation published, either as a whole or in acceptable part (if approved by the director of graduate study in the area concerned and by the Dean of the Graduate School), in a book or an approved journal. A candidate must make a deposit of $50 to guarantee publication. If within four years after the commencement at which the degree was received the candidate demonstrates that he has a contract with a recognized publisher or an acceptance by an editor of a recognized journal, he will be allowed one more year to submit the required number of copies to the Graduate School and recover his deposit. Failing of either step he will forfeit his deposit and arrangement No. 2 will be followed. The printed dissertation must have a cover and a title page, and the latter, in addition to the title and the name of the author, must bear an appropriate inscription as follows:

   A portion of a dissertation / A dissertation } presented to the Faculty of the Graduate School of the University of Kentucky in candidacy for the degree of Doctor of Philosophy (Education)

2. A candidate may elect in writing to let his dissertation be microfilmed and copyrighted by the University. The copyright will be taken in the name of the author. One positive microfilm copy will be deposited in the University Library and will be available for inter-library loan. Microfilm copies of dissertations may be purchased at cost. The abstract of each dissertation will be printed in an issue of *Microfilm Abstracts* (published by University Microfilm, Ann Arbor, Michigan), which is distributed to leading libraries here and abroad. University Microfilm will also have the microfilm copy of the dissertation catalogued by an expert, and this information sent to the Library of Congress, for printing and distribution of cards to depository catalogues and libraries.

   To cover the costs involved, a candidate is required to pay at the Business Office a fee of $50 before taking the final examination. Even if the candidate elects to use this arrangement for publication he should understand that it is still desirable for him to have his work printed in a recognized way.

FINAL EXAMINATION

After the acceptance of the dissertation by the special committee and the Dean of the Graduate School the candidate shall be given a final oral, or, if the examining committee elects, an oral and a written examination. The examining committee shall consist of a minimum of five persons, appointed by the Dean of the Graduate School, after he has conferred with the director of graduate study for the area. (The President of the University and the Dean of the Graduate School are ex-officio members of all examining committees.) The director of graduate study (or his delegate) shall be chairman of the committee. Other members shall include the major professor, a third representative of the department, a representative of the minor, and one member of the Graduate Faculty associated with neither the major nor minor areas. The final examination shall include a defense of the dissertation and shall be as comprehensive in the major and minor areas as the committee desires to make it.

If the student passes this examination, he will be recommended for the degree at the next commencement provided one academic year has elapsed since the qualifying examination.

The completion of three years of residence work confers no right upon the student to be examined.

RECOMMENDATION

After the final examination has been passed, the name of the candidate will be presented for recommendation to the Board of Trustees for the degree of Doctor of Philosophy in course.

FEES

Before any doctor's degree is conferred, a commencement fee of $25.00 must be paid at the Business Office of the University.

REQUIREMENTS FOR THE DEGREE OF DOCTOR OF EDUCATION

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

1. No foreign languages are required for the Ed.D. degree.
2. A total of 72 semester hours is required of which at least one-third and not more than one-half must be in departments outside the College of Education.

Applicants for the Ed.D. degree, who are required to do at least one-third of the minimum requirements outside of areas in the College of Education, shall declare at least one area other than Education when their special committees are appointed. Two members shall be chosen from these areas.

The Registrar, the Graduate committee of the College of Education, and the Graduate Dean will evaluate credits and residence to be allowed transfer students. It is understood, however, that the special committee may accept only such courses as fit into the graduate program of the student.

JOINT EDUCATION-PSYCHOLOGY DOCTORAL PROGRAM IN COUNSELING AND GUIDANCE

A doctoral program in counseling and guidance is provided through the cooperation of the College of Education and the Department of Psychology. A faculty committee administers this program and serves as the student's adviser until the Special Committee is appointed by the Dean of the Graduate School. A doctoral candidate may apply for the degree of Doctor of Education or the degree Doctor of Philosophy. In either case the candidate must complete the Graduate School requirements for his intended degree. For information concerning admission to the program, course requirements, and the like, write to the Dean, College of Education.

REQUIREMENTS FOR THE DEGREE OF SPECIALIST IN EDUCATION

The degree of Specialist in Education is conferred upon a candidate who satisfactorily completes a sixth-year 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, (1) must have a master's degree, (2) have a standing of 3.4 or higher on his graduate work, except in special cases, (3) meet the requirements for a teaching certificate or have credentials appropriate to his field of specialization, and (4) have completed at least 30 semester hours of courses in education (undergraduate and graduate).

A student must file an application with the Dean of the College of Education. The application will be considered by an admissions committee of the College of Education and each student must be recommended to the Graduate School by the division or department in which he plans to major.

PROGRAM

The student must earn a minimum of 24 semester hours of graduate work beyond the master's degree (of which at least 12 semester hours must be in 600-799 level courses) with a limit of 12 semester hours per semester for a full-time student, 6 semester hours per summer session, and 3 semester hours for a three-week intensive course.

The division or department in which the student majors shall be responsible for assisting the student plan a program to meet his needs. The program should contribute to specialization in a field but should not neglect the broader development of the individual. The total disciplinary resources of the University of Kentucky will be recognized in planning a program to meet the student's needs.

An independent research problem (equal to 3 but not to exceed 6 semester hours) must be done by the student and a satisfactory written report prepared, a copy of the report to be filed with the division or department directing the research.

With the approval of the Graduate Dean and of the division or department in which he is to major, the student may transfer a maximum of 6 semester hours of residence credit earned beyond the master's degree from an institution which is approved to offer work above the master's level.

FINAL EXAMINATION

A final examination shall be required of all candidates.

An examining committee, consisting of at least three qualified members, is recommended by the adviser and director of graduate study and appointed by the Dean of the Graduate School.

ELIGIBILITY

This program is instituted as of June, 1957, and all post-master's requirements pertaining to the degree must be met after this date, except for those who in 1956 began an organized and supervised plan of post-master's work at the University of Kentucky, while the final details of this program were being discussed by the faculty.

GRADUATE STUDENTS NOT APPLICANTS FOR DEGREES

Graduate students who are not working toward advanced degrees are not required to designate major or minor subjects, but may elect their work with a view to the special purposes for which they are in attendance at the University.

Any course of study announced for advanced undergraduates and graduates is open for election by such students under the same conditions as apply to candidates for degrees.

Should a graduate student, who has not arranged for his work with a view to obtaining a degree, subsequently desire to become an applicant for a degree, the number of semester hours he is to receive for work already done will be determined at the time he applies for admission as applicant for the degree.

CHECK LIST FOR GRADUATE STUDENTS SEEKING ADVANCED DEGREES

1. Send to the Registrar application for admission; request Registrars of former institutions to send transcripts of work previously completed; and request references to send letters of recommendation—all at least four weeks prior to first admission.
2. On or before date of first registration consult appropriate director of graduate study and plan tentative course of study. (At registration the director's signature on the classification card approving the registration is required.)
3. *Early in the first term or semester apply for the Graduate Record Examination* (Area Tests, Aptitude Test, and Advanced Test in your major field), if you have not previously taken this standardized test. Apply at the University Testing Service, Administration Building. Take test at time designated. (*Scores on this test are necessary before admission to full graduate standing.*)
4. Early in the first term or semester begin preparations for the language examination(s) required for the degree and arrange to take the necessary language examination(s) early in graduate career.
5. *After first term or semester apply for full graduate standing* (secure forms from the Graduate Office), if a graduate degree is sought.
6. Before the beginning of each succeeding semester or term consult the appropriate director of graduate study concerning program for the new term.

7. If doctoral applicant, during or before the fourth semester of graduate study confer with director of graduate study and Graduate Dean concerning Special Committee. After the appointment of the Special Committee, the chairman becomes graduate adviser. At least once each year request the chairman of the Special Committee to hold a meeting to review the course program and the research, in retrospect and (especially) in prospect.
8. If doctoral applicant, arrange with Special Committee for Qualifying Examinations at least one academic year before the degree is expected.
9. Before beginning thesis or dissertation, secure from the Campus Bookstore Kate Turabian's *A Manual for Writers of Dissertations* and follow instructions therein, unless specifically directed otherwise by your director of graduate study.
10. *Within the first two weeks of the semester or term when the degree is expected, file application for the degree* (Office of the Dean of the Graduate School).
11. Submit to the Graduate Office the thesis (if required) or dissertation in final form (after it has been read and approved by the director of graduate study and the committee) by or before the thesis deadline indicated in the University Calendar at the front of the Graduate School Bulletin.
12. Arrange for the final oral examination (consult the director of graduate study and the Graduate Office) at least two weeks before the end of the term or semester when the degree is expectd.
13. Pay the commencement fee and (if applicable) the dissertation fee as soon as the final oral examination is scheduled.
14. Secure commencement instructions from the Graduate Office.

RESEARCH PROGRAM AT OAK RIDGE INSTITUTE OF NUCLEAR STUDIES

The University is one of the Sponsoring Universities of the Oak Ridge Institute of Nuclear Studies located at Oak Ridge, Tennessee. Through this cooperative association with the Institute the University of Kentucky Graduate Research Program has at its disposal all the facilities of the National Laboratories in Oak Ridge and of the research staffs of these laboratories. When masters' and doctoral candidates have completed their residence work it is possible, by special arrangement, for them to go to Oak Ridge to do their research problems and prepare their theses. In addition, it is possible for the staff members of this university to go to Oak Ridge for varying periods, usually not less than three months, for advanced study in their particular fields. Thus, both staff and students may keep abreast of the most modern and up-to-date developments in atomic and nuclear research that is in progress at the Oak Ridge laboratories.

The students will go to Oak Ridge on Oak Ridge Graduate Fellowships which have varying stipends determined by the number of dependents they have and the level of work that they are doing. Staff members may work in Oak Ridge on stipends commensurate with their present salary and rank.

For further information inquire at the office of the Graduate School or write directly to the Chairman of the University Relations Division of the Oak Ridge Institute of Nuclear Studies, Box 117, Oak Ridge, Tennessee.

SOUTHERN REGIONAL TRAINING PROGRAM IN PUBLIC ADMINISTRATION

Since 1945 the Universities of Kentucky, Alabama, and Tennessee have conducted a joint program in public administration leading to a master's degree. Part of the course work is completed at each institution and three months of successful internship are required. For detailed information, anyone interested should inquire of Prof. James W. Martin, Bureau of Business Research, or the Political Science Department at the University of Kentucky.

ADVANCED STUDY AND RESEARCH BY GUESTS OF THE UNIVERSITY

When the appropriate resources are available at the time desired, the President of the University, upon the recommendation of the Dean of the Graduate School and the department affected, will welcome advanced scholars as guests of the University, with the privilege of auditing seminars and research courses and of carrying on research in laboratories and libraries. Normally there will be no charge except for laboratory expenses. Negotiations for such arrangements should be conducted in advance through the Graduate Office.

Fellowships & Scholarships

HAGGIN FELLOWSHIPS AND SCHOLARSHIPS

These fellowships and scholarships, which were endowed by Margaret Voorhies Haggin in memory of her father, George Voorhies, carry a stipend of $1500 each (fellowships) and $1200 each (scholarships).

Fellows and Scholars are expected to devote their entire time to graduate work, and no teaching or other departmental work may be required of them; nor are they permitted to perform any duties for extra pay. Fellows and Scholars must carry a full schedule unless work on a thesis is substituted for part of the load. In this case recommendation must be made by the advisor and approved by the Graduate Council. The award is paid in nine equal monthly installments. Fellows, scholars, graduate assistants, and instructors pay the fees assessed residents of Kentucky. The appointments are made for one year only but may be renewed if it can be shown that the study and research should be continued.

These fellowships and scholarships are open to students who hold bachelors' degrees or higher from any college or university of recognized standing. Forms for making applications may be secured from the office of the Dean of the Graduate School and must be submitted not later than March 1 of each year.

THE DR. PAUL I. MURRILL MEMORIAL SCHOLARSHIP

This scholarship was set up by Mrs. Paul I. Murrill in honor of her husband, who was a graduate of the University of Kentucky. It pays a variable stipend of approximately $2500 a year to a student who possesses outstanding qualities of character and aptitude for fruitful graduate work. Preference shall be given to scholars in the field of Chemistry.

KENTUCKY RESEARCH FOUNDATION FELLOWSHIPS

The Kentucky Research Foundation supports several graduate fellowships of $1800 to $2400 each awarded, without

limitation as to the field of specialization, to doctoral candidates who possess outstanding personal qualities and professional qualifications; and several at $1500 each awarded to outstanding students on the Master's level. The deadline for submitting applications to the Graduate Office is March 1 of each year. Only those with highly superior undergraduate and graduate records should apply for these.

THE GEORGE W. PIRTLE FELLOWSHIP IN GEOLOGY

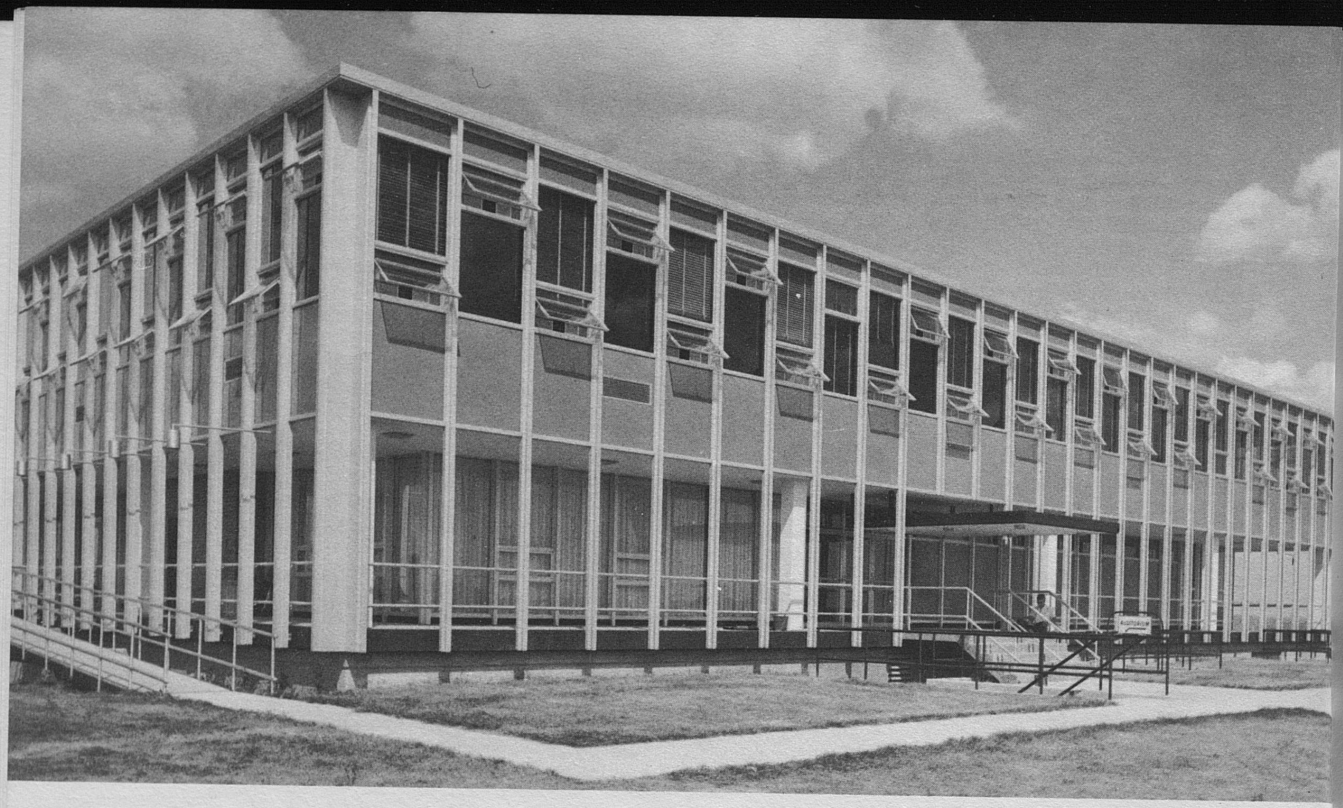
A grant of $500 a year is given by George W. Pirtle to a graduate student in geology upon the recommendation of the faculty of the Department of Geology. The award is made upon the basis of need and promise of future achievement in the geological field. Mr. Pirtle has set up this grant in appreciation of the training he received in the Geology Department. He was the first student to obtain the Master's degree from the University with a major in Geology. The grant is given in honor of Dr. A. C. McFarlan.

The recipient is expected to write a thesis based on field work.

Applications for this grant should be directed to the Head, Department of Geology.

OTHER GRADUATE SCHOLARSHIPS

For information concerning other scholarships (National Science Cooperative Fellowships, National Defense Fellowships, etc.) inquire of the Graduate Office.





Extended Programs

University of Kentucky Extended Programs is the successor to the Department of University extension, established in 1919, which was changed to the College of Adult and Extension Education in 1954. The present organization came into existence by act of the Board of Trustees in 1957. The basic purpose of Extended Programs is to extend the resources and facilities of the University by means of various services and programs.

Home Study Program

Home Study is a medium of instruction designed for and dedicated to serving the educational needs of mature men and women who are interested in furthering their education but find it impracticable, if not impossible, to do so through regularly organized classes on or off campus. Home Study courses are prepared and taught by members of the University teaching staff. Home Study syllabi are revised or rewritten regularly, thus assuring the student of pertinent course content at all times.

Home Study courses are especially helpful to those preparing for various vocational fields of endeavor, teachers who desire to earn or renew their teaching certificates, men and women in military service, and others who wish to improve their cultural and educational backgrounds.

Home Study courses are available at both the college and high school levels, and the courses may be pursued on a credit or non-credit basis. A limited number of offerings in the field of practical engineering are offered only as non-credit courses.

Regulations governing Home Study work are:

1. Not more than twenty-five percent or 32 semester hours of the requirements for a bachelor's degree at the University of Kentucky may be earned by Home Study and/or Extension work.
2. Graduate credit cannot be granted by the University of Kentucky for work taken by Home Study.
3. Three-fourths of the total amount of credit required for the issuance of any certificate in Kentucky must be in residence credit.
4. A student has one year from the date of enrollment in which to finish a Home Study course.
5. A student may enroll for a Home Study course any time during the calendar year.
6. A student in residence at the University of Kentucky must obtain permission from his dean to register for a Home Study course while currently enrolled.
7. Students who have been dropped by the University will not be allowed to take Home Study courses until they have been reinstated by the University authorities.
8. A student who has failed a course at the University of Kentucky will not be permitted to enroll in that course by Home Study without the permission of his dean and the head of the department involved.
9. Each Home Study course taken by a student in residence at the University of Kentucky shall count on his load for either the first or second semester or for the summer term.

The tuition fee for a Home Study course is $10.00 per semester hour credit, plus a $2.00 service charge per course. The fee for a high school course is $17.00 per one half unit credit, or one semester's work, plus a $2.00 service charge per course. The service charge for all Home Study courses is non-refundable.

Extension Class Program

The Extension Class Program serves students off-campus who are unable to attend the University, or find it more helpful to work in a particular group on research problems. This program includes credit and non-credit courses for teachers, administrators, business personnel, and others who qualify for admission. Credit courses by extension require the same type of work from the students as on-campus courses.

Location: Courses are offered in communities throughout the state when requested by a school official

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R. D. Johnson, M.A., Ed.D., is Executive Dean of Extended Programs.

or an administrator in industry, business, or agriculture. The University sends a representative to the community to register and counsel with the students. Courses may be on a high school, college, or graduate academic level. They are usually conducted in a public building in the local area approved as an adequate classroom.

Class Organization: A list of courses to be offered by extension is available to you. In the case of teachers, it is suggested that the supervisor, principal, and superintendent assume the responsibility for submitting a list of the students who desire a particular course to Extended Programs, University of Kentucky. Groups other than teachers desiring courses should contact Extended Programs, University of Kentucky, directly.

Number Required in Class: A minimum of approximately 20 students is required for a class within a radius of 50 miles of Lexington, and a minimum of 25 students for classes at a greater distance.

Residence Requirements: A minimum of 30 of the last 36 credits presented for the baccalaureate degree must be completed on the campus in residence at the University. In the College of Arts and Sciences the last 30 credits must be completed while registered in the College.

Student Load: Persons holding full-time working or professional assignments may not take for graduate credit toward a degree in any single semester or term more than 4 credits.

Transfer of Credit: Credit earned by extension may be transferred to another institution at the request of the student. Each extension student is responsible for checking with the institution where he is taking his degree to be sure the extension courses will be accepted.

Extension Credit: A maximum of 32 credits taken by extension and/or correspondence may be counted toward the baccalaureate degree. Not more than half of the credits required for the major may be gained by extension.

Time Required: The number of clock hours for extension classes is the same as on campus. It is recommended that classes organized in communities a long distance from the University meet for two sessions on alternating week-ends. Others are to meet once per week. All three hour classes are required to meet a minimum of 16 sessions for 2½ clock hours. It is recommended that each class meet a minimum of 45 clock hours for a three hour course to include the organizational and the examination sessions.

Auditor: Any student may be admitted to a class as an auditor by payment of the required fee. No credit can be given for a course audited. An auditor is not eligible for a special examination for credit.

Tuition and Fees: The tuition for undergraduate credit is $10.00 per semester hour. The fee for graduate credit is $11.00 per semester hour. A student auditing a course will pay the regular fee. An out-of-state student will pay $15.00 per semester hour for undergraduate credit and $20.00 per semester hour for graduate credit. A $2.00 service fee is charged for each course.

Late Registration: Students registering after the first class session will pay a late registration fee of $3.00. No person will be permitted to register after the second class session except on approval of the instructor.

Payment of Tuition: It is preferred that all students pay the tuition by check, made payable to the University of Kentucky. However, cash is acceptable.

Withdrawal and Refund of Fees: A student may withdraw from an organized class and have refunded a portion of his tuition, depending on the number of weeks the class has been in session. Requests for refunds should be made at the office of Extension Class Program, Extended Programs. No refund will be made after the ninth week of a semester. All refunds must be claimed before July 1 of each year.

Admission to the Graduate School: Students who have never applied for admission to the University of Kentucky Graduate School, and plan to work toward a graduate degree, must arrange to have two official transcripts of their undergraduate work sent to the Registrar's Office. Students who have never applied for admission and do not intend to seek a graduate degree at the University must arrange to have a transcript of their bachelor's degree sent to the Registrar's Office by the school from which they received their degree. Admissions are not official until transcripts and applications for admission have been received and accepted. Arrangements should be made to have transcripts sent immediately, as a delay may mean loss of credit. The necessary application blanks will be available during registration. Those desiring credit toward a graduate degree should write to the Graduate School for a graduate catalogue, and become familiar with the requirements for graduate degrees.

Credit Toward the M.A. Degree: Under certain conditions, up to six hours of the credits and nine weeks of the residence required for any master's degree may be satisfied by extension courses given in person by University of Kentucky instructors.

Evening Class Program

The University's Evening Class Program provides an opportunity for continuing education to everyone in the Central Kentucky area. This program includes credit and non-credit classes in many fields taught by University staff members and qualified business and professional leaders of the community. Credit courses are offered under the same conditions as similar daytime campus classes. Non-credit classes are designed to meet specific needs of business and professional people

and all persons desiring to broaden their intellectual and cultural horizons.

Enrolling as a Non-credit Student: Non-credit classes are open to anyone desiring to enroll in them. Any person may enroll as a non-credit student in a credit class. However, the work in some credit classes, especially those numbered 300 through 599, is of an advanced nature, and non-credit students should consult with the instructor before enrolling.

Non-degree Students: Any person over 21 may enroll as a non-degree student provided he is not currently enrolled as a degree candidate and is eligible for admission. Non-degree students may apply for admission as degree candidates at a later date, at which time they must meet regular admission requirements as given in the University General Catalogue. Credit earned as a non-degree student may be counted toward a University degree provided the student was eligible for admission to the University and for the course at the time of enrollment. Generally speaking, the typical Evening Class student should enroll as a non-degree student.

Degree Candidate Students: Degree candidate students taking one or more daytime classes must register with the Registrar's Office according to the Regular University Schedule. They may enroll in an Evening Class only after completing this registration.

Full-time University Students: Full-time University students who have paid the full fee may enroll in an Evening Class which carries University credit provided they have the permission of their dean. Full-time students may enroll in classes listed as "non-credit" by paying the stated fee.

Academic Standing of Evening Students: Evening Class non-degree students are subject to University regulations concerning academic standing (grade point averages), academic probation, and dropping for low scholarship. Each student is responsible for familiarizing himself with these regulations and maintaining the proper grade point average.

Students who have been dropped by the University of Kentucky may not enroll for credit in the Evening Class Program until they have been reinstated.

Students from other institutions desiring to enroll for credit must meet all University conditions for admission. These include good standing in every respect in the institution last attended and a grade point average of 2.0, or C, in all previous college work.

Students who plan to transfer credit to another institution must be eligible in all respects for admission to the University of Kentucky. It is the responsibility of the student to ascertain whether or not the work will be accepted by another institution.

Library Privileges: Evening Class students are entitled to use the University Library while they are officially enrolled. Present your receipted card at the main desk on the second floor of the Margaret I. King Library.

Fees: The fee for college credit Evening Classes is $10.00 per semester hour for undergraduates and $11.00 per semester hour for graduates. The fee for non-credit classes is on a proportional basis. Some courses will require a laboratory fee based on the type of materials required. A $2.00 service fee will be added to the total amount of class registration fees. All fees must be paid at the time of enrollment.

Non-resident Fees: Students who have not resided in the state for twelve consecutive months next preceding enrollment must pay out-of-state student fees if they register for college credit: $15.00 per semester hour for undergraduate credit, and $20.00 per semester hour for graduate credit.

Workshops and Conferences

In cooperation with the academic Colleges, workshops, conferences, and similar short-course study programs can be organized for business and professional groups.

The teaching staffs of these programs are composed of both University staff members and visiting lecturers and consultants.

The classroom and cafeteria facilities of the University, and, when possible, the housing facilities, are available to visitors to the campus participating in these programs.

University Community Colleges

There are five Community Colleges: Northern Center, Covington, Kentucky, established in 1948; Ashland Center, Ashland, Kentucky, started in 1957; Southeast Center, Cumberland, Kentucky, opened in 1960; Northwest Center, Henderson, Kentucky, established in 1960; and the Fort Knox Center, Fort Knox, Kentucky, organized in 1959.

The purpose of these Community Colleges is threefold:

1. To provide the first two years' program of academic work up to a maximum of 67 hours residence credit.
2. To offer certain terminal programs of a non-degree, technical, or pre-professional nature.
3. To provide courses of a cultural or personal improvement nature to adults served by each Community College.

Each Community College is an integral part of the University with the same standards of admission and operation as apply to the parent campus. A Director is responsible for general administration of each Community College. He is assisted by a Bursar-Recorder, and a full-time staff and faculty. Appointments of teaching staff are a joint responsibility of the Department Head, Dean of the respective College, and Community College Director.

FACULTIES

Northern Center

Associate Professors: Thomas Lee Hankins (M.S., Kentucky, 1940), Education, Director; Edna Caroline Miller (Ed.D., Cincinnati, 1947), Modern Foreign Languages, Education, Merl Lee Farmer (M.A., Chicago, 1951), Economics. *Instructors:* James W. Broaddus (M.A., Kentucky, 1958), English, William Monroe Byron (M.A., Kentucky, 1957), English, Edward Chester (Ph.D., University of Pittsburgh), History, Richard Davis (M.A., Washington and Lee, 1961), History, Cliff Joseph Swauger (M.S., Kentucky, 1962), Mathematics, Paul R. Schott (B.S., Kentucky, 1959), Bursar-Recorder, Robert M. Rankin (A.B., Kentucky, 1939), Journalism, Public Relations, Marion F. Smith (B.S., Simmons College), Librarian.

Ashland Center

Assistant Professors: Robert L. Goodpaster (Ed.D., Kentucky, 1961), Director, George William O'Brien (Ph.D., Kentucky, 1958), Chemistry, Bacteriology, William Godfrey Wheeler (LL.B., Kentucky, 1940), Commerce. *Instructors:* Edward R. Buchanan (M.M., Chicago, 1961), Music, Opal Scaggs Conley (M.S., Kentucky, 1943), Anatomy and Physiology, Klara Rosa Cook (Dr.Theol., Zurich, 1946), Geography, German, George J. Edwards (M.A., Minnesota, 1948), English, Robert D. Halladay (M.S., Ohio University, 1953), Physics, Dorothy Seaberg Hope (M.S., North Carolina, 1947), Commerce, Jeannette Hill Jennings (A.B., Kentucky, 1957), Modern Foreign Languages, Leonard Jack LeRoy (M.A., Marshall, 1960), English, Journalism, Ann Elizabeth McCall (M.A., Marshall, 1961), English, Nancy Turman McClellan (A.B., Kentucky, 1954), English, Charles Ronald Marcus (M.S., Kentucky, 1962), Mathematics, Delores Wickline Moore (M.B.A., Ohio University, 1958), Commerce, Dirck M. Parkin (M.A., Penn State, 1956), History, John Buckingham Sowards (A.B., Marshall, 1951), English, Speech and Dramatic Arts, Kenneth H. Shaner (M.A., 1962), Chemistry, Elizabeth Ann Walthall (M.A., Marshall, 1953), Biological Sciences, Martha Tate (A.B., Morehead), Bursar-Recorder, Jessie Hughes (B.S., Peabody), Librarian.

Fort Knox Center

Assistant Professor: James Allison Jones (M.A., Georgia, 1949), Acting Director, Robert Chase Toole (Ph.D., Pennsylvania, 1954), History. *Instructor:* Robert E. Collier (M.A., Kentucky, 1960), English.

Northwest Center

Assistant Professors: Louis Cleveland Alderman, Jr. (Ed.D., Auburn, 1959), Biology, Director; Herman Clarence Nixon (Ph.D., Chicago, 1925), visiting, History. *Instructors:* Ronald Wallace Butler (M.A., Kentucky, 1957), English, Doris Elouise Cave (M.B.E., Kentucky, 1959), Commerce, William Hunter Dent, Jr. (M.A., Kentucky, 1962), Mathematics, Arch Sanders Lacefield (M.A., Kentucky, 1950), Modern Foreign Languages, Ernest Liles Overfield (M.A., Vanderbilt, 1954), English, Ralph Landis Place (M.S., Kentucky, 1962), Physics, Dorothy Rothrock Tapp (M.S., Chicago, 1948), Biology, Maralea Arnett (M.R.E., Carver, 1944), Librarian, Robert S. Larson (A.B., Montana State, 1937), Bursar-Recorder.

Southeast Center

Assistant Professors: Paul A. Clark (Ed.D., Kentucky, 1959), Director, James Harrel Cobb (B.D., Indiana, 1931), English. *Instructors:* Elizabeth Ann Colley (M.S., Tennessee, 1961), Zoology, Kenneth Bernard Colebank (M.A., Penn State, 1959), History, Mavis Annette Curry (M.A., Kentucky, 1959), Commerce, Thomas E. Gaston (M.A., Kentucky, 1961), English, Bernard Coleman Gravitt (M.A., Kentucky, 1951), Education, Davie L. Hughes (M.S., Wisconsin, 1953), Chemistry, Guy Robert Mauldin (M.S., Mississippi State, 1959), Mathematics, Dorothy Wooding (M.A., Middlebury, 1961), Modern Foreign Languages, D. Dean Cadle (M.A., State U. of Iowa, 1950; M.S., Univ. of Ky., 1957), Librarian, Jo D. Cadle (B.S., Univ. of Tennessee, 1949), Bursar-Recorder.

Other Services

Music Services: Music services in Extended Programs provide schools and communities with concerts, recitals, workshops, clinics, and consultant services.

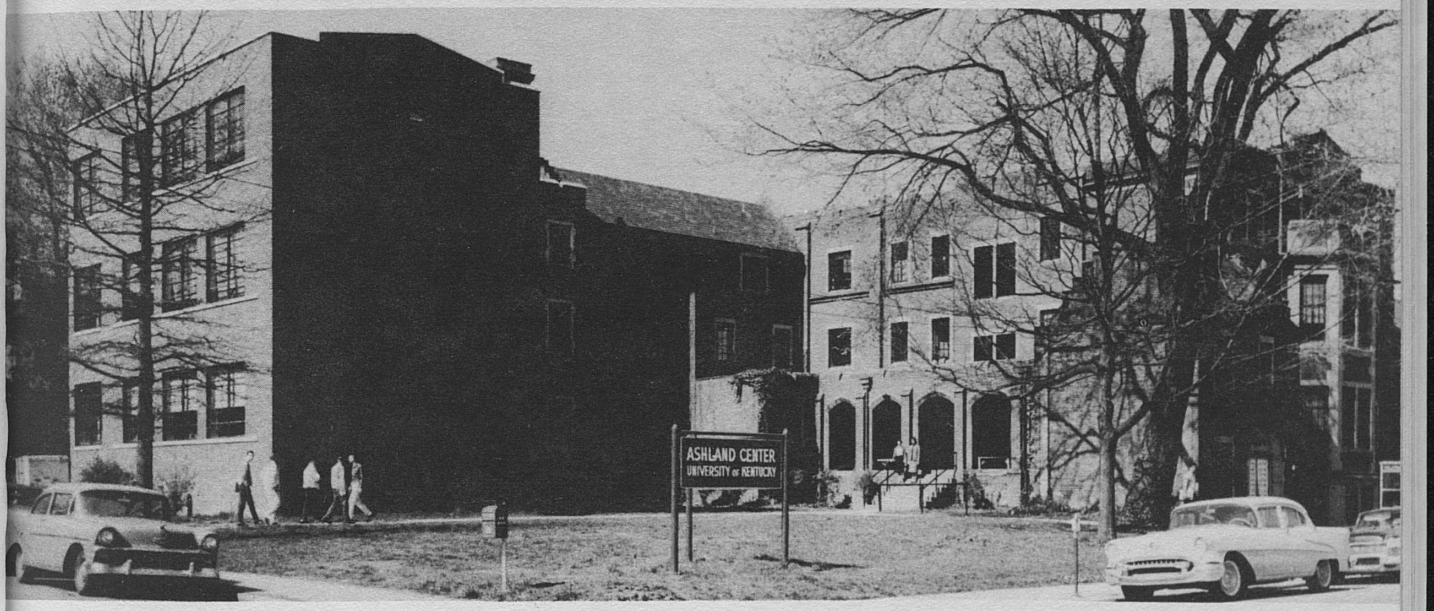
Faculty ensembles, soloists, workshop directors, and clinicians are available on a professional, consultant, and non-fee basis, depending upon the nature and function of the services provided.

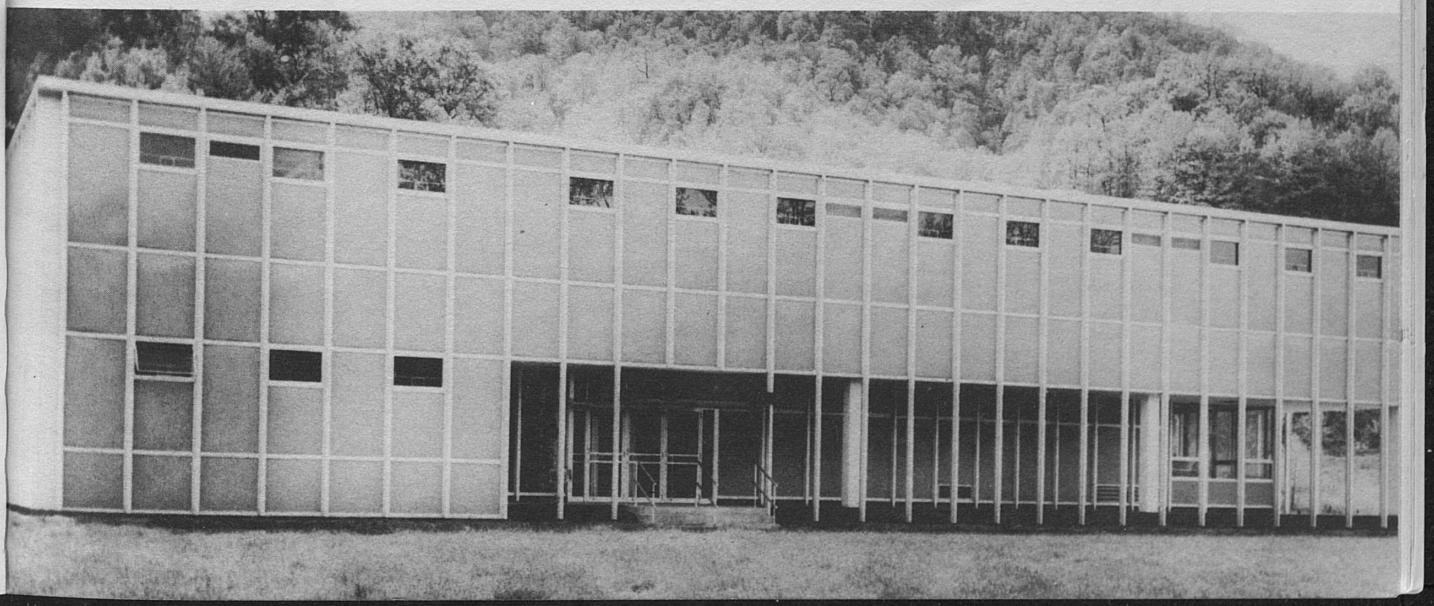
Student musical organizations are available for individual concerts or tours upon request by school or community groups. Expenses for student groups include only the necessary travel expense plus meals and lodging.

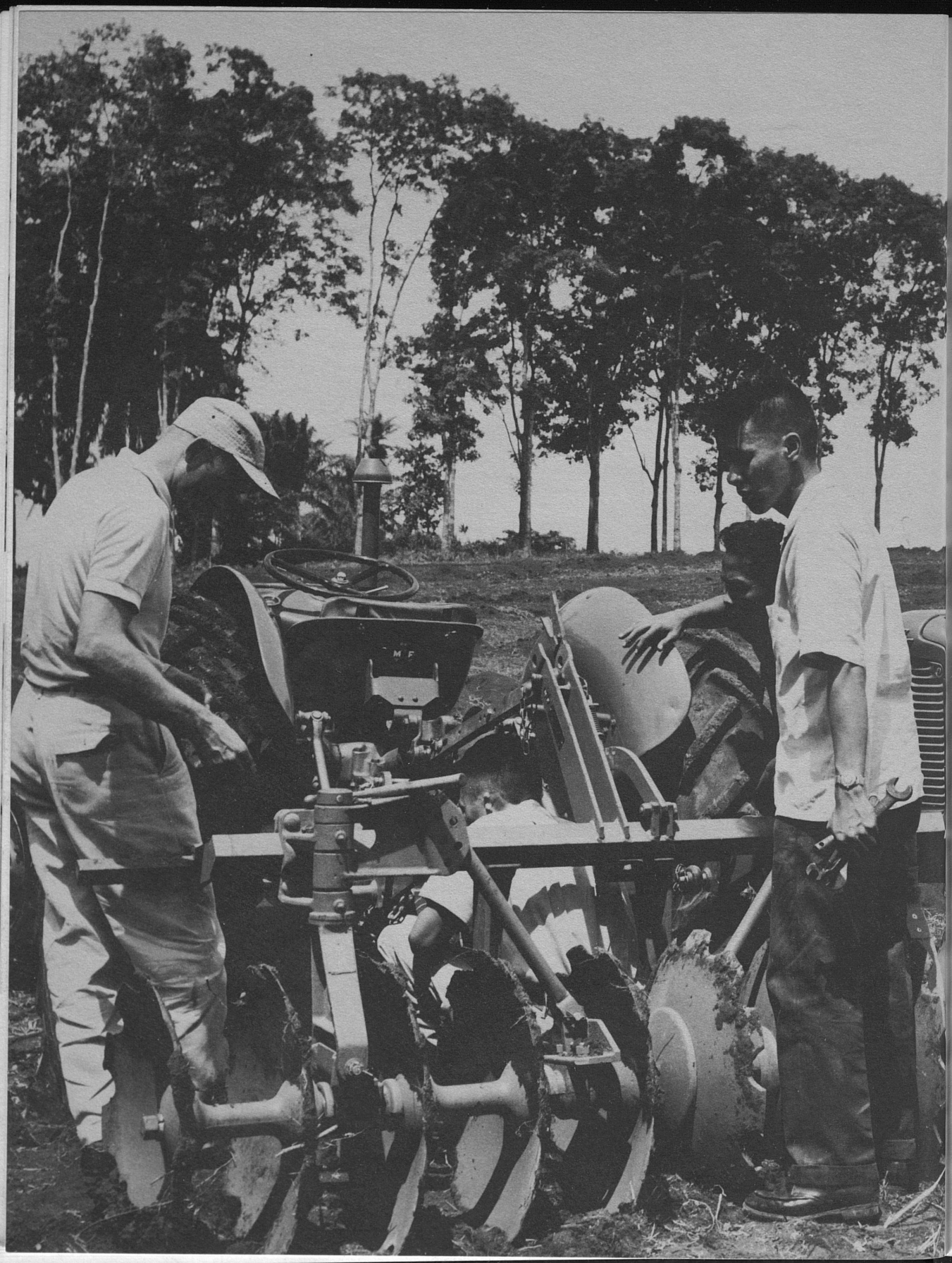
Community groups may arrange for a series of programs during the school year to include concerts by large student organizations, faculty soloists, and ensembles.

High School Speech and Drama: The University of Kentucky Extended Programs sponsors the Kentucky High School Drama and Speech Festivals for the high schools of the state. This program includes regional and state festivals, and speech and drama clinics, workshops, and conferences for teachers and students.




ASHLAND CENTER
UNIVERSITY OF KENTUCKY




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Contract Teams Abroad

THE UNIVERSITY OF KENTUCKY provides assistance to the Technical and Scientific Faculties of the Institute of Technology at Bandung and to the Faculties of Agriculture and Veterinary Science of the University of Indonesia at Bogor under a contract with the Agency for International Development (AID), U.S. Department of State. The program at Bandung was started in 1956 and was expanded to include Bogor the following year. It is administered by the Kentucky Research Foundation.

Under the arrangement, the University of Kentucky provides a team of professors and administrators to assist the Bandung and Bogor faculties in organization, curriculum planning and the teaching of courses in important areas where they need qualified faculty members. In addition, promising young professors and graduate students of the Indonesian institutions are sent to the University of Kentucky and other American institutions for advanced training. Upon return, they replace the University of Kentucky professors. The end result will be an all-Indonesian faculty.

In 1957, the University of Kentucky entered into an agreement with the AID and the Universidad de San Carlos de Guatemala for the purpose of strengthening the agricultural program in Guatemala. At present, Levi J. Horlacher, professor of animal science at the University of Kentucky, is devoting full time to the program in Guatemala. He is assisted by short-term staff members who go to Guatemala for three-month assignments.

FACULTIES

BANDUNG

Professors: Ralph L. Dunckel (M.E., Cornell, 1925), Production Industrial Engineering, Arlo F. Johnson (Ph.D., Stanford, 1951), Mechanical Engineering, E. E. Litkenhous (Ph.D., Minnesota, 1934), Chemical Engineering, C. T. Maney (M.S., Kentucky, 1949), Electrical Engineering), Vincent E. Nelson (Ph.D., Chicago, 1942), Geology, CHIEF OF PARTY. *Associate Professors:* Robert C. Barnett (Ph.D., Chicago, 1951), Biochemistry, Lee W. Gildart (Ph.D., Northwestern, 1950), Physics, Warren Stanley Heath (Ph.D., Syracuse, 1958), Chemical Engineering, George Allen Hinds (M.C.P., Yale, 1953), Architecture, Harry Frank McFarland (B.S., Colorado School of Mines, 1932), Mining Engineering, Robert H. Miller (Ph.D., Oregon State, 1953), Botany, Harold L. Overton (M.S., Houston, 1957), Petroleum Engineering.

BOGOR

Distinguished Professor: Howard W. Beers (Ph.D., Cornell, 1935), Rural Sociology, HEAD OF PARTY. *Professors:* Claude Harper (M.S., Illinois, 1918), Animal Husbandry, Herbert F. Massey, Jr. (Ph.D., Tennessee, 1952), Agronomy, William H. McCollum (Ph.D., Wisconsin, 1951), Animal Pathology, Frederick Francis McKenzie (Ph.D., Missouri, 1925), Animal Gynecology. *Associate Professors:* Harry C. Haines (M.E., Duke, 1939), Forestry, Donald J. Cotter (Ph.D., Cornell, 1958), Horticulture, Aly M. Lasheen (Ph.D., Texas A&M, 1954), Plant Physiology, Jessie McQueen (A.M., Columbia, 1926), Home Economics, Donovan D. Moss (Ph.D., Georgia, 1961), Zoology, John W. Tuttle (M.S., Kentucky, 1950), Poultry Husbandry, Oliver J. Worthington (Ph.D., Wisconsin, 1936), Food Technology, *Assistant Professor:* Bernice V. Beers (A.B., New York State College, 1929), Home Economics.

GUATEMALA

Professor: Levi Jackson Horlacher (M.S., Kansas State, 1919), Animal Husbandry.



Statistics

Introductory and advanced courses in statistics are offered by a number of departments to meet the particular needs and interests of students working in various disciplines. It should be noted that some of these courses list prerequisites; descriptions of the required courses may be found under the appropriate departments.

Agricultural Economics

530 *Agricultural Statistics.* (3) I, II
Principles and methods involved in the analysis, interpretation, and use of agricultural statistics including variation, correlation, standard errors, and simple analysis of variance.

630 *Statistics for Agricultural Research: Social Sciences.* (3) I
Multiple and partial correlation, test of reliability, sample surveys, and other techniques for agricultural research. Prereq: Agr. Econ. 530 or equivalent. *Card and Shuffett.*

631 *Statistics for Agricultural Research: Plant and Animal Sciences.* (3) II
Analysis of variance and covariance; statistical considerations in the design of experiments; tests of significance and confidence limits. Prereq: Agr. Econ. 530 or equivalent. *Card.*

Behavioral Science

421 *Biological Statistics I.* (2)
An introduction to probability, sampling, and confidence interval estimates, testing hypotheses, linear regression, design and analysis of simple experiments, data processing. *Ross.*

422 *Biological Statistics II.* (2)
Analysis of variance for single and multiple classifications, coveriance, randomized block and crossover designs, factorial systems, split plot designs, individual contrasts, analysis of growth curves. *Ross.*

Commerce

364 *Data Processing for Business.* (3) I, II
Introduction to machine systems of data processing and storage; theory and application of electrical punched cards equipment in the preparation of accounting and statistical reports. Prereq: Com. 108. *Solomon.*

571 *Statistical Quality Control.* (3) I
Elementary probability theory, control charts, acceptance sampling plans including single, double and sequential sampling. *Christian.*

572 *Sampling Techniques.* (3) II
Application of sampling theory and significance testing in economic research, practical problems in sample design. *Christian.*

573 *Automatic Data Processing.* (3) I
Examination of the role of high speed data processing equipment in the solution of business and economic problems. The study of computer fundamentals; input, arithmetic and logical units, control, storage, and output. Includes digital computer programming. *Solomon.*

Economics

386 *Economic Research.* (3) II
The sources, uses and application of statistical information in the analysis of economic problems. Prereq: Econ. 252 and 507. *Stroup.*

507 *Statistical Method.* (3) I
Introduction to the sources of business data, the use of calculating machinery, tabulation, simple charts and graphs, the averages, dispersion, correlation, and the time series analysis. *Christian and Stroup.*

550 *Advanced Business and Economic Statistics.* (3) II
Advanced time series analysis, multiple and partial correlation, elementary analysis of variance and experimental design. Prereq: Econ. 507. *Christian.*

650 *Research Statistics I.* (2) I
The place of statistics in research method, the theory of statistical averages, the application of advanced statistical methods to economic data; the testing of economic theory. Prereq: an elementary course in statistics. *Christian.*

651 *Research Statistics II.* (3) II
Inferences involving linear transformations of random variables; individual degrees of freedom; complex analysis of covariance. Applications to economic and business data. Prereq: Economics 650 or Agr. Econ. 630. *Guthrie.*

691 *Econometrics.* (3) I
The application of statistical methods to problems of economic analysis. Building and measuring relationships among economic variables. Econometric models of the economy as a whole and of individual sectors. Prereq: Econ. 618 and Agricultural Econ. 630 or Econ. 550, or equivalent. *Guthrie.*

Education

657 *Educational Statistics.* (3) I
A non-mathematical study of the applications of statistical and graphical methods to educational data.

Mathematics

421 *Elementary Computational Methods.* (3)
Study of number systems, matrices, determinants, and Boolean Algebra with applications to electrical networks, machine computation, automatic electronic digital computors, and other engineering problems. Prereq: MA 212.

521 *Mathematical Statistics.* (3) II
Averages, coefficients of dispersion and skewness, correlation and regression lines, curve fitting, Bernouli Theorem, DeMoivre-Laplace Theorem, generating functions, sampling. Prereq. MA 212.

522 *Actuarial Mathematics.* (3)
Theory of mortality tables, life annuities, premiums, terminal reserve, joint-life annuities and insurance. Prereq: MA 211.

523 *Probability.* (3)
Theorems of total and compound probability, Bernoulli's Theorem, Bayes' Theorem. Poisson Law, Expected value, Law of large numbers. Distribution functions and characteristic functions. Prereq: MA 212.

621 *Mathematical Statistics.* (3)
Theory of sampling, the Chi-square distribution, testing statistical hypotheses. Prereq: MA 521.

Sociology

502 *Laboratory in Methods of Demographic Analysis.* (1) II
Application of statistical techniques employed in the analysis of census and vital statistics data, including methods of population standardization, life table construction, and preparation of population estimates. Three hours weekly. Prereq: an introductory statistics course and Soc. 501.

582 *Measurement of Attitudes and Public Opinion.* (3) II
Attention is focused upon measurement procedures in the study of public opinion and attitudes. Prereq: Introductory Statistics or SOC 581.

681 *Research Design and Analysis.* (3) II
Problem definition and delimitation, design appropriate to problem and data, and selection of appropriate analysis techniques; critical examination of representative research studies and students' designs. Prereq: Elementary Statistics and Sociology 581 or equivalents.

Psychology

336 *Applications of Statistics in Psychology.* (3) II
An introduction to statistical procedures used in making decisions based on psychological data. Not available for credit to students who have had a previous statistics course. Prereq: Psy. 100. *Calvin.*

610 *Psychometrics.* (3) I
Analysis and interpretation of human measurements. The course deals with the computation and interpretation of simple, partial, and multiple correlations, regression equations, and reliability of measures. Prereq: A course in statistics. *Calvin.*

Committees

Administrative Committees[1] 1963

Camp Robinson—Earl Kauffman, S. F. Adams, J. W. Brown, Martha G. Carr, John Flint, M. M. White (Student members: Ted Gum, Evelyn Kelsall).

Campus Planning—C. P. Graves, A. D. Albright, G. L. Coleman, E. B. Farris, R. D. Haun, J. B. Kincheloe, W. L. Matthews, F. D. Peterson, W. A. Seay, W. R. Willard (Student members: David Ashley, Sue Ellen Grannis).

Campus Safety. W. L. Mahan, H. R. Binkley, R. C. Boys, J. W. Glass, Ken Harper, T. P. Lewis, Clyde Lilly, R. K. Noback, Judith Pratt, D. C. Seaton, Doris Seward, Denver Sloan, D. M. Soule, H. E. Wetzel (Student members: Tony Newkirk, Edith Justice).

Commencement Program. Hambleton Tapp, Jesse DeBoer, Betsy Worth Estes, R. B. Fitzgerald, R. K. Jarecky, Helen G. King, Mary Page Milton, Betty Jo Palmer, W. Z. Ramsey, B. A. Shively, R. E. Tucker, R. W. Wild (Student members: Steve Beshear, Jane Withers).

Committee of Fifteen. T. D. Clark, J. H. Adler, L. M. Chamberlain, Marcia Dake, W. C. DeMarcus, R. M. Doughty, L. V. Ginger, W. D. Ham, Malcolm Jewell, Robert Johnson, J. L. Massie, F. D. Peterson, G. W. Schneider, R. E. Shaver, Elizabeth E. Taylor.

Computing Center. H. C. Eckstrom, L. W. Cochran, John Donahoe, S. C. Hite, Clay Maupin, S. O. Navarro, W. C. Royster, R. S. Schweet.

Faculty Health Service. V. L. Christian, R. J. Angelucci, C. Amyx, E. E. Kraehe, V. A. Musselman, E. P. Slone, Robert Straus, T. H. Taylor, Richard Thurston.

Foreign Programs. L. M. Chamberlain, W. H. Jansen, A. D. Kirwan, W. A. Seay, Willis A. Sutton, Amry Vandenbosch, M. M. White.

Foreign Students. Kenneth Harper, M. A. Clay, Henry Durham, F. J. Essene, Joseph Mangalam, J. G. Rodriquez, Doris Seward, S. J. Zyzniewski (Student members: Ali Yadzi, Ann Combs).

Freshman Orientation—Kenneth Harper, Keller Dunn, Lewis Donohew, W. M. Carter, M. A. Hatch, E. D. McDaniel, George Rogers, Doris Seward, M. S. Wall (Student members: Pat Ryan, Trudy Mascia).

Honors Day. C. C. Carpenter, J. S. Brown, Stephen Diachun, R. O. Evans, T. J. Pignani, Frederick Thursz, F. W. Whiteside (Student members: Ed Houlihan, Vanda Marcum).

Insurance. L. X. Tarpey, H. L. Bost, G. R. Kavanaugh, R. S. Mateer, Paul Oberst, R. R. Pickett, D. L. Sproull, W. P. Street, E. G. Youmans.

Non-Resident Fees. C. F. Elton, R. D. Gilliam, F. D. Peterson.

Patents. W. D. Ham, R. H. Dutt, D. K. Blythe, V. P. Kenney, E. L. Newbury, Morris Scherago.

Research Fund. A. D. Kirwan, L. M. Chamberlain, R. A. Chapman, Merl Baker, T. P. Field, C. E. Hendrickson, David Horton, W. H. Knisely, R. A. Lauderdale, Paul G. Sears, R. F. Wiseman.

Academic Progress (formerly Scholarship and Attendance). C. F. Elton, H. W. Guthrie, J. R. Ogletree, J. W. Patterson, May Sanders (Student members: Larry Singleton, Jeanie Haines).

Scholarships and Student Loans. E. W. Ockerman, M. E. Adelstein, W. T. Carse, Kenneth Harper, C. T. Maney, W. L. Matthews, W. Soloman, Doris Seward, W. F. Wagner, M. S. Wall, C. A. Walton (Student members: Prent Smith, Betsy McKinivan).

Television Activities. O. L. Press, A. L. Cooke, J. C. Eaves, L. V. Ginger, R. D. Johnson, C. E. Snow.

University Press. H. L. Donovan, L. M. Chamberlain, B. F. Denbo, T. D. Clark, W. W. Haynes, A. D. Kirwan, A. K. Moore, L. N. Plummer, H. P. Riley, L. S. Thompson.

Faculty Committees[1] 1963

Curriculum Committee: Carl B. Cone (term expires Dec. 31, 1964). *Term to expire Dec. 31, 1963:* Jacob H. Adler, Annie R. Brownlie, May M. Sanders, Michael T. Romano. *Term to expire Dec. 31, 1964:* James C. Humphries, Wesley Garrigus, James G. Morris, Charles A. Walton. *Term to expire Dec. 31, 1965:* Wimberly C. Royster, Paul Oberst, Herbert Sorenson, Harold W. Guthrie, William H. Knisely.

Elections Committee—Term to expire Dec. 31, 1963: Carlos Erwin, Gifford Blyton, Dana G. Card. *Term to expire Dec. 31, 1964:* John Douglas, Donald Hochstrasser, Anna Gorman.

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1 In each instance the first named member is chairman. All appointments are effective January 1, 1963.

Faculty Council—Terms to expire Dec. 31, 1963: R. H. Weaver, L. W. Cochran, Stephen Diachun, W. W. Haynes, John Kuiper, J. E. Reeves, Douglas Schwartz, Paul G. Sears, Williams S. Ward.

Honors Program Committee—Term to expire Dec. 31, 1963: James G. Morris, Ellis Brown, Wendell DeMarcus, Harold Guthrie, James B. Kincheloe, John E. Barrows. *Term to expire Dec. 31, 1964:* William F. Wagner, Morris Scherago, C. Milton Coughenour, Earl Slone, Jacob Adler, Virginia Lane. (Student members: Betsy McKinivan, Robert Stokes.)

Library Committee—Term to expire Dec. 31, 1963: William H. Knisely, Samuel C. Hite, Harry A. Smith, Robert H. Stroup. *Term to expire Dec. 31, :1964:* Laszlo Zsoldos, Marion Piersall, Daniel Claster, Blaine Parker. (Student members: Charles P. Beatty, Sandy Brock.)

Rules Committee—Term to Expire Dec. 31, 1963: Wimberly Royster, Charles F. Elton, Denver Sloan, Wellington B. Stewart, M. Stanley Wall. *Term to expire Dec. 31, 1964:* Wasley Krogdahl, James Thorpe, William W. Ecton, James Hopkins, Ernest McDaniel. (Student members: Charles Kirk, Susan Scott.)

Student Organizations and Social Activities Committee—Term to expire Dec. 31, 1963: Virgil Christian, Maurice Clay, Richard Thurston. *Term to expire Dec. 31, 1964:* Irving Fisher, Richard Mateer, Emmett Burkeen, J. Ardery McCauley. (Student members: Joseph Coughlin, Edith Justice.)

Public Education Proposals Special Committee—W. P. Street, E. W. Ockerman, C. B. Cone, A. L. Crabb, J. M. Carpenter, R. Straus, C. T. Maney. (Student member: B. Brawner.)

Graduate Program Special Committee—R. H. Weaver, D. G. Steele, S. C. Hite, V. A. Musselman, T. B. Stroup, M. E. Jewell. (Student member: Chip Rice.)

Student Achievement Special Committee—E. McDaniel, L. S. Thompson, D. M. Seward, M. E. Adelstein, W. T. Carse, J. E. Reeves. (Student members: Dee Dee Ellis, Ross Shank.)

Faculty & Professional Staff

Abbott, Okra Jones, Ph.D., Associate Professor of Poultry Science
Abernathie, Jan W., Ph.D., Assistant Professor of Horticulture
Adam, Richard J., M.D., Senior Clinical Fellow in Medicine
Adams, Anthony C. I., M.P.H., Instructor in Community Medicine
Adams, Estelle, M.A., Instructor in Education
Adams, Frances, B.S., Home Agent, Cooperative Extension Service
Adams, Hunter M., Assistant in Acquisitions Department, King Library
Adams, Leslie Keene, LL.B., Supervisor of Electrical Engineering Laboratories, special assignment
Adams, Staley Fields, M.S., Associate Professor of Applied Mechanics
Adelstein, Michael E., Ph.D., Assistant Professor of English
Adler, Jacob Henry, Ph.D., Associate Professor of English
Albright, Arnold DeWald, Ph.D., Executive Vice President
Alderman, Louis Cleveland, Jr., Ed.D., Director, Northwest Center
Alderson, Lois, A.B., Part-time Critic Teacher, Education
Alexander, Alexander John, M.D., Associate Professor of Clinical Pediatrics, voluntary
Allen, Clyde C., Jr., B.S., Acting County Agent, Cooperative Extension Service
Allen, John M., M.D., Instructor in Clinical Surgery, voluntary
Allen, Richard S., M.S., Professor of Physiology
Allen, Stephen Q., M.S., Extension Specialist in Agricultural Economics
Allison, Nathan Breckinridge, Ph.D., Professor of Electrical Engineering
Amyx, Clifford, M. A., Professor of Art
Anderson, Ella S., M.A., Extension Specialist in Home Management
Anderson, Grace, M.A., Assistant Professor of Education, special assignment
Angelone, Joan, A.B., Administrative Assistant in Anesthesiology
Angelucci, Ralph J., M.D., Associate Professor of Clinical Surgery, voluntary
Archdeacon, James W., Ph.D., Professor of Physiology
Arlinghaus, Ralph B., Ph.D., Research Fellow, Biochemistry
Armstrong, George A., B.S., Resource Development Specialist, Robinson Substation
Armstrong, W. D., M.S., Extension Specialist in Horticulture, Princeton Substation
Arnett, Manuel B., B.S., County Agent, Cooperative Extension Service
Arnett, Maralea, M.R.E., Librarian, Northwest Center
Arnold, Thomas William, B.S., Assistant PMS, Military Science
Arons, Peter Lederman, Ph.D., Instructor in English
Arvin, Jennie, B.S., Home Agent, Cooperative Extension Service
Ashley, Perry J., A.B.J., Part-time Instructor in Journalism
Aspy, David, M.A., Counselor, University Counseling Service
Aten, Donovan Lyle, B.S.L.A., Part-time Visiting Critic in Architecture
Atherton, Faye R., B.S., County Agent, Cooperative Extension Service
Atkinson, William O., M.S., Assistant Professor of Agronomy
Aug, Robert G., M.D., Assistant Professor of Psychiatry
Auvenshine, Charles Dwight, Ph.D., Assistant Professor of Education; Director, Rehabilitation Counseling.
Auxier, Thomas Alvin, M.S., Research Assistant, Wenner-Gren Aeronautical Research Laboratory
Axton, William Fitch, Ph.D., Assistant Professor of English
Bach, John C., B.S., Associate County Agent, Cooperative Extension Service
Back, Lyle Newton, M.S., Assistant Professor of Electrical Engineering
Bacon, William Gordon, B.S., Assistant County Agent, Cooperative Extension Service
Bahl, Roy W., Jr., Research Assistant, Bureau of Business Research
Bailey, Carroll, B.S., Assistant County Agent, Cooperative Extension Service
Bailey, Harry H., Ph.D., Associate Professor of Agronomy
Bailey, Robert W., B.S., Captain, U.S. Air Force, Assistant Professor of Air Science
Baker, Howard, B.S., Assistant County Agent, Cooperative Extension Service
Baker, Joeann P., A.B., Critic Teacher, Education
Baker, Merl, Ph.D., Executive Director, Kentucky Research Foundation; Director, University Research and Industrial Relations; Director, AID Programs; Part-time Professor of Mechanical Engineering
Baker, Robert L., M.S., Personnel Assistant, University Personnel Division
Baker, Ruth M., B.S., Home Agent, Cooperative Extension Service
Baker, W. Maurice, M.A., Head, Department of Industrial and Distributive Education; Professor of Education
Baldridge, Bill J., M.A., Psychology Lecturer, Northern Center
Ball, Hubert E., B.S., County Agent, Cooperative Extension Service
Ball, John Charles, Ph.D., Associate Professor of Sociology
Ball, Leon D., B.S., Area Extension Agent, Cooperative Extension Service
Ball, William B., A.B., Supervisor, Department of Public Information and Educational Aids, Agriculture
Balows, Albert, Ph.D., Assistant Professor of Medicine
Banks, Vernon, M.S., County Agent, Cooperative Extension Service

Banks, William H., Jr., M.S., Assistant Professor of Education
Barber, William Jackson, M.S., Associate Professor of Applied Mechanics
Barbour, Roger William, Ph.D., Associate Professor of Zoology
Bardwell, Anna S., B.S., Home Agent, Cooperative Extension Service
Barkley, Marie Rodes, M.A., Associate Professor of Home Economics, special assignment
Barkman, J. O., B.S., Associate Professor Emeritus of Dairy Science Mfg.
Barnett, Brinkley, B.M.E., Associate Professor of Electrical Engineering, special assignment
Barnett, M. Randall, B.S., Associate County Agent, Cooperative Extension Service
Barnhart, Charles E., Ph.D., Professor of Animal Science, Associate Director, Agricultural Experiment Station
Barnhart, Raymond, M.A., Professor of Art
Barr, Thomas Calhoun, Jr., Ph.D., Assistant Professor of Zoology
Barrett, Carey, M.D., Associate Professor of Clinical Medicine, voluntary
Barrett, Olive E., M.A., Critic Teacher, Education
Barrows, John E., Ed.D., Director of Institutional Studies, Part-time Assistant Professor of Anthropology
Bartlett, Marian, M.A., Extension Specialist in Home Furnishings
Bastin, Garland, M.S., District Leader, County Agricultural Extension Agents
Bates, Barbara, M.D., Assistant Professor of Medicine
Bates, Cecile, B.S., Home Agent, Cooperative Extension Service
Bates, Patricia G., B.S., Assistant Home Agent, Cooperative Extension Service
Batt, John R., LL.M., Visiting Associate Professor of Law
Baugh, Lucy Gaines, B.S., Seed Analyst, Entomolgy and Botany
Baulch, Walter M., M.Ed., Part-time Instructor in Physics, Northern Center
Baumgarten, Clarita M., Administrative Assistant, Department of Oral Diagnosis and Oral Medicine, College of Dentistry
Baxter, James C., Ph.D., Assistant Professor of Psychology and Psychiatry (joint appt.)
Baxter, Wayne, B.S., Assistant County Agent, Cooperative Extension Service
Bayes, Clarence P., B.S., County Agent, Cooperative Extension Service
Beals, Wendell Everett, C.P.A., Professor of Accounting
Bean, Kenneth Clarke, M.S., Resource Development Specialist in Poultry, Robinson Substation
Beers, Howard W., Ph.D., Distinguished Professor of Rural Sociology
Begin, John Joseph, Ph.D., Associate Professor of Poultry Science
Behlow, Robert F., D.V.M., Professor of Animal Pathology
Bennett, Bert A., M.A., Mathematics Lecturer, Northern Center
Bennett, C. Leeman, B.S., Assistant Football Coach
Bennett, Florence, B.S., Home Agent, Cooperative Extension Service
Benoit, George R., Ph.D., Assistant Professor of Agronomy
Bentley, Geraldine, B.S., Associate Home Agent, Cooperative Extension Service
Benton, Robert S., Ph.D., Associate Professor of Anatomy
Benton, Stanley Dale, M.S., Assistant Professor of Engineering Graphics
Berry, John F., Jr., M.D., Instructor in Clinical Radiology, voluntary
Best, Donald K., Master Sergeant, U.S. Air Force, Sergeant Major in Air Science
Best, Harry, LL.D., Professor of Sociology, special assignment
Biagi, J. Quinton, B.Arch., Visiting Lecturer in Architecture
Binger, Norman H., Ph.D., Associate Professor of Modern Foreign Languages
Bingham, William Ray, M.S., Instructor in Education
Binkley, Harold Roper, Ed.D., Associate Professor of Education
Binkley, Wendell C., M.S., Associate Professor of Agricultural Economics; Extension Specialist in Cooperative Marketing
Bishop, Ellis, B.S., County Agent, Cooperative Extension Service
Bishop, Ruth, M.A., Instructor in Nursing
Bissmeyer, Ollie Edward, Jr., Ed.S., Associate Professor of Education
Black, Ben W., Ph.D., Assistant Professor of English
Black, Rodney Elmer, Ph.D., Associate Professor of Chemistry
Blackerby, Jeffries Lee, M.D., Clinical Assistant, Department of Pediatrics, voluntary
Blackburn, Arnold, M.M., Professor of Music
Blakeman, Robert W., B.S., Director of Men's Housing
Blakey, Leslie, M.D., Assistant Professor of Clinical Medicine, voluntary
Blankenship, Lorene, B.S., Home Agent, Cooperative Extension Service
Bledsoe, Francis H., M.D., Part-time Physician, University Health Service; Instructor of Clinical Medicine
Blegen, Barbara, A.B., Research Assistant, Anatomy
Blevins, Robert L., M.S., Assistant Professor of Agronomy
Blue, J. W. III, B.S., Associate County Agent, Cooperative Extension Service
Blythe, David Knox, M.C.E., Professor of Civil Engineering; Head, Department of Civil Engineering
Blyton, Gifford, Ph.D., Professor of Speech
Boehm, John J., M.D., Instructor in Pediatrics
Boggs, William E., B.S., County Agent, Cooperative Extension Service
Bohanan, S. C., M.S., Chairman, Agricultural Extension Programs
Bohannan, Harry M., D.M.D., Associate Professor of Periodontics and Endodontics; Chairman, Department of Periodontics and Endodontics
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Bolin, R. B., Assistant Director of Purchases, Division of Purchases, Medical Center
Bolton, Joseph R., M.D., Instructor in Clinical Surgery, voluntary
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Boone, George R., B.S., Assistant Football Coach
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Bortner, Charles E., M.S., Professor of Agronomy
Bosomworth, Peter P., M.D., Professor of Anesthesiology; Chairman, Department of Anesthesiology
Bost, Howard L., Ph.D., Professor of Community Medicine; Assistant Vice President for Program and Policy Planning, Medical Center
Boston, Lawrence A., B.S., Instructor in Civil Engineering
Boswell, W. Leroy, M.D., Assistant Professor of Clinical Radiology, voluntary

Bosworth, N. L., M.D., Assistant Professor of Clinical Surgery, voluntary
Botsford, Mildred Harris, M.S., Assistant Professor of Home Economics
Bowling, Phyllis, B.S., Home Agent, Cooperative Extension Service
Boyarsky, Louis L., Ph.D., Professor of Physiology
Boyce, V. Milton, B.S., Acting County Agent, Cooperative Extension Service
Boyd, Janet Sue, B.S., Home Agent, Cooperative Extension Service
Boyden, Ruth, M.S., Assistant Professor of Home Economics
Boys, R. C., B.S., Colonel, U.S. Air Force, Professor of Air Science, Head of Department of Aerospace Science
Brabant, Kenneth, B.S., County Agent, Cooperative Extension Service
Brabant, Stuart, B.S., County Agent, Cooperative Extension Service
Braddy, John P., M.B.A., Major, U.S. Air Force, Assistant Professor of Air Science
Bradford, Lawrence A., M.S., Professor of Agricultural Economics
Bradley, Eugene Bradford, M.S., Assistant Professor of Electrical Engineering
Bradley, N. W., Ph.D., Associate Professor of Animal Science
Bradshaw, Adrain, Superintendent, University Post Office
Bradshaw, Charles I., M.A., Head Football Coach
Brady, George Keysport, Ph.D., Professor of English
Branam, Harold Frank, A.B., Instructor in English
Brandon, Alfred N., M.S., Librarian, Medical Center Library
Branson, Edwin Robert, A.B., Areal Geologist, Kentucky Geological Survey
Brauer, Alfred Charles, Ph.D., Professor of Zoology
Briggs, Wallace Neal, M.A., Associate Professor of English; Director, Guignol Theatre
Brinkley, William R., B.S., Associate County Agent, Cooperative Extension Service
Britt, William M., B.S., County Agent, Cooperative Extension Service
Broaddus, James William, M.A., Instructor in English, Northern Center
Brock, Ruth S., B.S., Home Agent, Cooperative Extension Service
Brockman, Fred, M.S., 4-H Field Agent, Agricultural Extension Division
Brockman, Raymond A., M.S., County Agent, Cooperative Extension Service
Brooks, Jesse B., M.S., Associate Professor of Agricultural Engineering
Brothers, Darrell W., M.A., Art Lecturer, Northern Center
Browder, Mary D., M.A., Extension Specialist in Parent Education and Child Development
Brown, Anne Lee, M.S.P.H., Assistant Director of Nursing Service, University Health Service
Brown, Aubrey J., Ph.D., Professor of Agricultural Economics; Head, Department of Agricultural Economics
Brown, Ben F., M.S., County Agent at Large, Cooperative Extension Service
Brown, Chester L., B.S., County Agent, Cooperative Extension Service
Brown, Ellis Vincent, Ph.D., Professor of Chemistry; Director, General Chemistry
Brown, Gene H., B.S., Assistant County Agent, Cooperative Extension Service
Brown, Gilbert E., M.S., Resource Development Specialist in Forest Management and Utilization, Experiment Station
Brown, H. Corley, B.S., County Agent, Cooperative Extension Service
Brown, Herbert, Ph.D., Area Agent in Swine, Cooperative Extension Service
Brown, Hollis Bradley, M.S., Assistant County Agent, Cooperative Extension Service
Brown, James S., Ph.D., Associate Professor of Rural Sociology
Brown, James W., M.A., Director, Extension Class Program, Extended Programs
Brown, Joe, M.A., Basketball Trainer
Brown, Joe B., B.S., Inspector, Creamery License Section, Dairy Science
Brown, Marion Clay, M.A., Assistant Professor, Department of Mathematics and Astronomy
Brown, Marion G., M.D., Instructor in Clinical Surgery, voluntary
Brown, Robert O., C.P.A., Assistant Professor of Commerce
Brown, Will Kenneth, Jr., M.S., Part-time Instructor in Mechanical Engineering
Brown, William R., Ph.D., Professor of Geology
Browne, Edward Tankard, Jr., Ph.D., Associate Prof. of Botany
Browning, Wilmer, M.S., Extension Specialist in Agricultural Economics
Brownlie, Annie Richmond, M.S., Associate Professor of Home Economics
Bruce, Herbert, Jr., M.S., Instructor in Education
Brumleve, Margaret Ann, A.B., Sales Manager, University Press
Bryan, Joyce A., M.Ed., Part-time Instructor in Psychology, Southeast Center
Bryans, John T., Ph.D., Professor of Animal Pathology
Bryant, Barbara Ann, Assistant to Archivist, University and Educational Archives
Bryant, James R., Technician, Department of Agricultural Engineering
Bryant, Lester, M.D., Instructor in Surgery
Bryant, Thomson R., Associate Director, Agricultural Extension Division, special assignment
Bryant, T. R., Jr., M.D., Assistant Professor of Clinical Surgery, voluntary
Buchanan, Claribel, B.S., Home Agent, Cooperative Extension Service
Buchanan, Edward L., M.M., Department of Music, Ashland Center
Buck, C. Frank, Ph.D., Associate Professor of Animal Science
Buckner, Robert C., Ph.D., Associate Professor of Agronomy
Bucy, John L., B.S., Laboratory Technician, Dairy Science
Bull, Cecil, M.A., Head Cataloger, Medical Center Library
Bull, Jacqueline, Ph.D., Head of Special Collections, University Library
Bullen, Reba K., B.S., Home Agent, Cooperative Extension Service
Bunn, Joe M., Ph.D., Assistant Professor of Agricultural Engineering
Burberry, Roy Donald, M.S., Assistant Professor of Engineering Graphics
Burch, Richard J., D.D.S., Assistant Professor of Oral Diagnosis and Oral Medicine; Administrative Assistant to the Dean, College of Dentistry
Burg, Ida Jo, B.S., Associate Home Agent, Cooperative Extension Service
Burkeen, Emmett, M.A., Instructor in Education
Burkeholder, David, Pharm.D., Research Associate, Department of Medicine
Burkett, W. Keith, Ph.D., Agricultural Economist
Burnett, Bob, M.S., Assistant Director of Purchases, Division of Purchases
Burr, Elizabeth, M.A., Extension Specialist in Home Furnishings
Burrus, P. B., II, M.S., Assistant Professor of Agronomy

Burton, Arthur M., B.S., Major, U.S. Air Force, Assistant Professor of Air Science
Burton, Edward K., B.S., Laboratory Assistant and Demonstrator, Department of Chemistry
Bushong, M. Blanche, A.B., Extension Specialist, Department of Public Information and Educational Aids
Butler, Robert E., M.S., Part-time Instructor in Mathematics, Fort Knox Center
Butler, Ronald Wallace, M.A., Instructor in English, Northwest Center
Byerly, Zelma, B.S., Home Agent, Cooperative Extension Service
Byers, George B., Ph.D., Professor of Agricultural Economics
Byron, William Monroe, M.A., Instructor in English and Administrative Assistant, Northern Center
Cabe, Carl, Ph.D., Professor of Economics
Cadle, Dean, M.S., Librarian, Southeast Center
Cadle, Jo Dannel, B.S., Bursar-Recorder, Southeast Center
Caldwell, Charles W., M.D., Instructor in Clinical Surgery, voluntary
Caldwell, William M., Sr., A.B., Internal Auditor, Division of Internal Audits
Callahan, Steve A., B.S., Area Agent in Marketing, Department of Agricultural Economics
Callihan, Anne W., Assistant Professor of Art, special assignment
Calvin, James S., Ph.D., Professor of Psychology; Head, Department of Psychology
Camenisch, Dorothy C., B.S., Home Agent, Cooperative Extension Service
Campbell, Daniel, A.B., Computer Analyst, University Computing Center
Campbell, Lois J., Ph.D., Assistant Professor of Geology
Campbell, Mary Ann H., B.S., Home Agent, Cooperative Extension Service
Campbell, Mollie, B.S., Assistant Home Agent, Cooperative Extension Service
Campbell, Nancy, B.S., Assistant Home Agent, Cooperative Extension Service
Campbell, Stanley Wayne, B.S., Assistant PMS, Military Science
Campbell, Tommye Jean, B.S., Assistant Home Agent, Cooperative Extension Service
Cannon, L. Dennis, Ph.D., Part-time Instructor in Psychology, Fort Knox Center
Card, Dana G., Ph.D., Professor of Agricultural Economics
Carl, Alma, M.A., Curriculum Laboratory Coordinator, College of Education
Carlson, Loren D., Ph.D., Professor of Physiology; Chairman, Department of Physiology
Carpenter, Cecil Clayton, Ph.D., Professor of Economics; Dean, College of Commerce
Carpenter, John Melvin, Ph.D., Professor of Zoology; Head, Department of Zoology
Carr, Martha G., Ed.D., Professor of Physical Education; Chairman, Women's Division
Carr, Scott B., M.S., Instructor in Dairy Science
Carr, Wilbert L., LL.D., Professor of Classics, Home Study
Carrel, William Joseph, C.E., Professor of Structural Engineering, special assignment
Carse, William, Ed.D., Associate Professor in Counseling and Guidance, Department of Education
Carter, Ada L., Acting Field Agent, 4-H Extension Programs
Carter, Cecil E., B.S., Associate County Agent, Cooperative Extension Service
Carter, Lucian Hugh, Ph.D., Professor of Economics
Carter, Willis Merle, Ph.D., Professor of Machine Design; Head, Department of Mechanical Engineering
Casada, James H., B.S., Assistant in Agricultural Engineering
Cassidy, Thomas M., M.D., Instructor in Clinical Psychiatry, voluntary; Psychiatric Consultant, University Health Service
Castle, Warren James, Ph.D., Assistant Professor of Classics
Cathey, Ted W., B.S., Assistant in Animal Science
Catlett, Craig Reed, Laboratory Supervisor, Mechanical Engineering
Caudill, James H., M.S., Assistant County Agent, Cooperative Extension Service
Caudill, John, B.S., County Agent, Cooperative Extension Service
Cavanaugh, Virginia F., M.A., Assistant Recorder
Cave, Doris Elouise, M.B.E., Instructor in Commerce, Northwest Center
Caveny, James, M.A., Instructor, Department of Mathematics and Astronomy
Cawein, Madison J., M.D., Assistant Professor of Medicine
Cazaudebat, Marie, M.A., Instructor in Modern Foreign Languages
Cetrulo, Robert C., LL.B., Political Science Lecturer, Northern Center
Chacon, Roger J., Ph.D., Assistant Professor of Philosophy
Chamberlain, Leo Martin, Ph.D., LL.D., Professor of Higher Education
Chamberlain, Robert W., M.D., Instructor in Pediatrics
Chambers, Alvin Lee, C.E., Associate Professor of Testing Materials, Engineering
Chambers, John S., M.D., Professor of Hygiene and Public Health, special assignment
Chambers, Nancy H., M.S., Assistant Acquisitions Librarian, King Library
Chambers, William M., M.A., Director, Testing Service
Chambliss, William J., M.A., Instructor, William Andrew Patterson School of Diplomacy and International Commerce
Chaney, C. H., Ph.D., Assistant Professor of Animal Science
Chapin, Henry Butler, M.A., Instructor in English
Chaplin, Carl E., M.S., Associate Professor of Horticulture
Chapman, Loren J., Ph.D., Associate Professor of Clinical Psychiatry, voluntary
Chapman, Richard A., Ph.D., Professor of Plant Pathology
Charles, Arthur R., Airman First Class, U.S. Air Force, Cadet Records Clerk, Air Science
Charnock, Martha F., M.A., Assistant Professor of Physical Education
Chenault, Harvey, M.D., Assistant Professor of Clinical Surgery, voluntary
Chester, Edward, Ph.D., Instructor in History, Northern Center
Chestnut, Josephine, B.S., Home Agent, Cooperative Extension Service
Chin, Frances Wang, Ph.D., Cataloger, Medical Center Library
Chipps, Davis H., M.D., Professor of Clinical Pathology, voluntary
Christensen, Earl W., M.D., Instructor in Clinical Surgery, voluntary
Christian, Claude O., B.S., County Agent, Cooperative Extension Service
Christian, Virgil Langdon, Jr., Ph.D., Associate Professor of Economics
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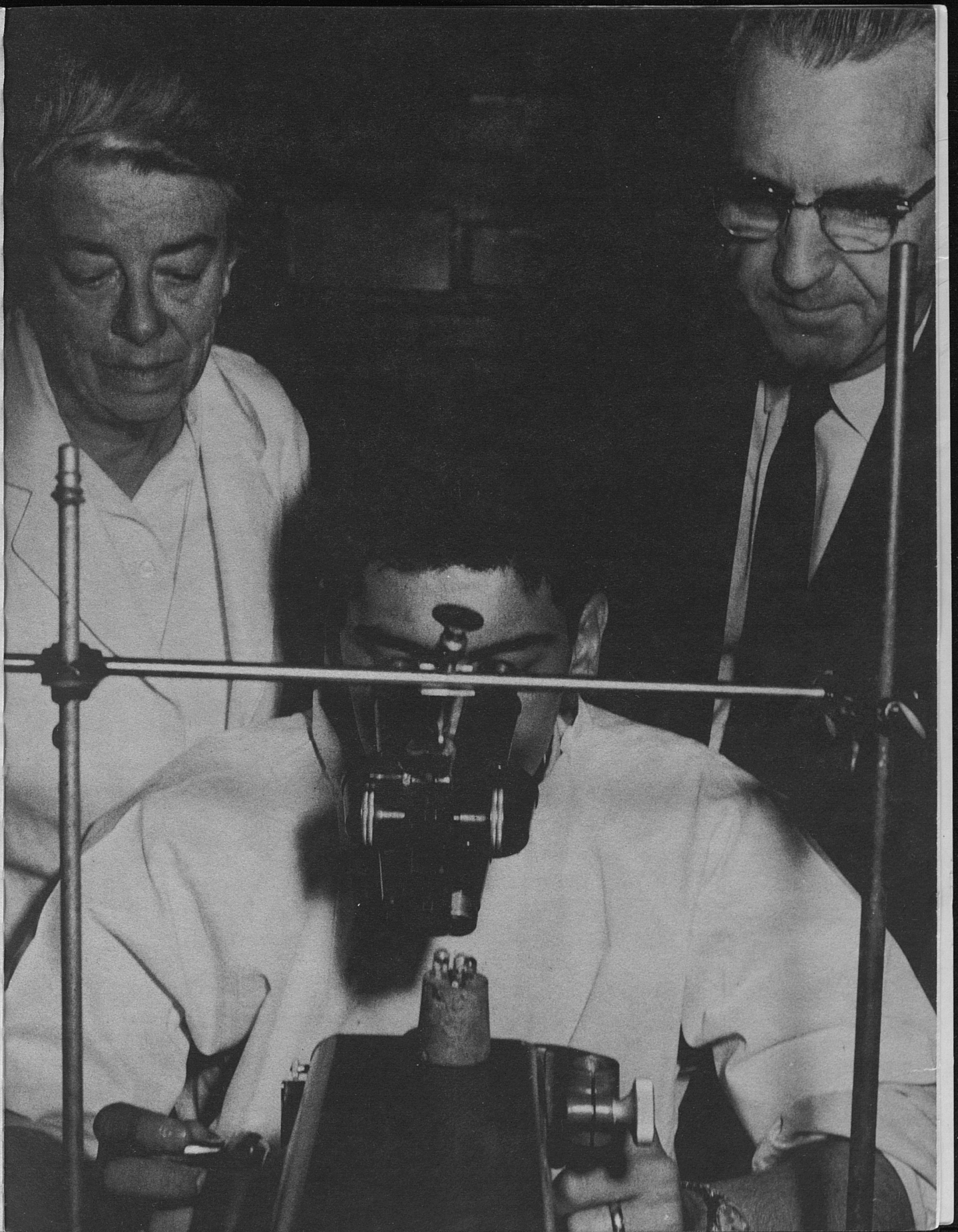
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Sources of Information

PUBLICATIONS

Several publications are issued by the University of Kentucky to give prospective students and others information about the institution.

Bulletins of the various colleges may be requested from either the college dean or the University registrar's office. These are:

Agriculture and Home Economics Bulletin

Arts and Sciences Bulletin

Commerce Bulletin

Dentistry Bulletin

Education Bulletin

Engineering Bulletin

Extended Programs Bulletin

Graduate School Bulletin

Law Bulletin

Medicine Bulletin

Nursing Bulletin

Pharmacy Bulletin

The following bulletins are also available from the registrar's office:

Catalogue

Summer Session Bulletin

Viewbook

Questions and Answers About the University

Information on University two-year centers at Ashland, Covington, Cumberland, Ft. Knox, and Henderson, and on extension, evening, and correspondence work are available from the Division of Extended Programs.

OTHER INFORMATION

Persons wishing special information about some part of the University's program may direct inquiries to members of the administrative staff listed below. In each case the University of Kentucky, Lexington, Kentucky, is the post office address.

The general policies of the University—President of the University

General information, all admissions, and transcripts of credits—Dean of Admissions and Registrar

Living accommodations, student help, social affairs—Dean of Men or Dean of Women

A particular college and its program—Dean of the College

Graduate work—Dean of the Graduate School

Summer Session—Dean of Admissions and Registrar

Class extension and correspondence study—Dean of Extended Programs

Agricultural extension—Director of Agricultural Extension

Facilities for veterans—University Counseling Office

Scholarships and Loans—Chairman of Scholarships and Loans Committee

General information about the University—Director of Public Relations

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