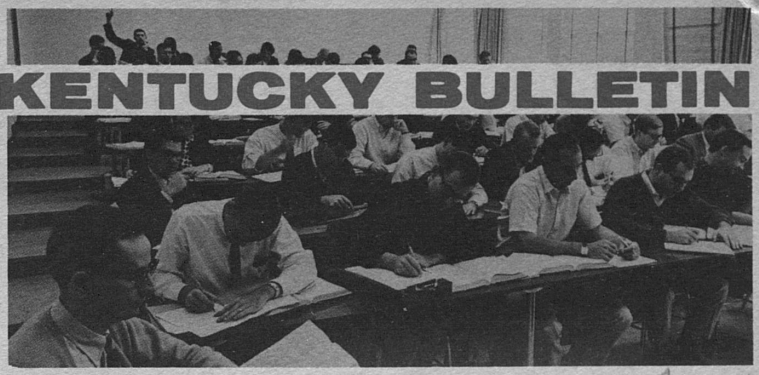




UNIVERSITY OF KENTUCKY BULLETIN

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University Archives
Margaret I. King Library - North
University of Kentucky
Lexington, Kentucky 40506

Catalogue 1967-68









1967

UNIVERSITY OF KENTUCKY CATALOGUE

Registration Fees

School Year 1967-68

STUDENTS ENROLLING AFTER THE REGULAR REGISTRATION PERIOD WILL BE CHARGED AN ADDITIONAL FEE OF $20.

Full-time Student:	*Resident*	*Non-resident*
All Colleges except Medicine and Dentistry—		
Semester Fee	$140.00	$410.00
Summer Term Fee	80.00	220.00
Colleges of Medicine and Dentistry—		
Annual Fee	600.00	1,280.00

Part-time Student:	*Resident*	*Non-resident*
All Undergraduate Colleges except Law		
Semester Credit Hour Fee	$12.50	$37.00
Summer Term Credit Hour Fee	14.00	37.00
College of Law		
Semester Fee	14.00	41.00
Summer Term Fee	16.00	44.00
Graduate School		
Semester or Summer Term Credit Hour Fee	17.00	46.00

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

Additional Fees and Deposits

Additional fees and/or deposits may be assessed for certain courses or activities.

Housing Costs

	Pear Year
Men's and Women's Residence Halls	$850*
Men's and Women's Residence Halls	735**
Cooperstown Single Student Housing:	Per Year
Single graduate student in efficiency	$480****
Single graduate student in one bedroom apartment	$570****
Married Student Housing:	Per month
Efficiency apartment	$ 80****
One Bedroom apartment	95****
Two Bedroom apartment	105****

	Summer Term
Men's and Women's Residence Halls:	
For double room occupancy	$100***
For single room occupancy	125***

* Includes room and three meals daily except Sunday evening meal.

** Includes room and breakfast and the evening meal daily (Sunday noon meal replaces Sunday evening meal).

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

**** Includes adequate basic furnishings, utilities, and maintenance. Does not include board.

Personal Expenses

(Not payable to the University)

Books and Supplies. Range from $40 up, depending on the student's major field of study and schedule of classes for the semester.

Laundry. For students living in the residence halls, laundry facilities for personal items are provided. Other students must make their own arrangements. Local cost for this service is comparable to that in any city.

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

Linen and Towel Service. This voluntary service is provided on a contractural basis for occupants of the residence halls. Information concerning bed linen and towel service can be obtained from the University Housing Office.

ALL FEES AND HOUSING COSTS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

A bulletin published monthly January to October inclusive, by the University of Kentucky, Lexington 40506. Second Class postage paid at the Post Office, Lexington, Ky. Edited by the Department of Public Relations and published under its direction.

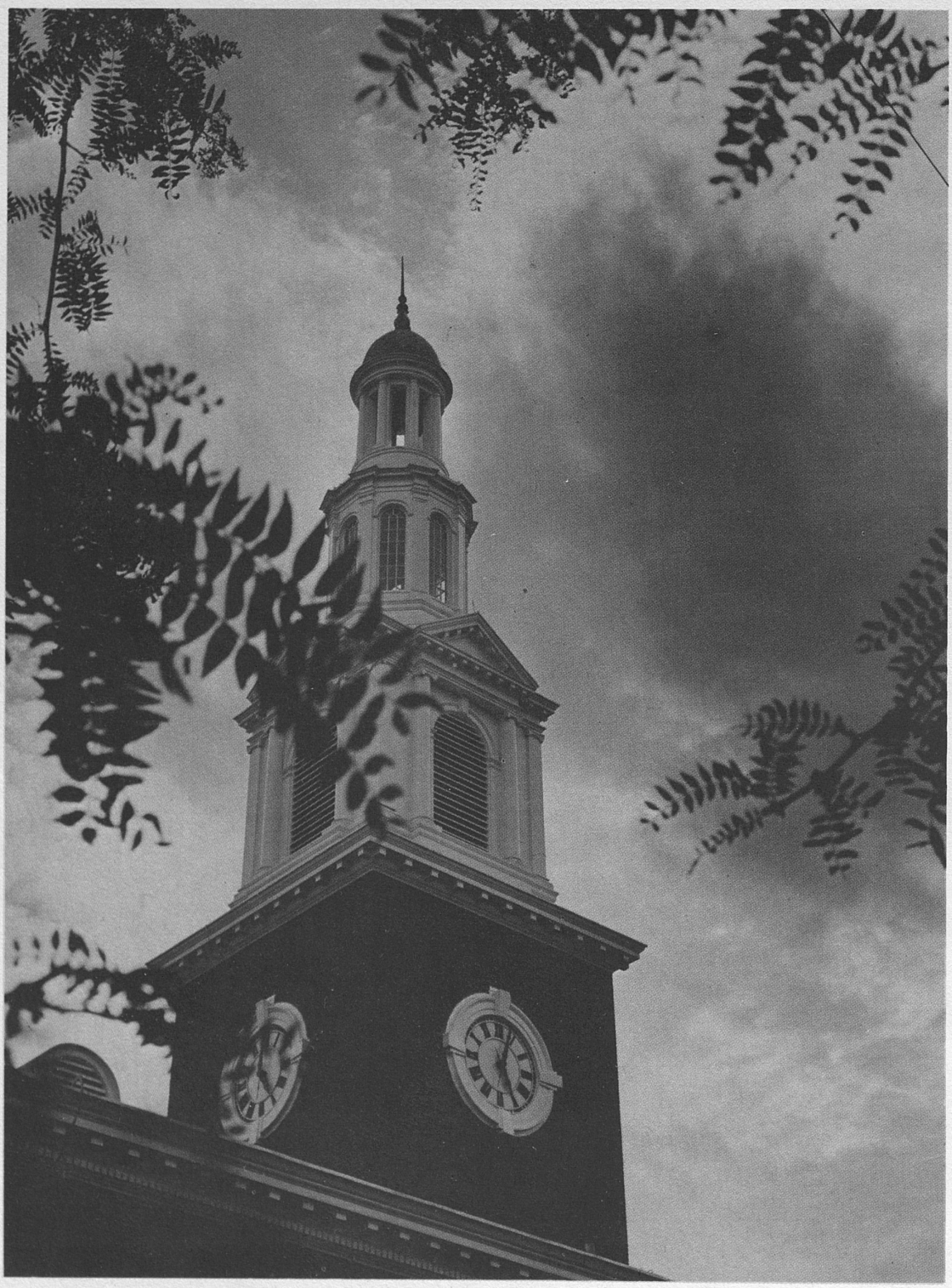
VOL. 59 FEBRUARY, 1967 NO. 2

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Margaret I. King Library - North
University of Kentucky
Lexington, Kentucky 40506

University of Kentucky Catalogue

1967-68

This publication is a presentation for the 1967-1968 academic year and preceding 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. Fees are subject to change without notice.



CALENDAR

1967 Summer Session

May 12—Friday—Last day to submit application and transcripts to Admissions Office for Summer Session, 1967
June 9, 10—Friday and Saturday—Registration
June 12—Monday—Class work begins
June 15—Thursday—Last day to enter an organized class for the Summer Session
June 23—Friday—Last day to drop a course without a grade
June 26, 27—Monday and Tuesday—Last days for filing application for an August degree in College Dean's Office
July 4—Tuesday—Independence Day Holiday
July 31—Monday—Last day to submit application and transcripts to Admissions Office for the 1967 Fall Semester
Aug. 4—Friday—End of Summer Session
Aug. 8—Tuesday—All grades due in Registrar's Office by 4:00 p.m.

1967 Fall Semester

July 31—Monday—Last day to submit all required documents to Registrar's Office for admission to the 1967 Fall Semester
Aug. 27—Sunday—Dormitories open for Fall Semester
Aug. 28, 29—Monday and Tuesday—Classification, registration, and orientation for students not pre-registered
Aug. 30—Wednesday—Class work begins
Sept. 6—Wednesday—Last day to enter an organized class for the Fall Semester
Sept. 11—Monday—Last day to drop a course without a grade
Sept. 12, 13—Tuesday and Wednesday—Last day for filing application for a December degree in College Dean's Office
Oct. 19—Thursday—Undergraduate mid-terms grades due in Registrar's Office by 4:00 p.m.
Nov. 9—Thursday—Last day to drop a class before finals
Nov. 23, 24, 25—Thursday, Friday and Saturday—Thanksgiving Holidays
Dec. 12—Tuesday—Class work ends
Dec. 15—Friday—Last day to submit all required documents to Registrar's Office for admission to the 1968 Spring Semester
Dec. 14-20—Thursday through Wednesday—Final examinations
Dec. 20—Wednesday—End of Fall Semester
Dec. 22—Friday—All grades due in Registrar's Office by 4:00 p.m.

1968 Spring Semester

Jan. 15, 16—Monday and Tuesday—Classification, registration, and orientation for students not pre-registered
Jan. 17—Wednesday—Class work begins
Jan. 23—Tuesday—Last day to enter an organized class for the Spring Semester
Jan. 29—Monday—Last day to drop a course without a grade
Jan. 29, 30—Monday and Tuesday—Last days for filing application for a May degree in College Dean's Office
Mar. 7—Thursday—Undergraduate mid-term grades due in Registrar's Office by 4:00 p.m.
Mar. 16-24—Saturday noon through Sunday—Spring vacation
Apr. 1—Monday—Last day for out-of-state freshmen to submit all required documents to Registrar's Office for admission to the Fall 1968 Semester
Apr. 1—Monday—Last day to drop a class before finals
May 4—Saturday—End of class work
May 6-11—Monday through Saturday—Final examinations
May 10—Friday—Last day to submit all required documents to Registrar's Office for admission to the 1968 Summer Session
May 11—Saturday—End of Spring Semester
May 12—Sunday—Baccalaureate Vespers
May 13—Monday—101st Annual Commencement
May 14—Tuesday—All grades due in Registrar's Office by 4:00 p.m.

1967

APRIL

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1968

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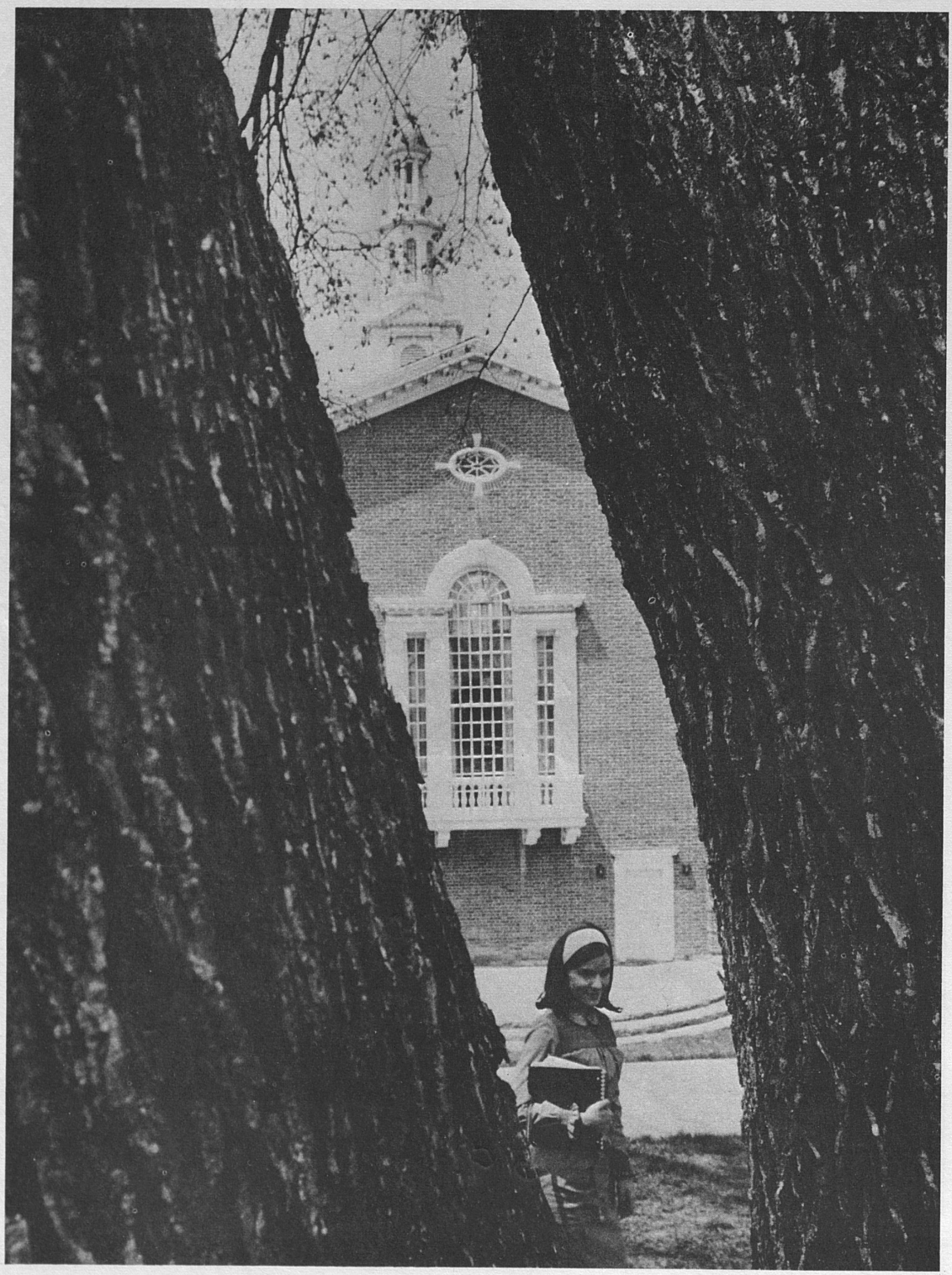
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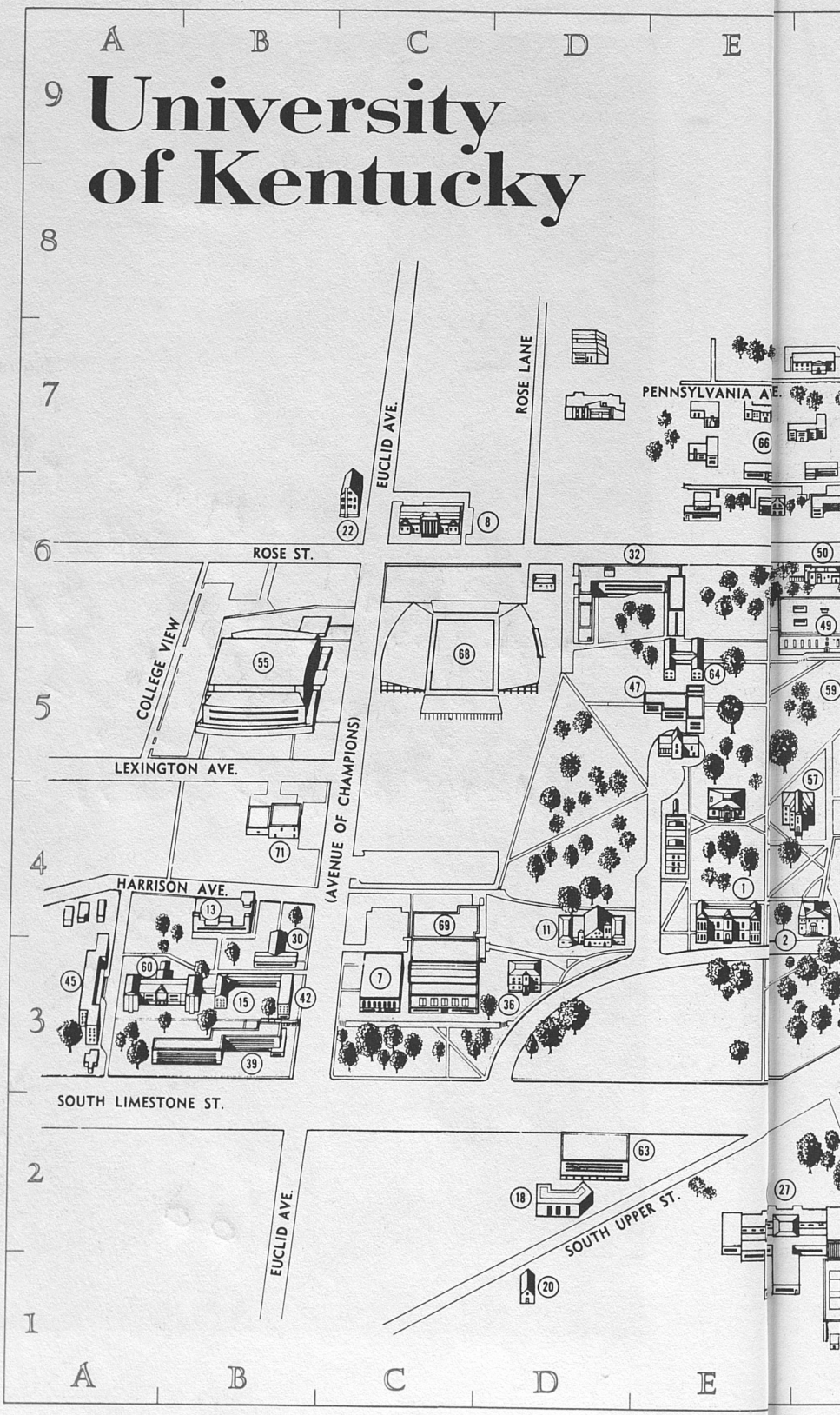
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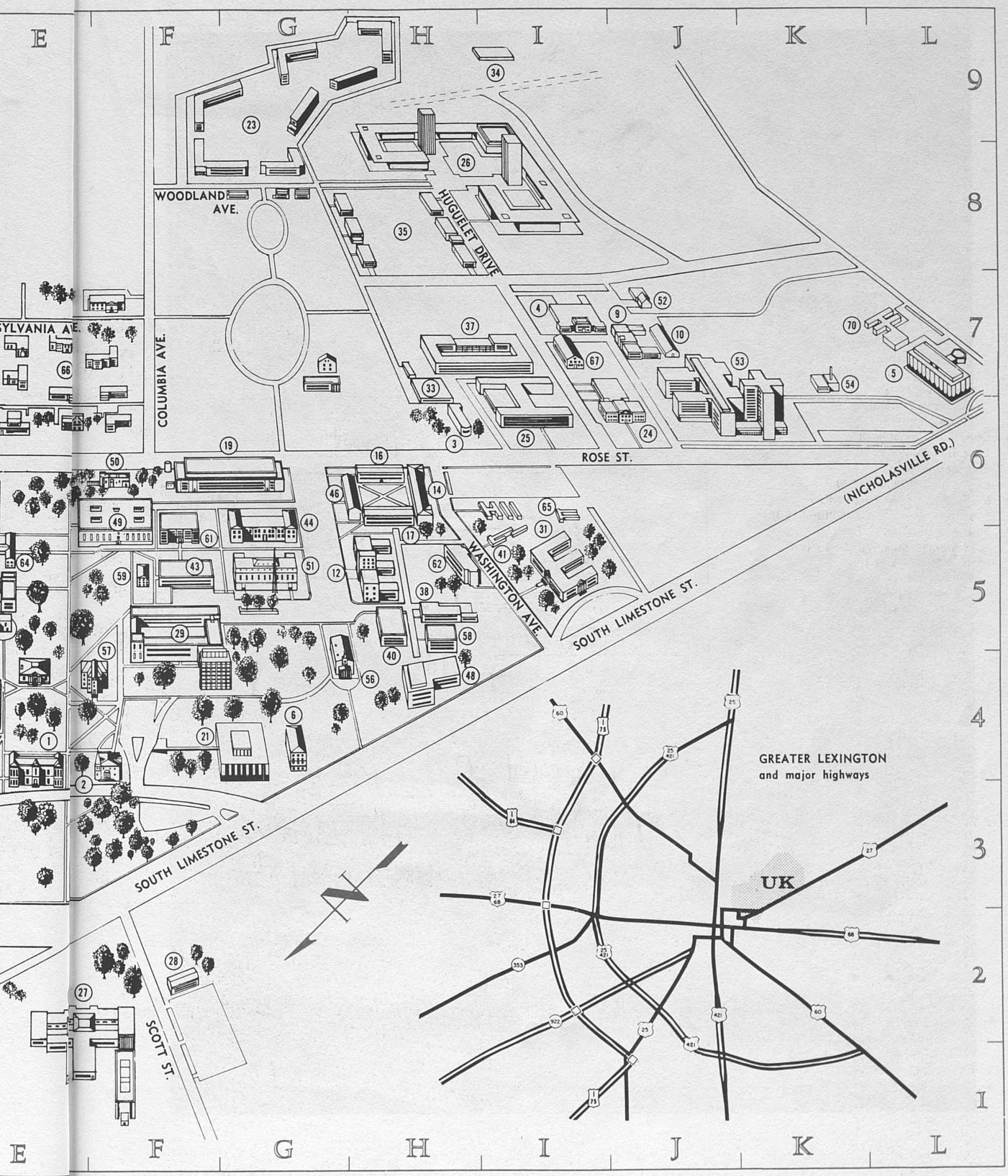


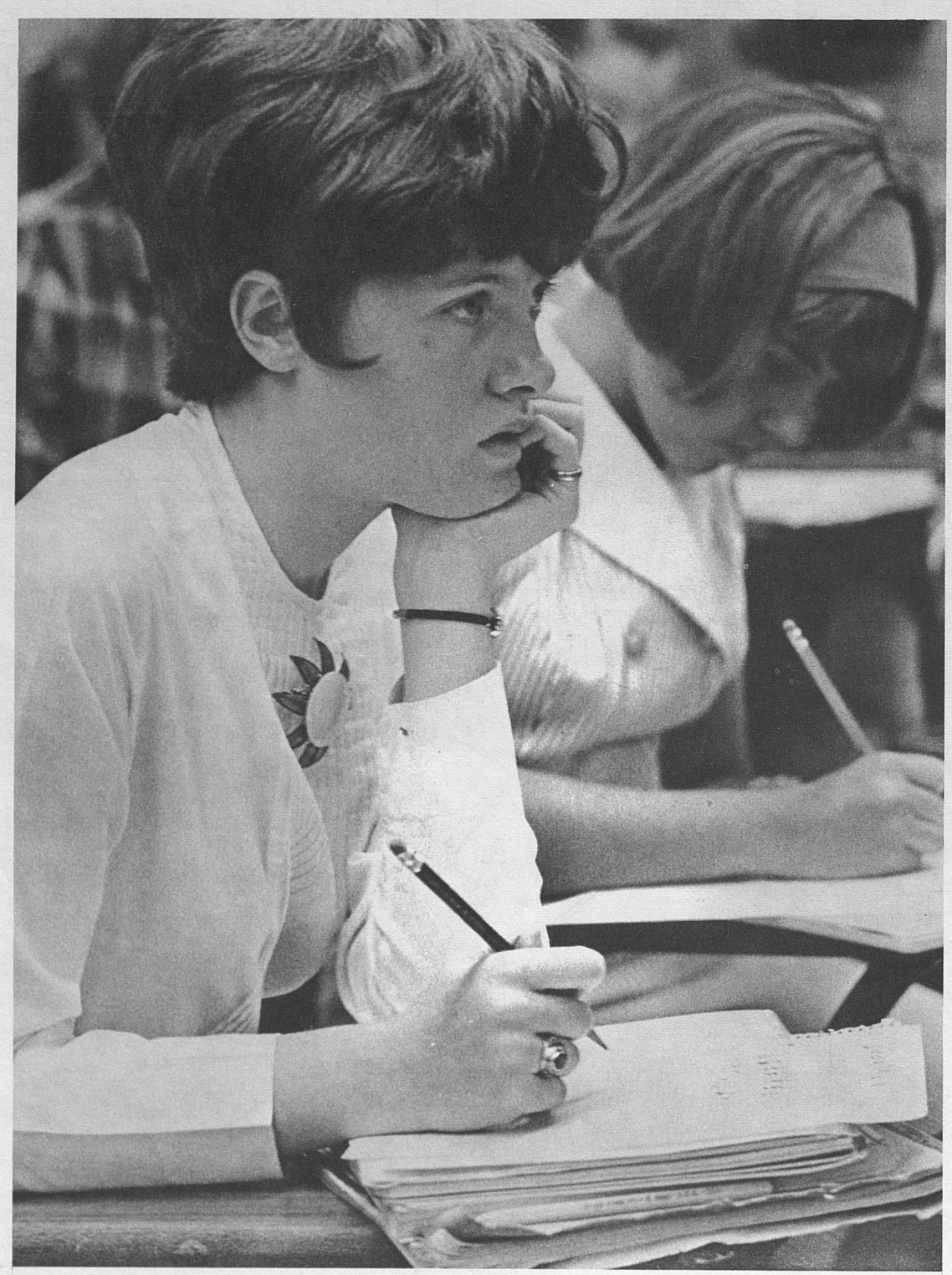
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5. Agricultural Science Center (7-L)
6. Agriculture Building (4-G)
7. Alumni Gymnasium (3-C)
8. Alumni House (6-C)
9. Animal Pathology Building (7-J)
10. Animal Pathology Hospital (7-J)
11. Barker Hall (Buell Armory) (4-D)
12. Biological Sciences Building (Funkhouser) (5-H)
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14. Bowman Hall (6-H)
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19. Chemistry-Physics Building (6-G)
20. Coal Research Laboratory (1-D)
21. Commerce Building (4-G)
22. Community College Building (6-C)
23. Cooperstown (9-G)
24. Dairy Products Building (6-J)
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30. Euclid Avenue Building (4-B)
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32. Fine Arts Building (6-D)
33. Food Storage Building, K-Lair (7-H)
34. Football Building (9-I)
35. Fraternities (8-H)
36. Frazee Hall (3-D)
37. Haggin Hall (7-H)
38. Highway Research Laboratory (5-H)
39. Holmes Hall (3-B)
40. Home Economics Building (5-H)
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42. Jewell Hall (3-B)
43. Journalism Building (5-F)
44. Kastle Hall (6-G)
45. Keeneland Hall (3-A)
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47. Lafferty Hall (5-E)
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53. Medical Center (7-K)
54. Medical Center Heating Plant (7-K)
55. Memorial Coliseum (5-B)
56. Memorial Hall (4-H)
57. Miller Hall (4-F)
58. Mineral Industries Building (5-H)
59. Mining Laboratory (5-F)
60. Patterson Hall (3-A)
61. Pence Hall (5-F)
62. Pharmacy Building (5-H)
63. Service Building (2-D)
64. Social Sciences Building (5-E)
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67. Stock Pavilion (7-I)
68. Stoll Field (5-C)
69. Student Center (3-C)
70. Tobacco Research Laboratory (7-K)
71. "Wildcat" (Bowling-Grill) (4-B)




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(NICHOLASVILLE RD.)
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SOUTH LIMESTONE ST.
SCOTT ST.
SYLVANIA AVE.
GREATER LEXINGTON
and major highways
UK



The Academic Program

THE UNIVERSITY OF KENTUCKY has recently completed an analysis of its academic programs and organization and has initiated certain changes designed to provide its students with improved advisement and instruction. The changes described here apply to all students entering the University in September, 1966, and thereafter.

A university brings together students with greatly varying geographic, economic, social, political, and educational backgrounds. Although any entering class is a rather select group in intellectual ability and educational achievement, there is still a considerable range of ability, achievement, and incentive among the individuals in the class.

A state university is characterized by a wide variety of course offerings and of degree programs ranging from the most traditional of majors in the liberal arts to professional and applied programs with rather specific vocational goals.

The combination of a heterogeneous student body and the multiplicity of curricula requires that the University furnish alternative paths of study, even for the entering student, to provide the soundest education. The programs being developed are based, in part, on the assumptions that every graduate should have breadth of understanding achieved by study in the basic disciplines and that he should have achieved depth by advanced study in a major department or professional area.

To help the student acquire a breadth of understanding, the University requires of each student entering in September, 1966, and thereafter, in addition to six hours of English Composition, or demonstration of proficiency, completion of a sequence of 2 courses in at least five of the following areas of general study:

I MATHEMATICS-PHILOSOPHY
II PHYSICAL SCIENCES
III BIOLOGICAL SCIENCES
IV FOREIGN LANGUAGES
V HUMANITIES: LITERATURE, ART, AND MUSIC
VI HISTORY
VII SOCIAL SCIENCES
VIII BEHAVORIAL SCIENCES

Within each of these areas, several optional sequences are available, giving the student a wide variety of learning opportunity in the basic disciplines.

The courses in each area are:

Area I. *Mathematics-Philosophy*

The general studies requirement in this area may be satisfied by either of the following two options:

A. MA 113 Analytics and Calculus I	(4)
B. PHI 220 Elementary Logic	(3)
plus one of the following:	
PHI 200 Introduction to Philosophy	(3)
PHI 230 Ethics	(3)
PHI 500 History of Ancient Philosophy	(3)
PHI 505 History of Medieval and Renaissance Philosophy	(3)
PHI 510 History of Modern Philosophy	(3)
PHI 520 Introduction to Symbolic Logic	(3)
PHI 535 Social and Political Philosophy	(3)
MA 122 Fundamental Concepts of Mathematics I	(3)
MA 222 The Fundamental Concepts of Mathematics II	(3)

Area II. *Physical Sciences*

The general studies requirement may be satisfied by choosing one of the following seven sequences:

A. PHY 191 Descriptive Astronomy	(3)
PHY 192 Descriptive Astronomy	(3)
B. CHE 102 Elem. Gen. Chemistry	(4 or 5)
CHE 104 Elem. Gen. Chemistry	(4 or 5)
C. CHE 110 Gen. Coll. Chemistry	(5)
CHE 112 Gen. Coll. Chemistry	(5)
D. GLY 104 Outlines of Geology	(3)
GLY 105 Outlines of Geology	(3)
GLY 110 Lab Work in Elementary Geology	(1)
E. PHY 151 Introduction to Physics	(3)
PHY 152 Introduction to Physics	(3)
F. PHY 211 Gen. Elem. Physics	(5)
PHY 213 Gen. Elem. Physics	(5)
G. PHY 231 Gen. Coll. Physics	(3)
PHY 232 Gen. Coll. Physics	(3)
PHY 241 Gen. Coll. Physics (Lab)	(2)
PHY 242 Gen. Coll. Physics (Lab)	(2)

Students who have not submitted a unit of chemistry or physics for admission from high school can meet this area requirement only through completion of one of the sequences in chemistry or physics.

Area III. *Biological Sciences*

The general studies requirement in this area may be satisfied by choosing one of the following five options:

A. Any *two* of the following courses:
- BOT 101, General Botany, or BOT 125 and 126, General Plant Biology (3)
- MB 200 Principles of Bacteriology (4)
- ZOO 100, General Zoology, or ZOO 104, Principles of Zoology (4)
- BOT 528 Plant Cytology (4)
- BOT 530 Introduction to Heredity (3)
- HYG 110 Introduction to Human Biology and Health (3)

B. MB 100 Elementary Microbiology (4)
MB 102 Elementary Microbiology (4)

C. BOT 101 General Botany or
BOT 125 and 126 General Plant Biology (3)
plus one of the following:
- BOT 103 Plant Kingdom (3)
- BOT 501 Plant Physiology (3-5)
- BOT 524 Mycology (4)

D. MB 200 Principles of Bacteriology (4)
MB 550 Immunology and Serology (5)

E. ZOO 100 General Zoology or
ZOO 104 Principles of Zoology (4)
plus one of the following:
- ZOO 200 Comparative Anatomy (4)
- ZOO 206 Invertebrate Zoology (4)
- ZOO 208 Vertebrate Zoology (4)
- ZOO 502 Animal Ecology (3)
- ZOO 504 Heredity (4)
- ZOO 506 Embryology (4)
- ZOO 526 Limnology (4)
- ANT 100 Introduction to Physical Anthropology (3)
- PGY 502 Principles of Physiology (5)
- HYG 110 Intro. to Human Biology and Health (3)

Area IV. *Foreign Language*

A student may satisfy the general studies requirement in foreign language by passing the fourth semester courses in one language or by demonstrating equivalent competence by examination.

Area V. *Humanities: Literature, Art, and Music*

The general studies requirement in the humanities may be satisfied by choosing one course from the following:
- ENG 261 Survey of Western World Literature: from the Greeks Through the Renaissance (3)
- ENG 262 Survey of Western World Literature: from 1660 to the Present (3)
- ENG 560 Comparative Literature I (3)
- ENG 561 Comparative Literature II (3)
- ENG 562 Comparative Literature III (3)
- CL 524 Greek Literature in Translation (3)
- CL 525 Latin Literature in Translation (3)

plus *one* of the following:
- ART 203 Intro. to the Art of Western Civilization (3)
- MUS 200 Music in Western Civilization (3)
- ART 554 Ancient Art (3)
- ART 558 Renaissance Art in Italy (3)
- ART 560 Baroque Art (3)
- ART 562 Nineteenth Century Art (3)
- ART 564 Twentieth Century Art (3)
- MUS 282 Survey of Music Literature (2)
- MUS 580 Music in the Eighteenth Century (3)
- MUS 581 Nineteenth Century Music (3)
- MUS 589 History of American Music (3)
- MUS 587 Twentieth Century Music (3)

Area VI. *History*

A student may satisfy the general studies requirement in history by any one of the following options:

A. HIS 104 Europe to 1648 (3)
HIS 105 Modern Europe since 1648 (3)

B. HIS 108 History of the U.S. through 1865 (3)
HIS 109 History of the U.S. since 1865 (3)

C. HIS 109 History of the U.S. since 1865 (3)
plus one of the following:
- HIS 569 Cultural and Intellectual History of the U.S. since 1865 (3)
- HIS 565 Recent History of the U.S., 1912 to 1939 (3)
- HIS 566 Recent History of the U.S., since 1939 (3)

D. HIS 105 Modern Europe since 1648 (3)
plus one of the following:
- HIS 525 Europe since 1919 (3)
- HIS 554 British History since 1870 (3)

E. Two courses selected from the following:
- HIS 229 The Ancient Near East and Greece to the Death of Alexander the Great (3)
- HIS 230 The Hellenistic World and Rome to the Death of Constantine (3)
- HIS 270 Early Middle Ages (3)
- HIS 271 Later Middle Ages (3)
- HIS 202 History of the British People to the Restoration (3)
- HIS 203 History of the British People Since the Restoration (3)
- HIS 568 Cultural and Intellectual History of the U.S. to 1865 (3)
- HIS 569 Cultural and Intellectual History of the U.S. since 1865 (3)

Area VII. *Social Sciences*

A student may satisfy the general studies requirement in the Social Sciences by taking two of the following courses:
- ANT 121 Intro. to Cultural Anthropology (3)
- SOC 151 Introductory Sociology (3)
- PS 151 American Government (3)
- GEO 152 Regional Geography of the World (3)
- ECO 251 Principles of Economics (3)
- ECO 252 Principles of Economics (3)
- ANT 533 Social Anthropology (same as SOC 533) (3)
- SOC 551 Principles of Sociology (3)
- PS 572 Modern Political Theory (3)

Area VIII. *Behavioral Sciences*

A student may satisfy the general studies requirement in the Behavioral Sciences by taking two of the following:
- PSY 104 Basic Psychology I (3)
- PSY 106 Basic Psychology II (3)
- PSY 210 General Psychology (not open to students who have credit for PSY 104 or PSY 106)
- PSY 330 Experimental Psychology (3)
- PSY 501 Personality (3)
- PS 201 Introduction to Political Behavior (3)
- SOC 240 Collective Behavior (3)
- SOC 544 Social Psychology (same as PSY 544) (3)
- ANT 526 Culture and Personality (same as SOC 526) (3)

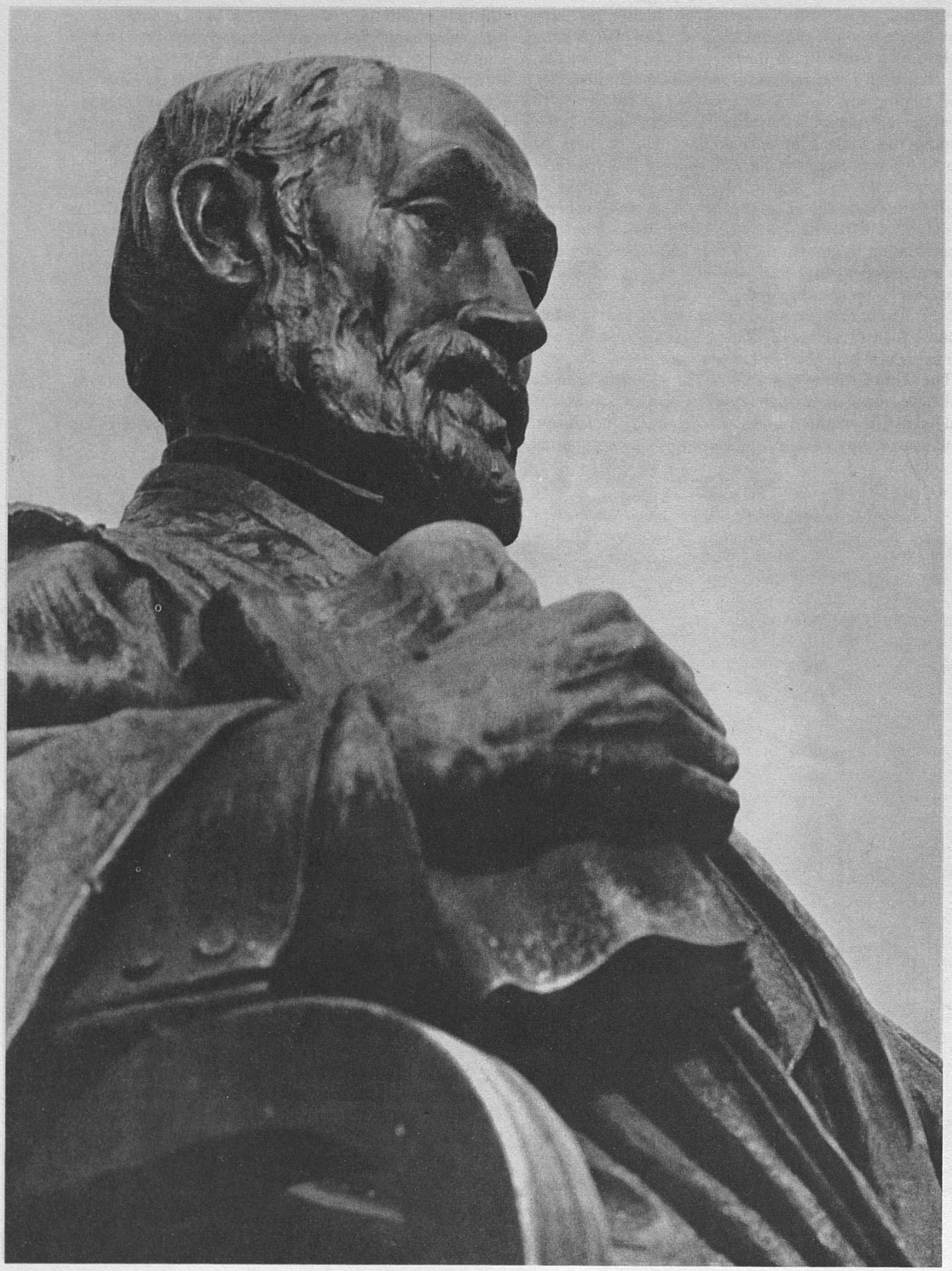
Beginning in September, 1966, all entering students have been formally registered in the College of Arts and Sciences and remain registered in that College until the beginning of the junior year, or until the admission requirements of another College have been met.

Each entering student will be assigned a faculty member as an advisor. The student's advisor will help him decide upon a program of study 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. After helping the student to decide how many courses he should attempt to carry, he will approve the schedule. Students who have already decided upon a field of study will be assigned an advisor from that field of study and will pursue, from the beginning, a course of study leading to graduation in that field. Students who are undecided upon a field of study will be advised to concentrate on courses contained in the areas listed above. From this program students will gain a background that should help them to choose intelligently the fields in which they will concentrate.

The University assumes that the entering student will have acquired in high school sufficient knowledge and skill in composition, mathematics, languages, American history, and the sciences to make substantial repetition of these courses unnecessary. Thus, a student who has credit for two units of a foreign language in high school may not receive degree credit for the first semester of that language in the University, and a student who has three credits in a language may not receive degree credit for the first year of that language. Credits earned in algebra and trigonometry during the Fall Semester, 1967, and thereafter, may not be counted toward degree requirements in the University.

The University offers the entering student an environment wherein he may achieve a genuine understanding of the world and find his place in it. In the University he should come to understand better his role as a citizen who participates in decisions on issues and policies. He should develop a love for truth, an independence of judgment, and a respect for the convictions of others. These are some of the characteristics of a liberal education—the University's goal for all of its graduates. In addition, it offers many areas of specialization leading to a variety of career opportunities in the arts, the sciences, and the professions. These are outlined elsewhere in this catalogue.





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 FUNCTION

Without an adequate library collection, a university would find it impossible to perform properly its teaching and research functions. For this reason alone the maintenance of libraries would be proper university teaching and research, the university has an obligation purpose. But over and above the requirements of 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 Community Colleges, the Audio-Visual Services, the Department of Public Relations, the Engineering Experiment Station, the Kentucky Geological Survey, the University Research Foundation, the Child Guidance Service, the Social Research Consultation Service, the University Hospital and related services, the Bureau of Community Service (Sociology), the Computing Center, Conferences and Institutes, the Office of School Relations, and the Center for Developmental Change.

History

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 Agricultural and Mechanical College 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 State University, Lexington, 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 six 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
JOHN W. OSWALD, 1963-

Before 1878, while it was a division of Kentucky University, the institution was presided over by John A. Williams, Joseph Desha Pickett, and James K. Patterson. During this time Bowman was regent of the parent institution.











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 School of Architecture, a Graduate School, and a Division of University Extension.

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 Business and Economics, College of Pharmacy, College of Medicine, College of Nursing, College of Dentistry, School of Architecture, Graduate School, University Extension, nine community colleges and the Technical Institute. 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

The College of Arts and Sciences embraces 33 departments:

Aerospace Science, Anthropology, Art, Biochemistry, Botany, Cell Biology, Chemistry, Computer Science, English and Speech, French Language and Literature, Geography, Geology, Germanic and Classical Languages and Literatures, History, Hygiene and Public Health, Journalism, Library Science, Mathematics, Microbiology, Military Science, Music, Philosophy, Physics and Astronomy, Political Science, Psychology, Radio-Television-Films, Slavic and Oriental Languages and Literatures, Social Work, Sociology, Spanish and Italian Languages and Literatures, Theatre Arts, Physiology and Biophysics, Zoology, and the William Andrew Patterson School of Diplomacy and International Commerce.

Agriculture & Home Economics

Students in agriculture may select any one of the following curricula: agricultural economics, agricultural engineering, agricultural entomology, agricultural extension, vocational agriculture, agronomy, animal sciences, horticulture, and rural sociology. There are preprofessional programs for students who plan to study forestry, veterinary medicine, or theology. All students, other than those in the preprofessional programs, will follow a basic curriculum for the first two years. By the end of the 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 chemical engineering, a general curriculum in civil engineering, a general curriculum in electrical engineering, a general curriculum in mechanical engineering, and a curriculum in metallurgical engineering.

College of Law

The student may complete a three-year program in the College of Law leading to the degree of Juris Doctor. Admission to this program and to the College of Law requires at least three years of prelaw study. A combined program of prelaw and law work leading to the A.B. degree and the J.D. degree may be completed in six years in the College of Arts and Sciences and the College of Law.

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 Business and Economics

The programs of study in the College of Business and Economics include a general-business curriculum, an economics curriculum, an industrial-administration curriculum, a marketing and advertising 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. Registered nurses who are graduates of approved 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 degree of Doctor of Dental Medicine (D.M.D.). Additional training through post-doctoral programs, which prepares students for clinical specialties within dentistry and provides opportunities for basic research, has also been developed.

School of Architecture

The School of Architecture offers a five-year curriculum in architecture, leading to the professional degree of Bachelor of Architecture.

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, anatomy, animal sciences, biochemistry, biology, chemistry, civil engineering, diplomacy and international commerce, education, economics, engineering mechanics, English, French, Germanic languages, history, mathematics, mechanical engineering, metallurgical engineering, microbiology, pharmacology, physics, physiology and biophysics, 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 degree is also offered.

Degrees

The University offers the following degrees:

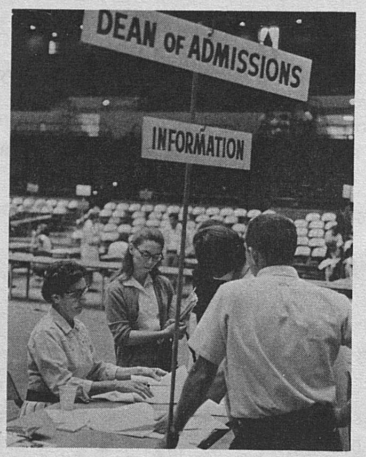
BACHELOR OF ARCHITECTURE
BACHELOR OF ARTS
BACHELOR OF ARTS IN EDUCATION
BACHELOR OF ARTS IN JOURNALISM
BACHELOR OF BUSINESS ADMINISTRATION
BACHELOR OF MUSIC
BACHELOR OF SCIENCE
BACHELOR OF SCIENCE IN ACCOUNTING
BACHELOR OF SCIENCE IN AGRICULTURE
BACHELOR OF SCIENCE IN AGRICULTURAL ENGINEERING
BACHELOR OF SCIENCE IN BUSINESS AND ECONOMICS
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 COMMUNICATIONS
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 CLINICAL NUTRITION
MASTER OF SCIENCE IN EDUCATION
MASTER OF SCIENCE IN ELECTRICAL ENGINEERING
MASTER OF SCIENCE IN ENGINEERING MECHANICS
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
SPECIALIST IN EDUCATION
DOCTOR OF EDUCATION
DOCTOR OF DENTAL MEDICINE
DOCTOR OF MEDICINE
DOCTOR OF PHILOSOPHY
JURIS DOCTOR

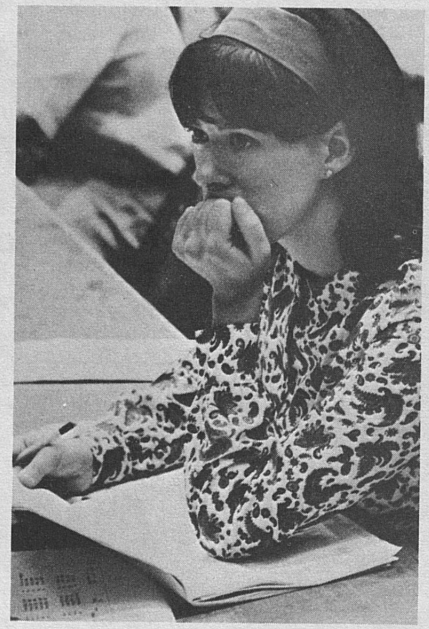
University Extension

Through University Extension the University makes its instructional and research facilities available to the

citizens of the state. These programs include 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 Community Colleges by extension. University Extension also provides music services for schools and communities, and an annual program of high school drama, speech, and music festivals.




DEAN OF ADMISSIONS
INFORMATION







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, an 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 with various administrative officials.

The Office of the Dean of Admissions is located in the Administration Annex, and the dean or a member of the admissions staff 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. University offices are closed on Saturdays and Sundays. 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.

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. A list of publications and sources of information appears in the back of this catalogue.

Requirements for Undergraduate Admission

All students should make application to the University at the earliest possible date. The application for admission, all grade transcripts, and any other required materials must be received in the Office of the Dean of Admissions at least 30 days before the beginning of the semester in which the student plans to enroll. If all required materials are not received by that date, the application will be cancelled, or, if requested, the application may be deferred to the following semester. All application materials from out-of-state beginning freshmen who are applying for the Fall or Summer Semesters must be received in the Office of the Dean of Admissions by April 1. Those students who are applying for the Colleges of Medicine and Dentistry should write or consult with the Office of Student Services, College of Medicine, for further details. In addition to the preceding requirements there are certain specific requirements which are described in detail in the literature contained in the application packet. All full-time students entering the University for the first time must file a Health Report Form. Those students who have been absent from the University one or more years or who have withdrawn for medical reasons must furnish a medical report before readmission.

Freshmen

Kentucky residents seeking to enter the University as freshmen must be graduated from an accredited high school. They must submit their secondary school record form. They must also submit the results of the American College Test (ACT). (Other tests may not be substituted). Your high school will probably be able to give you information about applying to take the ACT, testing dates, and location of test centers. If your high school does not have this information write to: ACT Central Registration Unit, Box 4505 Chicago, Ill. 60680.

Applicants who are non-residents of Kentucky seeking to enter the University as freshmen will be admitted only if their high school record and other measures of scholastic aptitude indicate probable academic success at the University and there are adequate facilities for their accommodations. The deadline for submitting all the required forms including results of the American College Test is April 1.

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.

Admission from High School with Advanced Standing

A number of high schools give the College Entrance Board Placement Examination. 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.

Advanced Standing

Students with previous college work must have a cumulative grade point average of 2.0 (C) or better (where courses have been repeated, both grades are averaged in determining cumulative average), and be in good standing in all respects. Previous college work cannot be ignored regardless of the circumstances. Transfer students with less than 12 hours of college work are required to submit their high school transcripts and the results of the American College Test (ACT).

Readmission

Former University of Kentucky students who have attended another college since leaving the University must meet the same requirements as stated above.

Graduate, Medical, Dental, and Pharmacy Applicants

Applicants for the Graduate School should write directly to the Graduate School Office. Applicants for the College of Medicine, the College of Dentistry, and the College of Pharmacy should write directly to the Associate Dean of Admissions, Office of Student Services, Medical Center. (This does not apply to Law School applicants).

Students from Other Countries

Students who are residents of other countries should apply for admission at least six months before the beginning of the semester in which they intend to enroll, and at least nine months earlier if they plan to ask for a scholarship. No scholarships are available for undergraduate foreign applicants. Generally speaking, students from other countries should be prepared to meet all their financial needs, since there are far more applicants for scholarships than there are scholarships available.

Residents of other countries must meet the academic standards of the University of Kentucky. In addition they must demonstrate an adequate knowledge of English in order to be considered for admission. All applicants from non-English speaking countries will be expected to take the Test of English as a Foreign Language offered by the Educational Testing Service, Princeton, New Jersey 98540, U.S.A., given at various test centers in many countries. When you write to the Dean of Admissions and Registrar for application material, you will be sent a bulletin giving you instructions about taking this test.

No student from another country will be considered for admission until all transcripts of his academic work have been received.

Exceptions

In some cases, persons may be admitted to the University without meeting all of 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 are judged on the basis of their high school record and the results of the American College Test (ACT). In addition to the above stated requirements students in this category must have the recommendation of their high school teachers as having the ability to start carrying college work immediately. Persons seeking detailed information on the program should write to the Associate Dean of Admissions.

Special Student. A person may be considered for admission 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. Further, students in this category must be prepared to take a general ability test.

Non-Degree Student. A person who desires University instruction without wishing to become a degree candidate should write or visit the Admissions Office for further information related to his non-degree status.

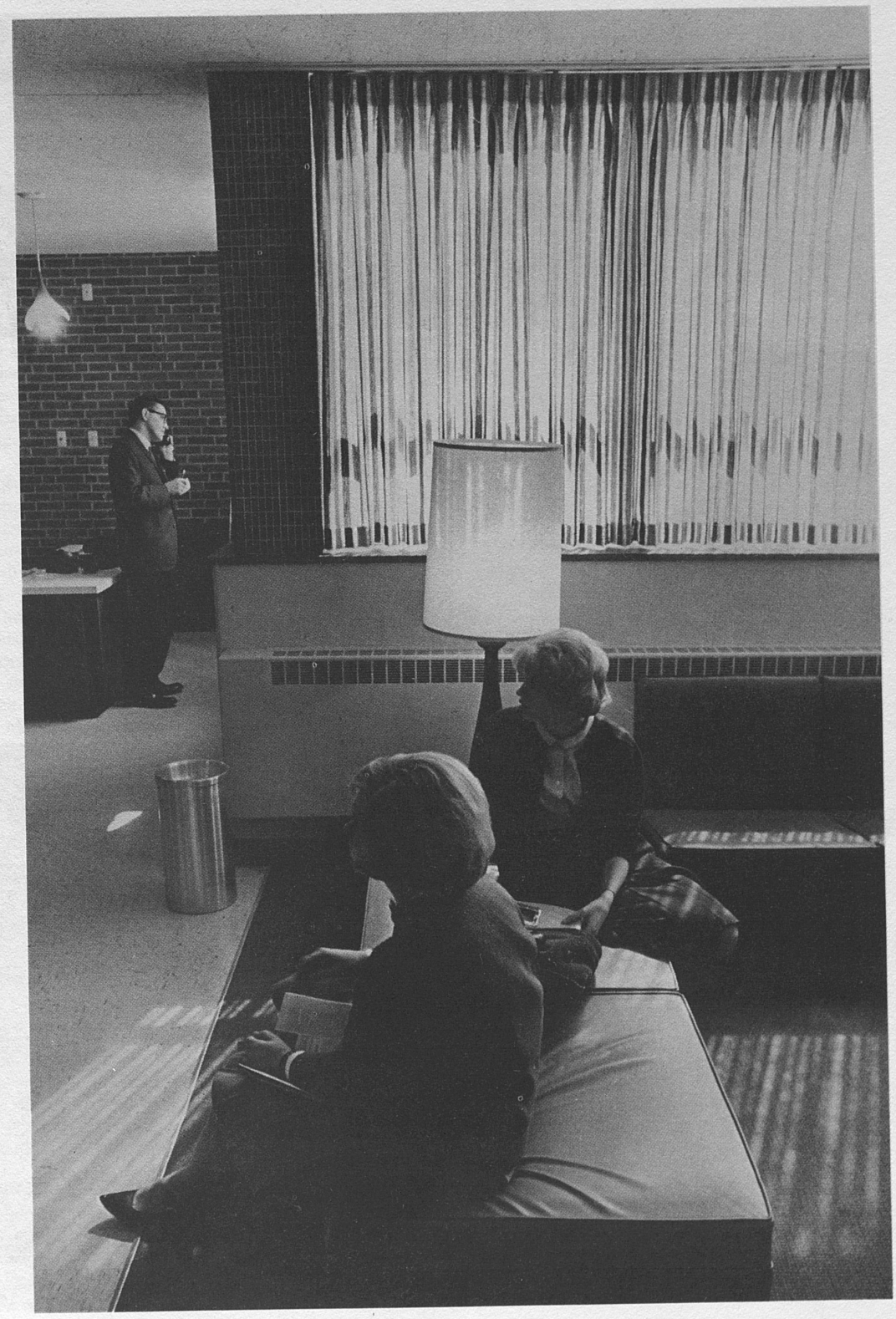
Auditor. Any person who has not been dismissed by the University of Kentucky may apply for admission as an auditor. No credit can be granted for a class audited, nor is the student permitted an exam for credit when auditing a class.

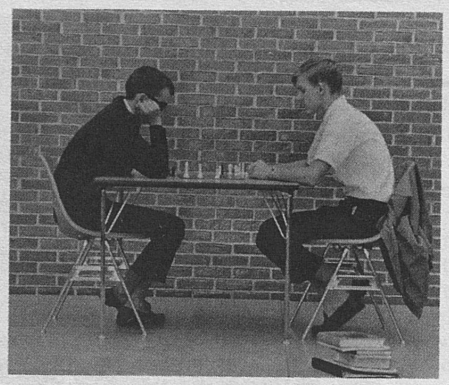
Transient. A student who is a degree candidate at another institution may apply for admission as a transient student for one semester provided the Admissions Office has been supplied with satisfactory evidence that the student meets all of the University of Kentucky entrance requirements.

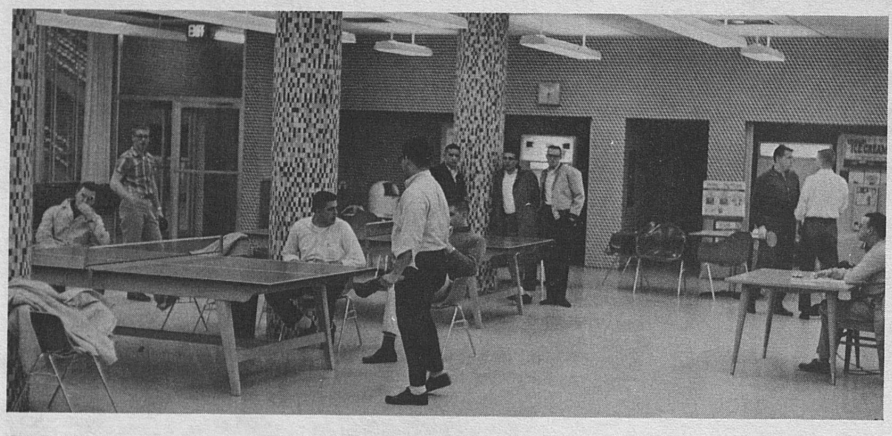
For further information or for answers to questions about admission please write or come by the Admissions Office in the Administration Annex.

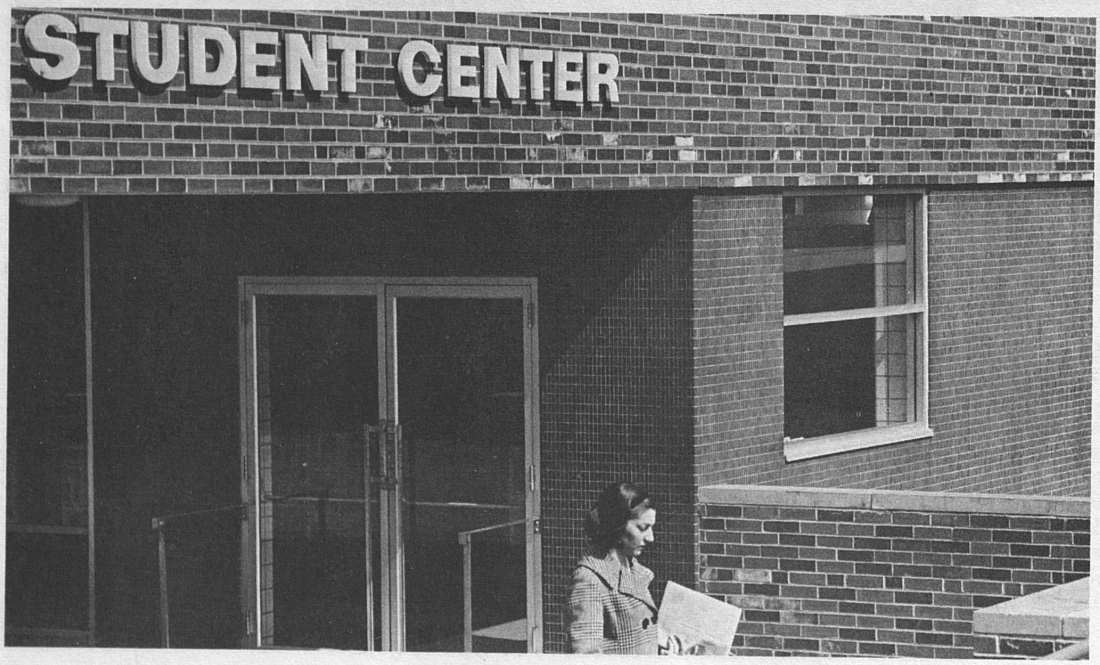
Orientation

Prospective freshmen who have applied to the University and have completed their American College Test and are generally academically eligible are invited by invitation to attend summer orientation. This is a one day event which is designed to give both students and parents advance information and preparation for the student's pursuits at the University. It must be understood that this is not an official acceptance to the University, and this orientation can not be completed until high school graduation and all necessary forms, including the final high school transcript, have been forwarded.








STUDENT CENTER

Living Accommodations

The University Housing Office is responsible for the receipt of housing applications and deposits, the establishment of consideration lists, the assignment of rooms /apartments, the notification of students of room/apartment assignments, and the payment of refunds as applicable to married and single student housing. It is also responsible for maintaining listings of off-campus housing.

As a part of the total University experience, it is desirable for students to live on campus. All students academically classified as freshmen are expected to live on campus, and beginning in the Fall, 1968, all sophomores will also be expected to live in University residence halls. Any freshman student desiring to live off campus must receive clearance to do so from the University Housing Office. The student should present his written request to live off campus to the Housing Office as soon as he applies for admission to the University. Freshmen who will commute from home, are twenty-one or older, or who are veterans of at least two (2) years military service will not need permission to live off-campus. However, these students must notify the Housing Office, in writing, of their housing plans. Non-freshmen students may apply for campus housing in accordance with the regulations presented below.

All undergraduate students living in residence halls will have a room and board contract; however, the student has the option of electing a two- or three-meal-a-day plan. Room and board are not provided during the stated recesses of the University. The two-meal option provides breakfast and dinner six days a week, and breakfast and the noon meal on Sundays. Students electing the two-meal-a-day contract may eat lunch (cash basis) in either the new Complex dining facility or the Student Center cafeteria. Those students with the three-meal-a-day contract will be served three meals a day six days a week and breakfast and the noon meal on Sundays. These students may eat lunch in either Donovan Hall cafeteria or Blazer Hall cafeteria. All undergraduate applicants must indicate on the application the meal plan they prefer.

A room application can be cancelled with $90 of the first installment refunded if the cancellation is received in the University Housing Office *on or before July 29, 1967 for the Fall Semester or December 15, 1967 for the Spring Semester. No refund* will be made if cancellation is received after July 29, 1967 for Fall or December 15, 1967 for Spring applicant, except for those special provisions as stated in the housing contract.

Single Student Residence Halls

On the north side of the campus, there are six residence units for women. Three of these units, Patterson, Boyd, and Jewell, are adjoining and accommodate only Freshman women. Jewell Hall is the smallest (housing about 90 students), and is the freshman women's study emphasis hall. Radios, record players, and musical instruments are not played except in the lounge and recreation room. Students who wish to live in Jewell Hall must sign a special form for assignment to this Hall. Patterson Hall houses approximately 120 students. While the rooms in Patterson are not as spacious as those of some of the newer units, this hall is highly regarded by all who live there because of its friendly atmosphere and air of tradition. Boyd Hall is situated between Patterson and Jewell and houses approximately 130 women.

Keeneland Hall houses 304 upperclass women students and its rooms are arranged as suites—double rooms connected by a full bath. It contains a formal reception room, library, and corridor study rooms.

Holmes Hall is a modern, four story building which houses 292 women. This unit provides double rooms, with sinks in each room; canteen, laundry room, and library are located on the ground floor.

Blazer Hall maintains a quiet study atmosphere for upperclass women students. Radios and record players are not allowed in any room except the lounge and recreation room. This hall has corridor study rooms, a library, a music room, and is airconditioned. It houses approximately 185 upperclass women who must sign a special form for assignment to this hall.

On the southern part of the campus is Donovan Hall, a residence unit for men, constructed in 1956, which has a capacity of 353 students. This residence hall houses two men to a room and is the closest men's residence facility to the central part of the University campus. One of the University's main dining facilities

which serves both men and women is located in the basement of Donovan Hall. The building also contains a large lounge.

Haggin Hall, another unit for men on the southern portion of the campus, was completed in 1960 and has a capacity of 525 students, two assigned to each room. Haggin is constructed in the shape of a square with a large open court in the center. This four-story facility encourages small-group living in that each corridor opens to the outside and is locked to all but its own occupants. Haggin Hall contains a study room on each corridor, a large lounge and a large recreation room and is completely air conditioned.

Located on the southeastern side of the campus is the University's new 2,724 bed complex. The complex comprises eight three story halls and two twenty-two story buildings to be divided among men and women students.

Graduate Residence Halls

A little further to the southeast are residence units with apartment type facilities. This housing area, Cooperstown, provides facilities for single graduate or advanced men and women, who are assigned, two to a unit, for a full calendar year of twelve months from the date the student moves into the apartments. Students living in these facilities may prepare their own meals or may have University board contracts.

The one-bedroom unit can provide a single room for the student and the efficiency allows for sharing a room with another student. Each hall has a reception area, a study room, and laundry facilities. Each apartment includes a living area, kitchen, bath, and telephone.

Cooperative Housing

In addition to the foregoing housing units, the University maintains two cooperative houses (Weldon and Hamilton). Weldon and Hamilton Houses accommodate thirty-four women and are called "cooperative" houses because the residents work together to reduce expenses. This work includes preparing the meals, cleaning the house, and participating in activities.

Room Assignment

Room assignments are made according to a system of priority including classification, home state, and the time and date the completed housing application, first installment, and housing contract are received in the Housing Office. Filing an application does not guarantee an assignment, nor does it in any way coincide with or affect admission to the University of Kentucky. Receipt of the signed contract and residence hall assignment will be confirmation of housing for the student. Specific room assignment is not made until the student arrives on campus.

Rates

The room and board rate for single undergraduate students in the residence halls is $850.00 per academic year for room and board of three meals a day, or $735.00 for room and board of two meals a day per academic year. Graduate rates in Cooperstown are $480.00 for an efficiency apartment and $570.00 for a one-bedroom apartment for a twelve (12) month period. Cooperative housing rates for women are $100.00 per academic year for room, plus actual food and operation costs for each house, which are assessed monthly.

The first installment of $100.00 is to be sent with the application for housing to the University Housing Office. All subsequent payments must be made to the Housing Operations Office, Kinkead Hall. If the student does not request to pay the remainder of his room and board costs at the beginning of the semester, he is expected to make payment according to the Residence Halls Payment Plan and Rate Schedule of the contract for Residence Halls for Men and Women. In addition to the room and board rate, an activity fee ($10.00 or less) which supports student managed programs in the residence halls is collected at the beginning of the school year.

Upon action taken by the Board of Trustees, rates are subject to change at any time prior to the beginning of the academic year.

II.

Regulations for Housing of Single Students

I. Eligibility

A. An individual may apply for and be assigned to single (unmarried) student housing if he qualifies as an eligible student. An eligible student is defined as an individual who

1. is single (unmarried) and
2. has been accepted for enrollment in one of the following classifications: full-time undergraduate student, full-time advanced student, full-time graduate student, or full-time postdoctoral trainee.

B. For purposes of these eligibility rules the following definitions shall apply:

1. A "full-time undergraduate student" is defined as a student who has been accepted by the University in undergraduate status or who is enrolled in the University in undergraduate status and whose academic program contains at least twelve semester hours of course work for credit.
2. A "full-time advanced student" is defined as a student who has been accepted by or is enrolled in the University for academic effort in one of the disciplines indicated below and whose academic program contains at least the number of semester hours or credits as listed.

Law ..... 10 Semester Hours
Pharmacy ..... 12 Semester Hours
Dentistry ..... 38 Credits Per Year
Medicine ..... 40 Credits Per Year

3. A "full-time graduate student" is defined as a student (a) who has been accepted by the University for admission in graduate status or (b) who is enrolled at the University in graduate status and (c) whose full-time status has been certified by the Dean of the Graduate School which would be the equivalent of at least nine semester hours. Verification of this status must be obtained from the Graduate Dean or appropriate Department Chairman.
4. The term "post-doctoral trainee" is used to describe the several categories of individuals whose academic programs do not lend themselves to the more usual classifications. Examples would include post-doctoral fellows, clinical fellows, medical interns and medical residents.

II. Assignment to single student housing

A. Considerations to be applied in making assignment of available single student optional housing to eligible students will be as follows:

1. First consideration: First year undergraduate students who are residents of the Commonwealth of Kentucky.
2. Second and equal consideration shall be given: a) Students transferring from the campuses of the University of Kentucky Community College System and from other institutions of higher learning who are residents of the Commonwealth of Kentucky. b) Students who were enrolled at the Lexington Campus during the immediately preceding semester who are residents of the Commonwealth of Kentucky.
3. Third and equal consideration shall be given: a) Students who were enrolled at the Lexington Campus during the spring semester 1965 who are not residents of the Commonwealth of Kentucky. b) Students transferring from other institutions of higher learning who are not residents of the Commonwealth of Kentucky.
4. Fourth consideration: First year undergraduate students who are not residents of the Commonwealth of Kentucky.

B. The cut-off date for the above consideration is April 15. Rooms will be assigned according to date completed application and initial payment are received in the Housing Office. Students who were not assigned rooms due to unavailability of space will remain on consideration lists for room assignment as cancellations occur. Students submitting applications after April 15 will be assigned available rooms according to date and time completed application and initial payment are received in the Housing Office.

III. Cancellations and Refunds

A. Before semester begins

1. $90 refund of initial payment will be made
   a. If notice to cancel room reservation is given in writing to the Housing Office by July 29, 1967, for fall applicants or December 15, 1967, for spring applicants.
   b. If a student is not accepted for admission to the University.
2. No refund will be made if cancellation of room reservation is requested during month previous to the beginning of the semester except for those special provisions stated in the Housing Contract.

B. After semester begins

1. Regular Semester (16 weeks). Students living in the residence halls who withdraw from the University of Kentucky will be assessed a charge for room and board computed at the rate of 8% of the total semester charge for each week in residence. There will be no refund after the 12th week in residence. Any fractional part of a week will be considered as a full week.

   Students withdrawing from the residence halls to enter other University housing units will be assessed a charge for room and board at the rate of 6.25% of the total semester charge for each week in residence. Any fractional part

Married Student Housing

At present, the University has housing accommodations for married students. Located approximately ¼ mile east and 1½ miles south of the main campus respectively, Cooperstown (one building being used for married students) and Shawneetown are composed of efficiency, one-bedroom, and two-bedroom apartments and include furnishings adequate to basic living.

The efficiency apartments rent for $80 per month, the one-bedroom apartments for $95 per month, and 2 bedroom apartments for $105 per month. Rentals also include utilities and maintenance.

Additional information and an application blank may be obtained by contacting the Housing Office.

Regulations for Housing of Married Students

I. Administration: The Housing Office will be responsible for the receipt of housing applications and de-

posits, the establishment of consideration lists, the assignment of apartments, the notification of students of apartment assignments, and the payment of refunds.

II. Eligibility

A. Eligibility to apply for and be assigned to married student housing will be considered if the individual is:

1. A married, full-time graduate student.
2. A married, full-time advanced student.
3. A married, post-doctoral trainee.
4. A widowed, divorced, or legally separated full-time graduate student, full-time advanced student or post-doctoral trainee who has one or more children.
5. A married, full-time undergraduate student.
6. A widowed or divorced, full-time undergraduate student who has one or more children.

B. For purposes of these eligibility rules the following definitions shall apply:

1. A "married" applicant is one who is legally married and who desires accommodation for self and spouse or for self, spouse and children.
2. A "full-time graduate student" is defined as a student (a) who has been accepted by the University for admission in graduate status or (b) who is enrolled at the University in graduate status and (c) whose full-time status has been certified by the Dean of the Graduate School.
3. A "full-time advanced student" is defined as a student who has been accepted by or is enrolled in the University for academic effort in one of the disciplines indicated below and whose academic program contains at least the number of semester hours or credits listed below:

Law	10 semester hours
Pharmacy	12 semester hours
Dentistry	38 credits per year
Medicine	40 credits per year

Dining Facilities

The Student Center Cafeteria, Blazer Hall Cafeteria, Donovan Hall Cafeteria, University Hospital Cafeteria, Dormitory Complex Cafeteria, Student Center Grill, Wildcat Lanes Grill, Dormitory Grill, and the K-Lair Grill are operated by the University as auxiliary services to provide dining facilities for students, faculty, staff members and guests.

The Student Center Cafeteria 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, for teas, receptions, parties, luncheons, banquets and dinners.

Blazer Hall Cafeteria, on Harrison Avenue, serves approximately 1,450 residence hall students. The service is three meals daily except Sunday, when the breakfast and noon meals are served.

The Donovan Hall Cafeteria, on Rose Street at Huguelet Drive, provides meal service to approximately 1,300 residence hall students on the same weekly schedule as Blazer Hall Cafeteria.

The Dormitory Complex Cafeteria serves the 2,664 residents of the Complex. The service schedule is the same as that for Blazer and Donovan Cafeterias.

The various grills provide service daily to students, faculty, staff and their guests. Students living off-campus are especially invited to use these facilities, as are faculty and staff members.

All sorority houses and a majority of the fraternity houses serve three meals a day, with the exception of the Saturday and Sunday evening meals. Certain fraternities provide only two meals a day.

Expenses & Financial Aid

Fees current at the time this catalogue was published are listed on the inside front cover. The student should remember that these fees are subject to change.

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 hospital service, admission to athletics contests and to Central Kentucky Concert-Lecture programs, use of the Library and Student Center, 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.

A student who officially withdraws from the University after registration but before the middle of the term, may, upon presentation to the Registrar's Office of official withdrawal evidence, student records, and identification card, be refunded one-half of the fees paid for the term. If the withdrawal occurs after the middle of the term, no refund will be given.

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.

In some cases it has not been necessary for the parents to have lived in the State for a year to acquire residency. Examples of these are: (1) Military and Civil Service personnel who have been assigned to Kentucky on official orders are considered residents immediately upon reporting to Kentucky and, conversely, become non-residents immediately upon reassignment outside the state; and (2) an employee who is reassigned by his employer to a position in a new plant established in Kentucky and takes up his abode in Kentucky near the plant becomes a resident at once. 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.

Normally a married woman's status is determined by the residence of her husband. There are certain cases, however, in which this is not true. For example, if a woman who has been classified as a resident for fee paying purposes should marry a non-resident, her classification is not changed.

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 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 and Registrar, who, as Chairman of the 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 an additional fee and obtain an ID card. If a card is lost through no fault of the student it may be replaced, but a fee will be charged.

Scholarships & Grants

To the greatest extent possible, financial assistance is rendered worthy students through scholarships. Scholarships at the University of Kentucky are supported by an annual appropriation of $60,000 made by the Board of Trustees at the request of President Oswald; by fund-raising activities of student organizations; and by gifts and endowments from alumni and friends of the University. These sources have enabled the University to expand greatly its scholarship program; however, additional funds are still needed in order to supply all the financial assistance needs of talented and deserving students who desire to profit from a University education.

Scholarships are assigned on the basis of academic ability and evidence of need for financial assistance. The University places emphasis on four-year or continuing, unrestricted awards. Some scholarships, however, are limited to students enrolled in a particular department or college of the University and are for less than a four-year period. Under the Higher Education Act of 1965, Educational Opportunity Grants ranging from $200 to $800 are available for students who could not enter or remain in college without such assistance. All applicants for freshman financial aid are required to take the American College Test. All freshman financial aid applications must be filed with the University by February 1. Detailed information regarding financial aid and the procedures involved may be obtained from high school counselors and principals or by writing to the Chairman, Committee on Student Financial Aid, Room 4, Frazee Hall, University of Kentucky.

A number of upperclass scholarships are available to deserving students. Qualified students, who have completed at least one semester at the University, may secure applications from the Office of the Chairman, Committee on Student Financial Aid, Room 4, Frazee Hall. All upperclass scholarship applications for the next academic year must be submitted no later than April 15.

Loans

The University, through its own resources and gifts contributed by organizations and friends of the University, is able to (1) maintain a University General Loan Fund, (2) make reserve deposits as a participant in the United Student Aid Funds, Inc. guaranteed bank loan program, (3) maintain a short-term emergency loan fund, (4) provide matching funds to participate in the National Defense Student Loan Program, the Health Professions Student Loan Program for medical and dental students, and the Nursing Student Loan Program for baccalaureate degree nursing students, (5) participate in the American Bar Association for Public Education Loan Program for second and third year law students, and (6) maintain a limited number of other loan funds restricted to a specific college or major field of study.

As the National Defense Student Loan Program provides the largest single source of funds, a brief description of this program follows.

A student desiring a loan must demonstrate to the Committee on Student Financial Aid the need for a loan and the ability to do acceptable work at the University. 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 $1,000 and the aggregate over a number of years cannot exceed $5,000 for undergraduates and $2,500 per year and an aggregate of $10,000 for graduate and professional school students.

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 10th month after 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.

Students who enter 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, Committee on Student Financial Aid, University of Kentucky.

Student Part-Time Employment

The third integral part of the University's program of financial aid to students is a Student Part-Time Employment Service. This service is designed to provide financial assistance for meeting in part the costs of education; to encourage students who are strongly motivated toward self-help; to develop proper skills and attitudes toward work; and to provide work situations which supplement and enrich the student's academic efforts.

In order for the University to be of maximum service to a student who must supplement other resources in order to meet his cost of education, he must give first priority to maintaining a satisfactory academic standing, must set aside in his class schedule definite time blocks of from two to four hours for work, preferably must offer a skill(s) and previous work experience, and must at all times assume a mature attitude toward his part-time work responsibilities. There are sufficient work opportunities through the University for both on and off campus employment for all students who require and desire this type of assistance.

It is strongly recommended that a new student come prepared to meet his expenses without having to work during his first semester. After completing at least one semester of academic work at the University, the student, his faculty advisor, and the Student Part-Time Employment Service are able to determine together more realistically the amount of time that can be devoted to part-time employment. No student should attempt to support himself completely through part-time work.

The Student Part-Time Employment Service concentrates its efforts of service to students in five main areas:

(1) On Campus Assured Job Program—This program consists of permanent part-time jobs on the campus which have been committed by various University organizational units to be filled and performed by students.

(2) Off Campus Employment—These jobs result from student interest and the cooperative attitude displayed by local industrial and business employers. The demand for student help from such employers is increasing, and the University is exerting every effort to fill these demands.

(3) Casual Jobs—Generally, jobs of temporary duration requiring skilled and unskilled personnel fall in this category.

(4) College Work-Study—The University is authorized to participate in the College Work-Study Program under the Economic Opportunity Act of 1964. Qualified students are employed in a variety of job categories on a part-time basis during the regular academic year and on a part-time and full-time basis during vacation periods and the summer months. Work-Study students may work up to 15 hours per week during full-time attendance and a maximum of 40 hours per week during regular declared University vacation periods and when not enrolled for credit during the summer months.

(5) Full-time and Part-time Summer Employment—The Student Part-Time Employment Service assists full-time University students in securing summer employment. Priority is given to students who must earn money to apply to educational expenses for the next academic year.

Veteran and War Orphan Benefits

The Office of Student Financial Aid coordinates veteran and war orphan affairs between the University and the Veterans Administration. The veteran or war orphan should report to the Office of Student Financial Aid which has been designated as the receiving center for veterans and war orphans wishing to enter or re-enter the University of Kentucky. Here the applicant will be given information about enrolling for federal benefits.

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 634, or a letter indicating eligibility under Public Laws 721, 815, or 894. (No payment for subsistence may be made until a certificate has been filed with the University.) The veteran or war orphan 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 721, 815, AND 894

Under Public Laws 721, 815, and 894 provision has been made for vocational education or training to overcome handicaps suffered as a result of service-connected disabilities. A veteran who is interested in applying for educational benefits under either of these laws should seek information from the nearest VA office prior to the date for enrollment at the University. For Kentucky residents, this office is located in Louisville.

PUBLIC LAW 634 (WAR ORPHANS AND CHILDREN OF TOTALLY DISABLED VETERANS)

Public Law 634 is a program of financial aid for the education of young men and women whose parents (World War I, World War II, or Korean Conflict) died of injuries or diseases resulting from their military service. The veteran must have died of a disease or injury incurred or aggravated in line of duty in active military service. If the death occurred after military service, the veteran must have been discharged under other-than-dishonorable conditions. Generally these veterans' children must be between the ages of 18

and 23. The law has been amended to cover children of totally disabled veterans.

In order to determine eligibility, the guardian of the war orphan should file an application (VA Form 22-5490) which can be obtained from the nearest VA office or from the University Office of Student Financial Aid. This should be done prior to registration date at the University of Kentucky. After the application is approved, the war orphan will receive a Certificate of Education and Training. This should be presented to the Veterans Secretary in the University Office of Student Financial Aid at the time of enrollment. Benefits will be paid directly to the guardian until the war orphan reaches the age of 21. The war orphan must arrange for payment of his own University fees just as any other student 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 Herman L. Donovan Senior Citizens Fellowship Program

Any man or woman who has attained the age of 65 or more years may enroll for regular courses at the University without the payment of fees. This Fellowship is available at the Lexington campus and at each of the Community Colleges. Courses may be taken for credit toward degrees or audited for no credit. All prerequisites and entrance requirements are waived for auditors. This program is administered by the Council on Aging.

Graduate Assistantships

Graduate assistantships are available in most departments and involve participation in teaching, research, or administrative work. 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.



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 American College Test (ACT), 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 S may also be recorded as a permanent mark in courses carrying no academic credit.

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 American College Test (ACT) and such physical examinations as the University may require.

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 chairman 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 shall, however, have the right to appeal for waiving the two semester requirement on the grounds of exceptional hardship. He must apply for readmission at least 30 days before the beginning of the semester in which he plans to enroll.

If a student is readmitted, he shall be required to achieve a minimum grade point average of 2.0 for the first semester after readmission; a minimum grade point average of 2.5 for the second semester after readmission or a cumulative minimum average of 2.0 by the end of the second semester; and a minimum cumulative average of 2.0 by the end of the third semester. Failure to

attain any of these requirements will result in his being 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. Students beginning the study of law after August 29, 1965, must achieve a cumulative numerical grade average of 60 at the end of the first two semesters and must maintain a cumulative average of 60 at the end of each semester thereafter. A student failing to meet this academic requirement will be dropped from the University for poor scholarship. After the first semester and regardless of the cumulative average, any student will be dropped for poor scholarship who fails to achieve a numerical grade average of at least 56 in any particular semester, or who receives a grade of less than 50 in two or more courses in any one semester.

A student who has been dropped from the college will not be recommended by the Dean for readmission 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.

A student who has been dropped a second time shall not be re-admitted to the University except in unusual circumstances and then only upon recommendation of his dean and the approval of the University Senate Council.

Each student shall be presented with a copy of the rules that deal with probation, dropping for low scholarship and readmission. 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 Senate. 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 Community College shall be limited to freshman and sophomore courses. The maximum credit acceptable from University Community Colleges 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 sophomore on the Lexington campus or elsewhere.

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.

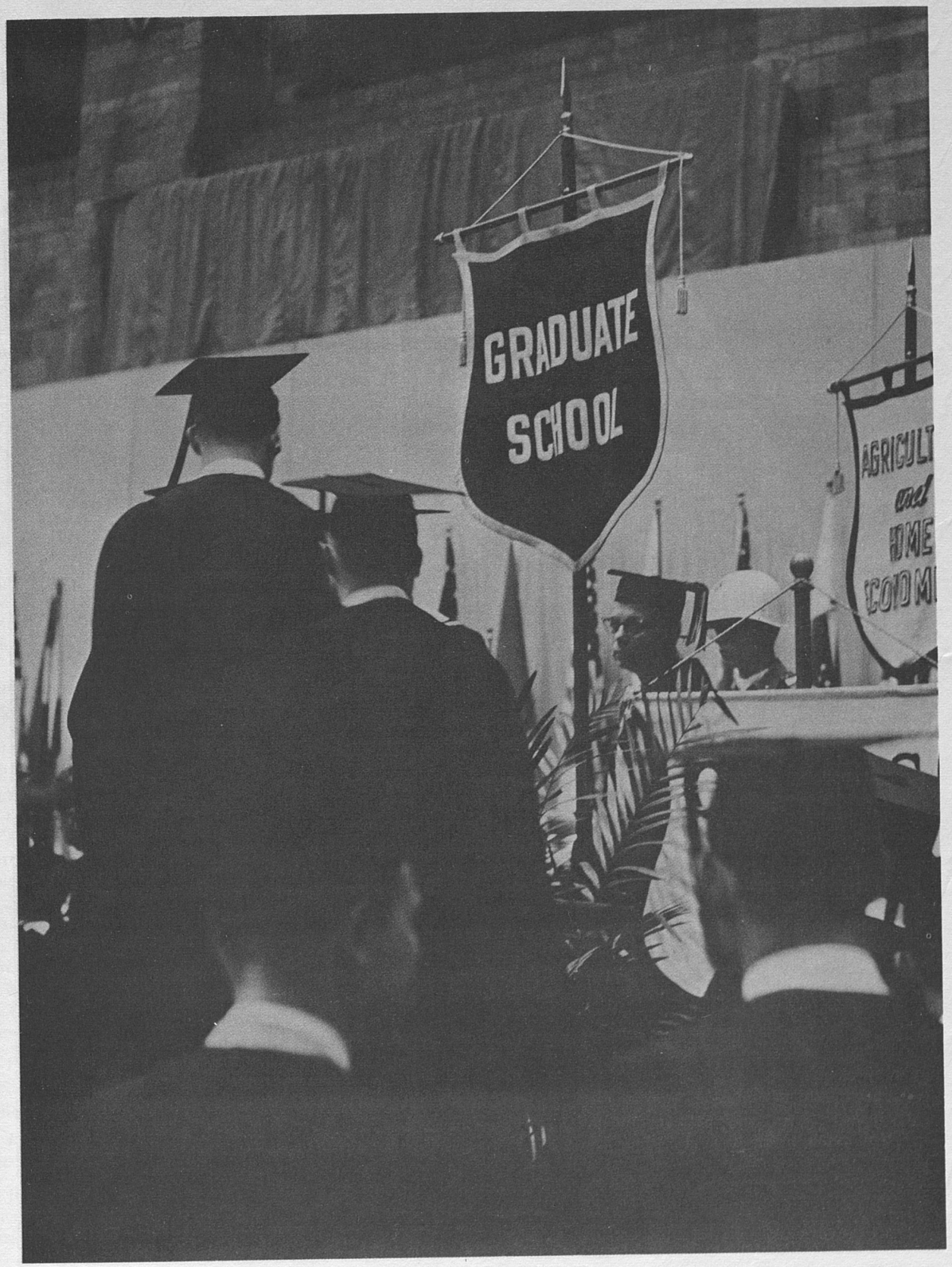
The degree with honors from a professional college shall be based solely upon work done in the professional college.

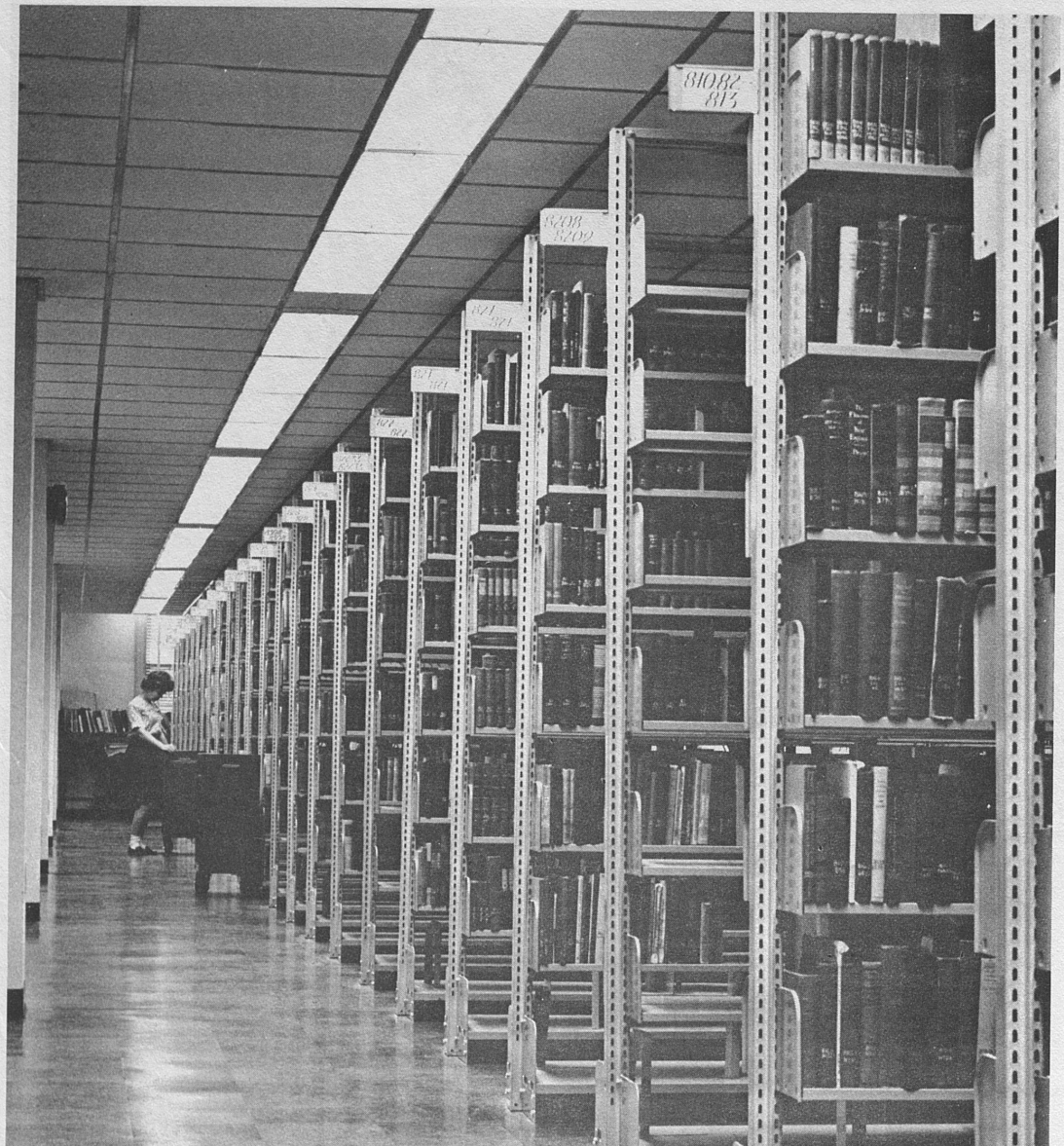
Student Discipline and Control

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. All students are required to adhere to University policies and rules as established by the Board of Trustees and the University Faculty-Senate.

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. This 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 each term.


GRADUATE
SCHOOL


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Special Academic Opportunities

THE STUDENT ATTENDING the University of Kentucky is expected to develop through his work in the classroom, through daily contact with other persons of many interests, and through frequent reading in the University libraries. Some of the opportunities open to the student are described in this section.

Libraries

The University of Kentucky libraries house over 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 serials 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 1962 addition to the main library doubles the size of the building and permits greater use of the facilities.

The general collections in the King Library and departmental libraries are on open shelves and are available to all students.

The University libraries regularly receive approximately 10,000 periodicals and are a depository for all U. S. Government publications. Some 25,000 other serials are received.

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, Commerce, Education, Engineering, Geology, Home Economics, Horticulture, Law, Library Science, Mathematics, Medical Center, Middle Eastern, and Pharmacy.

The University of Kentucky is a member of the Midwest Interlibrary Center in Chicago, and the four 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 elec-

trostatic prints may 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.

The Honors Program

Purpose of 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, because such students stimulate other students and members of the faculty and in the long run will contribute to the intellectual leadership in the state and in the nation.

The purpose of the Honors Program is to attract students of unusual ability and achievement to the University and to provide them with suitable opportunities for intellectual development.

Opportunities for Able Students. The Honors Program is conceived to be essentially a challenge to outstanding students and an opportunity for them to find and to assume responsibilities equal to their abilities. Honors students are selected not only because of their demonstrated records as superior students but also because of their desire to continue to do superior scholarly work in the University. Through its Honors Program, the University tries to help able students by encouraging or inducing or provoking them to reach for high academic standards and achievement.

The heart of the Honors Program may be the opportunity for each student to develop and progress individually according to his own talents and interests, with inspiration and encouragement from other Honors students and concerned faculty members with whom he can associate.

In the Honors Program some students discover an opportunity to read, write, think, and study beyond or apart from curricular requirements. Some students find encouragement and stimulation to work hard in an environment of friendly competition. Some students find opportunity for companionship and friendship with teachers and fellow students devoted to scholarship.

Selection of Honors Students. Honors students for the freshman year are selected on the basis of their high school grades and their scores on the American College Test. To be selected, a student must have both an overall high school grade point average of 3.5 or better based on 4.0 and a composite raw score on the ACT examination of 28 or better. A relatively small group of students is selected. These students must excel in scholarship. They must like to study. They must want to work hard with other good students in a difficult and competitive program of studies. They should have, or should want to develop, a wide range of intellectual interests. The Honors Program is intended for those good students who want educational opportunities to match their talents, a chance to stretch their minds, and an opportunity to study with other good students.

Second semester freshmen, first and second semester sophomores, and first semester juniors in the University may enter the Honors Program if they rank in the top 10% of their class in their College.

Study in the Honors Program. Every student in the University Honors Program enrolls in the college of his choice in the University. Every student participates in the Honors Program on a voluntary basis, subject to continuing approval of the Honors Program Committee.

A faculty Honors advisor for each student in the Honors Program is designated by the Dean of the College in which the student is enrolled, upon recommendation of the Honors Program Committee. The Honors advisor works closely with the student to develop a program of studies suitable to the abilities, needs, and interests of the student.

Honors students study together in Honors sections of some courses and in discussion groups or colloquia. In the rest of their courses they are in regular classes. Thus, they have opportunity to meet together and become well acquainted one with another and still mix with many other students in the University.

At the present time Honors courses have been established in the following departments: Chemistry, Economics, Electrical Engineering, Engineering Mechanics, English, Geology, History, Humanities, Hygiene, Mathematics, Modern Foreign Languages, Philosophy, Political Science, Psychology and Sociology.

Honors students are encouraged to proceed to individual study and creative work as soon as they are ready in the judgment of their Honors advisors.

As a rule, Honors students are expected to participate in individual work or research in the department of their major by the beginning of their junior year with this research continuing until they graduate from the University.

To remain in the Honors Program students are expected to maintain high academic standings, to enroll in Honors sections of courses, and to participate in independent work in their major area of study in their junior and senior years.

To graduate with Honors, students must have a high academic average, 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 examination. Stu-

dents who fulfill these requirements will have stated on their diplomas and official transcripts that they graduated in the University Honors Program.

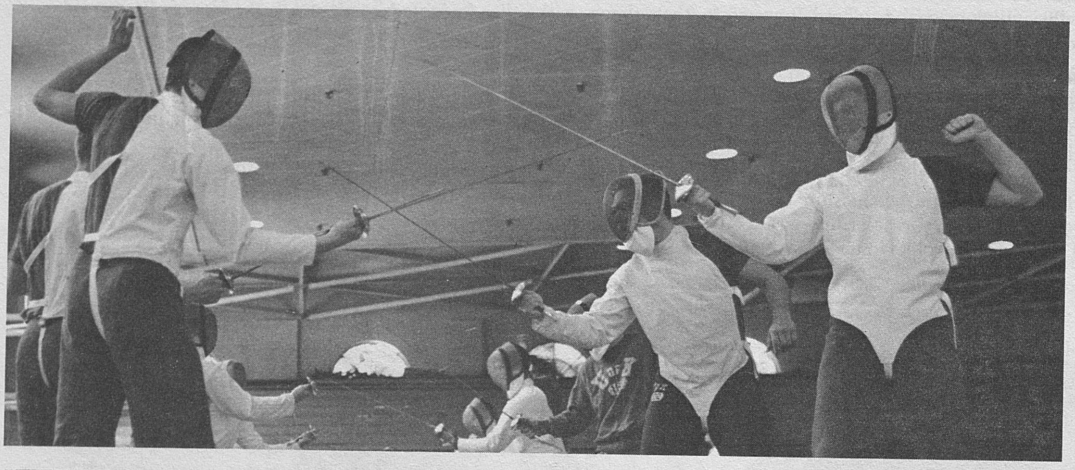
Rewards. Rewards will inevitably come to those who earn them by their achievements; a sense of satisfaction, knowledge, friendships, prestige, graduate scholarships and fellowships, and good positions after graduation are among the rewards.

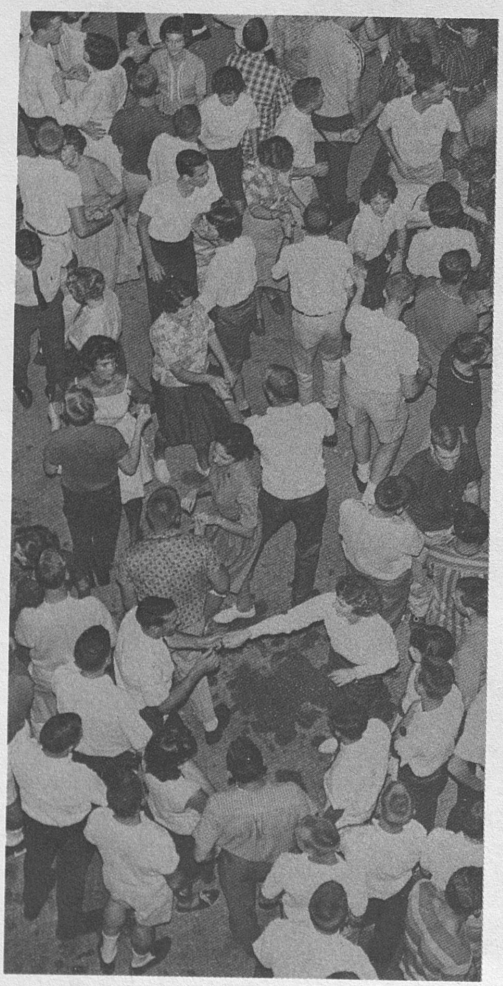
The Rotary Club Scholarship Fund has established several competitive scholarship awards and grants-in-aid for students in the Honors Program.

Also, freshmen in the Honors Program may qualify, with other students who are not in the Honors Program, for scholarships awarded by the University of Kentucky Scholarships Committee.

Information. The University Faculty Honors Program Committee welcomes and invites inquiry about the Honors Program from interested high school and college students. For further information write to Honors Program Director, University of Kentucky, Lexington, Kentucky.











Student Affairs

The Student Affairs area, administered by a Vice President of the University, encompasses a total campus student life outside the structured academic experience. Within Student Affairs are found:

THE OFFICE OF THE DEAN OF STUDENTS

The Dean of Students staff assists students with their problems and in their adjustment to college life. Through the Associate Deans of Students emphasis is given to the specific areas of student life and activities (Residence Halls Program, Student Organizations, General Counseling and Advising).

STUDENT FINANCIAL AID

Under Expenses and Financial Aid, see page 30.

UNIVERSITY HOUSING OFFICE

Under Living Accommodations, see page 25.

COUNSELING AND TESTING SERVICES

The services of the University Counseling and Testing Center are available by appointment to all students enrolled in the University. In addition, high school seniors seeking help in planning a college program may utilize these services. Counseling services are also available to staff and faculty. All interviews are confidential. There are no fees for testing or counseling.

The University Counseling and Testing Center 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 is available upon referral from a counselor. 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 effiicency.

The Center also 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.

UNIVERSITY HEALTH SERVICE

Through the facilities of the Medical Center, the University provides physicians, nurses and other key personnel for student consultation and treatment. The University Health Service utilizes the following means to aid in counseling and caring for students:

1) A Health Report Form is mailed to the student who applies for admission to the University for recording of the student's health history and medical examination. This complete and confidential medical record helps the Health Service to be informed of the student's current health state, which may include problems for which he will need attention while here on campus.

2) Health surveys are conducted which include screening programs for tuberculosis and other disorders. Their purposes are two-fold: One for the student's health protection, and second for the protection of the University community.

3) Appointments may be scheduled for health questions or less urgent illnesses, and students with more urgent illnesses may be seen on a walk-in basis. Students with urgent illnesses who need attention outside of the usual clinic hours may consult the emergency room of the University Hospital in the Medical Center.

Further details may be found in the booklet describing Health Service benefits for students.

Cultural Opportunities

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, 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.

Student Activities

The University supports and encourages students to participate in extracurricular activities. The many campus organizations provide social, political, religious, cultural, and recreational opportunities and experiences. For students having special abilities and interests, there are departmental clubs, national and local organizations, and intercollegiate teams. Most of these groups are open to membership year round and welcome any interested student. Extracurricular activities contribute to the growth and development of the student and provide opportunities to be creative beyond his academic pursuits.

STUDENT CENTER

Because it is the one place where the paths of students, faculty, alumni, and friends meet, the Student Center might well be called the crossroads of the University campus. The policies governing the building and administrative decisions arising from these policies are made by the Student Center Policy Board, composed of six students and a faculty advisor. The Program Board, comprising six elected students and six faculty advisors, is charged with the planning and execution of programs for the Center. With over 133,000 sq. ft. of floor area, the Student Center offers many facilities for all areas of campus life: a theater, cafeteria, Grille, Faculty Club, Browsing Room, Music Room, Grand Ball Room, and numerous conference rooms and offices for student organizations.

RELIGIOUS COORDINATION

While the University endorses no particular religious faith, it encourages persons and groups to keep alive the exploration of diverse religious traditions and the development of mature and dynamic faith. The Religious Advisors Staff, composed of campus ministers and advisors to student religious groups, attempts to coordinate religious activity on campus. These persons are available for individual counseling and for assistance in developing programs which raise religious and ethical issues. Groups such as the YMCA and YWCA sponsor discussions, forums, service projects, seminars and conferences on campus and throughout the nation and world.

INTERNATIONAL CENTER

The University provides an International Student program which is beneficial in educational and cross-cultural experiences. Each year over two hundred International Students are enrolled from some forty countries. In the fall semester the International Student receives a special orientation program in which he is made aware of the academic and social opportunities on the campus and in the community. He is also aided in the adjustment to the American culture and introduced to many of the leading citizens of the Lexington area. The University helps the student with his special needs, such as immigration regulations, housing, academic, financial and personnel counseling. A limited number of scholarships is available for those who qualify.

STUDENT GOVERNMENT

The Student Government represents organized student interest and expression in University Affairs and is a constitutional government whose structure parallels that of our national form of democracy. In the spring of each year, the executive positions of President and Vice President, and representatives to serve as a legislative body, are filled as a result of a campus-wide election, with additional representation from each of the seven groups: Associated Women Students, Men's Residence Hall Council, Women's Residence Hall Council, Interfraternity Council, Panhellenic Council and Off-campus Student Association. The judicial branch hears the disciplinary cases involving students and recommends action to the appropriate University officials.

STUDENT PUBLICATIONS

The Student Publications Board is responsible for all campus wide student publications. Its membership, appointed by the President, consists of six students, three adults from within the University and three adult

members-at-large. *The Kentucky Kernel* is the student newspaper, which is published five times weekly. The *Kentuckian* is the University yearbook. Any interested student may work on these publications.

PLACEMENT SERVICE

The Placement Service provides assistance in securing full-time career employment to graduating seniors throughout the University and to graduate students in all disciplines. Its services are available to alumni.

The Placement Service assists registrants through employment counseling, by providing information regarding immediate employment opportunities, by referring credentials to prospective employers, and by serving as a repository for resumes, records, and recommendations. Through the recruiting program administered by the Service, registrants have an opportunity to schedule on-campus interviews with representatives of many businesses, industries, governmental agencies, schools and colleges, and other professions.

Students should register with the Placement Service at the beginning of the first semester of their final year.

FRATERNITIES

Nineteen National Fraternities maintain chapter houses at the University of Kentucky. They include: Alpha Gamma Rho, Alpha Tau Omega, Delta Tau Delta, Farm House, Kappa Alpha, Kappa Sigma, Lambda Chi Alpha, Phi Delta Theta, Phi Gamma Delta, Phi Kappa Tau, Phi Sigma Kappa, Pi Kappa Alpha, Sigma Alpha Epsilon, Sigma Chi, Sigma Phi Epsilon, Tau Kappa Epsilon, Theta Xi, Triangle, and Zeta Beta Tau.

Transfer students and freshmen who have completed twelve (12) hours and a 2.1 standing are eligible to pledge.

SORORITIES

Fourteen National Sororities maintain chapters at the University of Kentucky. They are Alpha Chi Omega, Alpha Delta Pi, Alpha Gamma Delta, Alpha Xi Delta, Chi Omega, Delta Delta Delta, Delta Gamma, Delta Zeta, Gamma Phi Beta, Kappa Alpha Theta, Kappa Delta, Kappa Kappa Gamma, Pi Beta Phi, and Zeta Tau Alpha.

All entering freshmen and all transfer women who are admitted to the University in good standing are eligible for sorority rush.

Sorority rushing activities are planned so that the major rush program takes place early in the fall. To participate in this rushing period, students must register prior to August 1st.

Further information regarding the Fraternity and Sorority system may be obtained by writing the Associate Dean of Students Office.

RADIO STATION

WBKY-fm (91.3 megacycles) is the University owned radio station. Students taking courses in Radio, Television and Films, and others of demonstrated talents, are permitted to gain actual broadcasting experience as staff members of the station. Many of the programs produced in the WBKY studios are used by commercial stations in almost every part of Kentucky.

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, e.g. (1-3), (2-6), etc. In no case, however, may the total credits exceed the maximum number authorized for the course.

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

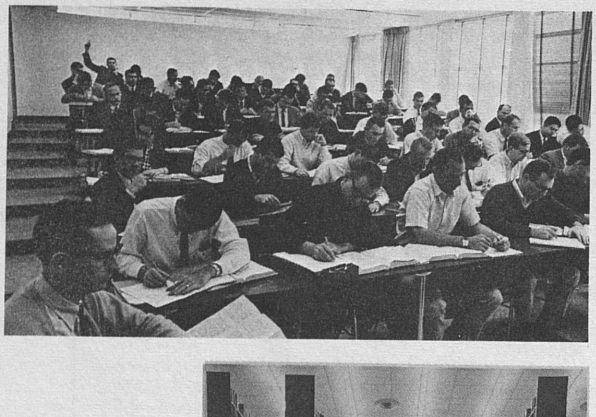
The University of Kentucky has established the following set of standardized abbreviations for its academic departments. These abbreviations should be used in making out class schedule cards and at other times when referring to specific course offerings.

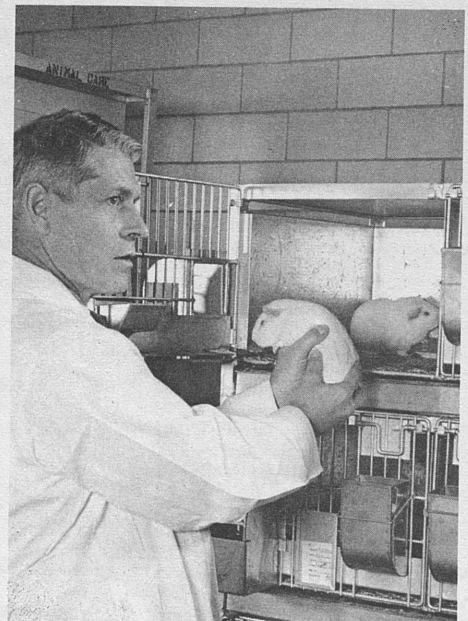
Standardized Departmental Abbreviations
(alphabetical by abbreviation)

ACC—Accounting
AEC—Agricultural Economics
AEN—Agricultural Engineering
AEX—Agricultural Extension
AGE—Agricultural Entomology
AGR—Agronomy
ANA—Anatomy
ANS—Anesthesiology
ANT—Anthropology
ARC—Architecture
ART—Art
AS—Aerospace Science
ASC—Animal Sciences
BA—Business Administration
BCH—Biochemistry
BIL—Biology
BOE—Business and Office Education
BOT—Botany
BSC—Behavioral Science
CBI—Cell Biology
CD—Community Dentistry
CDS—Conjoint Dental Science
CE—Civil Engineering
CHE—Chemistry
CLA—Classical Languages and Literature
CM—Community Medicine
CME—Chemical Engineering
CMO—Communications
CON—Conjoint
CS—Computer Science
DEN—Dentistry
DIP—Diplomacy
DS—Dairy Science
ECO—Economics
EDU—Education
EE—Electrical Engineering
EM—Engineering Mechanics
ENG—English
FOR—Forestry
FPR—Fixed Prosthodontics
FR—French Language and Literature
GEN—General Agriculture
GEO—Geography
GR—Germanic Languages and Literatures
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
MIN—Mining Engineering
MM—Materia Medica
MS—Military Science
MUS—Music
NUR—Nursing
OBG—Obstetrics and Gynecology
OD—Operative Dentistry
ODM—Oral Diagnosis and Oral Medicine
OP—Oral Pathology
ORT—Orthodontics
OS—Oral Surgery
PAT—Pathology
PCH—Pharmaceutical Chemistry
PDO—Pedodontics
PE—Physical Education
PED—Pediatrics
PEN—Periodontics and Endodontics
PGY—Physiology and Biophysics
PHA—Pharmacology
PHI—Philosophy
PHR—Pharmacy
PHY—Physics
PPA—Plant Pathology
PR—Prosthodontics
PS—Political Science
PSC—Psychiatry
PSY—Psychology
PTY—Poultry Science
RAD—Radiology
RTF—Radio, TV, & Films
RS—Rural Sociology
SO—Slavic and Oriental Languages and Literatures
SOC—Sociology
SPI—Spanish and Italian Languages and Literatures
SUR—Surgery
SW—Social Work
TA—Theatre Arts
VS—Veterinary Science
ZOO—Zoology

THE COLLEGES







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Arts & Sciences

The College of Arts and Sciences encompasses most of the basic instruction and research carried on by the University. In addition, nearly all of the general studies are taught in this College. In discharging its responsibilities from the lower division level through graduate studies, this College seeks guidance from the great humane tradition of the liberal arts. Thereby the College hopes to assist its students in preparing for lives that can be contemplative, useful, and happy.

To support this broad assignment in instruction and research, the College of Arts and Sciences is dividing its faculty into several Schools. These are being instituted as leadership for them is obtained. Already functioning within the College is the School of Fine Arts, embracing the departments of Art, Music, and Theatre Arts; the School of Biological Sciences, which includes the departments of Biochemistry, Botany, Cell Biology, Microbiology, Physiology and Biophysics, and Zoology; and the School of Communications, which encompasses the departments of Journalism, and Radio, Television and Films, and the Division of Communication Services. Other units being established within the College are the School of Letters and Languages, the School of Physical Sciences, the School of Mathematical Sciences, and the School of Social and Behavioral Sciences. Into these groupings will be placed the remainder of the College's nearly 40 departments.

The new organization of the College of Arts and Sciences is intended to make possible enlarged success in teaching, research, and service in the fields involved. With each School representing a significant segment of the liberal studies, it can serve as a setting in which the faculties of the departments can collaborate under the leadership of the Director of the School, who is also an Associate Dean of the College. From the endeavors of its departments and Schools, the College will devise courses of study and programs of research and service that reflect the finest modern standards generally prevailing.

Paul C. Nagel, M.A., Ph.D., is Dean of the College of Arts and Sciences. Herbert N. Drennon, Ph.D., is Associate Dean for Instruction of the College of Arts and Sciences.

In such undertakings, the College is chiefly concerned with finding the best manner of moving its students toward capacities of thought that will make possible a resourceful life in the last third of the Twentieth Century.

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. Students entering the College are assigned advisors by the department in which they propose to major. Students who plan to graduate from one of the professional colleges will be advised by a faculty member in that college. It is relatively simple to change majors during the first two years and students are encouraged during this period to consider carefully the many possible majors. Undetermined students and students in the pre-professional programs who have not decided upon a major are directed by the Dean to departments closest to their general interests, and the departments assign them to advisors.

Sophomore and Upper Division Advisors. The department in which the student is doing his major work appoints the student's advisor.

Probation Students. Students placed on academic probation 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.

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 physical education service courses) and 256 points; that is, a standing of 2.0. The normal load per semester is 16 credits. In the departments of Anthropology, Art, Economics, Geology, Germanic and Classical Languages, Journalism, Music, Psychology, and Zoology, he must pass a final comprehensive examination on his major subject. 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

A. ENGLISH COMPOSITION

English Composition (6 credits) is required of all students and must be taken until this requirement is satisfied. Postponement of this requirement, or withdrawal from English Composition, is rarely permissible and must be approved by the Associate Dean for Instruction. Students whose ACT score in English is in the 85th percentile or above should enroll in English 105 rather than English 101. Students in the Honors Program will be considered as having met this requirement upon completion of two semesters of the Freshman Honors Colloquium.

B. GENERAL STUDIES REQUIREMENTS

The eight areas of the General Studies Component and course sequences for each area are detailed on page 9. Each student who seeks to graduate from the College of Arts and Sciences must take a total of *six* of the areas in the General Studies Component. These must include Areas II, III, IV, and V, except that students taking Mathematics in Area I may omit either II or III. Every student graduating from the College of Arts and Sciences must take one course in some laboratory science.

Foreign Language Requirement: A student may satisfy the foreign language requirement by passing the fourth semester course in one language or by demonstrating equivalent competence by examination. In the case of a student who wishes to continue the language begun in high school, the course level at which he will enroll will be determined by a placement test to be administered to all such students. In most instances the student will be required to begin at the level indicated. A student who has credit for three units of a foreign language in high school may not take the first year of that language in college for degree credit. A student who has completed two units of a foreign language in high school may not take the first semester of that language in college for degree credit.

The requirements in whole or in part for English, and for any of the courses in the General Studies Component may be satisfied without credit by passing a departmental proficiency examination.

The Upper Division

JUNIOR AND SENIOR YEARS

The student is required to gain at least 40 credits in a field of concentration, most of which must be taken during the junior and senior years. These 40 credits are to be elected subject to the approval of the student's advisor and the Associate Dean for Instruction of the College. These 40 credits must be in courses not open to freshmen. At least 24 credits must normally be in courses above the 200 level, but departments may adjust these limits for their majors with the approval of the Arts and Sciences Council and the Undergraduate Council.

At least 14 credits in the field of concentration must be outside the major department and should be in courses generically related to the major field of study. In planning his field of concentration the student should determine from his advisor what limits have been placed by his major department on the field of concentration in defining related course work.

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

Each department shall specify the requirements for a major, which shall include a minimum of 18 credits of non-freshman courses in that department, with the provision that this minimum may be set at 15 hours by a department, with approval of the College Council and Undergraduate Council, if there are special reasons for a lower minimum. A minimum of six credits is required as a prerequisite for a major in a department. As a general rule the prerequisites are to be acquired during the freshman and sophomore years.

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 Anthropology, Art, Economics, Geology, Germanic and Classical Languages, Journalism, Music, Psychology, and Zoology will be required 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 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 chairman 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 registered in this college 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.

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 100 credits plus physical education 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 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 and have gained at least 20 credits in his field of concentration before transferring to the professional school.

3. 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.

4. 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.

* If a student enters the College of Law with only 100 credits he must complete 30 credits while in Law before he can receive the A.B. degree.

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.

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
(b) Qualitative Analysis
(c) Quantitative 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 follow this profession, 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°

Freshman Year

First Semester	Crs.
CHE 110-111 or 102-103, General Chemistry	4-5
MA 113, Analytics and Calculus I	4
ENG 101, Freshman Composition	3
**SOC 151, Introductory Sociology or **PS 151, American Government	3
Second Semester	
CHE 112-113 or 104-105, General Chemistry	4-5
ZOO 100-101, General Zoology	4
ENG 102, Freshman Composition	3
German, French or Spanish	3

Sophomore Year

First Semester	Crs.
**ECO 251, Principles of Economics	3
German, French or Spanish	3
†CHE 230-231, Organic Chemistry or	3
†CHE 226-227, Analytical Chemistry	3-5
HUM-ENG 261 or 262, Western World Lit.	3
PHY 211-212, General Physics	5
Second Semester	
ZOO 206-207, Invertebrate Zoology or ZOO 208-209, Vertebrate Zoology	4
German, French or Spanish	3
‡CHE 232-233, Organic Chemistry	4-5
HUM—ART 203, Intro. to the Art of West Civil or MUS 200, Mus in Western Civil	3
PHY 213-214, General Physics	5

UPPER DIVISION

The student in his junior and senior years will proceed to complete the area 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 prepare themselves to apply for admission to a dental school are advised to consult the bulletin of the dental school of their choice for its entrance requirements. The minimum requirements as set forth by the Council on Dental Education of the American Dental Associate are as follows: the successful completion of two full years (60 semester hours) in an accredited college of liberal arts and science.

1 year of English (at least 6 semester hours)
1 year of biology (at least 6 semester hours)
1 year of physics (at least 6 semester hours)
1 year of inorganic chemistry (at least 6 semester hours)
½ year of organic chemistry (at least 3 semester hours)

All science courses must include both class and laboratory instruction.

Most dental schools, however, do not encourage students to apply with just the minimal preparation, for only those who demonstrate superior qualifications in personal maturity

° Military or Aerospace Science may be included in each semester of the freshman and sophomore years.
°° History courses may be substituted.
† Choice depending on length of preparatory course desired.
‡ Some medical schools require only an abbreviated course in Organic Chemistry.

as well as academic competence will be accepted. Rather, they prefer to consider the applicant with three or four years of undergraduate college preparation, considering him better prepared for a professional career.

The pre-dental student is advised to pursue a broad liberal arts curriculum including courses in speech, political science, art, music, literature, language, social sciences, psychology, statistics and mathematics. A major area of interest should be pursued beyond the introductory level which will provide an opportunity for independent study. The specific area of study chosen is of little significance, for candidates who meet admission requirements and demonstrate excellence will be given equal consideration whether they major in the natural sciences, in the social sciences, or in the humanities.

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.

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. At least one semester of accounting is desirable.

Many students now complete their work for a bachelor's degree before enrolling in the College of Law. Such students usually major in Economics, 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-OPTOMETRY CURRICULUM

By means of a contract with the University of Houston, administered through the Southern Regional Education Board, the Commonwealth of Kentucky will pay to the University of Houston the non-resident differential for each academic year in the College of Optometry for those students who qualify under this program and demonstrate approved progress in the four-year curriculum which leads to the Doctor of Optometry Degree. It is possible at this Institution for a student to earn a certificate in Optometry when the third year of the Optometry Curriculum is completed and when the State Board Examinations are passed after which the student can enter into the practice of optometry.

To be eligible for the financial assistance, a student must be a legal resident of the Commonwealth of Kentucky as defined by the Council on Public Higher Education and must be admitted to the College of Optometry, University of Houston.

THE PRE-OPTOMETRY REQUIREMENTS

	Crs.
General Chemistry	10 or 8
Freshman English	6
U.S. History	6
*College Algebra	3
*Plane Trigonometry	2
General Zoology	4
Principles of Bacteriology	4
English Literature	6
General Elementary Physics	10
Political Science	6
Physical Education	2
Electives	9 or 11
Total credits	68

The electives should be selected from art, drama, economics, languages, music, philosophy, psychology, sociology, anthropology and speech. Additional courses in English, history or political science may be chosen also.

The foregoing list of subjects will prepare a student for any college or school of optometry but financial support from the Commonwealth of Kentucky applies only to the College of Optometry of the University of Houston.

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 (General Botany, General Zoology)
1 semester Mathematics (Analytics and Calculus)
1 year Physics with laboratory
1 year of Microbiology
1 semester of Economics
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.

* Beginning in September, 1967, degree credit will not be given for College Algebra and Plane Trigonometry.

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

The College of Pharmacy will accept credit in typing as an elective.

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

RECOMMENDED COURSES PREPARATORY TO THE STUDY OF PHARMACY

First Year

Course	Cr.
CHE 110—General Chemistry	5
ENG 101—English Composition	3
BOT 101—General Botany	3
MA 113—Analytics and Calculus	4
CHE 112—General Chemistry	5
ENG 102—English Composition	3
ZOO 100—General Zoology	4

Second Year

PHY 211—General Physics	5
CHE 226—Analytical Chemistry	5
PHY 213—General Physics	5
ECO 251—Principles of Economics	3
MB 200—Principles of Bacteriology	4

Additional electives chosen from the areas above to total, with these requirements, 67 semester hours.

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 within the 130 hours required for graduation from the State Department of Education. For specific information concerning courses consult the statement of the College of Education.

AEROSPACE SCIENCE

FACULTY

John Elliott Delap, chairman

Professor

John Elliott Delap	B.S., Maryland, 1959

Assistant Professors

Ronald B. Allen	M.S., Kentucky, 1950
Martin J. Dawson	B.S., Iowa State Teachers, 1949
Wallace H. Franklin	B.B.A., Oklahoma, 1953
Ernest G. Kerby	B.S., Florida State, 1952
James S. Tucker	M.A., DePauw, 1959

THE AIR FORCE RESERVE OFFICERS TRAINING CORPS

The University of Kentucky maintains a unit of the senior division of the United States Air Force Reserve Officers' Training Corps.

Mission: To provide training in Aerospace Studies for the purpose of qualifying selected male students for Commission as Second Lieutenant in the United States Air Force Reserve. This program is designed to fit men physically, mentally and morally for pursuits of peace as well as for duties as leaders in the Armed Forces in times of national emergency.

Educational Aim: To train the student in skills and abilities which will be valuable to him in his civilian career as an executive as well as in military service should his nation call upon him to serve.

General Policy: The policy adopted by the Department of the Air Force is to qualify students for positions of leadership, to inculcate in them a respect for lawful authority, and to teach the fundamentals of the military profession and aerospace studies.

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 available to all students regardless of their field of academic study and is designed to produce officers possessing qualities and attributes essential to their progressive development in the Air Force Reserve and the Air National Guard.

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.

Scholarships: Under Federal legislation in 1964, certain selected students will receive scholarships plus a retainer fee of $50.00 per month.

Books and Uniforms: Aerospace Studies textbooks are provided by the Air Force.

Cadet uniforms and equipment are furnished to Basic Cadets on a loan basis. 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. This deposit is refunded upon return of the items.

Students formally enrolled in the Advanced Course receive $40 per month and individually tailored Air Force Officer's uniform which they retain upon commissioning. In addition, they receive, at the time they enter active duty, a $300.00 allowance to defray the cost of additional uniform requirements.

Basic Course: The Department of Aerospace Studies offers a two year Basic Course which is elective and is open to those full time students who are citizens of the United States and are physically qualified in accordance with standards established by the University Health Service.

Advanced Course: The elective and Competitive Advanced Course, including attendance at one Summer Training Unit (four weeks), is open to selected students with the approval of the Professor of Aerospace Studies. Physical and mental examinations conforming to current Air Force standards will be administered prior to admission to the Advanced Course. Upon completion of the Advanced Course and attainment of a Baccalaureate (or Graduate) Degree, the student receives a Commission as Second Lieutenant in the United States Air Force Reserve. Reserve Officers on Active Duty in the Air Force may compete for a Commission in the Regular Air Force.

Flight Instruction Program: Those Advanced Cadets who are physically and mentally qualified for pilot training will receive, at no cost to themselves, a program of flying instruction which includes thirty hours of ground school in addition to thirty-six hours of dual and solo flying time under the supervision of competent flight instructors at Bluegrass Field. This portion of the Advanced Course normally leads to the award of a Private Pilot License.

For University and college requirements see page 9.

The requirements for this department are presently under review. A detailed statement of these requirements may be obtained from the chairman of the department whose name is indicated under the preceding faculty listing.

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.

111,112 *Aerospace Studies I, ROTC.* (2 ea.)
A general outline of Aerospace power designed to acquaint the student with the needs, functions, and organization of U.S. and Foreign Aerospace programs. Leadership Laboratory—three hours per week.

Second Year

211,212 *Aerospace Science II, ROTC.* (2 ea.)
A comparative study of world military forces to include Free World land and naval forces, Free World air forces, Communist military systems, and trends in the development and employment of military power. Three hours per week. Prereq: 101, 102.

ALTERNATIVE TO BASIC COURSE

Those students who elect to do so and qualify physically and mentally may substitute a six-week training period for the two-year Basic Course. Such students must apply no later than the fifth semester prior to their attainment of any degree, graduate or undergraduate. For details contact the Department of Aerospace Studies.

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

331,332 *Aerospace Science III, ROTC.* (3 ea.)
A survey course about the nature of war; development of airpower in the United States; mission and organization of the Defense Department; Air Force concepts, doctrine, and employment; astronautics and space operations; and the future development of aerospace power. Includes the United States space programs, vehicles, systems, and problems in space exploration. Five hours per week. Prereq: Basic ROTC course or equivalent. AS 211 or six weeks basic military training course or approval of PAS.

303 *AFROTC Summer Training Unit.* (0) S
Familiarization flying, field exercises, individual weapons, USAF base activities and equipment, and Air Base problems. Prereq: AS 331, 332.

Fourth Year

311,312 *Global Relations 1, 2.* (3)
Military law, courts and boards; introduction to international relations; military aspects of world political geography; briefing for commissioned service. Leadership Laboratory. Five hours per week. Prereq: AS 331 or approval of PAS.

313 *AFROTC Flight Instruction Program.* (2)
Approximately 36 hours of aerial flight instruction, five hours of classroom instruction on Federal Aeronautics Agency Regulations. Prereq: Category I Aerospace Science 331, 332; Senior standing.

323 *Aerospace Studies—Flight Instruction Program.* (3)
An integrated program of classroom instruction and Flight Instruction and Practice in which the student earns an FAA Private Pilot's License. Includes theory of Flight, Federal Air Regulations, Fundamentals of Meteorology, Use of the Flight Computer, Aerial Navigation, Navigation by Radio Aids, Aerial Maneuvers, Aircraft Performance, In-Flight Instruction in the Art of Piloting Aircraft, and Practical Application of Principles and Techniques learned. Prereq: Category I Aerospace Science 331, 332; Senior Standing.

341,342 *Aerospace Studies.* (3 ea.)
A study of professionalism, leadership and management. Includes the meaning of professionalism and professional responsibilities. Leadership theory, its functions and practices. Management principles and functions, including human relations and communication procedures. The applicability of these in an Air Force environment plus Air Force controls. Prereq: AS 331 and 332.

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: Senior standing in AFROTC Program; 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.

ANTHROPOLOGY

FACULTY

Frank J. Essene, chairman

Professors

Frank J. Essene	Ph.D., California, 1947
Henry F. Dobyns	Ph.D., Cornell, 1960
George Patterson Faust	Ph.D., Princeton, 1932
Marion Pearsall	Ph.D., California, 1950
Douglas Wright Schwartz	Ph.D., Yale, 1955

Associate Professor

William Y. Adams	Ph.D., Arizona, 1958
Art Gallaher	Ph.D., Arizona, 1956
Donald Lee Hochstrasser	Ph.D., Oregon, 1962

Assistant Professors

John Edward Barrows	Ed.D., Kentucky, 1959
Neil Eddington	Ph.D., Arizona, 1958
Kenneth Edward Harper	Ph.D., Kentucky, 1959
Thomas Weaver	Ph.D., California, 1965

Instructor

Martha Ann Rolingson	M.A., Kentucky, 1960

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.

Departmental Requirements

For University and college requirements see page 9.

The requirements for this department are presently under review. A detailed statement of these requirements may be obtained from the chairman of the department whose name is indicated under the preceding faculty listing.

Course Descriptions

100 *Introduction to Physical Anthropology.* (3) I, II, S
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. Authorized to be offered by television. *Staff.*

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: ANT 100 or concurrent. *Staff.*

121 *Introduction to Cultural Anthropology.* (3) I, II, S
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 GEO and SOC 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.

221 *Primitive Inventions.* (3) I
Ancient and modern inventions of primitive peoples. Theoretical approach combined with handling and manufacturing artifacts. Prereq: ANT 121. *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 to maximum of 8 credits. *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.

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: ANT 100 or 3 hours in any other biological science.

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: ANT 500 or special permission.

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. *Gallaher.*

514 *Descriptive Linguistics: Phonetics.* (3)
Articulatory description of speech sounds; practice in recognition and control. (Same as ENG 514.) Prereq: consent of instructor. *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 ENG 515.) Prereq: ANT 516. *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 ENG 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.) Prereq: ANT 543 or equiv. course on Near East. *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. Lecture, 3 hours. Prereq: ANT 121. *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. Prereq: ANT 100, 121. *Essene.*

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

525 *Applied Anthropology.* (3) II
Application of anthropological methods to contemporary practical problems such as acculturation, colonial administration, intercultural education, and race relations. Prereq: ANT 121. *Gallaher.*

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 SOC 526.)

527 *Culture Change.* (3) I
Internal change and contact change in cultures; agents and conditions promoting change; an analysis of innovation, dissemination, integration, diffusion, acculturation, and related concepts. Prereq: ANT 121. *Gallaher.*

530 *Contemporary Latin American Cultures.* (3)
Detailed survey of societies and cultures of contemporary Latin America, utilizing contribution from anthropological research. Prereq: Consent of instructor. *Weaver.*

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 SOC 533. *Weaver, Dobyns.*

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. Prereq: One course in ANT. *Adams.*

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: ANT 543 or equivalent course on the Near East.

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.* (3) I, II, S
Prereq: Major and a standing of 3.0 in the dept. May be repeated to a maximum of 12 credits. *Staff.*

582 *Tutorial Seminar.* (2) I, II, S
Anthropological methods and theory. May be repeated to a maximum of 8 credits. Prereq: Major in anthropology. *Staff.*

614 *Field Methods in Linguistics.* (3)
Analysis of a language by working directly with a native speaker. Prere: ANT (ENG) 514 or 515, and ANT (ENG) 516. *Faust.*

727 *Seminar on Socio-Cultural Change.* (3)
A seminar for advanced students. Emphasizes economic, religious, political, technological, psychological, etc. factors in change, and social and cultural patterns and processes of change. Prereq: ANT 527 or permission of instructor. Same as SOC 727.

731 *Seminar in Comparative Social Organization.* (2) II
A seminar for advanced students. Emphasizes principles in the comparative study of social systems; the role of kinship, age, sex, locality, and voluntary associations in determining relationships between individuals and between groups in non-literate and literate societies. May be repeated once. Same as SOC 731.

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.*

BOTANY

FACULTY

Distinguished Professor

Herbert Parkes Riley — Ph.D., Princeton, 1931

Associate Professors

Edward Tankard Browne, Jr. — Ph.D., North Carolina, 1957
Raymond E. Hampton — Ph.D., Wisconsin, 1960
Carl Ernest Henrickson — Ph.D., Ohio State, 1950

Assistant Professor

Jasper Henry Barkdoll Garner — Ph.D., Iowa, 1954

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, ecology, and cytogenetics.

Departmental Requirements

For University and college requirements see page 9.

The requirements for this department are presently under review. A detailed statement of these requirements may be obtained from the chairman of the department.

Field of concentration requirements: See page 50.

Course Descriptions

101 *General Botany.* (3) 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 one two-hour lab period per week. *Staff.*

102 *Laboratory for Botany 101.*

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: BOT 101, 102 or 125. *Garner, Warden.*

104 *Laboratory for Botany 103.*

125 *General Plant Biology.* (3) I, II, S
The principles underlying the structure, physiology and reproduction of flowering plants. Two lectures and one discussion per week. May not be taken for credit if student has had Botany 101 or equivalent.

126 *Discussion for Botany 125.*

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: BOT 101 or 125. *Browne.*

202 *Laboratory for Botany 201.*

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. One one-hour lecture and two one-hour lab periods per week. Prereq: BOT 101 or 125. *Browne.*

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 ZOO 400.)

401 *Laboratory for Botany 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. (Same as ZOO 402.)

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. Lecture, 3 hours; Laboratory, 2 two-hours during regular session. Prereq: BOT 101, 102 or 125, CHE 112, 113 or 104, 105 or equiv. *Henrickson.*

506 *Special Problems.* (3) I, II
Independent work in some phase of advanced Botany. May be repeated three times for a maximum of 12 credits. 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.*

514 *Laboratory for Botany 513.*

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.*

522 *Laboratory for Botany 521.*

524 *Mycology.* (4) I
The structure, life history, 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: BOT 101, 102 or its equivalent. *Garner.*

525 *Laboratory for Botany 524.*

526 *Advanced Mycology.* (4) II
Detailed examination of the structure and physiology of specific groups of fungi that are of economic importance. Two lecture-discussions and two two-hour lab periods per week. Prereq: BOT 524, 525 or its equivalent and consent of instructor. *Garner.*

527 *Laboratory for Botany 526.*

528 *Plant Cytology.* (4) I
The structure of plant cells; mitosis and meiosis. Lectures two hours and four hours lab per week. Prereq: 3 credits in the Biological Sciences. *Riley.*

529 *Laboratory for Botany 528.*

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.*

541 *Plant Pathology.* (3)
Significance, nature, causes, and methods of control of plant diseases. Lectures and discussion, two hours; lab, two hours. Prereq: BOT 101, 102, 125. (Same as PPA 541.) *Chapman.*

542 *Laboratory for Botany 541.*

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: BOT 101, 102, 103 and 104 or consent of instructor. *Browne.*

552 *Laboratory for Botany 551.*

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: BOT 101, 102 or 125. *Browne.*

575 *Botanical Problems of Southern and Central Africa.* (3)
Vegetative regions, significant plant families, plant migration, and climatic factors affecting the distribution of plants in South Africa, Central Africa, and adjacent territories. Prereq: Six hours of Botany. *Riley.*

634 *Cytogenetics.* (3)
Cytological and genetic evidence for the chromosome theory. Chromosome aberrations and their importance in heredity and evolution. The effect of ionizing radiation on chromosomes. Three lectures and two hours lab per week. Prereq: BOT 528 and 530 or equivalent. *Riley.*

701 *Plant Metabolism.* (3)
Various aspects of plant metabolism including photosynthesis, respiration, nitrogen and protein metabolism; enzyme kinetics; and relation of molecular structure of cell components to function. Prereq: CHE 236 or 232, BOT 501, or consent of instructor. *Hampton.*

702 *Laboratory for Botany 701.*

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. Three lectures per week. Prereq: BOT 551, 552, 530. *Riley.*

736 *Laboratory for Botany 735.*

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

769 *Residence Credit for Doctor's Degree.* (0)
May be repeated indefinitely.

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 Botany.* (1-6)
May be repeated indefinitely, at the discretion of the department. Type of research to be inclosed in parentheses, e.g., (Plant Morphology), (Mycology), (Systematic Botany), (Cytogenetics), etc.

CHEMISTRY

FACULTY

William Frederick Wagner, chairman

Distinguished Professor

Lyle Ramsay Dawson — Ph.D., Iowa, 1935

Professors

William Frederick Wagner — Ph.D., Illinois, 1947
Ellis Vincent Brown — Ph.D., Iowa State, 1936
Hartley Clayton Eckstrom — Ph.D., Iowa, 1937
William Donald Ehmann — Ph.D., Carnegie Institute of Technology, 1957
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

Associate Professors

Henry H. Bauer — Ph.D., University of Sydney, 1956
Rodney Elmer Black — Ph.D., Wisconsin, 1942
John Miles Patterson — Ph.D., Northwestern, 1953
William K. Plucknett — Ph.D., Iowa State, 1942
Donald Edgar Sands — Ph.D., Cornell, 1955

Assistant Professors

Buddy L. Bruner — Ph.D., Iowa State, 1963
Robert Daulton Guthrie — Ph.D., Rochester, 1963
Jack C. Norman — Ph.D., Wisconsin, 1965
Stanford Lee Smith — Ph.D., Iowa State, 1961
Donald Howard Williams — Ph.D., Ohio State, 1964
Joseph William Wilson — Ph.D., Indiana, 1961

The Department of Chemistry offers a program leading to the Bachelor of Science degree for students who intend to become professional chemists or who intend to do graduate work in chemistry. The Department also offers courses to satisfy general studies requirements and provides basic instruction as required by other departments and colleges.

Departmental Requirements

For University and college requirements see page 9.

The requirements for this department are presently under review. A detailed statement of these requirements may be obtained from the chairman of the department whose name is indicated under the preceding faculty listing.

Field of concentration requirements: See page 50.

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.

100 *Chemistry for Nurses.* (4) I
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. *Patterson.*

101 *Laboratory for Chemistry 100.*

102,104 *Elementary General Chemistry.* (4-5 each) I, II, S
This course is for students who have not had high school chemistry and for other students who desire an elementary approach to the subject. Students who have not had a high school course and who expect to take more chemistry should register for five semester hours. Lectures and recitations, three to five hours; lab, two hours. Prereq: Score above ACT 25%ile; no CHE prereq. needed.

103,105 *Laboratory for Chemistry 102, 104.*

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: High school chemistry and score above ACT 50%ile.

111,113 *Laboratory for Chemistry 110, 112.*

226 *Analytical Chemistry.* (3-5) I, II, S
An introduction to the theory and practice of quantitative analysis. Chemical Engineering students should register for three semester hours. Lectures, two hours; lab, three to six hours. Prereq: CHE 112 or 104. *Hammaker.*

227 *Laboratory for Chemistry 226.*

230,232 *Organic Chemistry.* (3 ea.) I, II, S
Lectures, three hours. Lab, six hours. Prereq: CHE 112 or 104. *W. T. Smith.*

231,233 *Organic Chemistry Laboratory.* (1-2 each) I, II, S
Laboratory for CHE 230,232. Three or six hours.

236 *Organic Chemistry.* (4) I, II, S
An elementary course for non-professional students. Lectures and recitations, three hours; lab, two hours. Prereq: CHE 112, or 104. *Patterson.*

237 *Laboratory for Chemistry 236.*

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.

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.

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.

407 *General Chemistry Laboratory to Accompany Chemistry 406.*

440,442 *Physical Chemistry.* (3 ea.) I, II
The fundamental principles of physical chemistry are studied with emphasis upon the application of these in the correlation of natural phenomena. Allow undergraduate credit only for majors. Lectures and recitations, three hours. Prereq: PHY 242. *Sands.*

441,443 *Physical Chemistry Laboratory.* (2 ea.) I, II
Laboratory studies in physical Chemistry to accompany 440, 442. Allow undergraduate credit only for chemistry majors. Six hours. *Sears.*

444 *Physical Chemistry.* (5) II
For students in Agriculture and in the Biological Sciences. Lectures and recitations, three hours. Lab, six hours. Prereq: CHE 236; PHY 213, and MA 113.

445 *Laboratory for Chemistry 444.*

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: CHE 226; MA 212; PHY 242. *Sears.*

447,449 *Laboratory for Chemistry 446, 448.*

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. Prereq: Employment as a high school teacher and consent of instructor.

510 *Advanced Inorganic Chemistry.* (3) I
A course dealing with the concepts of inorganic chemistry with emphasis on atomic structure, periodicity, nomenclature, bonding, chemistry of the non-transition elements and acid-base theories. Prereq: CHE 232 or consent of instructor. *Sears.*

520 *Elementary Radiochemistry.* (3) I
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, 5 hours. Prereq: CHE 226 or equivalent. *Ehmann.*

522 *Instrumental Analysis.* (4) I, II, S
The theory and application of instrumental methods of analysis. Lectures, two hours. Prereq: CHE 442. *Wagner.*

523 *Laboratory for Chemistry 522.* (0) I, II, S

528 *Principles of Analytical Chemistry.* (2) II
An intermediate study of the theory and practice of quantitative analysis. Lectures and discussion, two hours. Prereq: CHE 548 or consent of instructor. *Hammaker.*

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: CHE 232.

533 *Laboratory for Chemistry 532.*

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

538 *Principles of Organic Chemistry.* (3) II
A general survey of the field of organic chemistry. Lectures, three hours. Prereq: Consent of instructor. *Brown.*

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

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

548 *Principles of Physical Chemistry.* (3) I
An intermediate course dealing with the fundamental principles of physical chemistry. Prereq: College physics, integral calculus, and one course in physical chemistry. *Eckstrom.*

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: CHE 112 or 104, 226 or equiv. *W. T. Smith.*

551,553 *Physiological Chemistry Laboratory.* (0) I, II
Laboratory for CHE 550, 552.

570,572 *Seminar.* (0, 1) I, II
Reports and discussions on recent research and current chemical literature. Required of all seniors.

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.*

610 *Chemistry of the Transition Metals.* (3)
A detailed treatment of the chemistry of the transition elements, the lanthanides and actinides, including the structure of coordination complexes, bonding, reaction mechanisms and preparations. Prereq: CHE 510 or equivalent. *Williams.*

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

622 *Quantitative Organic Analysis.* (3)
The applications of semimicro and micro techniques to the quantitative analysis of both organic and inorganic substances. Prereq: Chem. 442, 522.

623 *Laboratory for Chemistry 622.* (0)

625 *Optical Methods of Analysis.* (3) II
An intensive study of the theory and applications of each of the following methods: emission spectroscopy, absorption spectrophotometry, colorimetry, refractometry, and polarimetry. Laboratory, six hours. Prereq: CHE 522 and 442.

626 *Advanced Analytical Chemistry.* (3) I
An advanced study of the theory and practice of quantitative analysis. Lectures and discussions, three hours. Prereq: CHE 528 or equivalent. *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. *W. T. Smith.*

633,635 *Advanced Organic Chemistry.* (3 each) I, II
Fundamental organic chemistry as interpreted by modern theory. Lectures, three hours. Prereq: CHE 538 or consent of instructor.

642 *Advanced Physical Chemistry.* (3) II
An advanced course dealing with kinetic-molecular theory, thermodynamics, quantum theory, molecular structure, inter-facial state, chemical equilibria and kinetics of reaction. Lectures, three hours. Prereq: CHE 548 or equivalent. *Eckstrom.*

643 *Chemical Crystallography.* (2) I
An introduction to crystallography for chemists. Topics include the physical and chemical properties of crystals, crystal geometry, symmetry, x-ray diffraction, and crystal structure analysis. Prereq: CHE 442. *Sands.*

644 *Phase Rule.* (2)
Lectures and assigned readings on the theory and applications of the phase rule. Lectures, two hours. Prereq: CHE 542.

646 *Chemical Kinetics.* (2) I
Studies of chemical reactions from the standpoint of velocity and mechanism. Lectures, two hours. Prereq: CHE 542. *Plucknett.*

710 *Topics in Inorganic Chemistry.* (2) I
Discussion of topics of recent interest in inorganic chemistry, including physical methods, syntheses, and structural theories. Prereq: CHE 610 or equivalent. *Williams.*

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: CHE 442. *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: CHE 522, 523, and 442.

726 *Topics in Analytical Chemistry.* (3)
Selected topics which may include nuclear magnetic resonance, mass spectrometry, x-ray diffraction and spectroscopy, microscopy, and recent advances in analytical chemistry. Lectures, three hours. Prereq: CHE 522 and 442.

730 *Theoretical Organic Chemistry.* (3) I
The application of the principles of kinetics, thermodynamics and quantum mechanics to the problems of organic chemistry. Lectures, three hours. Prereq: CHE 635 and MA 431.

733 *Stereochemistry of Organic Compounds.* (3) I
The steric aspects of fundamental organic processes; the application of optical rotatory dispersion to the problems of stereochemistry. Lectures, three hours. Prereq: CHE 635.

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.

740 *Electrochemistry.* (2)
Modern theories of solutions. Applications of electrochemical methods in determining the properties of solutions. Polarization. Electrolysis. Equilibrium in solutions of electrolytes. Lectures, two hours. Prereq: CHE 542.

742 *Quantum Chemistry.* (3) I
An introduction to quantum mechanics with emphasis on the aspects closely related to chemistry. Lectures, three hours. Prereq: MA 431 and consent of instructor. *Plucknett.*

743 *Molecular Structure.* (3) II
Applications of quantum theory to chemical problems, theories of chemical bond, structure and spectra of molecules. Lectures, three hours. Prereq: CHE 742.

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. Lectures, three hours. Prereq: CHE 542 and MA 431. *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: CHE 442 or consent of instructor.

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.

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.

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, Inorganic Chemistry, Organic Chemistry, or Physical Chemistry. May be repeated indefinitely.

SCHOOL OF COMMUNICATIONS

JOURNALISM

FACULTY

Robert D. Murphy, chairman

Professors

Robert D. Murphy	Ph.D., Syracuse, 1951
Leonard Niel Plummer	Ph.D., Wisconsin, 1940

Associate Professors

J. Ardery McCauley	M.A., Kentucky, 1948
William M. Moore	Ph.D., Wisconsin, 1946
Robert Kent Thorp	Ph.D., Iowa, 1963
Raymond W. Wild	Ph.M., Wisconsin, 1939

Assistant Professor

Robert Lewis Donohew	Ph.D., Iowa, 1965

The Department of Journalism is one of the 47 members of The American Association of Schools and Departments of

Journalism. Accredited since 1931, the department is a member of the Association which is composed of the leading schools and departments of journalism in the United States.

General reference materials, representative daily newspapers and magazines, and recognized trade journals of the publishing industry are available in the department. In the general library are hundreds of volumes dealing with all phases of communications.

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 Kentucky Kernel, campus daily newspaper, and The Kentuckian, the student yearbook, offer journalism students opportunities for practical experience in writing and editing and in the advertising and management aspects of journalism. The Kentucky Press Association, composed of the daily and weekly newspapers of Kentucky, maintains its headquarters in the journalism building and cooperates closely with the program of the department.

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 in one of which a student specializes 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 preparation for men and women seeking careers in news and editorial work, advertising, publishing, and radio-journalism.

Departmental Requirements

For University and college requirements see page 9.

The requirements for this department are presently under review. A detailed statement of these requirements may be obtained from the chairman of the department whose name is indicated under the preceding faculty listing.

Field of Concentration Requirements: See page 50.

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
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
Lectures and readings on the development of the modern news style. Practice in effective writing. *Staff.*

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: JOU 501. *McCauley.*

504 *Laboratory for JOU 503.*

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.* (1-3) S
A study of the problems that confront the adviser of the high school newspaper or magazine. Open to advisors or prospective advisors with consent of the instructor.

531 *Law of the Press.* (2) I, II
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: JOU 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.*

551 *Process and Effects of Mass Communications.* (3) II
Considers the communications process and effects of mass communications on the individual. Draws upon research in these areas from the fields of political science, psychology, sociology, journalism, and mass communications. *Donohew.*

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. *Wild.*

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.

564 *Laboratory for JOU 563.*

571 *Community Journalism.* (3) I, S
A study of the problems which confront the community weekly and the small city daily. *Wild.*

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.

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.

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.

591 *Radio News Scripts.* (2) I, II
Instruction and practice in writing news and feature material for radio presentation. *Moore.*

COMMUNICATIONS

607 *Evaluating and Communicating Information.* (3) I, S
A study of the communications systems with which students will work, of the effect of the communications systems on public decisions, and of the means by which students work efficiently with communications systems.

608 *Mass Communications and Society.* (3) I, S
A study of the ways in which the communications media play their roles in contemporary society with special attention to the major functions, rights, and responsibilities of media and individuals.

651 *Communications Theory.* (3) II
Major theories of the communications process and review of experiments and field studies on communications. Readings, discussion, and student experiments testing theoretical propositions about communications. Prereq: Course in statistics or in design of social research.

665 *Communications Research Methods.* (3) II
The scientific method. Communications research as a part of social science research. Study and practice of advanced behavioral research techniques which apply to communications. Prereq: A behavioral research course and permission of instructor.

RADIO, TELEVISION & FILMS

FACULTY

Stuart W. Hallock, Acting Chairman

Assistant Professors

Stuart W. Hallock	M.S., Syracuse, 1952
Elizabeth Ellis Taylor	M.A., Kentucky, 1952

Instructors

Ronald D. Dyas	M.S., Indiana, 1965
Allan MacLeod	M.A., Bob Jones, 1962
Ronald Russell-Tutty	M.A., Kentucky, 1958
Donald E. Wheeler	M.S., Indiana, 1960

The Department of Radio, Television, and Films is a part of the School of Communications and offers an A.B. degree in Radio-Television. The Radio-TV curriculum is divided into four sequences to insure a broad, comprehensive preparation by the student in his area of emphasis particularly during his junior and senior years. These sequences are: *Management and Advertising, News and Public Affairs, Production,* and *General Broadcasting.*

Extra-curricular experience in radio, television, and films is available to the major as well as students in all other fields. Provision is made in the Division of Communication Services (encompassing Radio, TV, and Films) to give competent students an opportunity to assist a professional staff in each of the services.

RADIO AND AUDIO RECORDING

The radio and audio facilities, including WBKY-FM, are located on the top floor of McVey Hall, and are among the most extensive in the country among college operations. They include two fully equipped broadcasting studios. WBKY-FM, at 91.3 megacycles, operates seven days a week and 52 weeks a year as a service to the University family and the Central Kentucky Community. Making programs available throughout the state is the Public Tape Network which offers outstanding program series to commercial stations.

TELEVISION

Television training, both classroom and on-the-air, is an integral part of the curriculum. In addition to television lectures and laboratories students may work as a part of the studio crews in the production of telecourses and other TV programs, assisting the professional staff of the Television Service. The University's ETV production center is scheduled for activation in 1967. The RTF Department's utilization of commercial facilities, started in 1959, continues to offer opportunities for television experience.

The main production center for Kentucky's State ETV Network, which will be located on University grounds, is scheduled to operate in 1968. It will offer an opportunity for on-the-job training.

Each summer a selected group of RTF majors is permitted to enroll in an eight-weeks' internship in television at WHAS-TV, Louisville, for which credit is given under RTF 327. Training in this special television course includes work in TV news, film editing, script-writing, floor-directing, graphics, promotion, and advertising.

FILM

A third unit of service is the Motion Picture Service Center located at 136 Graham Avenue. Sixteen millimeter motion picture films, color, black and white, sound and silent, are produced for departments of the University for research, for public relations, for specialized training. Complete film facilities include cameras, lighting systems, sound recording studio, animation stand, complete editing equipment, 16mm precessor and printer.

Courses in photography are available, but no film major. Extra-curricular opportunities are available for competent students assisting the professional staff.

COURSES FOR MAJORING IN RADIO, TELEVISION AND FILMS

	Crs.
Open to Freshmen	
RTF 101, 105—Broadcasting Today	6
Open to Sophomores	
RTF 201—Radio and Television Announcing	2
RTF 205—Radio Production	2
Open to Juniors and Seniors	
RTF 501—Broadcast Regulations	3
RTF 505—Advanced Radio and Television Announcing	2
RTF 510—Radio and Television Advertising	2
RTF 515—Broadcast Script Writing	2

RTF 520—Television Production 3
RTF 525—Advanced Radio and Television Production 2
RTF 530—Pro-Seminar in Radio and Television 1
RTF 535—Motion Picture Production Techniques 3

Note: RTF majors must take RTF 101 and 105 as prerequisites for all other radio courses.

Departmental Requirements

For University and college requirements see page 9.

The requirements for this department are presently under review. A detailed statement of these requirements may be obtained from the chairman of the department whose name is indicated under the preceding faculty listing.

Field of Concentration Requirements: See page 50.

Course Descriptions

101 *Broadcasting Today.* (3) I, S
A familiarization of the set-ups of radio-television stations and networks, their relationship with the Federal body regulating them and many of the various tools used by them in presenting radio programs. Lecture and recitation, three hours.

105 *Broadcasting Today.* (3) II
Radio and television in public service; broadcasts to schools; building the radio schedule; serving the sponsor; listener problems; the newer broadcasting arts (FM, Television). Lecture, and recitation, three hours.

201 *Radio and Television Announcing.* (2) I, II, S
The study and practice of announcing, with emphasis on studio and microphone techniques, pronunciation, inflection. Workshop on WBKY. Lecture and recitation, one hour; lab, two hours.

202 *Laboratory for Radio, Television and Films 201.*

205 *Radio Production.* (2) II
Production and practice in basic study of function of broadcasting equipment, principles of professional radio production and practice in fundamental operating and production techniques.

206 *Laboratory for Radio, Television and Films 205.*

327 *Television Production Practicum.* (3)
Eight weeks of concentrated instruction through supervised laboratory participation in every phase of commercial TV production. Offered only during the summer term following junior year for selected students. Prereq: Consent of instructor and department chairman.

501 *Broadcast Regulations.* (3)
A study of the governmental regulations of Broadcasting by the FCC, and other federal, state and local agencies; licensing, libel and slander, copyrights, illegal practices, self regulation. Lecture and recitation, 3 hours.

505 *Advanced Radio and Television Announcing.* (2)
Practice in the disciplines of the announcing profession to improve oral reading ability, speech habits, and power of communication, to develop the art of speaking the broadcasting language and develop the ability to speak effectively extemporaneously. Closed circuit on-the-air training. Lecture and recitation, one hour; laboratory, two hours. Prereq: RTF 201.

506 *Laboratory for RTF 505.*

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.

515 *Broadcast Script Writing.* (2)
Survey of methods and principles involved in writing documentaries and dramas for radio and television. Emphasis on the documentary as a tool of communication and a rising modern art form. Lecture and recitation, one hour; lab, two hours.

516 *Laboratory for RTF 515.*

520 *Television Production.* (3)
Introduction to general procedures of television production. Survey of camera, audio, lighting, scenery and properties, graphics, film and video tape recordings, studio and control, and producing and directing techniques. Lecture and recitation, two hours, lab, three hours.

521 *Laboratory for Radio, Television, and Films 520.*

525 *Advanced Radio and Television Production.* (2)
Advanced practice in radio or television production involving individual research on assigned projects. Final project must be airworthy. Conferences and lab. Prereq: RTF 515 and 520 or consent of instructor.

526 *Laboratory for Radio, Television and Films 525.*

530 *Pro-Seminar in Radio and Television.* (1) II
Discussion and reports on current broadcasting highlights and problems. Required of all seniors in preparation for the comprehensive examination. Lecture and recitation, one hour.

535 *Motion Picture Production Techniques.* (3) I
A study of the methods, procedures and principles involved in a motion picture production, theory and application of camera operation, editing, lighting and sound. Each student, before he completes the course, must write, produce and direct a short film. Lecture, three hours; lab, two hours.

536 *Laboratory for Radio, Television and Films 535.*

COMPUTER SCIENCE

FACULTY

Silvio O. Navarro, chairman

Associate Professors

S. O. Navarro	Ph.D., Texas A&M, 1955
N. V. Findler	Ph.D., Budapest, 1956
A. C. R. Newbery	Ph.D., London, 1962

Assistant Professors

R. J. Chacon	Ph.D., Harvard, 1958
G. L. Olde	Ph.D., Western Ontario, 1960

Lecturers

M. J. Dillon	Ph.D., Buffalo, 1967
M. B. Solomon	M.B.A., Kentucky, 1960
W. D. Skees	M.S., Illinois, 1964
S. A. Zerof	M.S., Kentucky, 1959

Computer Science is concerned with the representation, storage, manipulation, retrieval and presentation of information. It deals with problems of designing the machines that perform these operations, plus implementing the means of communication between machines and between man and machine. The theoretical foundation of Computer Science overlaps other fields such as pure and applied mathematics, numerical analysis, electrical engineering, philosophy, linguistics, psychology, social sciences, industrial engineering, business administration and biology.

In general, the Computer Science program is designed to provide a wide range of knowledge in computer theory and concepts. With a broad based curriculum, the student should be prepared to either continue with graduate studies or to enter one of many fields as a professional computer scientist.

In addition to the Computer Scientist's interest in theoretical research areas, his responsibility is to find the best algorithms, i.e., the optimum calculational methods in terms of time and effort (both human and machine), for the solution of given problems. He must estimate the cost, "hardware" requirements, expected errors, sensitivity of results to the assumptions, etc., in advance. He very often collaborates with researchers of other disciplines. Computer Science, in an interdisciplinary area, cuts across traditionally established boundaries and enhances the cross-fertilization of ideas.

FACILITIES

At present there are three digital computers located in the Computing Center. The fastest and largest is an IBM 7040 (32 K memory, 8 tape units, high speed printer and card read-punch). Others include an IBM 1401 (4 K, 1 tape unit, high speed printer and card read-punch) and an IBM 1410 (40 K, 5 tape units and high speed printer and card read-punch). An IBM 360, Model 50, will be installed in early 1967.

Analog computers in the College of Engineering are accessible to Computer Science students.

Plans are being made to lease a major, modern time-sharing system by winter, 1967. At that time many departments on the campus as well as the students will have direct access to a computer via remote consoles.

Departmental Requirements

For University and college requirements see page 9.

The requirements for this department are presently under review. A detailed statement of these requirements may be obtained from the chairman of the department whose name is indicated under the preceding faculty listing.

Field of Concentration Requirements: See page 50.

Course Descriptions

220 *Introduction to Algorithmic Processes.* (2)
Characteristics of a procedure-oriented language; description of a computer as to internal structure and the representation of information; introduction to Algorithms. Prereq: MA 110.

320 *Computer Organization and Programming.* (3)
Limitations of procedure-oriented languages; machine languages; symbolic languages; subroutines, assembly programs and macros; advanced input-output. Prereq: CS 220 or equivalent.

396 *Independent Work in Computer Science.* (2)
A course for computer science majors only. A problem, approved by the chairman of the department, provides an opportunity for individual research and study. May be repeated to a maximum of 6 credits. Prereq: Major and standing of 3.0 in the Department.

420 *Algorithmic Languages and Compilers.* (3)
This course acquaints the student with the formal description of procedure-oriented languages and the techniques useful in the translation of these languages into computer programs. Prereq: CS 320.

440 *Information Processing Systems.* (3)
An introduction to structures of information sets covering syntactic or semantic relations. The generation, development and processing of structures and their interrelationships, machine instructions and storage hierarchies. Prereq: CS 220 or equivalent.

472 *Seminar.* (2)
Weekly report on current research papers. Discussion of new advances in computer science. May be repeated to a maximum of 6 credits. Prereq: CS 320 or 440 or consent of instructor.

525 *Analog and Hybrid Computer Techniques.* (3)
Application of analog and hybrid computers in the solution of systems of inte-gro-differential-difference equations. Prereq: MA 431 or equivalent.

540 *System Simulation.* (3)
Computer simulation techniques including building and utilizing deterministic and stochastic models for digital and analog computers. Prereq: CS 220 or equivalent.

560 *Non-Numerical Applications of Computers.* (3)
Introduction to and training in non-numerical techniques by digital computers. Prereq: CS 220 or equivalent.

570 *Computers and Programming Systems.* (3)
Advanced concepts in software design, development, and implementation including priority, executive, and real time computer systems. Prereq: CS 420.

WILLIAM ANDREW PATTERSON SCHOOL OF DIPLOMACY & INTERNATIONAL COMMERCE

COOPERATING FACULTY

Richard Butwell, director

Professors

Richard Butwell	D.Phil., Oxford, 1954
James F. Hopkins	Ph.D., Duke, 1949
P. P. Karan	Ph.D., Indiana, 1956

Associate Professors

Herbert Neal Drennon	Ph.D., Duke, 1951
Charles William Hultman	Ph.D., Iowa, 1960
Lloyd Jensen	Ph.D., Michigan, 1963
Eldon Smith	Ph.D., Wisconsin, 1954
Robert Stroup	Ph.D., Iowa, 1954
Edward Weidner	Ph.D., Minnesota, 1946
William Adriance Withington	Ph.D., Northwestern, 1955
Stanley Zyzniewski	Ph.D., Harvard, 1956

Assistant Professors

Kurt Anschel	Ph.D., Michigan State, 1965
George Brubaker	Ph.D., Texas, 1960
William Jones Chambliss	Ph.D., Michigan, 1963
Alvin Magid	Ph.D., Michigan State, 1965
Gerard E. Silberstein	Ph.D., Harvard, 1962
Sheldon Simon	Ph.D., Minnesota, 1964

This school has been established in pursuance of the bequest of the late James K. Patterson, president of the University from 1869-1910, 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 or business 2) to provide training in these fields in preparation for teaching and 3) to carry on research and to provide research training in these areas.

The school offers a curriculum leading to the master's and doctor's degree in the following fields: International Relations, Foreign Policy, Comparative Politics, International Economics and Economic Development, Area Studies.

Course Descriptions

DEPARTMENTAL COURSE OFFERINGS (See departmental listings for course descriptions)

I. INTERNATIONAL RELATIONS

PS 550, International Law (3)
PS 566, The United Nations (3)
PS 774, International Relations and Organization (3)
PS 501, Latin American Relations (3)
GEO 542, Geographical Foundations of World Power (2)
GEO 543, Special Problems (1)—related to GEO 542
HIS 542, German History 1815-1914 (3)
HIS 543, German History since 1914 (3)
HIS 592, Diplomatic History of the Far East since 1787 (3)
HIS 593, Far Eastern History since World War II (3)

II. FOREIGN POLICY

PS 530, The Conduct of American Foreign Relations (3)
PS 541, The Foreign Policy of the Soviet Union (3)
PS 758, Seminar in Soviet Politics, Government and Foreign Policy (3)
PS 775, Contemporary American Diplomatic Problems (3)
HIS 556, The British Empire to 1860 (3)
HIS 557, The British Empire and Commonwealth (3)
HIS 554, British History since 1870 (3)
HIS 574, Diplomacy and Foreign Policy of the United States to 1919 (3)
HIS 575, The Diplomacy and Foreign Policy of the United States since 1919 (3)
HIS 625, 626, Readings in British and British Empire History (3 each)

III. COMPARATIVE POLITICS

PS 520, Governments and Politics of South Asia (3)
PS 555, Comparative Government: Parliamentary Democracies (3)
PS 556, Government and Politics of the Soviet Union (3)
PS 568, Governments and Politics of Eastern Asia (3)
PS 757, Seminar in Comparative Democratic Political Systems (3)
PS 776, Political Development of Southeast Asia (3)
SOC 561, Comparative Sociology (3)
SOC 727, Seminar on Socio-Cultural Change (3)
HIS 587, Twentieth Century Latin American Revolutions (3)

IV. INTERNATIONAL ECONOMICS AND ECONOMIC DEVELOPMENT

ECO 514, Intermediate Microeconomic Analysis (3)
ECO 515, Intermediate Economic Analysis (3)
ECO 520, International Investments (3)
ECO 522, Underdeveloped Areas and Economic Policy (3)
ECO 525, Economic Development (3)
ECO 527, International Economics (3)
ECO 542, Soviet Area Economics (3)
ECO 565, Comparative Economic Systems (3)
ECO 590, Introduction to Mathematical Economics (3)
ECO 601, Theory of International Trade (3)
ECO 602, Analysis of International Trade (3)
ECO 611, Advanced Money and Banking (3)
ECO 618, Economic Theory (micro) (3)
ECO 619, Economic Theory (macro) (3)
ECO 650, Research Statistics I (3)
ECO 651, Research Statistics II (3)
ECO 690, Mathematical Economics (macro) (3)
ECO 691, Econometrics (3)
ECO 770, Seminar (1 to 6)
ECO 780, Research Problems in Economics (1 to 6)
AEC 545, Land Economics (3)
AEC 626, Agriculture in Economic Development (3)
AEC 640, Advanced Agricultural Policy (3)
RS 515, Diffusion of Technology in Modern Society (3)
SOC 523, Social Determinants of Economic Behavior (3)
BA 523, International Commercial Policy (3)

V. AREA STUDIES

Asia

PS 520, Governments and Politics of South Asia (3)
PS 568, Governments and Politics of Eastern Asia (3)
PS 776, Political Development of Southeast Asia (3)
HIS 590, Japanese History to 1600 (3)
HIS 591, Japanese History since 1600 (3)
HIS 592, Diplomatic History of the Far East since 1787 (3)
HIS 593, Far Eastern History since World War II (3)
GEO 528, Regional Geography of Asia (2)
GEO 529, Special Problems (1)—related to GEO 528
GEO 534, Regional Geography of Australia and the Pacific Islands (2)
GEO 535, Special Problems (1)—related to GEO 534
GEO 550, Regional Geography of South Asia (2)
GEO 551, Special Problems (1)—related to GEO 550
GEO 552, Regional Geography of Southeast Asia (2)
GEO 553, Special Problems (1)—related to GEO 552
PHI 540, Great Religions (3)

Latin America

GEO 524, Regional Geography of Latin America (2)
GEO 525, Special Problems (1)—related to GEO 524
GEO 560, Regional Geography of the Caribbean (2)
GEO 561, Special Problems (1)—related to GEO 560
ANT 530, Contemporary Latin American Cultures (3)
PS 501, Latin American Relations (3)
HIS 584, Economic History of Latin America since Independence (3)
HIS 587, Twentieth Century Latin American Revolutions (3)
HIS 637, 638, Readings in Latin American History (3 each)
HIS 715, Seminar in Latin American History (3)
SOC 561, Comparative Sociology (3)—this course frequently treats the Latin American countries.

Europe

GEO 526, Regional Geography of Europe (2)
GEO 527, Special Problems (1)—related to GEO 526
HIS 542, German History, 1815-1914 (3)
HIS 543, German History since 1914 (3)
HIS 554, British History since 1870 (3)
HIS 523, Europe, 1814-1870 (3)
HIS 524, Europe, 1870-1918 (3)
HIS 525, Europe, since 1919 (3)
HIS 600, European Historiography (3)
HIS 623, 624, Readings in European History since 1815 (3 each)
HIS 625, 626, Readings in British and British Empire History (3 each)
HIS 720, Seminar in Modern European History, 1500-1714 (3)
HIS 730, Seminar in Modern British History (3)

Soviet Union—Eastern Europe

PS 541, The Foreign Policy of the Soviet Union (3)
PS 556, Government and Politics of the Soviet Union (3)
PS 758, Seminar in Soviet Politics, Government, and Foreign Policy (3)
ECO 542, Soviet Area Economics (3)
SOC 561, Comparative Sociology (3)—frequently treats Soviet society
HIS 534, Russian Revolutions and the Soviet System I (3)
HIS 535, Russian Revolutions and the Soviet System, II (3)
HIS 536, Intellectual History of Modern Russia, 1789-1917 (3)
HIS 538, Political and Diplomatic History of East Central Europe from the French Revolution to the End of World War I (3)
HIS 539, Political and Diplomatic History of East Central Europe since World War I (3)

Regardless of the area specialization chosen, the student may also take three to six hours of Geography 650 (Regional Study of Special Areas), a seminar for persons who have had appropriate previous work.

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

769 *Residence Credit for Doctor's Degree.* (0)
May be repeated indefinitely.

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 Business and Economics.

Departmental Requirements

University and College Requirements: See page 9.

Pre-Major Requirements: ECO 251 and 252

Field of Concentration Requirements: See page 50.

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

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 AND SPEECH

FACULTY

Jacob Henry Adler, chairman

Professors

Jacob Henry Adler	Ph.D., Harvard, 1951
Gifford Blyton	Ph.D., Ohio State, 1941
Arthur Louis Cooke	Ph.D., Michigan, 1944
Guy Mattison Davenport, Jr.	Ph.D., Harvard, 1961
Robert O. Evans	Ph.D., Florida, 1954
Arthur Keister Moore	Ph.D., Vanderbilt, 1943
Mary Ellen Rickey	Ph.D., Florida, 1955
Donald A. Ringe	Ph.D., Harvard, 1954
Rinaldo C. Simonini	Ph.D., North Carolina, 1949
Thomas Bradley Stroup	Ph.D., North Carolina, 1933
William Smith Ward	Ph.D., Duke, 1943

Associate Professors

William F. Axton	Ph.D., Princeton, 1961
John Levi Cutler	Ph.D., Ohio State, 1949
Maurice A. Hatch	Ph.D., Cornell, 1948
Robert Durene Jacobs	Ph.D., Johns Hopkins, 1953
William Hugh Jansen	Ph.D., Indiana, 1948
J. W. Patterson	Ph.D., Oklahoma, 1960
J. Reid Sterrett	Ph.D., Wisconsin, 1941
Lizette O. Van Gelder	M.A., Syracuse, 1944

Assistant Professors

Michael E. Adelstein	Ph.D., Michigan, 1958
Wendell Erdman Berry	M.A., Kentucky, 1957
Ben W. Black	Ph.D., Michigan, 1953
Thomas O. Blues	Ph.D., Iowa, 1966
James Harrell Cobb	M. A., Indiana, 1931
Alfred L. Crabb, Jr.	M. A., Peabody, 1941
Harry Alan Ebeling	Ph.D., Kansas, 1965
Frank E. Haggard	Ph.D., Kansas, 1966
Joan Joffe Hall	Ph.D., Stanford, 1961
Leila Gott Harris	M.A., Kentucky, 1945
Robert E. Hemenway	Ph.D., Kent State, 1966
Richard H. Henze	Ph.D., Nebraska, 1965
Nancy Carol Joyner	Ph.D., North Carolina, 1966
Michael F. Kelly	Ph.D., Tennessee, 1966
David A. McCants	Ph.D., Northwestern, 1964
Maurice Lee McCullen	Ph.D., Colorado, 1966
Jean Gardner Pival	M.A., Kentucky, 1962
Thomas A. Van	Ph.D., Duke, 1966
Robert Lee White	Ph.D., Minnesota, 1960

Instructors

Robert E. Burkhart	M.A., Cincinnati, 1963
Martin John Dillon	B.S., Canisius, 1961
Joseph H. Gardner	M.A., California, 1963
Margaret Thornton Greynolds	M.A., Indiana, 1962
George William Griffith	B.S., Florida, 1953
Colleen deM. Herrmann	M.A., San Francisco State, 1965
Dennis R. Hoilman	M.A., Utah, 1964
David W. Kerr	M.A., Vanderbilt, 1965
Rollin W. Lasseter	M.A., Yale, 1963
Laura Jean Marsh	M.A.T., Reed, 1965
Anne E. Millard	M.A., Tennessee, 1965
Anna K. Reed	M.A., Duke, 1960
Fredric A. Roux	M.A., New Hampshire, 1962
Grady Steele	M.A., Memphis State, 1959
Mabel A. Stonecipher	M.A., Ohio University, 1965
Marietta Patrick Sturgell	M.A., Ohio University, 1965

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 or Speech.

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 editor, or professional book reviewer, dramatic or literary critic, or author of imaginative literature. And others take language or speech courses because they need to learn the accurate, precise use of language; or because they need speech experience as a part of their preparation for such professions as law, the ministry, teaching, and salesmanship.

The Department offers training in language study; English, American, and comparative literature; creative writing; speech. 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.

Departmental Requirements

For University and college requirements see page 9.

The requirements for this department (including a major in Speech) are presently under review. A detailed statement of these requirements may be obtained from the chairman of the department whose name is indicated under the preceding faculty listing.

Field of Concentration Requirements: See page 50.

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 ENG 101. The course is designed to help the student achieve a basic proficiency in oral and written communication in English. Phonetics, pronunciation, reading of materials in English, frequent exercises in written composition.

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. ENG 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. ENG 102 or 106 required of all freshmen. *Staff.*

105 *Advanced Freshman Composition.* (3)
A variant of ENG 101 for students who score in the 85th percentile or above on their classification tests. *Staff.*

106 *Advanced Freshman Composition.* (3)
A continuation of ENG 105. The reading matter is largely imaginative: Poetry, drama, fiction. Excellence in ENG 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. *Staff.*

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. *Berry.*

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. *Berry.*

412 *History of the English Language.* (3)
A survey emphasizing the characteristics of English from the times of Alfred, Chaucer, Shakespeare, and Johnson to the present. *Cutler.*

472 *Studies in English for High School Teachers.* (1-3)
Specialized topics in language, literature, and composition designed to increase the high school teacher's knowledge of subject matter, to aid him in meeting major problems in the curriculum, and to enlarge his understanding of new developments and approaches to the teaching of high school English. May be repeated to a total of 6 crs. Prereq: Employment as a high school teacher. *Staff.*

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. *Berry.*

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 ENG 501 and to bring practice closer to theory. Prereq: Consent of instructor. *Berry.*

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, Pival, VanGelder.*

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, Simonini.*

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.*

514 *Descriptive Linguistics: Phonetics.* (3)
Articulatory description of speech sounds; practice in recognition and control. Same as ANT 514. Prereq: Consent of instructor. *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 ANT 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 ANT 516.) Prereq: ENG 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. English majors should take ENG 551. *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. English majors should take ENG 552. *Staff.*

260 *Forms of Dramatic Literature.* (3)
A historical and critical study of the major forms of dramatic literature.

261 *Survey of Western Literature from the Greeks through the Renaissance.* (3)
A study of major continental writers and their works, using anthology selections and one complete work.

262 *Survey of Western Literature from 1660 to the Present.* (3)
A study of major continental writers and their works, using anthology selections and one complete work.

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.* (2)
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.* (2)
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.* (2)
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, Axton.*

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, Axton.*

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. *Axton.*

540 *Nineteenth-Century British Novel.* (3)
Study of the novel in English literature from Scott through Gissing. *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 Literature.* (3)
British literature of the 20th Century, with particular attention to the poetry, to literary movements, and to 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, Ringe.*

552 *American Literature, 1860-1900.* (3)
A survey of the development of American life, thought, and letters, in the later years of the 19th Century. *Jacobs, White, Ringe.*

553 *American Literature since 1900.* (3)
A survey of the development of American life, thought, and letters in the 20th Century. *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, White.*

560 *Comparative Literature I.* (3)
A study of Western World literature. From Homer to Montaigne.

561 *Comparative Literature II.* (3)
A study of Western World literature. From Montaigne to Anatole France. *Evans.*

562 *Comparative Literature III.* (3)
Masterpieces and examples of twentieth-century Western World literature, with emphasis on the emergence of new forms and techniques invented to express the complexity of modern life; the course will study novels, poems, and plays in their traditional development and in experimental and divergent forms. *Davenport.*

563 *Modern Drama.* (3)
Continental, British, and American dramatic literature from Ibsen to the present. *Adler.*

565 *The Lyric in English.* (2)
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. *Rickey.*

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.* (2)
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. *Ward.*

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. *Axton.*

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. *Axton.*

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, Ringe.*

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, Ringe.*

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, McCants, 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.*

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)
To offer the student 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 ENG 283. *Blyton.*

584 *Teaching of Speech.* (3)
An analysis of the field of speech education as related to the teacher of speech. *Blyton, Patterson.*

585 *American Public Address to 1865.* (3)
An historical and critical study of public discussion in the United States, from the Colonial Period to 1865, through the analysis of major speakers, speeches, and debates. *McCants.*

586 *American Public Address since 1865.* (3)
An historical and critical study of public address in the United States from 1865 to the present. *McCants.*

588 *Oral Interpretation of Drama.* (3)
The cutting and adapting of the three-act play for oral presentation. *Sterrett.*

687 *Studies in Ancient and Medieval Rhetoric.* (3)
A comparative and critical study of the major treatises on the art of speaking, from the time of Aristotle to the Renaissance, with attention to the rhetorical practice, criticism, and pedagogy of the succeeding periods.

688 *Studies in Renaissance and Modern Rhetoric.* (3)
A study of the major contributions to the body of rhetorical theory from the Renaissance to the present. *McCants, Patterson.*

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.*

SCHOOL OF FINE ARTS

ART

FACULTY

Richard Borden Freeman, chairman

Professors

Richard Borden Freeman	A.M., Harvard, 1934
Clifford Amyx	M.A., Kentucky, 1943
C. Raymond Barnhart	M.A., Ohio State, 1936
George W. Gunther	M.F.A., Indiana, 1954

Associate Professor

Frederic M. Thursz	M.A., Columbia, 1954

Assistant Professors

Anne G. Green	M.A., Columbia, 1945
Michael Hall	M.F.A., Washington, 1964
John R. Tuska	M.F.A., Alfred University, 1959

Instructors

William Bayer	M.F.A., Arizona State, 1966
Lowell D. Jones	M.F.A., Cranbrook, 1966
Martin Kalb	M.A., California, 1966
Janis Karlis Sternbergs	M.A., Latvian Art Academy, 1932

Artists-in-Residence

Kenneth Campbell
Herman Cherry

As a Department within the College of Arts and Sciences and the School of Fine Arts, the Art Department is concerned that its students should have a balanced education emphasizing both the liberal arts and a strong foundation for professional work in art. All students participate in the General Studies program and are grounded in the accepted studies in the liberal arts: the sciences, social studies, language, the humanities. The Department offers to the major a broad training in all aspects of the visual arts. This kind of education should result in a command of ideas and basic skills which afford the student a possibility for creative action throughout his life. A departmental faculty of scholars and artists is dedicated to these purposes.

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, 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) 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. Teaching 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.

Departmental Requirements

The University of Kentucky offers to the student an expanding curriculum in the arts, in association with other programs in the Fine Arts. There are active programs in drawing, painting, printmaking, ceramics, carving, casting, welding; classrooms and conference rooms for the critical and historical study of art; a collection of slides, an active University Gallery, a collection of original works of art.

For University and college requirements see page 9.

The requirements for this department (including a major in Art Education) are presently under review. A detailed statement of these requirements may be obtained from the chairman of the department whose name is indicated under the preceding faculty listing.

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
Evolution of forms in art; style; relation of styles to cultural context.

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. *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. (Same as PHI 592.) *Amyx.*

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
Basic concepts and procedures in drawing and painting. Media: pencil, charcoal, ink, casein and watercolor. Six studio hours. *Staff.*

112,113 *Descriptive Drawing.* (2 ea.) I, II, S
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. *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. Six studio hours. Prereq: ART 110.

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

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

395 *Independent Work: Painting, Printmaking.* (3) I, II, S
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: ART 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. *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
Training in basic design skills. Creative construction in common materials; logical development of unified forms. Six studio hours. *Bayer.*

237 *Life Modelling: Beginning Sculpture.* (2) II
Clay modelling and drawing from life; casting and direct use of plaster. Prereq: ART 110, 130. *Tuska.*

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

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

247 *Art in Advertising.* (2) II
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 *Sculpture: Wood.* (3) I
Carving: individual problems. Prereq: ART 130, 237. *Barnhart.*

331 *Sculpture: Ceramics.* (3) I
Kiln dried: hollow construction. Nine studio hours per week. Prereq: ART 237. *Tuska.*

332 *Sculpture: Welding.* (3) I, II
Ferrous and non-ferrous metal construction; finishing techniques. Nine studio hours per week. Prereq: ART 237. *Hall.*

333 *Sculpture: Casting.* (3) I, II
Direct and lost-wax processes: patinaing and finishing. Nine studio hours per week. Prereq: ART 237. *Hall.*

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

397 *Independent Work: Advanced Sculpture and Other Three-Dimensional Media.* (3) I, II
Individual research and experimental work. May be repeated twice for a maximum of 9 hours. Prereq: Any course in the 330 sequence; 3.0 standing and major in the Department, and consent of instructor. *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. Prereq: ART 100 or 105 or consent of instructor. *Freeman.*

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. *Amyx.*

203 *Introduction to the Art of Western Civilization.* (3)

Introduction to the important monuments in the architecture, painting, and sculpture of the Western World, from Prehistoric to present times.

232 *History of Architecture Survey.* (3)

A survey 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. Not open to students in Architecture. (Cross-listed with ARC 232)

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.

399 *Independent Work: History, Criticism.* (3) I, II, S

Individual research: history, criticism, aesthetics. Prereq: Major and a standing of 3.0 in the department. May be repeated to a maximum of 9 credits. *Amyx.*

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) II

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. *Freeman.*

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.*

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, Bryant.*

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 influence from relativism, psychoanalysis, Gestalt psychology, mathematical and social theory. Prereq: ART 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. *Amyx.*

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. *Kalb.*

171 *Studio for Art 170.*

172 *Public School Art.* (3) I, II, S

Continuation of Art 170, 171. 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.

173 *Studio for Art 172.*

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, 171.

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) II, S

Art for teachers in secondary schools. The literature of art education. Courses of study. Teaching materials. Lectures, conferences, and reports.

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; SOC 220; EDU 732 or 661; or consent of the instructor.

MUSIC

FACULTY

Hubert P. Henderson, chairman

Professors

Hubert P. Henderson — Ph.D., North Carolina, 1962
Arnold Blackburn — M.M., Michigan, 1943
R. Bernard Fitzgerald — M.M., Jordan Conservatory, 1935
Almonte Charles Howell, Jr. — Ph.D., North Carolina, 1953
Gordon J. Kinney — Ph.D., Florida State, 1962
Aimo Justus Kiviniemi — M.A., Ohio State, 1964
Nathaniel Maxwell Patch — M.M., Rochester, 1941
Kenneth W. Wright — Ph.D., Rochester, 1941

Associate Professors

Rex A. Conner	M.M.E., Missouri, 1953
Donald W. Ivey	D.M.A., Illinois, 1962
Phyllis Jenness	M.A., Kentucky, 1958
Paul R. Lehman	Ph.D., Michigan, 1962
Rey M. Longyear	Ph.D., Cornell, 1957
Phillip Miller	M.M.E., Boston University, 1958
Ford McRae Montgomery	M.M., Michigan, 1949
Gordon A. Nash	M.A., Kentucky, 1950
Albert Leroy Schaberg	M.M., Rochester, 1959

Assistant Professors

Joseph Ceo	M.M., Illinois, 1956
Norman B. Chapman	M.M., Kansas, 1957
Fred M. Dart	M.M., Maryland, 1963
Sara L. Holroyd	M.A., Columbia, 1951
Jack H. Hyatt	M.M., Boston, 1963
Bruce N. Morrison	M.M., Northwestern, 1960
Leo Scheer	

Instructors

Rodney K. Farrar	B.M., Oberlin, 1955
Bruce Freifeld	M.M., Juilliard, 1966
Sheila House	M.F.A., Iowa, 1965
Ann K. Huddleston	M.M., Kentucky, 1955

Artist-in-Residence

Edwin Grzesnikowski

Lecturers

Sarah Baird Fouse	M.M., Kentucky, 1961
John Barnes Chance	M.M., Texas, 1956

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 require the fulfillment of the basic lower division course requirements of the College of Arts and Sciences.

The Department of Music also offers courses leading to the Master of Music degree (in Applied Music, Music Theory, or Music Education) and the Master of Arts degree (in History and Literature of Music, Music Theory, or Music Education).

DEPARTMENTAL FACILITIES

The University provides a modern and well equipped Fine Arts building. The Music facilities include well lighted, sound proofed, air conditioned classrooms, rehearsal halls, teaching studios, a modern listening center, a departmental library, and 44 practice rooms including 4 two-manual practice pipe organs. In the building are two auditoriums seating approximately 500 and 120 persons respectively. 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 Lexington Junior League each year makes a cash award of approximately $200 to the outstanding Junior or Senior woman majoring in Music Education. This award is given on the basis of scholarship, character, and prospect of 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 Chairman of the Department of Music.

UNIVERSITY BANDS

The University has three bands: the Marching Band, the Symphonic Band, and the Concert Band. The Marching Band 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 Concert Band performs in two annual concerts and its membership is comprised of interested students who do not qualify for the Symphonic Band.

UNIVERSITY CHORAL ENSEMBLES

For those students interested in singing, there are four choral organizations on campus: the Men's Glee Club, the 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 SYMPHONETTE

The University Symphonette is a student 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)

DEGREES

Three undergraduate degrees are offered by the Music department: (a) the Bachelor of Arts with a concentration in music; (b) the Bachelor of Music in Music Education; (c) the Bachelor of Music with a concentration in Voice, Piano, Organ, or an instrument.

Music Performance Courses

Non-Credit

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.

Series I—Secondary

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 (but only upon approval of the Department of Music) 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		*Graduate Courses*
Piano	101, 201, 301, 401	501, 601
Voice	102, 202, 302, 402	502, 602
Organ	103, 203, 303, 403	503, 603
Violin	104, 204, 304, 404	504, 604
Viola	105, 205, 305, 405	505, 605
Cello	106, 206, 306, 406	506, 606
String Bass	107, 207, 307, 407	507, 607
Flute	108, 208, 308, 408	508, 608
Oboe	109, 209, 309, 409	509, 609
Clarinet	110, 210, 310, 410	510, 610
Bassoon	111, 211, 311, 411	511, 611
Trumpet	112, 212, 312, 412	512, 612
French horn	113, 213, 313, 413	513, 613
Trombone	114, 214, 314, 414	514, 614
Baritone	115, 215, 315, 415	515, 615
Tuba	116, 216, 316, 416	516, 616
Saxophone	117, 217, 317, 417	517, 617
Percussion	118, 218, 318, 418	518, 618

Series II—Major

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		*Graduate Courses*
Piano	121, 221, 321, 421	521, 621
Voice	122, 222, 322, 422	522, 622
Organ	123, 223, 323, 423	523, 623
Violin	124, 224, 324, 424	524, 624
Viola	125, 225, 325, 425	525, 625
Cello	126, 226, 326, 426	526, 626
String Bass	127, 227, 327, 427	527, 627
Flute	128, 228, 328, 428	528, 628
Oboe	129, 229, 329, 429	529, 629
Clarinet	130, 230, 330, 430	530, 630
Bassoon	131, 231, 331, 431	531, 631
Trumpet	132, 232, 332, 432	532, 632
French horn	133, 233, 333, 433	533, 633
Trombone	134, 234, 334, 434	534, 634
Baritone	135, 235, 335, 435	535, 635
Tuba	136, 236, 336, 436	536, 636
Saxophone	137, 237, 337, 437	537, 637
Percussion	138, 238, 338, 438	538, 638

Series III—Major

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		*Graduate Courses*
Piano	141, 241, 341, 441	541, 641
Voice	142, 242, 342, 442	542, 642
Organ	143, 243, 343, 443	543, 643
Violin	144, 244, 344, 444	544, 644
Viola	145, 245, 345, 445	545, 645
Cello	146, 246, 346, 446	546, 646
String Bass	147, 247, 347, 447	547, 647
Flute	148, 248, 348, 448	548, 648
Oboe	149, 249, 349, 449	549, 649
Clarinet	150, 250, 350, 450	550, 650
Bassoon	151, 251, 351, 451	551, 651
Trumpet	152, 252, 352, 452	552, 652
French horn	153, 253, 353, 453	553, 653
Trombone	154, 254, 354, 454	554, 654
Baritone	155, 255, 355, 455	555, 655
Tuba	156, 256, 356, 456	
Saxophone	157, 257, 357, 457	
Percussion	158, 258, 358, 458	

Music Performance Courses are taught by the following faculty members:

Piano—Patch, Chapman, Huddleston, Montgomery
Voice—Jenness, Ivey, House
Organ—Blackburn
Violin, Viola—Grzesnikowski, Freifeld, Geo
Cello, String Bass—Farrar

Flute—Fouse
Oboe—Bassoon—Morrison
Clarinet, Saxophone—Miller
Trumpet—Hyatt
Trombone—Dart
French Horn, Baritone—Schaberg
Tuba, Percussion—Conner

Departmental Requirements

For University and college requirements see page 9.

The requirements for this department are presently under review. A detailed statement of these requirements may be obtained from the chairman of the department whose name is indicated under the preceding faculty listing.

Field of Concentration Requirements: See page 50.

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, viola, cello and string bass. Two laboratory hours per week. May be repeated once for a total of 2 credits. *Mishkind, Kinney.*

162 *Class Instruction in String Instruments.* (1) I, II, S
A beginning course in the fundamentals of playing and teaching violin, viola, cello and string bass. Two laboratory hours per week. May be repeated once for a total of 2 credits. *Mishkind, Kinney.*

163 *Class Instruction in Brass and Percussion 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 *Class Instruction in Brass and Percussion 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. *Danfelt.*

171 *Theory I—The Elements of Musical Theory.* (3) II
A continuation of MUS 170. Prereq: MUS 170. *Danfelt.*

190 *Band.* (1) I, II
May be repeated 11 times for a total of 12 credits. *Miller.*

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. *Scheer.*

192 *University Choristers.* (1) I, II
Admission to the University Choristers is through the director. One two-hour meeting per week. 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.

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. *Holroyd.*

195 *University Chorus.* (1) I, II, S
Any student in the University may be admitted to the University Chorus after consultation with the director. Two meetings per week. May be repeated 11 times for a total of 12 credits. *Kiviniemi.*

200 *Music in Western Civilization.* (3) I, II, S
A survey for the non-music major of the important composers and musical works from the Renaissance period to the present. Daily listening assignments will be an integral part of the course. Also will include instruction in basic aspects of notation, rhythm, melody, harmony and form. Lecture, three hours. *Longyear, Ivey, Kinney, Howell.*

260 *Music Fundamentals and Skills for Classroom Teachers.* (3) I, II, S
Designed to aid elementary teachers in the College of Education in learning to read music. Keyboard and autoharp experiences are stressed. For non-music majors or classroom teachers. Three meetings each week. Two hours lecture; one hour laboratory. *Staff.*

261 *Methods and Materials of Teaching Music in the Elementary Grades.* (3) I, II, S
Principles, techniques, and procedures for teaching music in Grades 1-6. Opportunities for using current materials are included. Prereq: MUS 260 or permission of the instructor. Three meetings each week. *Staff.*

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. Prereq: MUS 171. *Wright.*

271 *Theory II—Aural Theory.* (2) II
The continuation of the aural and sightsinging techniques of MUS 270. Prereq: MUS 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. Prereq: MUS 171. *Wright.*

273 *Theory II—Written Theory.* (2) II
The continuation of the work of MUS 272. This course must be taken concurrently with MUS 271. Prereq: MUS 272. *Wright.*

280 *History of Music.* (3) I, S
A survey of the history of music from ancient times to the present. Prereq: MUS 200 or consent of the instructor. *Howell.*

281 *History of Music.* (3) II, S
A continuation of MUS 280. Prereq: MUS 200 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: MUS 200 or consent of instructor. *Longyear, Lehman.*

283 *Survey of Music Literature.* (2) II, S
A continuation of MUS 282. Prereq: MUS 200 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 maximum 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: MUS 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 MUS 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 MUS 160, 163, 165, 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: MUS 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 MUS 290. May be repeated once for a total of 2 credits. Two hour class per week. *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. Two meetings each week. Prereq: MUS 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: *MUS* 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. Two meetings a week. *Miller, Mishkind.*

563 *Conducting.* (2) II

A continuation of MUS 562. Two meetings a week. Prereq: MUS 562.

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. Two meetings a week. Prereq: MUS 371. *Kinney, Longyear.*

571 *Orchestration.* (2) II, S

A continuation of MUS 570. Two meetings a week. Prereq: MUS 570.

572 *Counterpoint.* (2) I, S

A study of Counterpoint based on 16th century and 18th century contrapuntal techniques, original compositions and analysis. *Kinney, Wright.*

573 *Counterpoint.* (2) II, S

A continuation of MUS 572. Prereq: MUS 572. *Kinney, Wright.*

574 *Composition.* (2) I, S

A basic course in original composition and orchestration. Prereq: MUS 371. *Wright.*

575 *Composition.* (2) II, S

A continuation of MUS 574. Prereq: MUS 574. *Wright.*

577 *Acoustics of Music.* (3) II

A study of the musical applications of sound phenomena. Prereq: Completion of 14 credits of music theory. *Lehman.*

579 *Baroque Music.* (3) I, II, S

The history of vocal and instrumental music in the Baroque style from 1600 to 1750. *Longyear.*

580 *Music in the Eighteenth Century.* (3) I, II, S

The development of music in the Classic style from the early 18th century to 1800. Prereq: MUS 280, 281. *Longyear, Henderson.*

581 *Nineteenth Century Music.* (3) I, II, S

A study of master works of music composed in the 19th century. Prereq: MUS 280, 281. *Longyear.*

582 *Piano Literature.* (3)

A historical and analytical study of music written for the piano. Matters such as the emergence of the piano idiom and the development of the instrument will also be considered. *Staff.*

583 *Symphonic Literature.* (3) II, S

An intensive study of orchestral literature. *Howell, Henderson.*

584 *Music for the Solo Voice.* (3) I, S

A stylistic study of solo vocal music from the Troubadours to the present. *Ivey.*

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. Two meetings a week. *Blackburn.*

586 *History and Literature of the Organ.* (2) II, S

A continuation of MUS 585. Prereq: MUS 585.

587 *Twentieth Century Music.* (3)

A stylistic study of representative compositions of the twentieth century.

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. *Longyear.*

589 *History of American Music.* (3) II, S

A study of music in America from colonial times to the present.

590 *Opera Workshop.* (1)

May be repeated twice for a total of 3 credits. *Jenness, Ivey.*

591 *Music Education Workshop.* (1) S
Intensive study of advanced methods and materials in one of the following areas of music education: elementary and general music, the school orchestra, the school band, choral music. May be repeated once for a total of two credits. *Staff.*

592 *Music Education Workshop.* (2) S
Intensive study of advanced methods and materials in one of the following areas of music education: elementary and general music, the school orchestra, the school band, choral music. May be repeated once for a total of four credits. *Staff.*

599 *Collegium Musicum.* (2) I, II, S
The study and realization of performance practices in early music. May be repeated once for credit. *Kinney.*

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: MUS 562, 564. *Staff.*

661 *Advanced Choral Conducting.* (2) I, S
The art of choral conducting as applied to various styles and forms of music. Study of unaccompanied works, works with small instrumental combinations, and works for orchestra and chorus. Prereq: MUS 563. *Staff.*

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.* (2)
An advanced technical study of playing string, brass, and woodwind instruments, designed for the needs of school music teachers. May be repeated once for credit.

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: MUS 360 or its equivalent. *Nash, Holroyd.*

669 *Analytical Techniques.* (2) I, S
Studies in the analysis of stylistic practices in the music of the 18th and 19th centuries. Prereq: MUS 271 and 273 or equivalent. *Staff.*

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. Prereq: at least 8 hours of upper division theory or consent of instructor. *Kinney.*

672 *Advanced Musical Analysis.* (2) II, S
A continuation of MUS 671. Prereq: MUS 671.

673 *Advanced Composition.* (2) I, II, S
Prereq: MUS 574 and 575. May be repeated 2 times for a total of 6 credits. *Wright.*

674 *Pedagogy of Theory.* (2) I, II, S
The teaching of music theory. *Wright.*

675 *Pedagogy of Theory.* (2) I, II, S
A continuation of MUS 674.

676 *Sixteenth Century Counterpoint.* (2) I
The study of sixteenth century contrapuntal techniques through analysis and composition. *Wright, Kinney.*

680 *Medieval Music.* (3) II, S
The development of Western music through the 14th Century.

682 *Research Methods.* (2) I, S
A course designed to acquaint the student with the basic research techniques and materials in music. *Longyear, Kinney.*

684 *Renaissance Music.* (3) II
A survey of vocal and instrumental music of the 15th and 16th centuries. *Howell.*

685 *Choral Music.* (3) I, S
The history and literature of vocal ensemble and choral music from 1500 to the present. *Staff.*

687 *History of Performance Practices.* (3) I, II, S
A survey of practices in the performing of European music from the later Middle Ages to 1800, based on evidence from contemporary sources. Must be taken concurrently with 599. *Kinney.*

742 *Administration and Supervision of Public School Music.* (3) II, S
A study of current trends in school music, curricula, testing programs, and other supervisory procedures. Same as EDU 742. *Holroyd, Nash. Nash.*

744 *History and Philosophy of Music Education.* (3) I, S
A historical survey of thought concerning the place and significance of music in the education of the individual and the group. Same as EDU 744. *Holroyd, Nash.*

760 *Psychology of Music.* (3) II, S
A study of the processes of musical thinking and the effects of music on human behavior. *Lehman.*

761 *Seminar in Music Education.* (3) I, II, S
Advanced professional study in the theory and practices of music education. May be repeated once for total of 6 credits. Prereq: Permission of instructor. *Lehman.*

768 *Residence Credit for the Master's Degree.* (0) I, II, S
May be repeated once.

779 *Studies in Music History.* (2) I, II, S
Intensive studies of a musical genre, a composer, or a school of composers. *Longyear, Howell, Kinney.*

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.

THEATRE ARTS

FACULTY

Wallace Neal Briggs, chairman

Associate Professors

Wallace Neal Briggs	M.A., Kentucky, 1945
Raymond A. Smith	M.F.A., Western Reserve, 1955

Assistant Professors

Charles F. Dickens	M.F.A., Western Reserve, 1957
Charles E. Grimsley	M.A., Northwestern, 1963

The Department of Theatre Arts of the University provides the opportunity for cultural and professional growth in the appreciation and understanding of theatre through intensive study and performance of drama. In addition, the Department presents a wide variety of theatrical activity for the entire university community.

A student whose main interest lies in professional theatre may work toward the Bachelor of Arts degree with special emphasis on Acting, Directing and Technical Theatre. This program also allows the student adequate time during the junior and senior years for the election of related and other subject matter fields. A student planning to teach Speech and Theatre Arts may work toward certification by completing the requirements in the College of Education.

The Department of Theatre Arts also offers graduate courses which will eventually lead to the Master of Arts degree. All degrees offered by the Department require the fulfillment of the basic lower division course requirements of the College of Arts and Sciences.

Departmental Facilities

The University provides a modern and well-equipped Fine Arts Building in which are housed the Departments of Art, Music and Theatre Arts. These three departments comprise the School of Fine Arts. The Department of Theatre Arts has two theatres. The Guignol Theatre, one of the finest operating theatre plants in the Southeast, seats 425, is completely air-conditioned, has a large well-equipped stage and shop area, adjacent green room and dressing room facilities, costume construction and property storage rooms. The Laboratory Theatre, adjacent to the Guignol Theatre, seats 140. Five productions in the Guignol Theatre and two staff-directed productions in the Laboratory Theatre are presented during the school year. Six productions are presented by the Centennial Theatre during the summer term. The Laboratory Theatre is also used for classes in Theatre Arts and for student executed productions.

Scholarships

The Department offers a number of grants made available each year through the Student Financial Aid Program in Theatre Arts. These grants are awarded on the basis of scholarship standing, character, general theatre ability and personal need.

The Lolo Robinson Guignol Scholarship of $250.00 is awarded annually on the basis of scholarship, need, and active interest in theatre. Any student applying for the Robinson Scholarship Award must have been in residence at the University of Kentucky for at least one year.

Departmental Requirements

For University and college requirements see page 9.

The requirements for this department (both for a major and for certification) are presently under review. A detailed statement of these requirements may be obtained from the chairman of the department whose name is indicated under the preceding faculty listing.

Field of Concentration Requirements: See page 50.

Course Descriptions

190 *Centennial Summer Theatre Workshop.* (3)
Open to apprentice students in the Centennial Summer Theatre. Classes in the theory and application of acting, directing and production principles supplemented by assignments in the University's Centennial Theatre. Admission by permission of staff. Students may receive credit for not more than two of the three courses, TA 190, 292 and 293. Lecture, three hours; lab, to be scheduled. Prereq: Acceptance as an apprentice student in the Centennial Summer Theatre. Staff of Centennial Theatre.

194 *Orientation to the Theatre.* (3)
An orientation to the theory and practice of the theatre arts. *Staff.*

292 *Stagecraft I.* (3)
Study of theory, principles and techniques of contemporary theatre production. Assignments in laboratory and backstage during rehearsals and performances. Recommended for those interested in any technical phase of theatre. *Grimsley.*

293 *Stagecraft II.* (3)
Intensified and expanded application of Theatre Arts 292. Advanced theory and practice in technical problems of play production. Assignments in laboratory and backstage during rehearsals and performances. Prereq: TA 292 or consent of instructor. *Grimsley.*

395 *Independent Work.* (3)
For undergraduate majors in Theatre Arts. Independent work under the guidance of a staff member. Production of a paper embodying the results of study. Examination required. May be repeated once for a total of six credits. Prereq: Major and standing of 3.0 in the Department. *Staff.*

590 *History of the Theatre I.* (3)
A study of the theatre from primitive times through the Elizabethan period. Theatre and stage architecture, scene design, costuming and acting styles are discussed and their relation to dramatic literature analyzed. *Dickens.*

591 *History of the Theatre II.* (3)
A continuation of TA 590, a study of the theatre from the Jacobean period to the present. *Dickens.*

592 *Scene Design I.* (3)
Study of theory, principles and techniques of scene and lighting design for the contemporary theatre. Comprehensive analysis of a play and the development of a design through the media of floor plans, lighting plot, and perspective line drawings. *Smith.*

593 *Scene Design II.* (3)
Intensified and expanded application of Theatre Arts 592. Advanced theory and practice in scene and lighting design for the theatre. Prereq: TA 592 or consent of instructor. *Smith.*

594 *Acting I.* (3)
Study of acting styles from antiquity to the present, with emphasis on important acting periods. Lecture and weekly demonstrations for the development of skill in the use of body and for projection of voice and total characterization. Two hours of lecture and two hours of laboratory weekly. *Briggs.*

595 *Acting II.* (3)
Study and acting of scenes from classical and modern dramatic literature. Intensive application of techniques studied in TA 594. Two hours of lecture and two hours of laboratory weekly. *Briggs.*

596 *Playwriting.* (3)
A course designed for students interested in creative drama. The completion of at least one play is required. May be repeated to a total of six credits. *Staff.*

597 *Teaching of Theatre Arts.* (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.*

598 *Theatre Directing I.* (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. *Dickens and Staff.*

599 *Theatre Directing II.* (3)
Analyses and direction of the characteristics of tragedy, comedy, melodrama, farce and their variants. Intensive application of techniques studied in TA 598. Prereq: TA 598 or consent of instructor. *Dickens and Staff.*

690 *Studies in Technical Theatre: Production.* (3)
Problems in advanced sceno-graphic techniques including drafting for the theatre, period composition and design, translation of the design into actuality, planning and laying out the technical schedule. Prereq: Permission of instructor.

691 *Studies in Technical Theatre: Lighting.* (3)
Investigation and critical evaluation of lighting practice and artistry in the contemporary theatre. Prereq: Permission of instructor.

794 *Special Topics in Theatre 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. (May be repeated once for a total of six credits.) *Staff.*

French Language and Literature

FACULTY

Phillip A. Duncan, chairman

Professors

Phillip A. Duncan	Ph.D., Indiana, 1958
L. Clark Keating	Ph.D., Harvard, 1934
Jean D. Charron	Ph.D., North Carolina, 1956
Theodore H. Mueller	Ph.D., Northwestern, 1953

Associate Professors

Jane Haselden	Ph.D., Kentucky, 1941
Walter G. Langlois	Ph.D., Yale, 1956

Assistant Professors

Eric C. Hicks	Ph.D., Yale, 1965
W. Robert Luszczynski	Ph.D., Wayne State, 1966
John A. Rea	A.B., Miami, 1948

Instructor

Janet Caulkins	M.A., Michigan, 1964

The Department of French Language and Literature offers curricula leading to the A.B., the M.A., and the Ph.D. degrees. As a branch of the liberal arts curriculum, one of the fundamental aims of the departmental program is to broaden and deepen the student's acquaintance with the French-speaking world through the medium of its language and literature. In addition, the Department provides training for those interested in entering the diplomatic and various other Government services where knowledge of French 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.

Departmental Requirements

For University and college requirements see page 9.

The requirements for this department are presently under review. A detailed statement of these requirements may be obtained from the chairman of the department whose name is indicated under the preceding faculty listing.

Course Descriptions

11 *French for Reading Knowledge.* (0)
This course is designed to meet the needs of upper division and graduate students who are preparing for the graduate reading examination.

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: FR 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. Prereq: FR 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: FR 101, 102 or two years of high school French. *Staff.*

202 *Intermediate French.* (3) I, II, S
A continuation of FR 201. Prereq: FR 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: FR 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: FR 201, 202.

207 *French Phonetics.* (3) I, II, S
A scientific study of French sounds based on the International System of Phonetic Symbols. Prereq: FR 201, 202.

212 *French Civilization.* (2) I, II, S
A history of French literature and the arts will be correlated with the geography and history of France, including events of scientific, political, social and economic significance. No knowledge of French is required.

395 *Independent Work in French.* (3) I, II, S
May be repeated once. Prereq: Major and a standing of 3.0 in the department.

414 *Twentieth Century French Literature in Translation.* (3)
A study of selected prose and poetry (in English translation), representative of the major trends in modern French literature. No knowledge of French required. Not open to French majors.

415 *Masterpieces of French Literature in Translation.* (3)
A study of outstanding works of French poetry and prose to the end of the nineteenth century, with particular emphasis on movements in the seventeenth and nineteenth centuries. No knowledge of French required. Not open to French majors.

450 *La Civilization Francaise au XXeme Siecle.* (3)
A survey of French culture in the XX Century with emphasis on the period following World War II. Conducted in French. Prereq: FR 202.

502 *French Literature of the XIX Century.* (3) I, II, S
A study of the representative writers of the XIX century and the more important literary movements. Outside reading and written reports on assigned topics. Prereq: FR 204, 205. *Duncan.*

503 *French Literature of the XIX Century.* (3) I, II, S
A continuation of 502. Prereq: FR 204, 205. *Duncan.*

504 *French Literature of the XVII Century.* (3) I, II, S
A course in the Classic Drama of the XVII Century. During the year the student is expected to read in class plays from the works of Corneille, Racine, Moliere. Other writers of the XVII century will also be read. Prereq: FR 204, 205. *Charron.*

505 *French Literature of the XVII Century.* (3) I, II, S
A course in the Classic Drama of the XVII Century. During the year the student is expected to read in class plays from the works of Corneille, Racine, Moliere. Other writers of the XVII century will also be read. Prereq: FR 204, 205. *Charron.*

506,507 *Advanced French Grammar.* (3 ea.) I, II, S
A study of the finer points of French grammar. Prereq: FR 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, Rousseau, Diderot, and Voltaire. Prereq: FR 204, 205.

509 *French Literature of the XVIII Century.* (3) I, II, S
A continuation of FR 508. Prereq: FR 204, 205.

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: FR 204, 205. *Langlois.*

511 *French Literature of the XX Century.* (3) I, II, S
A continuation of FR 510. Prereq: FR 204, 205. *Langlois.*

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: FR 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.*

516 *Introduction to Old French.* (3)
An introduction to the study of early French, especially of the Eleventh through the Thirteenth Centuries. Emphasis will be on understanding the language, with readings from selected literary works and discussion of Old French phonology and grammar. Prereq: FR 204, 205.

517 *Introduction to the Linguistic Structure of French.* (3)
An outline of the structure of spoken French along with an introduction to the pertinent concepts of descriptive and contrastive linguistics. Prereq: FR 203 (two semesters) or equivalent, consent of instructor. *Rea.*

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.

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. *Keating.*

603 *The Development of the French Language.* (3)
A history of the phonology and grammar of French from the origins to the present, with analysis and study of appropriate documents, literary and otherwise, to illustrate these developments, along with some introduction to the basic concepts of historical linguistics. Prereq: FR 516.

604 *Medieval French Literature.* (3)
A thorough survey of the main genres and chief works of the Middle Ages in France, with a considerable amount of readings in Old French. Prereq: FR 516.

606 *Studies in Bibliography and Research Methods.* (2)
Designed to serve the needs of students beginning graduate work in French by acquainting them with the tools of research. Prereq: Consent of instructor.

610 *Romance Philology.* (3)
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: FR 603 or 641 or equivalent. May be repeated once.

701 *Studies in French Literature of the Middle Ages.* (3)
A study of the major literary genres in French during the twelfth and thirteenth centuries, with special attention to one major type, work or author, and involving extensive reading in the texts of the period. Prereq: FR 604. *Hicks.*

702 *Seminar in the History of the French Language.* (3)
A thorough presentation of the development of the French language with special attention to morphology and syntax and to developments since the middle ages. Prereq: FR 604. *Rea.*

704 *Seminar in Classical Drama.* (3)
Intensive study of a single author or limited group of authors representative of this area of French literature. Prereq: Consent of instructor. *Charron.*

705 *Seminar in Classical Prose and Poetry.* (3)
Intensive study of a single author or limited group of authors representative of this area of French literature. Prereq: Consent of instructor. *Charron.*

708 *Seminar in the Literature of the Enlightenment.* (3)
Intensive study of selected works of one or more representatives of the Enlightenment in France. Prereq: Consent of instructor.

709 *Seminar in XVIII Century Novel and Drama.* (3)
Intensive study of one or more authors who made significant contribution in these literary genres during the XVIII century. Prereq: Consent of instructor.

710 *Seminar in Romanticism.* (3)
Intensive study of a single author or limited group of authors representative of this area of French literature. Prereq: Consent of instructor.

711 *Seminar in the Realist Novel.* (3)
Intensive study of a single author or limited group of authors representative of this area of French literature. Prereq: Consent of instructor. May be repeated for a total of 6 credits. *Duncan.*

712 *Seminar in Post-Romantic Poetry of the XIX Century.* (2)
Intensive study of a single author or limited group of authors representative of this area of French literature. Prereq: Consent of instructor. *Luszczynski.*

713 *Seminar in the Naturalist Novel.* (2)
Intensive study of a single author or limited group of authors representative of this area of French literature. Prereq: Consent of instructor. *Duncan.*

716 *Seminar in Contemporary Drama.* (3)
Intensive study of a single author or limited group of authors representative of this area of French literature. Prereq: Consent of instructor.

717 *Seminar in Contemporary Poetry.* (3)
Intensive study of a single author or limited group of authors representative of this area of French literature. Prereq: Consent of instructor.

718 *Seminar in the Contemporary Novel.* (3)
Intensive study of a single author or limited group of authors representative of this area of French literature. Prereq: Consent of instructor. *Langlois.*

719 *La Littérature engagée: Malraux, Sartre, Camus, etc.* (3)
Intensive study of works selected from the literature of commitment in the XX century. Prereq: Consent of instructor. *Langlois.*

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

769 *Residence Credit for Doctor's Degree.* (0)
May be repeated indefinitely.

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.

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. Prereq: Consent of instructor.

GEOGRAPHY

FACULTY

Joseph Raymond Schwendeman, chairman

Professors

Joseph Raymond Schwendeman — Ph.D., Clark, 1941
Thomas Parry Field — Ph.D., North Carolina, 1948
Pradyumna Prasad Karan — Ph.D., Indiana, 1956

Associate Professor

William Adriance Withington — Ph.D., Northwestern, 1955

Assistant Professor

Forrest Lester McElhoe, Jr. — Ph.D., Ohio State, 1955

Instructor

Thomas P. Grimes — M.A., Georgia, 1963

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, Location Research and Planning, 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 (GEO 152). 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.)

Departmental Requirements

For University and college requirements see page 9.

The requirements for this department are presently under review. A detailed statement of these requirements may be obtained from the chairman of the department whose name is indicated under the preceding faculty listing.

Field of Concentration Requirements: See page 50.

Course Descriptions

151 *Elements of Geography.* (3) II
An orientation course in the field of geography, certain basic facts and geographical tools. Major emphasis upon elements of weather, climate, and earth processes. *Grimes.*

152 *Regional Geography of the World.* (3) I, 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, Grimes.*

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 ANT and SOC 153 except for EDU majors.) *Schwendeman, McElhoe.*

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 SOC 154 except for EDU majors.) *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: GEO 151 or consent of instructor. *Grimes.*

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.*

Sub titles: 521 Anglo-America, 523 Kentucky, 525 Latin America, 527 Europe, 529 Asia, 535 Australia & the Pacific Islands, 537 Africa, 539 Conservation of Natural Resources, 541 Urban Areas, 543 Geographical Foundations of World Power.

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, Grimes.*

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) I

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: GEO 155. *Withington, McElhoe.*

540 *Geography of Urban Areas.* (2) II

A study of the location and growth of cities and urban areas in relation to environmental factors. Prereq: GEO 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) II

A study of the elements and controls of climate and of world climatic patterns. Prereq: GEO 151 or consent of instructor. *Grimes.*

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

A course in the construction and interpretation of maps. Prereq: GEO 151. *Field.*

548 *Applied Cartography.* (3) II

Map compilation techniques as directed by Army Map Service specifications. Enrollment by permission. Field.

550 *Regional Geography of South Asia.* (2)

A regional study of India, Pakistan, and the Himalayan Kingdoms with emphasis on politico-geographic, and socio-economic problems of the countries in the region. Prereq: GEO 151, 152, or 155, or consent of instructor. *Karan.*

551 *Special Problems in Regional Geography of South Asia.* (1)

Designed for advanced students in Geography 550 who wish to undertake research problems on the geography of South Asia to be conducted in regular consultation with the instructor. Prereq: Can be taken only concurrently with GEO 550.

552 *Regional Geography of Southeast Asia.* (2)

A study of the Southeast Asia region (between India-Pakistan to the west; China to the north; and Australia to the south) focusing on the politico-geographic, socio-economic, and resource potential problems of its countries. Prereq: GEO 151, 152, or 155, or consent of instructor. *Withington.*

553 *Special Problems in Regional Geography of Southeast Asia.* (1)

Designed for advanced students in GEO 552 who wish to undertake research problems on the geography of Southeast Asia under the direction of the instructor through regular consultations. Prereq: Can only be taken concurrently with or after taking GEO 552.

560 *Regional Geography of the Caribbean.* (2)

A regional study of Central America and the West Indies. Prereq: GEO 151, 152, or 155, or consent of instructor. *McElhoe.*

561 *Special Problems in Regional Geography of the Caribbean.* (1)

A regional study of Central America and the West Indies. Prereq: Independent reading in this field of geography. One geography course or permission of instructor.

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. Prereq: A prior major or minor in GEO or consent of instructor.

660 *Advanced Field Studies in Geography.* (3)

Field study and preparation of a report which shall include both manuscript and graphic material. This field study will be based upon the work done in the field of Geography 530, but will be carried forward to include the more difficult problems of preparation of graphic material, map composition, and manuscript preparation, such as later can be used in thesis preparation and publication. Prereq: GEO 151, 541, or 548 and 530 for GEO students, or consent of instructor for students offering field experience in allied subjects, such as Geology. May be repeated once. *Staff.*

768 *Residence Credit for the Master's Degree.* (0) I, II, S

May be repeated once.

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.*

GEOLOGY

FACULTY

Vincent Edward Nelson, acting chairman

Professors

William Randall Brown	Ph.D., Cornell, 1942
Vincent E. Nelson	Ph.D., Chicago, 1942
William C. MacQuown	Ph.D., Cornell, 1943

Associate Professors

Irving Sanborn Fisher	Ph.D., Harvard, 1952
Erwin John Lyons	Ph.D., Wisconsin, 1947
Thomas Glasdir Roberts	Ph.D., Columbia, 1949

Assistant Professors

Lois Jeannette Campbell	Ph.D., Ohio State, 1955
John V. Thrailkill	Ph.D., Princeton, 1965

The science of geology embraces the methods of inquiry by which we seek to understand the earth. These include investigations of the chemical and physical properties of earth materials; the nature and effect of earth processes; the historical interpretations of the rock record; and the history of life on the earth. Geological studies provide the information which is necessary for the discovery and exploitation of mineral resources; effective utilization of the atmosphere, oceans and land areas; and the successful planning and construction of modern engineering structures.

Geological employers include: oil, gas and mineral-producing industries; federal and state geological surveys; college and university geology departments; secondary schools as earth science teachers; museums; research institutes; engineering firms.

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 Chairman, Department of Geology.

Departmental Requirements

For University and college requirements see page 9.

The requirements for this department are presently under review. A detailed statement of these requirements may be obtained from the chairman of the department whose name is indicated under the preceding faculty listing.

Field of Concentration Requirements: See page 50.

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*

101 *Laboratory for Geology 100.*

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: GLY 104 or 200.

110 *Laboratory Work in Elementary Geology.* (1)
Prereq or Concurrent: GLY 104.

112,113 *Elementary Field Geology.* (1 ea.)
Visits are made to localities in the vicinity of Lexington to study local geologic phenomena.

120,121 *Elementary Field Work in Regional Geology.* (6 ea.)
Eight weeks in Colorado in the field. The party works along with that in GLY 524. Prereq: Elementary Geology. Special fee.

200 *Elementary Geology for Engineers.* (4)
An introduction to the principles of geology. Three lectures. One three-hour laboratory. *Lyons.*

201 *Laboratory for Geology 200.*

202 *Elementary Geology for Engineers.* (2)
The practical application of geology to engineering. Two lectures. Prereq: GLY 200. *Lyons.*

204 *Laboratory in Engineering Geology.* (1)
Prereq: GLY 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 Elementary Geology with laboratory. *MacQuown.*

212 *Mineralogy.* (3)
A study of elementary crystallography, physical properties, association, occurrence and identification of common and important minerals. Lecture, one hour; lab, four hours. Prereq: A course in chemistry (or concurrent). *Fisher.*

213 *Mineralogy.* (3)
A continuation of GLY 212 involving the study of more minerals. Emphasis is placed upon mineral occurrence, association and identification by varied techniques including x-ray diffraction, optical properties, differential thermal analysis, and qualitative chemical tests. Lecture, one hour; lab, four hours. Prereq: GLY 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 Elementary Geology. *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 Elementary Geology. *Campbell.*

220 *Field Geology.* (2)
An introduction to field methods involving the identification and tracing of formations, areal mapping, and structure contouring. Prereq or concur: GLY 210. Special fee. *Lyons.*

221 *Field Geology.* (2)
Topographic mapping. Six hours of field work a week. Prereq: GLY 210, 211; MA 112. Special fee. *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 geological features of the state other than mineral resources. This includes the major events in its geological history, the development of regional characteristics, an explanation of its scenic and natural wonders.

500 *Paleontology.* (3)
A study of fossil invertebrates, their nature, classification, and geological distribution. Lecture, one hour; lab, four hours. Prereq: GLY 210, 211 and General Zoology. *Campbell.*

501 *Paleontology.* (3)
A study of geologic faunas. Practice in determining stratigraphic horizons. Lecture, one hour; lab, four hours. Prereq: GLY 500.

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: GLY 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: GLY 210, 211. *Roberts.*

504 *Elementary Petrology.* (3)
A megascopic study of the common rocks with emphasis on the sedimentary rocks. Prereq: GLY 212, 213. *Fisher.*

505 *Elementary Structural Geology.* (3)
An introduction to Earth structures. Advanced geologic map interpretation. Prereq: GLY 210, 211; PHY 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: GLY 220, 221. Special fee.

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: GLY 210, 211. Special fee.

526,527 *Report on Field Work in Regional Geology.* (1 ea.)
Prereq: GLY 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.

540 *Geochemistry.* (3)
An introduction to element distribution and chemical reactions in geologic systems. Prereq: GLY 213, MA 113, or consent of instructor. *Thrailkill.*

541 *Geochemistry.* (3)
An introduction to chemical reactions and equilibria in geologic systems. Prereq: GLY 540. *Thrailkill.*

550 *Hydrogeology.* (3)
An introduction to hydrogeologic processes and systems in geology, including topics in fluvia geomorphology and geophysical and geochemical aspects of groundwater. Prereq: GLY 104 or 200, MA 113, or consent of instructor. *Thrailkill.*

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: PHY 211, 213; GLY 210, 211, 505. *Nelson.*

601 *Stratigraphy.* (3)
Regional stratigraphy. Sucession of faunas and the use of fossils for stratigraphic correlation. Lecture, one hour; lab, four hours. Prereq: GLY 210, 211, 500, 501. *McFarlan.*

602 *Stratigraphy.* (3)
A continuation of 601. Lecture, one hour; lab, four hours. Prereq: GLY 601.

603 *Optical Mineralogy.* (3)
A study of the optical properties of minerals by means of the petrographic microscope. Prereq: GLY 212 and 213; PHY 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: GLY 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: GLY 603. *Brown.*

606 *Advanced Economic Geology.* (3)
Lecture, two hours; lab, two hours. *Nelson.*

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.*

GERMANIC & CLASSICAL LANGUAGES & LITERATURES

FACULTY

Wayne Wonderley, chairman

Professors

Wayne Wonderley	Ph.D., Wisconsin, 1941
Paul Stapf	Ph.D., Berlin, 1937
Lawrence S. Thompson	Ph.D., North Carolina, 1938
Paul K. Whitaker	Ph.D., Ohio State, 1942

Visiting Professor

Wilbert L. Carr	LL.D., Drake, 1937

Associate Professor

Norman H. Binger	Ph.D., Ohio State, 1942

Assistant Professors

Warren J. Castle	Ph.D., Wisconsin, 1953
Penrith Goff	Ph.D., U.C.L.A., 1961

Instructor

Katharine H. Shaw	M.A., North Carolina, 1961

Lecturer

Ingeborg F. Riester	M.A., Kentucky, 1952

The Department of Germanic and Classical Languages and Literatures embraces Germanic languages, Greek and Latin. Undergraduate students are offered the choice of specialized curricula leading to the A.B. degree in these three languages. The Department also offers advanced work in the literature and philology of each of these languages, leading to the M.A. degree; and to the Ph.D. degree in German.

As a branch of the liberal arts curriculum, one of the fundamental aims of language study is to broaden an deepen our acquaintance with the world about us by presenting new aspects of its culture, ancient and modern, and a more intimate knowledge of its peoples. In addition, the Department provides training for:

1. prospective high school and college teachers of German, Greek, or Latin;
2. students who are planning to pursue graduate work or research in Classical languages, Germanic languages, his-

tory, archaeology, medieval studies, theology, philosophy, or linguistics;

3. students who are interested in entering the diplomatic and various other Government services where knowledge of foreign languages is required; and
4. students who wish to obtain a general liberal education without preparing for any specific vocation.

NOTE—It is inadvisable for the 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 units should register for the second semester of the intermediate course.

Departmental Requirements

For University and college requirements see page 9.

The requirements for this department are presently under review. A detailed statement of these requirements may be obtained from the chairman of the department whose name is indicated under the preceding faculty listing.

Field of Concentration Requirements: See page 50.

Course Descriptions

CLASSICS

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 Caesar. Emphasis on learning to read Latin. Prereq: CL 101 or one year of high school Latin.

203 *Intermediate Latin.* (3) I
Selections from Cicero, showing the orator, statesman, and humanist, 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,* or 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: Three years of high school Latin or three semesters of college Latin or 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.

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: Senior standing.

GREEK

150 *Beginning Greek.* (3) I
Easy excerpts from Greek literature. 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: CL 150 or consent of instructor.

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 their philosophy in its relation to both ancient and modern thought. Prereq: CL 151 or consent of instructor.

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

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.

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.

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, Sophocles, Vergil. Prereq: sophomore standing.

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.

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 Classics.

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, and the student may concentrate his reading in any field. No knowledge of Greek necessary.

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.

524 *Greek Literature in Translation.* (3) I
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.

525 *Latin Literature in Translation.* (3) II
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 Latin necessary.

580 *Independent Work in Classics.* (3) I, II, S
Prereq: Major and a 3.0 in department. May be repeated to a maximum of 12 credits.

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) I
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.

GERMAN

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 GER 121 with more extended exercise in easy reading, writing and pronunciation. Prereq: GER 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: GER 122. *Staff.*

222 *German Translation and Rapid Reading.* (3) I, II, S
Continuation of GER 221. Prereq: GER 221. *Staff.*

223 *Readings in Medical German.* (3) I, II, S
This course is designed to meet the needs of Pre-medical and Medical Technology students as well as Microbiology majors. The text used provides reading and builds up a graduated vocabulary in Biological Sciences. Prereq: GER 122.

224 *Readings in Medical German.* (3) I, II, S
Continuation of GER 223. Prereq: GER 223. *Staff.*

225 *Readings in Chemical German.* (3) I, II, S
This course is designed to meet the needs of Industrial Chemists and Chemistry majors. The material provides a vocabulary in Chemistry and an intimate acquaintance with the style which is characteristic of German scientific writing. Prereq: GER 122.

226 *Readings in Chemical German.* (3) I, II, S
Continuation of GER 225. Prereq: GER 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: GER 123 or permission of instructor. *Staff.*

228 *Elementary German Conversation and Composition.* (3) I, II, S
This course is conducted mainly in German. The first semester's work will be held to simple every-day terms which any student having had GER 122 should be able to master without difficulty. Prereq: GER 122 or approval of the Department.

229 *Elementary German Conversation and Composition.* (3) I, II, S
Continuation of GER 228. Prereq: GER 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: GER 222.

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: GER 222.

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)

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: GER 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 Proseminar Course: GER 230 or 231.

524 *Proseminar in Kleist.* (3) I
Whitaker

525 *Proseminar in Hauptmann.* (3) II
Binger.

526 *Proseminar in Schiller.* (3) I

527 *Proseminar in Grillparzer.* (3) II
Whitaker

528 *Proseminar in 20th Century Prose Narrative.* (3) I

529 *Proseminar in Lessing.* (3) II

530 *Proseminar in Hebbel.* (3) I
Whitaker

531 *Proseminar in 20th Century Drama.* (3) II
Goff.

532 *The German Lyric.* (3)

An intensive study of the German lyrical poem from the Age of the Baroque to the present. Prereq: six semesters of German. *Goff.*

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.

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 semesters 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.

539 *Structure of the German Language.* (3) I, II

An introduction to the phonology, morphology and syntax of modern German by means of concepts and methods of linguistic science. Prereq: six semesters of German or consent of instructor.

553 *The Teaching of Modern Foreign Languages.* (3)

A course for teachers and prospective teachers of French, Spanish, or German.

621 *Introduction to German Bibliographical Studies.* (2) I, II

An introduction to bibliography, original research, and textual criticism. Prereq: six semesters of German. *Stapf.*

622 *Theories of Literature in German.* (2)

An introduction to theories of literature with emphasis upon those of Germany and continental Europe. *Stapf.*

623 *Medieval German Literature.* (3)

A survey of the literature of the Middle High German period, with special attention to one major genre or author, and involving extensive readings in the texts of the period. Prereq: GER 537.

624 *German Literature of the 16th and 17th Centuries.* (3)

A survey of the major literary documents of the German Reformation, Renaissance, and Baroque, with special attention given to one period, and involving extensive readings in the texts of the period.

625 *German Enlightenment and Pre-Romanticism.* (3) I, II

A survey of the literary themes and forms of the *Aufklärung* and *Sturm und Drang*, with special emphasis on selected aspects of German letters of the period 1700-1775.

626 *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.

627 *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.

628 *The German Novelle.* (3) I, II

This course traces the development of the German Novelle from Goethe to Thomas Mann. Prereq: six semesters of German.

630,631 *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.

635 *Gothic.* (3)

Readings; phonology and morphology of Gothic. Prereq: Reading knowledge of German and GER 536, or consent of instructor.

636 *Old High German.* (3)

Readings; phonology, morphology, and dialects of Old High German. Prereq: Reading knowledge of German and GER 536, or consent of instructor.

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.*

770 *Seminar in Earlier German Literature.* (2)
Intensive study of a single topic from German literature (1100-1700). Prereq: GER 623 or 624. May be repeated once for credit.

771 *Seminar in 18th Century German Literature.* (2) I, II
Intensive study of a single topic from German literature of the 18th century. Prereq: GER 625 or 627 or 628. May be repeated once.

773 *Seminar in 19th Century German Literature.* (2) I, II
Intensive study of a single topic from German literature of the 19th century. Prereq: GER 626 or 627 or 628. May be repeated once.

774 *Seminar in 20th Century German Literature.* (2) I, II
Intensive study of a single problem in 20th century German literature. May be repeated once.

775 *Seminar in Germanic Philology and Linguistics.* (2)
Intensive study of a single area in the field of Germanic Philology and Linguistics. May be repeated once for credit.

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.

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, and providing opportunity for original endeavor. May be repeated to a maximum of six credits.

HISTORY

FACULTY

Carl B. Cone, chairman

Distinguished Professor

Thomas Dionysius Clark	Ph.D., Duke, 1932

Professors

Carl B. Cone	Ph.D., Iowa, 1940
David Dowd	Ph.D., California, 1944
William Clement Eaton	Ph.D., Harvard, 1929
Holman Hamilton	Ph.D., Kentucky, 1954
James Franklin Hopkins	Ph.D., Duke, 1949
Albert Dennis Kirwan	Ph.D., Duke, 1947
Shelby Thomas McCloy	Ph.D., Columbia, 1933
Paul Chester Nagel	Ph.D., Minnesota, 1952

Associate Professors

Will D. Gilliam, Jr.	Ph.D., Indiana, 1941
Robert Gerhard Lunde	M.A., Chicago, 1928
Rhea Alec Taylor	Ph.D., Chicago, 1948
Stanley John Zyzniewski	Ph.D., Harvard, 1956

Assistant Professors

Thomas B. Brewer	Ph.D., Pennsylvania, 1962
George A. Brubaker	Ph.D., Texas, 1959
William J. Chambliss	Ph.D., Michigan, 1963
E. Randolph Daniel	Ph.D., Virginia, 1966
Mary W. Hargreaves	Ph.D., Radcliffe College, 1951
Donald G. Nugent	Ph.D., Iowa, 1965
Gerard E. Silberstein	Ph.D., Harvard, 1962
Glen W. Swanson	Ph.D., Indiana, 1966
Joseph Thompson	Ph.D., Stanford, 1966
Ross Allan Webb	Ph.D., Pittsburgh, 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, 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.

Departmental Requirements

For University and college requirements see page 9.

The requirements for this department are presently under review. A detailed statement of these requirements may be obtained from the chairman of the department whose name is indicated under the preceding faculty listing.

Field of Concentration Requirements: see page 50.

Course Descriptions

104 *Europe to 1648.* (3)
Emphasis will be given to the ideas, institutions and events which, from ancient Greece and Rome through the Middle Ages, the Renaissance, the Reformation, and the early modern period, contributed significantly to the development and character of western civilization.

105 *Modern Europe since 1648.* (3)
A survey of European developments from the Peace of Westphalia to the present. A continuation of HIS 104.

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.

203 *History of British People Since the Restoration.* (3) I, II

From the Stuart period to the present. A continuation of HIS 202.

208 *Colonial Latin America.* (3)

A survey of the origins and development of Latin American Colonies and their struggle for independence.

209 *Latin American Republics.* (3)

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.

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.*

245 *The Byzantine Empire.* (3)

A study of Byzantine history from the time of Constantine the Great to the capture of Constantinople by the Turks in 1453. Prereq: HIS 104.

246 *The Ottoman Empire.* (3)

The rise and expansion of the Ottoman Empire, its relations with the European states, its position in the Near East, and the Turkish state in the Twentieth Century. Prereq: HIS 104, 105.

270 *Early Middle Ages.* (3)

A survey of European history from the Fourth through the Twelfth Centuries.

271 *Later Middle Ages.* (3)

A survey of European history from the Thirteenth through the Fifteenth Centuries.

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. *Zyzniewski.*

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. *Zyzniewski.*

295 *The Far East to 1850.* (3)

A survey of Chinese, Japanese and Korean History from earliest times to 1850. Emphasis on political, economic, social and intellectual developments. Prereq: HIS 104 or equiv.

296 *The Far East since 1850.* (3)

A continuation of 295. A survey of the political and economic modernization of traditional Far Eastern society with emphasis on nationalistic reactions to Western pressure and international rivalry in the Far East. Prereq: HIS 105 or equiv.

316 *Junior Seminar: Historical Method and Literature.* (3)

An introduction to research and writing in the field of History followed by study of the bibliography and literature of selected fields of history, with attention to problems of historiography, to schools of historical thought, and philosophies of history. To be taken during the first semester of the junior year and required of all History majors enrolled in the College of Arts and Sciences.

490 *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: HIS 104 and 105. *Lunde.*

I. EUROPEAN HISTORY

500 *Pre-Classical and Classical Greece.* (3)

A history of Greece from earliest times to the end of the Peloponnesian War.

501 *Fourth Century Greece and the Hellenistic World.* (3)

A history of Greece and the Greek world from the end of the Peloponnesian War to the Roman conquest of Egypt. Prere: HIS 500 or consent of instructor.

502 *A History of the Roman Republic.* (3)

A history of Rome from earliest times to the fall of the Republic. Emphasis will be placed upon the territorial expansion of Rome and the effects of this expansion on republican institutions.

503 *A History of the Roman Empire.* (3)

A study of the foundation of the Roman Empire, the development of Imperial institutions, social and intellectual developments of the Graeco-Roman world, the decline of Rome and the barbarian invasions of the fourth century. Prereq: HIS 502 or consent of instructor.

510 *Medieval Civilization to 1100.* (3)

The formation of a new civilization—our own—in Western Europe between the decline of the Roman Empire and the First Crusade is the central stress in this study of the cultural interests and achievements of the period 300-1100. Prereq: HIS 271 or consent of instructor. *Daniel.*

511 *Medieval Civilization since 1100.* (3)

Medieval culture at its height (1100-1350) is considered as the first notable achievement of European Civilization. Major topics are: Latin and vernacular literatures, the fine arts, philosophy, and science. *Daniel.*

513 *Medieval Institutions.* (3)

A study of the legal and political institutions and ideas of medieval Europe, exclusive of the Church and England (See HIS 579 and 561). Prereq: HIS 270, 271. *Daniel.*

519 *The Era of the Renaissance.* (3)

A historical description and analysis of the development of political, economic, social, religious, intellectual and cultural institutions of Europe from Petrarch to Erasmus. Prereq: HIS 104. *Nugent.*

520 *The Era of the Reformation.* (3)

A historical description and analysis of the development of the religious, intellectual, cultural, political, economic and social institutions of Europe from Luther to the Treaty of Westphalia. Prereq: HIS 104. *Nugent.*

521 *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 despotism and the Age of Enlightment. Prereq: HIS 104 or equivalent. *Lunde.*

522 *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.*

523 *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. *Silberstein.*

524 *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. *Silberstein.*

525 *Europe since 1919.* (3)
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. *Silberstein.*

528 *Cultural History of Seventeenth Century Europe.* (3) I
A history of the development of culture in Western and Southern Europe in various fields. *McCloy.*

529 *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.*

530 *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.*

531 *The Eighteenth Century Revolutions, 1760-1815.* (3)
The origins, development, consequences and interactions of the 18th Century revolutions, counter-revolutions and wars, and their impact upon Europe and the modern world. Special attention will be given to developments outside France and to social and economic factors. Prereq: HIS 104 and 105 or consent of instructor. *Dowd.*

534 *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: HIS 286 or graduate status or consent of instructor. *Zyzniewski.*

535 *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: HIS 286 or graduate status or consent of instructor. *Zyzniewski.*

536 *Intellectual History of Modern Russia, 1789-1917.* (3)
A survey is made of the main intellectual currents from the 18th Century to 1917, as expressed in political concepts, socio-economic doctrines and literature. Particular attention is given to the ideologies of revolutionary movements and to the interaction between ideas and the politico-economic background. Prereq: HIS 587, 584 or equivalent with consent of instructor. *Zyzniewski.*

538 *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: HIS 104, 105 or consent of the instructor. *Zyzniewski.*

539 *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: HIS 104, 105 or consent of the instructor. *Zyzniewski.*

541 *History of Modern France.* (3)
The course of French history from 1760, including the development of French political, administrative, legal, social, economic and cultural achievements and institutions and their contribution to the modern world. Prereq: HIS 104 and 105 or consent of instructor. *Dowd.*

542 *German History 1815-1941.* (3)
This course is designed as a study of domestic development in Germany. While political history is emphasized due consideration is given to social, economic and intellectual trends. Prereq: HIS 104, 105 or consent of instructor. *Silberstein.*

543 *German History since 1914.* (3)
Examines the fall of Imperial Germany, the Weimar Republic, Hitlerian period, and the post 1945 era. The course is primarily concerned with internal affairs, but attention is directed to the international scene when crucial. Prereq: HIS 104, 105 or consent of instructor. *Silberstein.*

549 *Independent Work.* (1-3)
Under special conditions selected students may investigate problems, with weekly reports to the instructor. Prereq: Major and standing of 3.0 in the department. May be repeated to a maximum of 6 credits.

II. ENGLAND AND THE BRITISH EMPIRE

550 *English Constitutional History to 1603.* (3) I
A study of the backgrounds of the English constitution. Prereq: HIS 202 or equivalent. *Cone.*

551 *English Constitutional History since 1603.* (3)
A continuation of HIS 550. The constitutional struggle between the Stuart kings and Parliament; triumph of constitutional monarchy; rise of the Cabinet; effect of democracy in recent times. Prereq: HIS 203 or equivalent. *Cone.*

552 *British Social History during the Tudor Period, 1485-1603.* (3)
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: HIS 202. *Cone.*

554 *British History since 1870.* (3)
A detailed study of Britain's political, social, diplomatic and industrial development during the recent period. Special consideration of Britain in World War I and World War II, and her position in the contemporary world. *Thompson.*

556 *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.*

557 *The British Empire and Commonwealth.* (3) II
A continuation of 556. Great Britain and the growth of the Dominions and the Commonwealth since 1860. Prereq: HIS 202 and 203. *Cone.*

558 *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. *Webb.*

III. AMERICAN HISTORY

560 *Colonial America to 1748.* (3)
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.*

561 *Colonial America and Independence, 1748-1789.* (3)
This course deals with England's triumph over France in the New World, the drastic change in her colonial policy and the rise of opposition to it, the war for American independence, and the establishment of the United States under the Constitution. Prereq: One year of American or European history. *Taylor.*

562 *The New Nation, 1789-1828.* (3)
As intensive study of the most significant men, events, and trends in the generation of American National growth. Prereq: HIS 108. *Hopkins, Hamilton.*

563 *Expansion and Conflict, 1828-1865.* (3)
A study of the territorial expansion of the United States and the growth of sectional controversy over expansion and slavery, culminating in the Civil War. Prereq: HIS 108, 109. *Hamilton, Eaton, Kirwan.*

564 *Emergence of Modern America, 1865 to 1912.* (3)
A study of the transformation of America from a rural society "isolated" from world affairs into a highly industrialized power. Prereq: HIS 108 and 109 or equiv. *Hargreaves, Brewer.*

565 *Recent History of the United States, 1912 to 1939.* (3)
An intensive study of the problems of maturing America from the election of 1912, through World War I, depression, and the New Deal to our involvement in World War II. Prereq: One year of American History. *Hargreaves, Brewer.*

566 *Recent History of the United States since 1939.* (3)
An intensive study of the development and maturation of the United States from World War II to the present, synthesizing military, diplomatic, social, economic, political and cultural changes. Prereq: One year of American History. *Hargreaves, Brewer.*

568 *Cultural and Intellectual History of the United States to 1865.* (3)
An interpretive analysis of the growth of ideas in the United States within their cultural setting before 1865. Prereq: HIS 108 or consent of instructor. *Nagel.*

569 *Cultural and Intellectual History of the United States since 1865.* (3)
An interpretive analysis of the growth of ideas in the United States within their cultural setting since 1865. Prereq: HIS 109 or consent of instructor. *Nagel.*

570 *Economic and Social History of the United, 1787-1900.* (3)
The emergence of the United States from an underdeveloped economy to an industrial state. Interwoven in the theme of economic growth are the social ramifications of change and the role of government in American economic activity. Prereq: HIS 108 and 109, ECO 251 and 252, or consent of instructor. Offered in alternate years. *Brewer.*

571 *Economic and Social History of the United States: Twentieth Century.* (3)
Emphasis is placed on 20th Century economic and social changes caused by technology, internal and external business modifications, the growing affluence of the United States, and, most importantly, the increasing role of government in American society. Prereq: HIS 108, 109, ECO 251, 252, or consent of instructor. Offered in alternate years. *Brewer.*

574 *The Diplomacy and Foreign Policy of the United States to 1919.* (3)
A survey designed to acquaint the student with the principles of American foreign policy and its historical evolution. Prereq: HIS 108 or equivalent. *Hopkins.*

575 *The Diplomacy and Foreign Policy of the United States since 1919.* (3)
A continuation of 574. Foreign policy after the United States became a world power. Prereq: HIS 109 or equivalent. *Hopkins.*

576 *The American Frontier.* (3)
A course dealing specifically with American westward expansion. Prereq: HIS 108 and 109 or equiv. *Eaton, Clark.*

577 *The American Frontier.* (3)
A continuation of HIS 576. It will consider the Trans-Mississippi West. *Eaton, Clark.*

578 *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: HIS 108. *Eaton and Kirwan.*

579 *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.*

584 *Economic History of Latin America since Independence.* (3)
Course emphasizes Latin American efforts in the 19th and 20th Centuries to promote economic and social development, the problems encountered, the role of foreign investments and diplomatic pressures, and, more recently, the economic factors in Latin American Social revolutions. Prereq: HIS 208 or 209; or ECO 102 or 103; or approval of instructor. *Brubaker.*

587 *Twentieth Century Latin American Revolutions.* (3)
An historical and comparative approach to those Latin American social revolutions that have greatly influenced political movements in other Latin American countries. Prereq: HIS 208, 209, or PS 265 or 501, or consent of instructor. *Brubaker.*

IV. THE FAR EAST

590 *Japanese History to 1600.* (3)
A broad survey of the political, social, economic, and intellectual history of Japan from earliest times to the "unification" of Japan under Hideyoshi. Prereq: HIS 104 or equiv., or consent of instructor. *Chambliss.*

591 *Japanese History since 1600.* (3)
A continuation of HIS 590, from 1600 to present. Prereq: HIS 105 or equivalent, or consent of instructor. *Chambliss.*

592 *Diplomatic History of the Far East since 1787.* (3)
A study of the international relations between China, Japan, and Korea and their relations with the major Western Powers. Prereq: HIS 105 or consent of instructor. *Chambliss.*

593 *Far Eastern History since World War II.* (3)
A study of the revolutionary political, economic and social changes occurring in China, Japan, and Korea in the aftermath of and their relations to pre-war trends will be emphasized. Prereq: HIS 105 or consent of instructor. *Chambliss.*

THE GRADUATE GROUP

a. Seminars

These are content courses presented by the lecture and discussion method and as such are distinct from those numbered "700," which are concerned with the problems and the practice of research.

600 *European Historiography.* (3) I
McCloy.

603 *American Historiography.* (3) II
Nagel.

606 *Historical Criticism.* (3)
Required of every entering graduate student in history who has not had an equivalent course.

611,612 *Readings in Ancient History.* (3 ea.)
An intensive study of the bibliography of Greek and Roman history, primary (in translation) and secondary, criticism and analysis of selected books, and of recent articles in professional journals. Prereq: Consent of instructor.

613,614 *Readings in Medieval History.* (3 ea.)
A course designed to provide systematic and extensive reading over broad areas of the period indicated, to acquaint the student with the standard source materials and literature of the field, and to provide opportunity for critical discussion of outstanding issues. Prereq: An undergraduate course in Medieval History. *Daniel.*

621,622 *Readings in European History, 1500-1815.* (3 ea.)
A course designed to provide systematic and extensive reading over broad areas of the period indicated, to acquaint the student with the standard source materials and literature of the field, and to provide opportunity for critical discussion of outstanding issues. Prereq: An undergraduate course in European History.

623,624 *Readings in European History Since 1815.* (3 ea.)
A course designed to provide systematic and extensive reading over broad areas of the period indicated, to acquaint the student with the standard source materials and literature of the field, and to provide opportunity for critical discussion of outstanding issues. Prereq: An undergraduate course in European History.

625,626 *Readings in British and British Empire History.* (3 ea.)
An intensive study of the bibliography of British and British Empire History, primary and secondary, with readings, analyses and criticisms of selected titles in the literature of the field and of recent published research in the professional journals. Prereq: An undergraduate course in British History.

631,632 *Readings in United States History to 1865.* (3 ea.)
A course designed to provide systematic and extensive reading over broad areas of American History in the period indicated, to acquaint students with source materials and the secondary literature of the field, and to provide opportunity for critical discussion of books and issues. Prereq: An undergraduate course in American History.

633,634 *Readings in United States History Since 1865.* (3 ea.)
A course designed to provide systematic and extensive reading over broad areas of American History in the period indicated, to acquaint students with source materials and the secondary literature of the field, and to provide opportunity for critical discussion of books and issues. Prereq: An undergraduate course in American History.

635 *Readings in Modern Russian History.* (3) I
A guided program (with readings primarily in translation) designed to familiarize the student with the broad patterns and specific developments of the modern imperial period (beginning with Peter I), to analyze the position of Russia in international affairs, and to assess the causes and nature of the 20th century revolutions. Lecture, 3 hours. Prereq: Consent of instructor. *Zyzniewski.*

636 *Readings in Modern Russian History.* (3) II
A program relying considerably upon readings (mostly in translation) which will offer the student a broad comprehension of the nature of the Soviet system and of the blocs of other Marxist states by focusing upon the ideological foundations, evolutionary patterns and specific developments that comprise the history of the Soviet Union from 1917 to the present. Lecture, 3 hours. Prereq: Consent of instructor. *Zyzniewski.*

637,638 *Readings in Latin American History.* (3 ea.)
Supervised reading at the graduate level of a select topical bibliography covering the main themes of colonial Latin American history or the modern period. Prereq: HIS 208 and 209 or consent of instructor. *Brubaker.*

639 *Readings in Far Eastern History.* (3)
Supervised reading at the graduate level of a select topical bibliography covering the main themes of Chinese history the Ch'ing Dynasty (1644-1912) and Japanese history during the Tokugawa period (1615-1867). Prereq: HIS 295 and 296 or consent of instructor.

640 *Readings in Far Eastern History.* (3)
Supervised reading at the graduate level of a select topical bibliography covering the main themes of Chinese history since 1895 and Japanese history since 1868. Prereq: HIS 295 and 296 or consent of instructor.

COURSES IN THE 700 GROUP

Seminars—basically research in character. These are not content courses. They provide special training in historical research (collection and critical analysis of bibliography, note-taking and organization of materials, and the presentation of a properly documented research paper). Topics will be chosen in keeping with the interests of the professors in charge. Two class hours and one conference hour. Any of these seminars may be repeated for a maximum of 12 credits.

700 *Special Problems in History.* (3)
Visiting professors will conduct research seminars in topics or problems in which they have special research interests. Prereq: At least one year of graduate study in History.

705 *Seminar in Ancient History.* (3)
Select topics in Greek and Roman history, with an intensive study of a particular area or aspect of the ancient world. Prereq: Reading knowledge of at least one ancient language and one modern foreign language, or consent of instructor.

706 *Seminar in Medieval History.* (3)
Directed research on a common problem. Prereq: Latin and one modern European language.

710 *Seminar in American History, 1607-1783.* (3)
May be repeated to a total of 12 credits.

711 *Seminar in American History, 1783-1865.* (3)
May be repeated to a total of 12 credits.

712 *Seminar in American History, 1865 to the Present.* (3)
May be repeated to a total of 12 credits.

715 *Seminar in Latin American History.* (3)
This seminar course will consider special problems encountered in the study of Latin American History. Prereq: HIS 208, 209, 584 or consent of instructor.

720 *Seminar in Modern European History, 1500-1714.* (3)
May be repeated to a total of 12 credits.

721 *Seminar in Modern European History 1714-1870.* (3)
May be repeated to a total of 12 credits.

722 *Seminar in Modern European History, 1870 to the Present.* (3)
May be repeated to a total of 12 credits.

730 *Seminar in Modern British History.* (3)

740 *Seminar in Kentucky History.* (3)
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.*

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.

HYGIENE & PUBLIC HEALTH

FACULTY

N. J. Pisacano, chairman

Professors

N. J. Pisacano — M.D., Hahnemann, 1951
William Brooks Hamilton — Ph.D., Massachusetts, 1935

Associate Professor

Wilbur August Heinz — M.S.P.H., Michigan, 1930

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.

Departmental Requirements

For University and college requirements see page 9.

The requirements for this department are presently under review. A detailed statement of these requirements may be obtained from the chairman of the department whose name is indicated under the preceding faculty listing.

Field of Concentration Requirements: see page 50.

Course Descriptions

110 *Introduction to Human Biology and Health.* (3)
A course describing basic anatomical and physiological functions of various body cells, tissues, and organs and their interrelationships as a functioning whole. It also deals with basic information as to *maintenance of health;* brief description of the major and common diseases affecting man—their control and prevention.

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.*

500 *Public Health.* (3) I, S
A consideration of the cause, prevalence, transmission, and control of preventable diseases. *Hamilton.*

501 *Public Health.* (3) II, S
A continuation of HYG 500. Administrative and organizational approach to disease prevention. *Heinz.*

510 *Health Education.* (3) II, S
A course dealing primarily with principles of health education, health service, and health protection. *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
Environmental sanitation and the effects of environment on the control of communicable diseases. Prereq: MB 200, 400 or 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 had PSY 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) I, S
An individual problems course for students and teachers in service, based upon a systematic attack upon the health problems of a school. *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 HYG 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 HYG 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. *Staff.*

770 *Seminar.* (1) I, II, S
Staff.

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

Lawrence A. Allen, chairman

Professors

Lawrence A. Allen — Ph.D., Chicago, 1961
Maurice Derby Leach, Jr. — B.L.S., Chicago, 1946

Associate Professor

Laura Katharine Martin — M.A., Stanford, 1940

Assistant Professors

Robert Edgar Cazden — Ph.D., Chicago, 1965
Layton Barnes Murphy — Ph.D., Michigan, 1965

Instructor

Nancy B. Pillon — M.S.L.S., Kentucky, 1959

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.

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 Chairman 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 and related subjects; 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 12 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 Chairman of the Department, candidates may take up to one-third of their graduate work in related subjects.

CERTIFICATION

Prerequisite: Junior standing. Library Science courses meeting the Kentucky State Board of Education requirements are: 513, 529, 533, 536, 537, 539, and 586 when qualifying in the secondary program.

Other libraries: Individual programs are arranged for students qualifying for sub-professional positions.

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

395 *Independent Work.* (2) 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.*

513 *Organization and Administration of the School Library.* (3) I, S
Designed to help beginning librarians organize collections for and administer school libraries. Planning and managing the library; ordering and preparing materials for use; and work with students and teachers. *Cole.*

521 *Libraries and Librarianship.* (3) I, S
An orientation course designed to give students a general understanding of libraries and library work. *Leach.*

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, S
A study of the essential reference works, including dictionaries, encyclopedias, atlases, yearbooks, periodical indexes, and the more important subject and trade bibliographies. *Katz.*

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. (Covers types of materials of especial interest to readers of high school age—grades 7-12). Consideration given to materials for recreational reading and use with classes in high school. Some attention also paid to types of adult materials suitable for more mature students, and to problems of selection. *Cole.*

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. (Covers various types of materials for use by and with children of grades 1-6. Consideration given to types of books available in various fields, the authors of the books, their illustrators, and the use made of these materials in the school curriculum and as recreational reading.) *Cole.*

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: LS 513, 529 or equiv. and two of the following courses: 533, 536, 537. *Martin.*

545 *Organization of Library Materials.* (3) I, 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. *Katz.*

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 EDU 544.)

612 *The Public Library.* (3) II, S
A study of the public library as a functioning institution. The course will include case studies of specific libraries. *Leach.*

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). *Cole.*

614 *The College and University Library.* (3) II, S
A study of the college and university library as a functioning institution. The course will include case studies of specific libraries. *Clarke.*

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. *Staff.*

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: LS 529 or equivalent.

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: LS 533 or equivalent. *Katz.*

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: LS 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. *Katz.*

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: LS 552 or equivalent. *Katz.*

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: LS 529, 533, and 545, or equivalent. *Katz.*

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. *Katz and Leach.*

781 *Individual Study in Library Science.* (1) I, II, S
Individual 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

FACULTY

Wimberly C. Royster, chairman

Professors

Wimberly C. Royster	Ph.D., Kentucky, 1952
Frederick V. Atkinson	Ph.D., Oxford, 1939
James Clifton Eaves	Ph.D., North Carolina, 1949
Frank R. Keogh	Ph.D., Cambridge, 1954, visiting
S. M. Shah	Ph.D., London, 1942

Associate Professors

James Donnell Buckholtz	Ph.D., Texas, 1960
Donald B. Coleman	Ph.D., Purdue, 1961
Nicholas Findler	Ph.D., Budapest, 1956
Thomas L. Hayden	Ph.D., Texas, 1961
Donald C. Leigh	Ph.D., Cambridge, 1954
John E. Mack	Ph.D., Purdue, 1959
Vojislav Maric	Ph.D., Belgrade, 1957
A. C. R. Newbery	Ph.D., University of London, 1962
Stephen E. Puckette	Ph.D., Yale, 1957
James E. Simpson	Ph.D., Yale, 1961
James H. Wells	Ph.D., Texas, 1958

Assistant Professors

James C. Beidleman	Ph.D., Pennsylvania State, 1964
Raymond H. Cox	Ph.D., North Carolina, 1962
Carl E. Eberhart	Ph.D., Louisiana State, 1966
Joseph B. Fugate	Ph.D., Iowa, 1964
Tom C. Hutchinson	Ph.D., Iowa, 1966
Charles N. Kellogg	Ph.D., Louisiana State, 1964
Lynn C. Kurtz	Ph.D., Utah, 1964
Donald Leon Prullage	Ph.D., Purdue, 1964
John Selden	Ph.D., Georgia, 1963
T. K. Seo	Ph.D., Indiana, 1965

Lecturer

Clifford J. Swauger, Jr.	M.A., Kentucky

The courses offered by the Department of Mathematics serve two purposes.

First, for students concentrating in mathematics, there are undergraduate courses leading to either a B.A. or a B.S. in mathematics. It is possible to major in mathematics in the College of Arts and Sciences and simultaneously to obtain a teacher's certificate. The department offers graduate work leading to the M.A., M.S., and Ph.D. degrees. The Ph.D. is currently granted in the fields of complex analysis, functional analysis, algebra, topology, numerical analysis, and applied mathematics.

Second, the Department of Mathematics provides courses to fit the specialized needs of students in other departments and colleges: physical sciences, life sciences, philosophy, social sciences, engineering, and commerce. It provides special background training for the prospective elementary and secondary school teacher. It offers a two-year sequence for Honors Program students during their freshman and sophomore years, and independent study for qualified upperclassmen.

Departmental Requirements

For University and college requirements see page 9.

The requirements for this department are presently under review. A detailed statement of these requirements may be obtained from the chairman of the department whose name is indicated under the preceding faculty listing.

Field of Concentration Requirements: see page 50.

Course Descriptions

2 *Solid Geometry.* (non-degree credit)
A study of lines, planes, cubes, spheres, cones, and cylinders. For the student who has not had this subject in high school. Prerequisite for MA 211. Prereq: 1 unit high school plane geometry.

110 *College Algebra and Trigonometry.* (5)
An integrated course in algebra and trigonometry covering the standard materials of these two courses. Prereq: One unit high school algebra, one unit high school plane geometry, and score of 60 or above on American College Test. Non-degree credit effective September 1967.

111 *College Algebra.* (3) I, II, S
Standard course. Prereq: 1 unit high school algebra. (Credit not allowed for both 110 and 111.) Non-degree credit effective September 1967.

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 MA 111. Non-degree credit effective September 1967.

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: MA 110 or 111 and 112.

115 *Elementary Analysis I* (Honors Mathematics). (3)
MA 115, 116, 215, and 216 constitute a four-semester sequence of honors mathematics and when completed will include as total content the following topics: Real number system, least upper bound axioms, functions, integral and differential calculus, elementary differential equations and vector algebra. Prereq: MA test score 90 or better or permission of the Department of Mathematics.

116 *Elementary Analysis II.* (4)
Continuation of MA 115. Prereq: MA 115 or consent of Department.

121 *Mathematics of Finance.* (3)
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: MA 111 or equivalent.

122 *Fundamental Concepts of Mathematics I.* (3)
The real numbers, binary systems, logic, sets, Boolean Algebra, functions, introductory calculus. Prereq: 2 units of high school algebra or MA 111 or equivalent.

201 *Fundamentals of Elementary Mathematics.* (3) I, II
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: Open only to elementary and junior high school teaching majors.

202 *Fundamentals of Elementary Mathematics.* (3)
A course designed to give elementary teachers a basic understanding of the structure of the real number system, elementary number theory and geometry. This course is for elementary education majors only. Prereq: MA 201 or 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: MA 113.

212 *Analytics and Calculus III.* (4) I, II, S
Vectors, determinants, space geometry, partial differentiation, multiple integrals, infinite series, complex numbers. Prereq: MA 211.

215 *Elementary Analysis III.* (4)
The third semester of a four-semester sequence designed for mathematics majors and honors students. Content: Real number system, least upper bound axiom, functions, integral and differential calculus, elementary differential equations, vector algebra. Prereq: MA 116 or consent of Department.

216 *Elementary Analysis IV.* (4)
Continuation of MA 215. Prereq: MA 215 or consent of Department.

222 *The Fundamental Concepts of Mathematics II.* (3)
A continuation of MA 122, probability, statistical curves, matrices and determinants, Linear algebra and groups, linear programming. Prereq: MA 122, or consent of instructor.

261 *Introduction to Number Theory.* (3) I
The division algorithm, Diophantine Equations, linear and quadratic congruences, historical enrichment material, Pythagorean triplets, open problems. Prereq: Consent of instructor.

262 *Linear Algebra.* (3) II
Real numbers, number fields ,single-valued mappings, vectors, vector spaces, determinants, linear transformations, second and third order square matrices. Prereq: Consent of instructor.

341 *Topics in Geometry.* (3)
Selected topics in geometry including Euclidean and non-Euclidean geometry (Hyperbolic and Elliptic Geometry). Convex spaces. Material to accent the contrast among the various geometries. Prereq: MA 211 or consent of instructor.

351 *Elementary Topology.* (3)
A beginning course in topology designed to develop mathematical maturity in topology and to cover the basic topology which is used in beginning graduate course in analysis. Open and closed sets, limits, continuous maps and homeomorphisms, connectedness, topological metric and compact spaces. Particular attention will be paid to the real line and the plane. Prereq: Consent of instructor.

362 *Introduction to Modern Algebra.* (3)
Groups, sub-groups, normal sub-groups, factor groups, rings, ideals, factor rings, homomorphisms, isomorphisms. Prereq: MA 211 or consent of instructor.

371 *Introduction to Modern Algebra.* (3)
Groups, sub-groups, normal sub-groups, factor groups, rings, ideals, factor rings, homomorphisms, isomorphisms. Prereq: Consent of instructor.

395-396 *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.

401 A *Historical Development of Mathematics.* (3)
A historical development of mathematics contrasting early solutions and approximations to modern techniques. Treats a vast number of mathematical problems from the process of elementary counting to the calculus and number theory. Prereq: MA 261, 341 or consent of instructor.

421 *Elementary Numerical Methods.* (3)
Outline of capabilities and limitations of the computer. Number representation. Propagation of errors through basic arithmetical operations. Applications of analysis to error-estimation. Linear and non-linear equation solving. Matrix eigenvalues. Prereq: MA 211, 262 or equivalent.

431 *Differential Equations.* (3)
First-order equations, special second-order equations, series solutions, higher order equations and systems. Prereq: MA 212.

432 *Methods of Applied Calculus I.* (3) I
Limits; continuity; infinite series and sequences; differentiable functions; implicit functions; line, surface, and space integrals; Fourier series and integrals; vector analysis; matrices; partial differential equations; complex variables and conformal mapping.

433 *Methods of Applied Calculus II.* (3) II
A continuation of MA 432. Prereq: MA 432.

462 *Matrix Analysis.* (3)
Vectors, matrices, vector-valued and matric-valued functions, differentiation, integration, Jacobians, Wronskians, inversion of matrices, Eigen Values, vectors, matrices of special forms, inner product spaces and tensors. Prereq: MA 262 or consent of instructor.

473 *Introduction to Complex Variables and Applications I.* (3)
An introductory course to complex variable theory with applications. Complex numbers, elementary properties of analytic functions, Cauchy theorems, power series, residue theory and conformal mapping. *Prereqs* MA 432 or equivalent.

485 *Fourier Series and Boundary Value Problems.* (3)
An introductory treatment of Fourier series and its application to the solution of boundary value problems in the partial differential equations of physics and engineering. Orthogonal sets of functions, Fourier series and integrals, solution of boundary value problems, theory and application of Bessel functions and Legendre polynomials. Prereq: MA 431 and 432 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 our present 500 or 600 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: MA 212.

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.

525 *The Calculus of Finite Differences.* (3)
A study of the methods of differencing, interpolation, finite integration and difference equations. Prereq: MA 212.

532 *Ordinary Differential Equations.* (3)
Use of matrix formalism, stability and oscillation theory for linear equations with constant and with variable coefficients, singular points, existence theorems, non-linear oscillations. Prereq: MA 431, 462.

533 *Partial Differential Equations.* (3)
Existence theorems and methods of solution for first order equations. Linear second order equations. Prereq: MA 431, 462 or consent of instructor.

535 *Vector and Tensor Analysis.* (3)
The algebra and calculus of vectors; theory of tensors; quadratic differentiable forms; Riemannian geometry. Emphasis on tensor analysis. Prereq: MA 431 or consent of instructor.

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: MA 431.

537 *The Operational Calculus.* (3)
The theory of the inverse Laplace Transformation. Applications in advanced boundary value problems. Fourier Transforms and applications. Prereq: MA 536.

538 *Elementary Numerical Analysis.* (3)
Interpolation. Gaussian quadrature, orthogonal polynomials. Richardson process. Numerical treatment of ordinary differential equations and intermediate linear algebra. Linear difference equations. Prereq: MA 421 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.

543 *Introduction to Higher Geometry.* (3)
Emphasis on fundamentals common to all geometry. Geometries associated with the projective group and the group of circular transformations. Prereq: Consent of instructor.

545 *Algebraic Curves.* (3)
Topics include general properties of algebraic curves, the theory of residuation, singular points, covariant curves, unicursal curves, systems of curves.

551 *Topology.* (3)
General topology, Hausdorf spaces, normal spaces, connectedness and compactness. Prereq: Consent of instructor.

561 *An Introduction to Modern Algebra.* (3)
Integral domains, Rational numbers and Fields, Polynomials, Real and Complex numbers, groups, vector spaces, Canonical Forms, Algebra of classes, rings and ideals, algebraic number theory, Galois Theory. Prereq: Consent of instructor.

565 *Introduction to Matrices.* (3)
The algebra of matrices, linear transformations, determinants of matrices, systems of equations, applications. Prereq: MA 211.

566 *Introduction to Theory of Numbers.* (3)
Divisibility, prime numbers, congruences and residues, Diophantine equations. Prereq: Consent of instructor.

571 *Introduction to Analysis.* (3) I
Point sets on the line and in Euclidean spaces, metric spaces, continuous functions, sequences, series.

572 *Introduction to Analysis.* (3) II
Functions of bounded variation, Riemann-Stieltjes integration, sequences of continuous functions, Fourier series, functions of several variables.

573 *Introduction to Complex Variables and Applications II.* (3)
Continuation to MA 473; boundary value problems, analytic continuation, contour integration, special functions. Prereq: MA 473.

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 *Independent 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 *Advanced Mathematical Statistics.* (3)
Theory of sampling, the Chi-square distribution, testing statistical hypotheses. Prereq: MA 521.

632 *Advanced Differential Equations.* (3)
Existence theorems, linear systems, systems with periodic coefficients, eigenvalue problems, non-linear equations, partial differential equations. Prereq: MA 532 or consent of instructor.

638 *Advanced Numerical Analysis.* (3)
Continuous and discrete curve-fitting. Numerical treatment of advanced linear algebra and partial differential equations. Linear programming. Prereq: MA 538.

641 *Differential Geometry I.* (3) I
Tensor products, exterior algebra, differentiable maps, manifolds, geodesics, metric properties of curves in En, fundamental forms, surfaces. Prereq: Consent of instructor.

642 *Differential Geometry II.* (3)
A continuation of MA 641.

651 *General Topology.* (3)
Embedding and metrization, compact spaces, uniform spaces and function spaces. Prereq: MA 551.

653 *Dimension Theory.* (3)
Primarily concerned with dimensions of separable metric spaces. Will also consider the relationships between various definitions of dimensions. Prereq: MA 651.

661 *Linear Algebra.* (3)
Fields, vector spaces, linear transformations, dual spaces, matrices, associated with linear transformations, eigen vectors, tensor products, canonical forms, adjoint matrices. Prereq: MA 561 or consent of instructor.

662 *Modern Algebra II.* (3)
Operator groups, Jordan-Holder theorem, direct products, decompositions of operator groups, Krull-Schmidt theorem, modules, chain conditions on submodules, Hilbert basis theorem, semisimple modules, Euclidean rings and principal ideal rings. Prereq: MA 661 or consent of instructor.

665 *Theory of Matrices.* (3)
Equivalence, inverses, symmetric and Hermetian matrices, similarity, canonical forms. Applications to systems of linear equations, differential equations, quadratic forms. Prereq: MA 561 or consent of instructor.

667 *Group Theory.* (3)
A study of homomorphisms for groups, finite groups, solvable groups, nilpotent groups, free groups, and abelian groups. Lecture, three hours. Prereq: MA 561, 661, or equivalent.

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: MA 571, 572.

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.

681 *Measure and Integration.* (3)
Lebesque measure and integration on the line, topics from the general theory of measure and integration including the Fubini theorem, absolutely continuous set functions and the Radon-Nikodym theorem. Prereq: MA 572 or consent of instructor.

682 *Function Theory and Linear Spaces.* (3)
Equicontinuous families, the theorems of Arzela and Ascoli, elementary theory of Banach spaces, linear functionals; LP spaces and C(X). Prereq: MA 681.

683 *Convergence and Summability.* (3)
Fundamental limit ideas applied to infinite sequences, infinite series, infinite products, etc. Summability of Cesaro, Holder, Abel, Borel, and Leroy. Prereq: MA 571 or consent of instructor.

685 *Fourier Series.* (3)
Expression of a general periodic function as a Fourier series, sufficient conditions for convergence, Fejer's theorem, applications. Prereq: MA 571.

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 in the 600 group for graduate students. Prereq: Major standing of 3.0 in department. 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: MA 651.

753 *Functional Analysis.* (3)
Locally convex linear topological spaces; Banach algebras; function algebras; Fourier transforms; Linear Operators.

754 *Functional Analysis.* (3)
A continuation of MA 753.

755 *Selected Topics in Topological Algebra.* (3)
Selected topics from: Lie groups, transformation groups, topological groups, semigroups, rings, semirings, and lattices. Prereq: MA 651 or consent of instructor.

756 *Seminar in Topological Algebra.* (3)
Reports and discussions of recent advances in topological algebra. Emphasis will be placed on semigroups, cohmology of clans, lattices, semirings, and rings. Prereq: MA 755.

768 *Residence Credit for Master's Degree.* (0)
This course is designed for graduate students working for advanced 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 advanced degree. The time-credit is on the same basis as for any other course but no point-credit is given. May be repeated indefinitely.

771-772 *Selected Topics in the Theory of Complex Variables.* (3 ea.)
Analytic continuation, functions with natural boundaries, gap theorems, over-convergence, entire functions, Dirichlet series. Prereq: Consent of instructor.

773,774 *Selected Topics in Analysis.* (3 ea.)
Theory of approximation; Riemann Surfaces; Banach algebras; advanced topics in real analysis, generalized functions and distributions.

777,778 *Mathematical Seminar.* (3 ea.)

MICROBIOLOGY

FACULTY

Samuel F. Conti, chairman

Professors

Samuel F. Conti	Ph.D., Cornell, 1959
Jack Norman Baldwin	Ph.D., Purdue, 1950
James Charles Humphries	Ph.D., Yale, 1944
Isaac Ruchman	Ph.D., Cincinnati, 1944
Ralph Holder Weaver	Ph.D., Michigan State, 1926
Ralph Franklin Wiseman	Ph.D., Wisconsin, 1956

Associate Professors

M. I. H. Aleem	Ph.D., Cornell, 1958
Ogden Frazelle Edwards	Ph.D., Yale, 1936

Assistant Professor

Kingsley Morton Stevens	M.D., Harvard, 1947

The Department of Microbiology, as a unit in the School of Biological Sciences, is concerned with an understanding of the principles of structure and function of living organisms as they can be learned through the study of microorganisms. Courses from the elementary to the advanced graduate level deal with various phases of metabolism, growth and development, and cytology. They also deal with the principles of genetics and with the ecological relationships of microorganisms with each other and with higher plants and animals. The processes by which viruses and the various microorganisms produce disease and the mechanisms involved in immunity to infection are studied. Techniques such as those used in fine structure study including electron microscopy and in serological studies receive attention. Courses also include consideration of fundamental principles involved in the applications of Microbiology.

Courses are available for students who wish simply to obtain an understanding of life processes, for those who plan to become biology teachers, for those who plan careers in medicine, agriculture or industry, as well as those who plan to become professional biologists.

Students who obtain a Bachelor of Science degree with a major in Microbiology may qualify to take an examination for registration in the National Registry of Microbiologists of the American Academy of Microbiology by meeting the requirements of the Department in Mathematics and the Physical Sciences and taking a minimum of 30 credits in the Biological Sciences including 20 in Microbiology.

The Department of Microbiology offers the Master of Science Degree in the various fields of Microbiology, and the Doctor of Philosophy degree in the fields of morphology and physiology of microorganisms, microbial genetics, immunology, and medical and public health microbiology and virology.

Graduate and advanced undergraduate students have an opportunity to participate in research programs in the Department.

Departmental Requirements

For University and college requirements see page 9.

The requirements for this department are presently under review. A detailed statement of these requirements may be obtained from the chairman of the department whose name is indicated under the preceding faculty listing.

Field of Concentration Requirements: see page 50.

Course Descriptions

99 *Practicum in Medical Technology.* (0) I, II, S
Students are required to spend three months during the summer performing, under supervision, various clinical laboratory tests in one of the approved clinical laboratories in Lexington. Prereq: MB 510, 511 and 550. *McClellan, Resinger, Stewart, 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.*

101 *Laboratory for Microbiology 100.*

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: MB 100. *Weaver and Wiseman.*

103 *Laboratory for Microbiology 102.*

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: PGY 206; CHE 100.

111 *Laboratory for Microbiology 110.*

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: MB 110.

113 *Laboratory for Microbiology 112.*

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: CHE 112 or 104. *Scherago or Baldwin and others.*

201 *Laboratory for Microbiology 200.*

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: MB 400 or 200; or 102; CHE 112. *Weaver and Humphries.*

211 *Laboratory for Microbiology 210.*

220 *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: MB 400 or 200; or 102 and CHE 112. *Weaver and Humphries.*

221 *Laboratory for Microbiology 220.*

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 hospitals in Lexington. Lab, twelve hours, and eighteen hours, respectively. Prereq: MB 510, 511. *McClellan, Resigner, Stewart, and others.*

350 *Seminar.* (1) I, II
Review of current literature in microbiology; presentation of papers on work in progress in the department or on assigned topics; reports on meetings of national scientific 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: CHE 112 or 104. *Baldwin and others.*

401 *Laboratory for Microbiology 400.*

410 *Applied Bacteriology.* (2) I, II, S
A course in bacteriological analysis to supplement courses 200 and 400. Lab, four hours. Prereq: MB 400 or 200; or 102 and CHE 112.

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: MB 400 or 200; or 102 and CHE 112. *Ruchman and Humphries.*

501 *Laboratory for Microbiology 500.*

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 or concurrent: MB 500.

511 *Laboratory Diagnosis.* (3) II, S
Continuation of MB 510. Examination of blood continued. Laboratory diagnosis of parasitism and infectious diseases. Lab, six hours. Prereq or concurrent: MB 500.

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: PGY 502, ZOO 200, 515 and 506; MB 500. *McClellan, and others.*

521 *Laboratory for Microbiology 520.*

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: MB 500. *Humphries.*

551 *Laboratory for Microbiology 550.*

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: MB 400 or 200; or 102 and CHE 112. *Weaver and Wiseman.*

611 *Laboratory for Microbiology 610.*

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: MB 400 or 200; or 102 and CHE 112. *Weaver and Wiseman.*

621 *Laboratory for Microbiology 620.*

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.

631 *Laboratory for Microbiology 630.*

632 *Public Health Bacteriology.* (3) II, S
Continuation of 630. Lectures and recitations, one hour; lab, four hours. Prereq: MB 630.

633 *Laboratory for Microbiology 632.*

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: reading knowledge of one foreign language; MB 550.

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: MB 400 or 200; or 102 and CHE 232. *Baldwin.*

641 *Laboratory for Microbiology 640.*

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: MB 550; CHE 444. *Humphries.*

652 *Laboratory for Microbiology 651.*

660 *Electron Microscopy.* (3) I, 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: PHY 232, 242. *Edwards.*

661 *Laboratory for Microbiology 660.*

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: MB 550. *Ruchman.*

671 *Laboratory for Microbiology 670.*

700 *History of Bacteriology.* (2) I, S
Conferences, two hours. Prereq: MB 550. *Weaver.*

712 *Bacterial Anatomy, Taxonomy and Nomenclature.* (3) II
Study of anatomical structure of various groups of bacteria, theories of staining, principles of taxonomy, code of nomenclature of bacteria and viruses. Cytochemical procedures used in laboratory. Lectures and conferences, two hours; lab, two hours. Prereq: MB 550, recommended MB 660. *Weaver.*

714 *Microbial Genetics.* (4) I
The nature and action of genetic material in microorganisms. Lectures and conferences, two hours; lab, 4 hours. Prereq: Basic courses in Genetics and Microbiology. *Baldwin.*

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: reading knowledge of German or French. *Wiseman.*

721 *Laboratory for Micriobiology 720.*

722 *Metabolism of Microorganisms.* (4) II
Continuation of MB 720. Lectures or conferences, two hours; lab, four hours. Prereq: MB 720. *Wiseman.*

723 *Laboratory for Microbiology 722.*

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 microbiology; presentation of papers on work in progress in the department or on assigned topics; reports on meetings of national scientific societies. Required of all graduate students. Two hours. May be repeated to a maximum of 10 credits. *Staff.*

790 *Research in Bacteriology.* (3-6) I, II, S
Lab, ten hours. May be repeated to a maximum of 12 credits. *Senior Staff.*

795 *Research in Bacteriology.* (3-6) I, II, S
Lab, ten hours. May be repeated to a maximum of 24 credits. *Senior Staff.*

MILITARY SCIENCE (ARMY ROTC)

FACULTY

Howard C. Parker, chairman

Professor

Howard C. Parker — M.A., Columbia, 1939

Assistant Professors

James B. Channon — A.B., Kentucky, 1962
Bruce A. Martin — A.B., Princeton, 1959
Max G. Pearsall — B.S., U.S. Military Academy, 1958
Ronald W. Schuette — B.A., Gettysburg College, 1958

Instructors

Roy B. Alexander, Harold N. Haley, Harry Wertz Jones

THE U.S. ARMY 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 Army 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 Department of Army 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 Controller 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.

Retainer Pay. Advanced course enrollees receive retainer pay of $40.00 per month.

Basic Course. The military department offers a two years' basic course in military science and tactics. The basic course 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 for the basic course may be given for service in the United States or allied military, naval, or air forces. This credit will not necessarily admit the student to advanced military science.

Advanced Course. The advanced course of two years, including a six-weeks Summer encampment at the conclusion of the junior (MS 111) 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 for further training, or who have made application, been accepted, and have successfully completed a Summer encampment prior to entering the junior (MS 111) year. Recommendations and acceptance for this course will be limited to those students who have manifested special interest during the basic course or the Summer encampment, 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.

Departmental Requirements

For University and college requirements see page 9.

The requirements for this department are presently under review. A detailed statement of these requirements may be obtained from the chairman of the department whose name is indicated under the preceding faculty listing.

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; role of Army in national security; 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; American military history; leadership, drill and command. Prereq: MS 101 and 102.

ADVANCED COURSE

Upon successful completion of the Advanced Course (MS 111 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 or a Summer encampment, 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.)
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: MS 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: MS 301, 302. *Staff.*

344 *Army ROTC Flight Training Program.* (3)
Academic classroom instruction (35 hours) in Theory and principles of Flight, Federal Aviation Agency Air Regulations, fundamentals and principles of meteorology as applied to aviation, principles and techniques of aerial navigation by electronic instruments, use of flight computers and instruments, aerial safety practices. Laboratory instruction (36½ to 39½ hours) in Aircraft Performance, Aerial Maneuvers and Aircraft manipulations in controlled and emergency situations. In-flight instruction of principles and techniques of piloting and aircraft, practical application of principles and techniques learned in academic and laboratory instruction. Successful completion of the course and FAA examination, consisting of in-flight performance, qualifies the student for FAA Private Pilot license. Prereq: MS 301, 302; senior standing; physically qualified; qualifying score on Army Fixed Wing Battery Tests.

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 of firing of weapons. Prereq: MS 301, 302.

PHILOSOPHY

FACULTY

John Kuiper, chairman

Professors

John Kuiper	M.A., Michigan, 1922
Jesse DeBoer	Ph.D., Harvard, 1942

Associate Professor

A. James Gregor	Ph.D., Columbia, 1961

Assistant Professors

Frederick E. Brouwer	Ph.D., Yale, 1960
Roger Jose Chacon	Ph.D., Harvard, 1958
Thomas M. Olshewsky	Ph.D., Emory, 1965

Instructor

Evan K. Jobe	M.A., Florida, 1965

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.

Departmental Requirements

For University and college requirements see page 9.

The requirements for this department are presently under review. A detailed statement of these requirements may be obtained from the chairman of the department whose name is indicated under the preceding faculty listing.

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. *Staff.*

380,381,382 *Tutorial Work in Philosophy.* (1 ea.) I, II, S
Weekly conferences with major students in preparation for the comprehensive examination. Required of all 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 and standing of 3.0 in department. May be repeated three times for a total of 12 credits. *Staff.*

500 *History of Ancient Philosophy.* (3) I
A survey of the philosophical thought of ancient Greece and Rome, up to the rise of 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.*

505 *History of Medieval and Renaissance Philosophy.* (3)
A survey of major developments in philosophy from Augustine to the seventeenth century. *Staff.*

510 *History of Modern Philosophy.* (3) II
A survey of modern philosophy from the seventeenth to the middle of the nineteenth century. *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, and Sartre. *Chacon.*

520 *Introduction to Symbolic Logic.* (3) I
An introductory course in symbolic logic, dealing with truth-functions, the deductive method, quantification theory, the propositional calculus, and the logic of relations and classes. *Chacon.*

530 *Contemporary Ethics.* (3) II
A study of major developments in the field of ethics, notably intuitionism, naturalism, emotivism, and the analysis of the logic and the language of moral statements.

535 *Social and Political Philosophy.* (3) II
A critical study of social and political philosophy, its subject matter and the nature of its enterprise. Readings will include extensive selections from contemporary European authors with selections out of the American political traditions. *Gregor.*

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. *Jobe.*

565 *Philosophy of Language.* (3)
An investigation of problems current in hte philosophy of language such as meaning and reference, the nature of analysis, linguistic relativity, and the relation of linguistics to philosophy. *Olshewsky.*

570 *Philosophy of History.* (3) I
A critical survey of philosophies of history including representative readings from the works of philosophers such as Hegel, Marx, Spengler, Niebuhr and Ortega y Gasset. Critical attention will be directed to the problem of "explanation" in history. *Gregor.*

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.*

625 *Advanced Symbolic Logic.* (3)
A study of the theory, construction, consistency, and completeness of deductive systems. Prereq: PHI 520 or its equivalent. *Chacon.*

700 *Seminar in Ancient Philosophy.* (3)
Intensive study of original works of such major classical philosophers as Plato and Aristotle. May be repeated twice for a total of 9 hours. Prereq: PHI 500 or equivalent.

710 *Seminar in Modern Philosophy.* (3)
Intensive study in the major works of such prominent philosophers of modern times as Descartes, Hume, Kant, and Hegel. May be repeated twice for a total of 9 hours. Prereq: PHI 510 or its equivalent.

715 *Seminar in Contemporary Philosophy.* (3)
Intensive study of current developments in philosophy as found in books and periodicals. May be repeated two times for a total of 9 credits. Prereq: PHI 515 or its equivalent.

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

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.*

PHYSICS & ASTRONOMY

FACULTY

Roy Fletcher Gabbard, acting chairman

Professors

Lewis Wellington Cochran	Ph.D., Kentucky, 1952
Wendell Carden DeMarcus	Ph.D., Yale, 1951
Ben R. Gossick	Ph.D., Purdue, 1954
Richard Hanau	Ph.D., Michigan, 1947
George Samuel Hurst	Ph.D., Tennessee, 1959
Bernard Donald Kern	Ph.D., Indiana, 1949
Wasley Swen Krogdahl	Ph.D., Chicago, 1942
Marcus Thomas McEllistrem	Ph.D., Wisconsin, 1956
Francis Lorraine Yost	Ph.D., Wisconsin, 1936

Associate Professors

Roy Fletcher Gabbard	Ph.D., Rice, 1959
Jesse Leo Weil	Ph.D., Columbia, 1959

Assistant Professors

Jerry Duke Brandenberger	Ph.D., Texas, 1962
Frank A. Butler	Renssalaer Polytechnic Institute, 1966
Hugh Patrick Kennedy	Ph.D., Virginia, 1964
Robert E. Knight	Ph.D., Texas, 1964
Joel Ellis Philhours	Ph.D., Kansas State, 1966
Rudolph Schrils	Ph.D., Colorado, 1963

The objectives of the Department 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; to provide time and facilities needed for the research activities of the staff of the Department.

Departmental Requirements

For University and college requirements see page 9.

The requirements for this department are presently under review. A detailed statement of these requirements may be obtained from the chairman of the department whose name is indicated under the preceding faculty listing.

Field of Concentration Requirements: see page 50.

Course Descriptions

Physics Courses

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. *Yost.*

152 *Introduction to Physics.* (3) II
A lecture demonstration course covering magnetism and electricity, and light. *Yost.*

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.*

212 *Laboratory for Physics 211.* (0)

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: PHY 211 or equivalent. *Staff.*

214 *Laboratory for Physics 213.* (0)

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; lab, four hours. Prereq: MA 111, 112, and 113; CHE 110 and 112; or equivalents, MA 211, concurrent. *Staff.*

232 *General College Physics.* (3) I, II
An advanced general course covering magnetism and electricity and light. Lecture and recitations, four hours. Prereq: PHY 231, or equivalent; MA 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, gases and heat. Laboratory, four hours. Prereq: PHY 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: PHY 241; PHY 232, or concurrent. *Staff.*

260 *Principles of Modern Physics.* (3) I, II
An introduction to the principles of Relativity, Kinetic theory, Atomic Physics, Structure of Matter, Nuclear Physics. Lecture and problem course with associated laboratory experiments. Four hours. Prereq: PHY 213 or 232. *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: MA 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 science teacher. *Staff.*

302 *Laboratory for Physics 301.* (0)

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 and problem 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. Discussion of problems associated with high school physics teacher. Recent developments in physics. Prereq: Employment as high school science teacher. *Staff.*

502 *Orientation in Modern Physics for Teachers.* (3) S
Review of fundamentals of classical physics: treatment of atomic and nuclear physics, solid state, and other topics of current interest. Prereq: Employment as high school science teacher. *Staff.*

504 *Theoretical Mechanics.* (3) I
A lecture and problem course covering the fundamental laws of mechanics. Topics include kinematics of a particle, statics and dynamics of particles and rigid bodies, constrained motion, and oscillatory motion. Prereq: PHY 232, 242; and MA 212. *Brandenberger.*

508 *Optics.* (3)
A lecture and problem course covering the basic phenomena of optics. Topics include thick lenses, apertures, wave motion, interference, diffraction, polarization, and the theory of selected optical instruments. Prereq: PHY 232, 242; and MA 212. *Hanau.*

510 *Spectroscopy.* (3)
A lecture and problem course dealing with the production, recording measuring, and interpretation of atomic and molecular spectra. Topics include basic principles of atomic structure, spectrographs, photometry, and spectrographic analysis. Prereq: PHY 232, 242; and MA 212. *Hanau.*

512 *Experimental Physics: Electricity and Magnetism.* (2)
An advanced laboratory course in electrical measurements. It includes calibration and use of the quadrant electrometer, the d'Arsonval galvanometer and the Type K Potentiometer; absolute determinations of electrical quantities. Prereq or equiv: PHY 516 or equivalent. *Gabbard.*

514 *Vacuum Tubes and Circuit Theory.* (3)
A lecture and problem course covering the theory of vacuum tubes and associated circuits. It includes the solution of selected electronic circuits by the method of the Laplace transform. Prereq: PHY 232, 242; MA 212. *Brandenberger.*

515 *Theory of Measurements.* (3)
A lecture and problem course in the analysis of experimental data. Topics include finding an empirical equation to fit a set of data, approximations, probability distributions, errors and deviations. Prereq: PHY 504 and MA 212. *Hanau.*

516 *Electricity and Magnetism.* (3)
A lecture and problem course covering the theory of electrostatic fields, conductors, dielectrics, and steady currents. Prereq: PHY 232, 242; and MA 212. *Weil.*

517 *Electricity and Magnetism.* (3)
A continuation of PHY 516. A lecture and problem course covering electromagnetic induction, magnetic fields, magnetic materials, alternating currents, and electromagnetic radiation. Prereq: PHY 516. *Weil.*

519 *X-rays and Crystal Structure.* (3)
A lecture and problem course dealing with the production and properties of X-rays. Topics include absorption, scattering, polarization, etc.; wave length measurement; the Compton effect and related quantum phenomena. Prereq: PHY 232, 242; and MA 212.

522 *Heat and Thermodynamics.* (3)
A lecture and problem course stressing some of the fundamental principles of heat phenomena, the laws of thermodynamics, equations of state for ideal and real gases, continuity, derivation of thermodynamic relations. Prereq: PHY 232, 242; and MA 212.

523 *Heat and Thermodynamics.* (3)
A continuation of PHY 522, dealing with thermodynamic functions, thermodynamic equilibrium, the phase equilibria, ionic equilibrium, electromotive force and free energy, surface phenomena, radiation. Prereq: PHY 522 or equivalent. *Staff.*

524 *Solid State Physics.* (3)
Structure of solids and the physical basis of the properties of materials 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: PHY 232, 242; MA 212. *Staff.*

525 *Experimental Physics: Heat.* (2)
Thermal and electrical conductance in solids, photoelectric effect, photoresistive effect, rectification, transistor action, diffusion, Hayne's experiment. Prereq: PHY 524. *Staff.*

530 *Experimental Physics: Spectroscopy.* (2)
An advanced laboratory course in the use and properties of various light sources, spectrographs, photographic materials, and photometric methods; analysis of unknown materials by spectrographic methods. Prereq: PHY 510 or 508. *Hanau.*

534 *Experimental Physics: Vacuum Tubes.* (2)
An advanced laboratory course dealing with the measurements of circuit and vacuum tube constants, and the experimental study of amplifiers, oscillators, pulse generators, saw-tooth generators, etc. Prereq: PHY 514 or equivalent. *Staff.*

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: PHY 555 or concurrent. *Gabbard.*

538 *Experimental Physics: Light.* (2)
An advanced laboratory course dealing with the properties of lenses, mirrors, prisms, gratings, and combinations of these elements in optical systems. The important phenomena of optics are studied experimentally. Prereq: PHY 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: PHY 232, 242; MA 212. *Kennedy.*

555 *Fundamental Atomic and Nuclear Physics.* (3)
A continuation of PHY 554. Prereq: PHY 554. *Kern.*

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: PHY 555. *Staff.*

598,599 *Introduction to Quantum Mechanics.* (3 ea.)
A lecture and problem course providing an introduction to quantum mechanics at the undergraduate level. Primary emphasis is 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: PHY 232, 242; MA 431. *Staff.*

604 *Classical Mechanics.* (3)
A lecture and problems course covering the methods of Lagrange and Hamilton and their application to particles, systems of particles, and continuous media; variational principles; transformation theory. Prereq: PHY 504; MA 431. *McEllistrem.*

605 *Kinetic Theory of Matter.* (3)
A course of lectures covering the classical kinetic theory of gases. Topics include the theorems of Clausius, Joule, Maxwell and Boltzmann; Brownian movements, development of equations of change of state. Prereq: Two 500 courses in PHY; MA 431. *DeMarcus.*

608 *Microwaves.* (3)
A lecture and problem course reviewing electromagnetic wave theory with emphasis on solutions of Maxwell's wave equations and their applications to the modern problems of microwave transmission. Prereq: PHY 516; MA 431. *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: PHY 510 or 554; MA 431. *Cochran.*

613 *Electromagnetic Theory.* (3)
A lecture course dealing with the application of classical electromagnetic theory to the optical phenomena of reflection, refraction, polarization, and absorption. Prereq: PHY 516 and 508; MA 431. *Staff.*

614 *Transient Electric and Vacuum Tube Phenomena.* (3)
A lecture course dealing with transient currents in circuits containing variable amounts of inductance, capacitance, and resistance. Both the methods of differential equations and of the Laplace transform are used. Prereq: PHY 514 or 516; and MA 431. *Staff.*

616 *Theoretical Physics.* (3)
A lecture and problem course presenting the basic aspects of theoretical physics in a unified way. Representative topics; advanced dynamics, hydrodynamics, elasticity. Prereq: Two 500 courses in PHY; MA 431. *Schrils.*

617 *Theoretical Physics.* (3)
A continuation of 616. Prereq: PHY 616 or equivalent. *Schrils.*

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 to important problems, relativity thermodynamics. Prereq: PHY 522; MA 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: PHY 714 or equivalent. *Staff.*

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: PHY 616. *Kern.*

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: PHY 616 or 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: PHY 714 or equivalent. *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: PHY 523; 616. *McEllistrem.*

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: PHY 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: PHY 616 or equivalent. *Staff.*

651 *Physics of Elementary Particles.* (3)
A lecture and problem course treating the subjects of fundamental particle classification schemes, high energy accelerators and detectors, introduction to meson field theory, pion nucleon interactions, and strange particles. Prereq: PHY 555, 617. *Staff.*

652 *Theory of Elementary Particles.* (3)
A lecture and problem course dealing with the application of modern theoretical concepts to elementary particle systems. Prereq: PHY 714. *Staff.*

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. *Staff.*

714 *Quantum Mechanics.* (3)
A lecture course covering a brief review of the origin of quantum theories, mathematical techniques of quantum mechanics, the general aspects of wave mechanics and matrix mechanics, the uncertainty principle. Prereq: PHY 616 or equivalent. *Kennedy.*

715 *Quantum Mechanics.* (3)
A continuation of PHY 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: PHY 714 or equivalent. *Kennedy.*

716 *Advanced Quantum Mechanics.* (3)
A continuation of PHY 715. Topics covered will include the relativistic wave equations, second quantization, quantum electrodynamics. Lecture, three hours. Prereq: PHY 715.

750 *Selected Topics in Advanced Physics.* (2-3)
Topics of an advanced and specialized nature such as the theory of angular momentum, topics in advanced theoretical nuclear physics, topics in advanced statistical mechanics. May be repeated once. Prereq: Consent of instructor.

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. *Staff.*

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.*

Astronomy Courses

191 *Descriptive Astronomy.* (3)
A non-mathematical course dealing with the earth, moon, sun, planets, comets, and meteors.

192 *Descriptive Astronomy.* (3)
A non-mathematical course dealing with the earth, moon, solar system, the stars, the galaxy, and the universe at large. No prereq.

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 PHY 193 and either 191 or 192.

291 *Spherical Astronomy.* (3)
Application of the formulae for the spherical triangle to a variety of problems on the celestial sphere. Prereq: MA 112.

292 *Galactic Astronomy I.* (3)
Consideration of stellar statistics, radio astronomy, galactic rotation, stellar populations, interstellar medium. Prereq: PHY 191, 192 or consent of department.

391 *Celestial Mechanics.* (3)
The mechanics of systems of gravitating particles, with emphasis upon the calculation of orbits, theory of perturbatious.

392 *Intermediate Spherical Astronomy.* (3)
Stellar parallax and proper motion; aberration; binary star orbits; atmospheric refractions. Prereq: Spherical Astronomy or consent of instructor.

492 *Galactic Astronomy II.* (3)
Study of the content, organization, and evolution of our own and other galaxies. Prereq: PHY 292 or consent of instructor.

495 *Elementary Astrophysics I.* (3)
Applications of the principles of elementary physics to the problems of stellar and planetary interiors. Prereq: PHY 231, 232.

496 *Elementary Astrophysics II.* (3)
Applications of the principles of elementary physics to the problems of stellar atmospheres and interstellar matter. Prereq: PHY 495.

591 *Cosmology I.* (3)
Consideration of observational basis of cosmology, cosmological theories of general relativity, the steady state theory, and kinematic relativity. Prereq: MA 113, 211, 212.

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: PHY 591.

593 *Advanced Celestial Mechanics.* (3)
The three- and n-body problems; special solutions potential theory. Prereq: PHY 391 or equivalent.

POLITICAL SCIENCE

FACULTY

S. Sidney Ulmer, chairman

Professors

S. Sidney Ulmer	Ph.D., Duke, 1956
Richard Butwell	D. Phil., Oxford, 1954
Malcolm E. Jewell	Ph.D., Penn. State, 1958
Edward W. Weidner	Ph.D., Minnesota, 1946

Associate Professors

David A. B. Booth	Ph.D., Virginia, 1957
Herbert N. Drennon	Ph.D., Duke, 1951
Lloyd Jensen	Ph.D., Michigan, 1963
Robert J. Pranger	Ph.D., California (Berkeley), 1960
John E. Reeves	M.A., Kentucky, 1938
Kenneth E. Vanlandingham	Ph.D., Illinois, 1950

Assistant Professors

George H. Gadbois, Jr.	Ph.D., Duke, 1965
William H. Hunt	Ph.D., Vanderbilt, 1966
Dean Jaros	Ph.D., Vanderbilt, 1966
Alvin Magid	Ph.D., Michigan State, 1965
Frank Marini	Ph.D., California (Berkeley), 1966
Sheldon Simon	Ph.D., Minnesota, 1964
Dean Yarwood	Ph.D., Illinois, 1966

Instructors

Bradley C. Canon	Ph.D., Wisconsin, 1967
Frederic J. Fleron, Jr.	Ph.D., Indiana, 1967
E. Wood Kelley	Ph.D., Indiana, 1967
Gene L. Mason	Ph.D., Kansas, 1967

The courses and facilities of the Department of Political Science are designed to serve a number of purposes. Among these 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. Recent 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.

Departmental Requirements

For University and college requirements see page 9.

The requirements for this department are presently under review. A detailed statement of these requirements may be obtained from the chairman of the department whose name is indicated under the preceding faculty listing.

Field of Concentration Requirements: see page 50.

Course Descriptions

151 *American Government.* (3) I, II, S
A survey of national government in the United States, with emphasis on the Constitution, the structure of Government, and politics.

152 *Functions of American Government.* (3) I, II
An introductory study of the policy-making processes in American Government through analysis of domestic and foreign programs and their impact upon the American policy. Prereq: PS 151.

200 *Introduction to Political Analysis.* (3) I, II
Introduction to the basic knowledge of research methodology in Political Science: a review of methods of data collection; historical, quantitative and comparative techniques of analysis.

201 *Introduction to Political Behavior.* (3) I, II
The study of behavior in a political context; its significance and antecedents; analysis of behavioral concepts used in Political Science, such as political roles, groups, power, systems, and decision-making; relation of political behavior to democratic theory.

390 *Seminar in Political Science.* (3) I, II
A topical seminar primarily for senior Political Science majors. Prereq: A standing of 3.0 in Political Science or consent of instructor.

395 *Independent Work.* (3) I, II
Honors course for seniors who are majors 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 *Special Problems in Political Science.* (3) I, II, S
May be repeated to a maximum of six credits.

I. THE POLITICAL PROCESS

570 *Political Parties.* (3) I, II
An analysis of pressure groups; organization, methods, and functions of political parties in the United States.

573 *Public Opinion.* (3) II
A study of the nature of public opinion and its influence on government, the role of the press, and other media, propaganda techniques, and voting behavior.

576 *Legislative Process.* (3) II
A study of Congress and the state legislatures, covering the legislative power structure, the selection of legislators and the roles they play, decision-making, and the relations of the legislative and executive branches.

779 *Voting Behavior.* (3) I
A study of recent research in the field of voting behavior, including analysis of survey research techniques. Prereq: An undergraduate course in Parties or Public Opinion or consent of instructor.

780 *Legislative Behavior.* (3) II
A study of recent research in the legislative process emphasizing both the substantive and methodological aspects. Prereq: An upper division course in the legislative process or consent of instructor.

RELATED COURSES IN OTHER DEPARTMENTS

Psychology 544, Social Psychology.

II. PUBLIC ADMINISTRATION

577 *Introduction to Public Administration.* (3) I, II
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 *Public Policy for Private Enterprise.* (3) II
A study of the development and implementation of government regulatory policy with major emphasis in the fields of anti-trust and public utilities.

763 *National and Regional Planning.* (3) II
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.

791 *The Organization as a Political System.* (3) I
This course involves an examination of theoretical concepts pertaining to the design of organizational structure and the prediction and control of administrative behavior, including detailed analysis of the models evolving from traditional, behavioral and decision-making approaches to the study of administrative organization. Major emphasis will be placed on such concepts as those relative to power and its allocations, leadership, representation and policy formation. Student work will include participation in field research projects as well as extensive reading in the field of organization theory. Prereq: PS 577 or equivalent.

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, II
The history of political theory from classical Greece to the Seventeenth Century with emphasis on the relationships between political and cultural change and the development of Western political thought.

572 *Modern Political Theory.* (3) I, II
Political theory from the seventeenth century to the present with emphasis on the development of contemporary ideologies, the impact of industrialism and modern science, and the relationships between modern democracy and dictatorship.

575 *Contemporary American Political Thought.* (3) I
Analysis of the development of American political thought especially as it relates to the role of government in the society.

770 *Seminar in Contemporary Political Theory.* (3) II, S
An intensive study of contemporary political ideologies. May be repeated once.

771 *Political Inquiry and Analysis.* (3)
Analysis of the application of scientific method to the study of political phenomenia; problems of concept formation; law, cause and explanation; theory construction; and the place of values in political inquiry.

RELATED COURSES IN OTHER DEPARTMENTS

Philosophy 500 and 510. History of Philosophy.

IV. COMPARATIVE GOVERNMENT

520 *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.

555 *Comparative Government—Parliamentary Democracies.* (3) I, S
A study of the governments of Great Britain and the Dominions, France, and Scandinavia.

556 *Government and Politics of the Soviet Union.* (3) I, II
Analysis of political development in the Soviet Union with emphasis on party-government relations, Communist ideology, and major approaches to the study of Soviet politics.

557 *Government and Politics in Subsaharan Africa.* (3)
The course will focus on the relationship between ideologies, institutions, and individuals in African political systems. Implications of these factors for African political behavior (domestic and international) will be examined.

568 *The Governments and Politics of Eastern Asia.* (3) I, S
An introductory study of the political institutions of China and Japan.

569 *Latin American Government and Politics.* (3) I
A study of contemporary Latin American political institutions and of the dynamics of the Latin American political process.

757 *Seminar in Comparative Democratic Political Systems.* (3)
An analysis of democratic political systems with emphasis upon the comparative approach as a method of political analysis. Prereq: PS 555 or consent of instructor.

759 *Seminar in African Political Systems.* (3)
The seminar will focus on dimensions of change in African political systems. Dimensions to be analyzed include ideology, economic development, socialization, authority, political recruitment and political party and interest group behavior.

776 *Political Development of Southeast Asia.* (3) II
Study of the processes of political change in Southeast Asia; concepts, approaches and methodology; problems of political development; research problems in studying political development in Southeast Asia. Prereq: permission of instructor.

V. PUBLIC LAW AND JUDICIAL BEHAVIOR

559 *American Constitutional Development.* (3) I
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.

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.

563 *The American Judicial Process.* (3) I
A study from the standpoint of the social sciences, of the judicial process at the state and national levels, dealing with the organization of courts, the making of judicial decisions, and the exercising of judicial power.

761 *The Constitution and Civil Rights.* (3) I
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.

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.

764 *Seminar in Judicial Behavior.* (3) II
A survey of published research in judicial behavior and a study of the methodological innovations in this field. Prereq: Permission of instructor.

RELATED COURSES IN OTHER DEPARTMENTS

History 561, 562. English Constitutional History.
Law 529. Constitutional Law.
Psychology 544. Social Psychology.
Psychology 610. Psychometrics.
Psychology 545. Small Group Behavior.

VI. INTERNATIONAL RELATIONS

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.

501 *Latin American Relations.* (3) II
The relations between the United States and the Latin American counties, with emphasis on the Monroe Doctrine and Pan-Americanism.

530 *The Conduct of American Foreign Relations.* (3) I, II
The formulation, conduct, and control of American foreign policy, basic principles, comparison with other countries. Prereq: PS 151.

541 *The Foreign Policy of the Soviet Union.* (3) I, II
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: PS 556 or consent of instructor.

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.

566 *The United Nations.* (3) II
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.

758 *Seminar in Soviet Politics, Government and Foreign Policy.* (3)
Emphasis on methodology of various approaches to the study of the USSR, as well as substantive research. Subjects will alternate yearly between Soviet Politics and Soviet Foreign Policy. Prereq: PS 556 and PS 541 or permission of instructor.

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.

775 *Contemporary American Diplomatic Problems.* (3) I
An examination of the more important and basic current problems of American foreign policy.

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.

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.

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.

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.

553 *Urban Government and Politics.* (3) I
An analysis of the formulation of public policy in small towns, middle-sized cities, and metropolitan areas. A theoretical model appropriate to all three settings will be formulated. The principal methods of studying community decision-making will be evaluated.

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.

751 *Seminar in Metropolitics.* (3)
Overview of research on Metropolitan Government and Politics; power structures, voting behavior and elections in Metropolitan areas; emphasis on student research in Metropolitan problems. Prereq: PS 553 or permission of instructor.

752 *Problems in State and Local Government.* (3) II
An intensive study of the basic problems of state and local government. Special emphasis will be given to such current problems as are of fundamental importance. May be repeated once.

RELATED COURSES IN OTHER DEPARTMENTS

Economics 524. State and Local Taxation.
Sociology 220. The Community.
Sociology 519. Sociology of Urban Life.

PSYCHOLOGY

FACULTY

Jesse Graham Harris, Jr., chairman

Professors

Jesse Graham Harris, Jr.	Ph.D., Duke, 1955
James S. Calvin	Ph.D., Yale, 1939
Charles F. Diehl	Ph.D., Penn State, 1949
Graham B. Dimmick	Ph.D., North Carolina, 1930
Betsy Worth Estes	Ph.D., Kentucky, 1950
Albert John Lott	Ph.D., Colorado, 1958
Frank Acklen Pattie	Ph.D., Princeton, 1925
Martin Marshall White	Ph.D., Chicago, 1930
Leonard Worell	Ph.D., Ohio State, 1954

Associate Professors

John William Donahoe	Ph.D., Kentucky, 1958
Charles Fowler Elton	Ph.D., Ohio State, 1951
Edward Engel	Ph.D., Princeton, 1955
David Lee Horton	Ph.D., Minnesota, 1959
Melvin J. Lerner	Ph.D., New York University, 1957
Edward Lee Newbury	Ph.D., Princeton, 1961

Assistant Professors

Juris I. Berzins	Ph.D., Connecticut, 1966
Carol B. Currier	Ph.D., Florida, 1963
Joan F. Dixon	Ph.D., Washington U., 1962
John V. Haley	Ph.D., Loyola, 1963
E. Wayne Herron	Ph.D., Texas, 1962
Joseph R. Newton	Ph.D., Colorado, 1963
James E. Spivey	Ph.D., Texas, 1964

The undergraduate program in Psychology includes courses in general, experimental, abnormal, animal, child, social, statistics; in psychological testing; in the applications of psychology to business and industry; and in theory and techniques of speech and hearing therapy.

The graduate program in Psychology 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. In cooperation with the Department of Psychiatry in the University of Kentucky Medical Center, the U.S. Public Health Service Hospital, and the Veterans Administration Hospitals, the Department of Psychology 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 administered by the organizations. Additional practicum facilities in clinical psychology are available in other hospitals and clinics in the locality.

Departmental Requirements

For University and college requirements see page 9.

The requirements for this department are presently under review. A detailed statement of these requirements may be obtained from the chairman of the department whose name is indicated under the preceding faculty listing.

Field of Concentration Requirements: see page 50.

Course Descriptions

102 *Applied Psychology.* (3) I
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: PSY 104 and 106, or 210.

104 *Basic Psychology I.* (3)
An introduction to the study of human behavior. Among the topics covered are: biological foundations of behavior, the methods and procedures of psychology; simple conditioning, sensation, perception and learning. Lecture, two hours; lab, two hours.

105 *Laboratory for Psychology 104* (to be taken concurrently).

106 *Basic Psychology II.* (3)
A continuation of Psychology 104. Among the topics covered are: psychological testing, personality, behavior pathology, social behavior, and applications of psychology to medicine, law, and engineering. Lecture, two hours; lab, two hours. Prereq: PSY 104.

107 *Laboratory for Psychology 106* (to be taken concurrently).

200 *Psychology of the Child.* (3) I, II, S
An introduction to the scientific study of infancy, childhood, and adolescence. Prereq: PSY 104 and 106, or 210. *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: PSY 104 and 106, or 210. *Staff.*

210 *General Psychology.* (3)
A beginning course open to sophomores. The emphasis is on the psychological theories and generalizations in the fields of perception, learning, and motivation. Not open to students who have received credit for PSY 104 or 106. Lecture, three hours. Prereq: Sophomore standing.

330 *Experimental Psychology.* (3)
A study of the application of scientific methods to psychological research. Particular attention is focused on experimental design, psychophysical methods, conditioning, learning, motivation, memory, and problem solving. Prereq: PSY 104 and 106 or PSY 210. *Spivey.*

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 104 and 106, or 210. *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.*

501 *Personality.* (3)
An examination of several prominent personality theories in terms of the contexts in which they were originated, their influence upon contemporary psychological thought, and their present applications. Prereq: PSY 104 and 106, or PSY 210, permission of instructor required for graduate students. *Worell.*

505 *Human Senses and Perception.* (4)
A study of the stimulus, receptor and organism variables that underlie perceptual experience and perceptually based behavior with emphasis upon theory and experimental method. Prereq: PSY 104 and 106, or 210. *Engel.*

506 *Laboratory for Psychology 505.* (0)

507 *Psychology of Learning.* (4)
Fundamental principles and findings from laboratory investigations of classical, instrumental, and verbal learning. Prereq: PSY 104 and 106, or 210 and 336, or equivalent.

508 *Laboratory for Psychology 507.* (0)

509 *Animal Behavior.* (4) I
Experimental techniques used in investigations of animal behavior. Topics include: heredity and environment, activity, instinct, motivation, learning, sensory discrimination, and personality in subhuman species. Prereq: PSY 104 and 106, or 210. *Newbury.*

510 *Laboratory for Psychology 509.* (0)

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: PSY 104 and 106, or 210. Not open to students who have had HYG 520.

521 *Abnormal Psychology.* (3)
A study of the major mental disorders, especially the psychoneuroses and the psychoses, and the biological, psychological, and sociological factors which contribute to their causation. Prereq: PSY 104 and 106, or 210.

522 *Counseling Psychology.* (3) II
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.

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: PSY 104 and 106, or 210. *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: PSY 104 and 106, or 210. *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: PSY 104 and 106, or 210. *Newbury.*

535 *Psychological Testing.* (3) I
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: PSY 104 and 106, or 210 and 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: PSY 104 and 106, or 210. *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: PSY 104 and 106, or 210. *Corder.*

544 *Social Psychology.* (3) I, S
Theoretical and empirical analysis of individual behavior in the social setting with particular emphasis on social learning, motivation, and the measurement, formation, and changing of social attitudes. Prereq: PSY 104 and 106, or 210. Same as SOC 544. *Lott.*

545 *Small Group Behavior.* (3) I
Detailed theoretical and empirical analysis of small groups. The course systematically covers properties of groups and how these properties have been manipulated experimentally. Prereq: PSY 104 and 106, or 210, and 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 104 and 106, or 210. *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: PSY 550, or concurrent. *Diehl.*

552 *Stuttering and Its Correction.* (3) II
The nature, causes, and treatment of stuttering, with emphasis on therapeutic procedures. Prereq: PSY 550. *Diehl.*

553 *Speech Mechanisms.* (3) I

A detailed investigation of the speech musculature: respiration, phonation, resonation, and articulation. Voice disorders and cleft palate will be given special emphasis. Prereq: PSY 550. *Diehl.*

560 *Introduction to Clinical Audiology.* (3) I

Topics covered are the auditory stimulus, air and bone conduction thresholds, masking, speech audiometry and auditory rehabilitation. Prereq: PSY 550.

561 *Audiometry.* (3) II, S

Methods and techniques for evaluating the hearing of large samples (school children, industry). Study of test instruments, calibration and variables in testing procedures. Essentials of hearing conservation. Prereq: PSY 550 or consent of instructor.

562 *Introduction to Hearing Disorders.* (3) I

Types of hearing loss. Classification of organic hearing disorders. Non-organic hearing disorders. Psychological effects of impaired hearing. Differential diagnosis. Prereq: PSY 560.

563 *Advanced Clinical Methods for the Aurally Handicapped.* (3) II, 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: PSY 562 or equivalent.

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.* (3) I

A systematic presentation and critical analysis of the major theories of learning. Prereq: PSY 505, 507 or equivalent, 600.

602 *Theories of Personality.* (3) II

An examination of current theories of personality. The relation of these theories to psychological research will be examined. Prereq: PSY 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: PSY 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.*

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.

620 *Proseminar in Systematic Psychology.* (2)

An examination of some works of important theorists in psychology of the last 40 years. Prereq: PSY 507 or equivalent. *Staff.*

621 *Proseminar in Learning.* (2)

An intensive treatment of concepts, methodology, and current developments in the field of learning. Prereq: PSY 507 or equiv. *Staff.*

622 *Proseminar in Personality.* (2)

An intensive treatment of theories, methods of investigation and current developments in the area of personality. Prereq: PSY 501 or its equivalent. *Staff.*

623 *Proseminar in Sensation and Perception.* (2)

An intensive examination of the facts, methods and concepts involved in the study of sensory and perceptual processes. Prereq: Consent of instructor. *Engel.*

624 *Proseminar in Social Psychology.* (2)

An intensive examination of the methods and data of social psychology with emphasis on social attitudes. Prereq: PSY 544 or its equivalent. *Lott.*

625 *Proseminar in Developmental Psychology.* (2)

An intensive treatment of theoretical and experimental literature, both classical and contemporary, in developmental psychology. Prereq: PSY 200 or equivalent. *Estes.*

630 *Clinical Psychology.* (3)

A survey of basic theoretical issues and research in the areas of assessment and psychotherapy, and of ethical, legal, and other professional problems in clinical psychology.

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.* (4)

This course provides theoretical material and advanced laboratory practice in the measurement of intelligence by individual techniques. Lecture, 3 hours; lab, 2 hours. Prereq: PSY 535 or equiv.

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) I

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: PSY 630 and 640.

645 *Projective Techniques II.* (3) II

A continuation of PSY 644. *Dimmick.*

646 *Quantitative Methods in Clinical Testing.* (3) I

A survey of the structure, uses, and relevant research literature of quantitative techniques of testing in clinical psychology. Prereq: PSY 610 or equivalent. *Harris.*

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) I

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.

661 *Practicum in Clinical Psychology.* (3) I, II

Intensive supervision of diagnostic evaluation and treatment with individual patients, both adults and children, in various inpatient and outpatient settings. Open only to clinical students of advanced standing with permission of instructor. Minimum of 6 credits required. May be repeated to a maximum of 12 credits. Prereq: PSY 640, 644, 645. *Berzins.*

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: PSY 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 EDU 665. May be repeated to a maximum of 12 credits. Prereq: PSY 522.

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

769 *Residence Credit for the Doctor's Degree.* (1 to 18 weeks residence) (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 underway by graduate students and members of the staff. May be repeated indefinitely. *Staff.*

771 *Seminar in Psychology II.* (0) II
One two-hour discussion each week of some current systematic concepts and of research underway by a graduate student or staff member. For Ph.D. candidates. May be repeated indefinitely. *Staff.*

772 *Seminar in Learning.* (3) I
The study of selected topics in the learning area with emphasis on the recent experimental and theoretical literature. May be repeated to a maximum of 6 credits. Prereq: PSY 507 and consent of instructor. *Donahoe.*

774 *Seminar in Verbal Behavior.* (3)
The study of selected topics in the area of verbal behavior with emphasis on recent research and theory. May be repeated to a maximum of 6 credits. Prereq: Consent of instructor. *Horton.*

775 *Advanced Seminar in Perception.* (3)
A study of the major theoretical approaches to perception and an examination of critical experiments and well established phenomena in the field of perception from the vantagepoint of these theories. Prereq: PSY 623 or its equivalent. *Engel.*

776 *Seminar in Animal Motivation.* (3)
A variety of topics in motivation and unlearned behavioral determinants in sub-human species will be treated intensively in comprehensive reports based on the research literature and related to such problems as instinct, drive theory, activation, stress, work decrement, and neural components. Human implications may also be considered. Prereq: Consent of instructor. *Newbury.*

777 *Seminar in Mathematical Psychology.* (3)
Topics in psychology which are receiving detailed mathematical analysis. Examples are mathematical learning theory, decision and judgment processes, advanced application of probability and statistics in psychological theory. Prereq: PSY 610. *Calvin.*

778 *Seminar in Child Psychology.* (3)
Topics in psychological development of the individual, e.g., learning, sex typing, identification, emotional problems, mental retardation, theories of infant care, achievement motivation, etc. Prereq: PSY 200 or equivalent. *Estes.*

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 SOC 779. May be repeated to a maximum of 6 credits. *Lott.*

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.*

SLAVIC AND ORIENTAL LANGUAGES AND LITERATURES

FACULTY

Stanley J. Zyzniewski, acting chairman

Associate Professors

Stanley J. Zyzniewski — Ph.D., Harvard, 1956
Leon Zolondek — Ph.D., Chicago, 1957

Assistant Professors

Paul G. Forand — Ph.D., Princeton, 1962
Biljana Sljivic-Simsic — Ph.D., Harvard, 1966
Haruhide Mori (Visiting) — Ph.D., University of Osaka, Japan, 1963

Instructor

Janos Laszlo — M.A., Yale, 1964

The Department of Slavic and Oriental Languages and Literatures offers courses in four languages: Russian, Arabic, Hebrew, and Japanese. Undergraduate students are offered a specialized curriculum leading to the B.S. degree with a major in the Russian language. Three years of course work in the remaining languages are also available.

Departmental Requirements

For University and college requirements see page 9.

The requirements for this department are presently under review. A detailed statement of these requirements may be obtained from the chairman of the department whose name is indicated under the preceding faculty listing.

Field of Concentration Requirements: see page 50.

Course Descriptions

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 SO 161. Prereq: SO 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: SO 161, 162.

262 *Intermediate Russian.* (3) I, II
A continuation of SO 261. Prereq: SO 261.

263 *Intermediate Aural-Oral Practice in Russian.* (1) I, II
Continuation of SO 163 on a more advanced level. Prereq: SO 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: SO 262 or equivalent.

265 *Advanced Readings in Russian Literature.* (3) I, II
A continuation of SO 264. Prereq: SO 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: SO 261, 262, or permission of the instructor.

561 *Survey of Russian Literature.* (3) I, II
An outline of Russian literature in lecture to be accompanied by representative readings in Russian. 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, S
An outline of Russian literature in lecture to be accompanied by representative readings in Russian. A paper on some aspect of Russian literature will also be required. Prereq: 18 sem. hrs. or consent of instructor.

JAPANESE

181 *Elementary Japanese.* (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 gradaully.

182 *Elementary Japanese.* (4) I, II
A continuation of SO 181.

281 *Intermediate Japanese.* (3) I, II
Reading of texts written in modern colloquial Japanese and continued practice in conversation. Prereq: SO 182.

282 *Intermediate Japanese.* (3) I, II
A continuation of SO 281.

284 *Comprehensive Readings in Japanese.* (3) I, II
A course designed to give students a reading knowledge of the standard colloquial form of Japanese used in newspapers and magazines. *Chambliss.*

285 *Comprehensive Readings in Japanese.* (3) I, II
A continuation of SO 284. This course will increase the student's reading vocabulary and introduce slightly more advanced grammatical forms.

HEBREW

170 *Beginning Hebrew.* (3) I, II
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
Selections from the prose portions of the Hebrew Old Testament. Emphasis on learning to read Hebrew. Prereq: SO 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 in understanding Hebrew thought. Prereq: SO 271 or consent of instructor.

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 language. Prereq: Consent of the instructor.

324,325 *Hebrew Civilization.* (3 ea.) I, II
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: SO 273 or consent of instructor.

575 *The Psalms.* (3) II
Selections with attention to poetic form and to historical and general cultural background. Prereq: SO 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
Emphasis on learning to read simple Arabic, with attention to the basic elements of Arabic grammar. Some attention to Islamic civilization. Open to freshmen.

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: SO 140.

242,243 *Intermediate Arabic: Selections from Classical Arabic Authors.* (3 ea.)
Selections from the Classic Arabic Period with such writers as Ibn Qutaybah, Ibn abd-ai Rabblhi, and other writers of the Ninth and Tenth Centuries, A.D. Prereq: SO 241.

248 *Arabic Conversation and Composition.* (1) II
A continuation of SO 147. Prereq: SO 147.

344 *Advanced Arabic Reading I.* (3)
Reading of selected modern Arabic texts. Prereq: SO 243.

345 *Advanced Arabic Reading II.* (3)
Reading of selected modern Arabic texts. Prereq: SO 344.

OTHER DEPARTMENTAL OFFERINGS

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.

206 *Aspects of Middle Eastern Culture.* (2)
Lecture, 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.

326,327 *Middle Eastern Literature in English. Translation.* (3 each)
Selections from various genres to give the student a basic understanding of Middle Eastern literature. The material will be drawn from Hebraic, Turkish, and Hittite sources. Given in English, no knowledge of any Middle Eastern language necessary.

328 *Islamic Civilization I: The Rise of Islam to the Fall of the Abbasid Dynasty.* (3)
The rise of Islam and its classical development.

329 *Islamic Civilization II: Islam and the West, 1453-1798.* (3)
The Islamic community and its relation to Europe.

330 *Islamic Civilization III: Islam and the Modern World.* (3)
The Islamic community and its response to westernization.

SOCIAL WORK

FACULTY

Harold E. Wetzel, chairman

Professor

Harold E. Wetzel	M.A., Ohio State, 1937

Assistant Professors

Robert L. Johnson	M.S., Yale, 1951
Leone Renn	M.S.W., Tulane, 1941
Constance Popeo Wilson	M.S., Boston, 1951

Visiting Lecturers

Irving A. Gail	M.D., Cincinnati, 1938
Beulah Theobald	M.A., Cincinnati, 1937

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.

Departmental Requirements

For University and college requirements see page 9.

The requirements for this department are presently under review. A detailed statement of these requirements may be obtained from the chairman of the department whose name is indicated under the preceding faculty listing.

Field of Concentration Requirements: see page 50.

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. Prerequisite for all majors in Social Work. *Wetzel.*

327 *Tutorial Work in Social Work.* (2) I
For senior majors in the department. *Wetzel.*

328 *Tutorial Work in Social Work.* (2) II
For senior majors in the department. *Wetzel.*

344,345 *Field Participation in Social Agency Programs.* (2 ea.) I, II
Supervised experience in a local social agency for senior majors in social work. Prereq: SW 513, 530, and 540, and consent of the instructor. *Wilson.*

346,347 *Field Participation in Case Work.* (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) I, II, S
Prereq: Major and a standing of 3.0 in the department. May be repeated to four credits. *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. For majors in the department. 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. For majors in the department. 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 SW 530 with emphasis on the organization and function of social welfare agencies at the national and international level. Prereq: SW 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: SW 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

Thomas R. Ford, chairman

Professors

Thomas Robert Ford	Ph.D., Vanderbilt, 1951
A. Lee Coleman	Ph.D., Cornell, 1950
Melvin L. De Fleur	Ph.D., Washington, 1954
James Walter Gladden	Ph.D., Pittsburgh, 1945
Robert Straus	Ph.D., Yale, 1947

Associate Professors

John Charles Ball	Ph.D., Vanderbilt, 1955
Eugene B. Gallagher	Ph.D., Harvard, 1958
George A. Hillery, Jr.	Ph.D., Louisiana State, 1954
Willis Anderson Sutton, Jr.	Ph.D., North Carolina, 1952
Harwin L. Voss	Ph.D., Wisconsin, 1961

Assistant Professors

Charles W. Dean	Ph.D., Illinois, 1966
John P. Drysdale	Ph.D., Louisiana State, 1966
Joseph J. Mangalam	Ph.D., Cornell, 1957
Joseph W. Scott	Ph.D., Indiana, 1963

Instructors

Charles W. Dean	M.A., Illinois, 1961
John P. Drysdale	M.A., Louisiana State, 1962
Mohamed El-Assal	M.A., Indiana, 1962
John B. Stephenson	M.A., North Carolina, 1961

(See also Rural Sociology faculty.)

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 post-graduate 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.

Students may often secure social research experience through participation in departmental or faculty research projects. The department is closely related to the University's Center for Developmental Change and through this multidisciplinary agency students may get experience in research, application, and special training programs related to problems of social change and economic and social development.

Departmental Requirements

For University and college requirements see page 9.

The requirements for this department are presently under review. A detailed statement of these requirements may be obtained from the chairman of the department.

Field of Concentration Requirements: see page 50.

Course Descriptions

(For course descriptions of Rural Sociology 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. *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. *Staff.*

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 ANT and GEO 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 GEO 154.) *Staff.*

365 *History of Sociology.* (3) II

A survey of the development of scientific theory in the science of human social interaction and society from Auguste Comte to recent times. Emphasis is on the growth of sociology as a discipline. Prereq: SOC 151 or consent of instructor. *Sutton, Gladden.*

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. Prereq: SOC 151 or consent of instructor. *Mangalam.*

561 *Comparative Sociology.* (3) I, II
Two or more societies are analyzed and compared sociologically. The specific societies considered may vary from time to time; for example, Soviet and American society; the middle Eastern countries; Latin American societies, etc. Prereq: SOC 151 or consent of instructor.

R.S.565 *Special Problems in Rural Life.* (1-3) I, II, S
Staff.

671 *Seminar in Contemporary Sociology.* (0)
Each member of the Departments of Sociology and Rural Sociology presents a summary of his past and present research and his current interests. The purpose is to acquaint the students with the wide range of interests, projects and personnel in his graduate department. One hour per week.

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 Sociology.* (3) I
A survey of the current state and organization of sociology as indicated by consideration of the main fields of sociology and developments in each. Most of the staff participate as special lecturers in their specialty. Prereq: Major or minor in SOC and 9 hours in SOC. *Coleman.*

581 *Techniques of Social Investigation.* (3) I, II
A study of the practical applications of sociology in organizing, conducting, and interpreting social surveys and other forms of sociological research. Prereq: SOC 151 and an introductory course in statistics. *Ford.*

651 *Systematic Sociology.* (3) I
An intensive study of certain selected sociological theorists such as Weber, Durkheim, Simmel, Pareto, and others.

681 *Research Design and Analysis.* (3) I
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 SOC 581 or equivalents. *Staff.*

685 *Integration of Theory and Research.* (3) I
Systematic analysis of problems related to the verification of sociological theory through empirical research. Prereq: SOC 681. *DeFleur.*

770 *Seminar in Sociological Theory.* (3) II
An intensive survey of contemporary general theorists from Comte to the present. The principal sociological concepts of each are considered and their role in the development of contemporary sociology is assessed. *DeFleur.*

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 credits. *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. May be repeated to a maximum of 10 hours.

III. SOCIAL ORGANIZATION AND PROCESS

220 *The Community.* (3) I, II, S
Social organization and process in modern communities; social techniques of community improvement. *Hillery, Sutton and Stephenson.*

501 *Population Analysis.* (3) II
Distribution and composition, fertility and mortality, migration, ecological relationships and growth of population. Prereq: SOC 151 or consent of instructor. *Ford and Hillery.*

502 *Methods of Demographic Analysis.* (3) 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. Prereq or concur: SOC 501 and one of the following introductory statistical courses: ECO 207, BSC 421, or AEC 530. *Hillery.*

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: SOC 151 or consent of instructor.

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: SOC 151 or consent of instructor. *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: SOC 509 or permission of instructor. *Gladden.*

R.S.513 *Rural Community Analysis.* (3) I
Stephenson.

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: SOC 151 or consent of instructor. *Sutton.*

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: SOC 151 or consent of instructor.

523 *Social Determinants of Economic Behavior.* (3) II
A study of the sociology of consumption, the effect of social values upon business and employee behavior, and the socio-economic implications of welfare legislation. Same as ECO 523. *Staff.*

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. Prereq: SOC 151 or consent of instructor. *Gladden.*

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: SOC 151 or consent of instructor. *Straus.*

529 *Political Sociology.* (3) I
A study of the sociological aspects of political systems, movements, and ideologies. Special attention is given to comparative analysis of parties, pressure groups, voting patterns, elites, bureaucracy, political socialization, mass politics, and the role of intellectuals. Prereq: 6 hours of Sociology or consent of instructor. *Drysdale.*

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: SOC 151 or consent of instructor. *Brown.*

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 EDU 532.) May be repeated to a maximum of 6 credits. *Coleman.*

536 *Sociology of Deviant Behavior.* (3) I
A systematic examination of the various types of social disorganization, with particular emphasis upon the sociological explanation of underlying factors. Prereq: SOC 151 or consent of instructor. *Voss.*

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. Prereq: SOC 151 or consent of instructor. *Voss.*

538 *Juvenile Delinquency.* (3) I, II
Study of the extent, ecological distribution, and etiology of delinquency in contemporary American society, including a critical examination of trends and methods of treatment. Prereq: SOC 151 or consent of instructor. *Dean.*

539 *Sociology of Corrections.* (3)
This course is a study of correctional practices, including the issues of punishment versus treatment of offenders, probation and parole as methods of treatment, the social structure of the institution and its impact on the offenders, and specific programs and experiments in institutional and community treatment. Prereq: SOC 151. Recommended SOC 537 or 538. *Dean.*

548 *The Sociology of Public Opinion.* (3)
Introduction to the study of public opinion, its role in the society and its functions for the individual. Propaganda and other mass persuasion techniques are examined as these relate to the formation, alteration or maintenance of public opinion. Prereq: SOC 151 or consent of instructor. *De Fleur.*

549 *Sociological Aspects of Mass Communication.* (3) I
The relationship between the organization of modern society and its communication media: Special emphasis is given the way in which cultural processes and social change have an impact upon the mass media, and upon the way in which the mass media influence cultural processes and social change. The social-psychological bases of communication are studied within a context of theory and research. (Same as EDU 549.) Prereq: SOC 151 or consent of instructor. *DeFleur.*

RS 615 *Rural-Urban Relations.* (3)
Brown.

625 *Sociology of Religion.* (3)
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. *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 EDU 661.) *Staff.*

690 *Community Action Analysis.* (3) II
The structure and dynamics of complex, collective actions are analyzed in terms of their social and cultural characteristics and their temporal patterns. Lecture, 3 hours. *Sutton.*

702 *Seminar in Social Demography.* (3) II
A seminar designed to explore the relations between sociology and demography. Emphasis is given to the influence of social factors on demographic behavior and to the tilization of population data and demographic techniques in the investigation of sociological problems. Prereq: SOC 501 or equivalent. *Ford, Hillery.*

720 Seminar in Community Theories. (3) I
An intensive examination of selected theories and writings relevant to an understanding of territorial communities. Includes a study of the writings of Durkheim, Park, Redfield, Warner, and others. *Hillery.*

727 *Seminar on Socio-Cultural Change.* (3)
A seminar for advanced students. Emphasizes economic, religious, political, technological, psychological, etc., factors in change, and social and cultural patterns and processes of change. Prereq: ANT 527 or permission of instructor. Same as ANT 727.

731 *Seminar in Comparative Social Organization.* (2)
A seminar for advanced students. Emphasizes principles in the comparative study of social systems; the role of kinship, age, sex, locality, and voluntary associations in determining relationships between individuals and between groups in nonliterate and literate societies. May be repeated once. (Same as ANT 731.)

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 EDU 661 or equivalent. (Same as EDU 750.) *Staff.*

775 *Seminar in the Family.* (2)
A seminar for advanced students interested in family research, family counseling, or dealing with family relationships in some other professional capacity. *Gladden.*

RS776 *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.

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. (Same as ANT 526.) *Staff.*

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 ANT 533.) *Pearsall.*

R.S.541 *Group Organization and Leadership.* (3) II
Coughenour.

542 *Human Relations in Administration.* (3) S
Analysis of the role of social structure, leadership, authority, power, and psychological stress in the administration of large-scale organizations in the United States. *Staff.*

544 *Social Psychology.* (3) I, II
Theoretical and empirical analysis of individual behavior in the social setting with particular emphasis on social learning, motivation, and the measurement, formation, and changing of social attitudes. Prereq: PSY 104 or 210. (Same as PSY 544)

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. *Gallagher.*

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. Prereq: SOC 151 or consent of instructor. *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 PSY 779.) May be repeated to a maximum of 6 credits. *Lott and DeFleur.*

SPANISH AND ITALIAN LANGUAGES AND LITERATURES

FACULTY

John E. Keller, chairman

Professors:

John E. Keller — Ph.D., North Carolina, 1946
J. Eduardo Hernandez — Ph.D., Kentucky, 1938

Associate Professors:

Joseph R. Jones — Ph.D., Wisconsin, 1962
William C. McCrary — Ph.D., Wisconsin, 1958
Daniel R. Reedy — Ph.D., Illinois, 1962
Gerardo Saenz — Ph.D., Texas, 1959

Assistant Professor:

Margaret E. W. Jones — Ph.D., Wisconsin, 1963

Instructor:

Maria Scorsone — M.A., Palermo, Italy, 1940

Lecturers:

Betty W. Berrios — M.A., Universidad Interamericana, 1966
Kathleen Duvall — M.A., Northwestern, 1964
Mary J. Inman — M.A., Kentucky, 1966
Laura Luszcynski — B.A., Wayne State, 1962
Arlene Schwartz — M.A., Middlebury College; New York U., 1966

Departmental Requirements

For University and college requirements see page 9.

The requirements for this department are presently under review. A detailed statement of these requirements may be obtained from the chairman of the department whose name is indicated under the preceding faculty listing.

Field of Concentration Requirements: see page 50.

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 SPI 141. Selected readings. Prereq: SPI 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 SPI 144. Selected readings. Prereq: SPI 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: SPI 144, 145 or two years of high school Spanish.

242 *Intermediate Spanish.* (3) I, II, S
Continuation of SPI 241. Prereq: SPI 241 or three years of high school Spanish. *Staff.*

243 *Introduction to Spanish Literature from the Beginning through the 18th Century.* (3)
Introduction to Spanish literature, a chronological study of authors and masterpieces from the beginning through the 18th Century. Prereq: SPI 242.

244 *Introduction to Spanish Literature of the 19th and 20th Centuries.* (3)
Introduction to Spanish literature, a chronological study of authors and masterpieces of the 19th and 20th centuries. Prereq: SPI 242.

245 *Introduction to Spanish-American Literature.* (3)
Introduction to Spanish-American literature, a chronological study of authors and masterpieces from colonial times to the present. Prereq: SPI 242.

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: SPI 241, 242.

248 *Mexican Civilization.* (3)
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.

346 *Civilization of Spain.* (3)
A one-semester course with emphasis on literature and thought rather than on political history.

347 *Civilization of Spanish America.* (3)
A one-semester course with emphasis on literature and thought rather than on political history.

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: SPI 243, 244.

543 *Spanish Literature of the 17th Century.* (3) I, II, S
Selected literature of the Golden Age. Cervantes and the picaresque novel, leading dramatists. Prereq: SPI 243, 244.

544 *Spanish Literature of the 17th Century.* (3) I, II, S
A continuation of SPI 543. Prereq: SPI 243, 244.

545,546 *Spanish Literature of the 20th Century.* (3 ea.) I, II, S
A study of the works of the Generation of 1898 and representative works of recent writers. Prereq: SPI 243, 244.

549 *Spanish Literature of the 19th Century.* (3) I, II, S
A study of Spanish Romanticism and the works of the leading Costumbristas. Prereq: SPI 243, 244.

550 *Spanish Literature of the 19th Century.* (3) I, II, S
A study of the novel and drama of the second half of the 19th century. Prereq: SPI 243, 244.

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.*

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.

560 *Spanish American Prose Fiction.* (3)
A study of the novel and short story in Spanish America, with emphasis on the principal authors and works from Lizardi to the present. Prereq: Intro to Spanish American Literature or three hours of a survey of Spanish literature.

564 *Spanish American Essay.* (3)
A comprehensive study of the principal currents of thought in the Spanish American essay, with special attention to the americanistas. Prereq: Intro to Spanish American literature or three hours of a survey of Spanish literature.

565 *Spanish American Drama.* (3)
A study of dramatic production in Spanish America from the missionary theatre to the present, accentuating the work of later authors beginning with Florence Sanchez. Prereq: Intro to Spanish American Literature or three hours of a survey of Spanish literature.

566 *Spanish American Poetry.* (3)
A study of Spanish American poetry, stressing the outstanding poets since Sor Juana. Prereq: Intro to Spanish American Literature or three hours of a survey of Spanish literature.

610 *Romance Philology.* (3)
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: FR 603 or SPI 641 or equivalent. May be repeated once.

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.

642 *Old Spanish.* (3) I, II, S
Reading of texts in Old Spanish. Prereq: SPI 641.

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

769 *Residence Credit for Doctor's Degree.* (0)
May be repeated indefinitely.

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.*

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.

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 and providing opportunity for original endeavor. May be repeated once.

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 SPI 191. Prereq: SPI 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: SPI 192.

292 *Intermediate Italian.* (3) I, II
A continuation of SPI 291. Prereq: SPI 291.

ZOOLOGY

FACULTY

Professor

John Melvin Carpenter	Ph.D., Texas, 1946

Associate Professors

Roger William Barbour	Ph.D., Cornell, 1949
Thomas Calhoun Barr, Jr.	Ph.D., Vanderbilt, 1959
Wayne Harry Davis	Ph.D., Illinois, 1957

Assistant Professors

John Claud Calkins	Ph.D., Texas, 1963
James Edward Carver, Jr.	Ph.D., Pittsburgh, 1965
Eugene Carson Crawford, Jr.	Ph.D., Duke, 1965
Edwin Dale	Ph.D., Iowa, 1960
James Marion Edney	M.S., Iowa, 1934
Stephen Mark Gittleson	Ph.D., California, 1966
Robert Andrew Kuehne	Ph.D., Michigan, 1958

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, physiology, protozoology, endocrinology, 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 a staff member in regard to training and opportunities for such careers.

Departmental Requirements

For University and college requirements see page 9.

The requirements for this department are presently under review. A detailed statement of these requirements may be obtained from the chairman of the department.

Field of Concentration Requirements: see page 50.

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.

101 *Laboratory for Zoology 100.*

104 *Principles of Zoology.* (4)
Introductory zoology for non-majors to cover the major areas of interest in modern zoology. Credit is not permitted for both ZOO 100 and 104. Three hours lecture-recitation, two hours discussion and demonstration.

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: ZOO 100, 101. *Edney.*

201 *Laboratory for Zoology 200.*

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. Prereq: ZOO 100 or BOT 101.

203 *Laboratory for Zoology 202.*

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: ZOO 100. *Barr.*

207 *Laboratory for Invertebrate Zoology.*

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: ZOO 100, 101. *Barbour.*

209 *Laboratory for Vertebrate Zoology.*

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: ZOO 100, 513, 515, or satisfactory equivalents.

301 *Laboratory for Zoology 300.*

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 BOT 400. *Staff.*

401 *Laboratory for Zoology 400.*

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

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: ZOO 100 or consent of instructor. *Kuehne.*

504 *Heredity.* (4) I, S
Lectures and recitations on principles of heredity, variation and eugenics. Prereq: ZOO 100. *Carpenter.*

505 *Laboratory in Heredity.*

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: ZOO 100, CHE 112. *Dale.*

507 *Laboratory for Zoology 506.*

508 *Evolution.* (3) II, S
An advanced lecture course on some of the fundamental principles of organic evolution. Prereq: ZOO 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.*

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: ZOO 200 or 506. *Staff.*

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. Prereq: ZOO 100, CHE 112. *Staff.*

514 *Laboratory for Zoology 513.*

515 *Special Histology.* (3) II
Histology of the organs. A continuation of ZOO 513 in which the studies are based on the organs. Prereq: ZOO 513. *Dale.*

516 *Laboratory for Zoology 515.*

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. Given alternate years. Prereq: ZOO 100. *Barbour.*

519 *Laboratory for Zoology 518.*

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. Given alternate years. Prereq: ZOO 100. *Barbour.*

521 *Laboratory for Zoology 520.*

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. Given alternate years. Prereq: ZOO 100. *Barbour.*

523 *Laboratory for Zoology 522.*

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. Given alternate years. Prereq: ZOO 100.

525 *Laboratory for Zoology 524.*

526 *Limnology.* (4) II
Detailed analysis of fresh water environment with special emphasis upon biological productivity. Two hours lecture, four hours field and laboratory. Given alternate years. Prereq: ZOO 100, CHE 110, 112; PHY 211, 213; consent of instructor. *Kuehne.*

527 *Laboratory for Zoology 526.*

528 *General Entomology.* (4) I

Introduction to the Class Insecta. Morphology, physiology, development, systematics, and ecology of insects; procedures and techniques of insect identification; preparation of insect collections for research purposes. Lecture, 2 hrs. Prereq: ZOO 100 and 3 additional credits in ZOO 206 or 502. *Barr.*

529 *Laboratory for Zoology 528.*

532 *Medical Entomology.* (4) I, S

Study of Arthropod vectors of disease. Structure, collection, identification, control measures and life history studies. Given alternate years. Same as AGE 532. Prereq: ZOO 534 or consent of instructor. *Edney.*

533 *Laboratory for Zoology 532.*

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. Same as AGE 534. Prereq: ZOO 100. *Edney.*

535 *Laboratory for Zoology 534.*

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. Prereq: ZOO 534 or consent of instructor. *Edney.*

537 *Laboratory for Zoology 536.*

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. Prereq: ZOO 534 or consent of instructor. *Edney.*

539 *Laboratory for Zoology 538.*

540 *General Radiation Biology.* (4) I, II, 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 comprehensive treatment of biological aspects. Lab devoted to use 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, Kuehne.*

541 *Laboratory for Zoology 540.*

542 *Insect Taxonomy.* (4) I

Methods and principles of systematic entomology and zoology; characterization of taxonomic categories; and international rules of zoological nomenclature. Collection, preparation and identification of insect specimens. Given alternate years. Lecture, 2 hours; lab, 4 hours. Same as AGE 542. Prereq: AGE 100 and ZOO 100.

543 *Laboratory to Accompany 542.*

550 *Comparative Physiology.* (5) II

Physiological mechanisms by which animals cope with different environmental stresses. Osmoregulation, respiration, temperature regulation and tolerance, sensory reception, circulation and tolerance, sensory reception, circulation, etc. Prereq: 1 yr. college chem, ZOO 206, 207, 1 yr. college physics or consent of instructor. *Crawford.*

551 *Laboratory to Accompany 550.* (0)

600 *Advanced Invertebrate 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: ZOO 206, 207, 502. *Barr.*

601 *Laboratory for Zoology 600.*

602 *Insect Morphology.* (4) I

A study of internal and external insect structure, including function, and variation of form. Given alternate years. Same as AGE 602. Prereq: AGE 100 and consent of instructor.

604 *Advanced Animal Ecology.* (3)

Selected topics from recent studies on the energy flow concept of ecology, population ecology and community ecology. Prereq: Zoology 502 or Botany 513, 1 year physics, organic chemistry, 1 year math; calculus and statistics recommended.

611 *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: ZOO 508. *Barr.*

615 *Seminar in Animal Navigation.* (2)

Discussions of the original literature, current research and problems in the areas of home range, migration, orientation, navigation and homing of animals. Prereq: some reading knowledge of German. *Davis and Barbour.*

617 *Advanced Microtechnique.* (3) II

Special methods in histological technique for students of Zoology, Pathology or Anatomy. Prereq: ZOO 513, 515. *Brauer.*

620 *General Acarology.* (4) II

Introduction to study of mites. Classification, morphology, physiology and ecology of mites important to the medical, veterinary and agricultural fields. Lecture, 2 hours; lab, 4 hours. Prereq: ZOO 100, AGE 100 and consent of instructor. Same as AGE 620. *Rodriguez.*

630 *Insect Physiology.* (4) II

Principles of insect physiology, function of organs, circulation, reproduction, respiration, and digestion. Lecture, 2 hours; lab, 4 hours. Same as AGE 630. Prereq: consent of instructor.

642 *Vertebrate Natural History.* (4) I

Behavior of vertebrate animals in their natural habitats 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. Given in alternate years. Prereq: ZOO 208, 502. *Barbour.*

643 *Laboratory for Zoology 642.*

709 *Graduate Seminar.* (1) I, II

Discussions of current research in Zoology. Prereq: Graduate standing in Zoology.

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

Independent research work under direction, with conferences on objectives, principles, materials, methods, analysis of data and conclusion. Progress reports required at intervals. May be repeated indefinitely, at discretion of department. Type of research to be enclosed in parentheses, e.g. (Genetics), (Ecology), (Embryology). Prereq: undergraduate degree in biological sciences.

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.

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 provides offices, classrooms, and 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.

William A. Seay, M.S., Ph.D., is Dean of the college; William G. Survant, Ph.D., is *Acting Associate Dean for Instruction.*

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; Yorkshire 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 crop and soil investigations.

Admission. Students may be admitted to the college when they have attained junior classification in the University.

Faculty Advisors. Students admitted to the University directly from high school and those who transfer from other colleges and universities who indicate agriculture (including pre-veterinary medicine and pre-forestry) as their major field of study will be assigned an academic adviser from the agriculture faculty. The Faculty Adviser helps the student in planning his 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 adviser 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 132 semester credits and 264 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 60 credits, including 30 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. Similar arrangements have been made with Kentucky State College whereby students may complete 2 years of work at Kentucky State prior to transferring to the University.

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 Senate. The normal academic load is 16 or 17 credits per semester; the maximum load is 22 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 shall include three components: (1) general studies component; (2) pre-professional component; and (3) free electives.

General Studies Component

All candidates for the B.S. degree in Agriculture are required to meet general studies requirements in Areas I, II, III, and VII. In addition, each candidate must meet the requirements of one of the other four areas.

Required
- Area I—Mathematics—Philosophy
- Area II—Physical Sciences (Sequence A will not be accepted)
- Area III—Biological Sciences
- Area VII—Social Sciences

Elect One
- Area IV—Foreign Language
- Area V—Humanities: Literature, Art and Music
- Area VI—History
- Area VIII—Behavioral Sciences

In addition to the general University requirement of six semester hours of English Composition, each student is required to complete six semester hours in the area of communication, to be elected from the following courses:

English 181 or 291, 203, 205
Journalism 201, 203

Pre-Professional Component

All candidates for the B.S. degree in Agriculture are required to have three lower division (freshman and sophomore) core courses in agriculture. A maximum of three additional courses in agriculture may be elected in the lower division. The three core courses are GEN 102 *Agricultural Social Science*, GEN 104 *Agricultural Plant Science* and GEN 106 *Agricultural Animal Science*.

Free Electives

All electives shall be subject to the approval of the student's adviser.

Professional Component

Each candidate for the B.S. degree in Agriculture shall declare a departmental major and an area of specialization. The options for areas of specialization for the Degree of Bachelor of Science in Agriculture shall be (1) agricultural technology; (2) agricultural science; and (3) agricultural business. Group requirements for each of these areas of specialization shall provide for the following minimum requirements.

	Areas of Specialization		
Group Requirements	*Agricultural Technology*	*Agricultural Science*	*Agricultural Business*
Departmental Major (a)	18	18	18
Specialty Support	6	20 (b)	26 (c)
Mathematics	....	4	....
Ag. Plant Science	6	....	....
Ag. Animal Science	6	....	....
Ag. Econ. and/or Rural Soc.	9	3	3
Electives	19 (d)	21 (d)	19 (d)

(a) A maximum of 24 hours in a department may be offered by the student in fulfilling minimum requirements for a degree.
(b) To include courses in science considered to be appropriate background for the departmental area in which the student is majoring.
(c) To include courses in business, economics and agricultural economics.
(d) All electives are subject to the approval of the student's adviser.

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, or Horticulture. 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 Agricultural Entomology 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 Adviser 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 Agricultural Engineering curriculum, administered jointly by the College of Agriculture and Home Economics and the College of Engineering, provides engineering knowledge for the agricultural industry and closely related industries, such as, the farm machinery industry.

The professional curriculum in Agricultural Engineering is basically the application of physical science to agriculture. It deals with the application of energy, materials and machines to agricultural processing and production operations. Graduates are prepared for *research, development, design* and *sales* in agricultural mechanization, soil and water conservation engineering, processing systems (such as grain drying and handling of milk processing plants) and farm structures including environmental control systems for animal and plant buildings.

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 113—Analytics & Calculus I	4
CHE 110—General College Chemistry	5
*General Studies	3
ME 105—Basic Engineering Graphics	2
	17

Second Semester	Crs.
AEN 002—The Engineering Profession	0
ENG 102—Freshman Composition	3
MA 211—Analytics & Calculus II	4
CHE 112—General College Chemistry	5
PHY 231—General College Physics	3
PHY 241—General College Physics Lab	2
	17

Sophomore Year

First Semester	Crs.
AEN 003—The Engineering Profession	0
MA 212—Analytics & Calculus III	4
PHY 232—General College Physics	3
PHY 242—General College Physics Lab	2
**Biological Science Sequence	3 or 4
*General Studies	3
	15 or 16

Second Semester	Crs.
AEN 004—The Engineering Profession	0
MA 431—Differential Equations	3
EM 222—Solid Mechanics I	4
**Biological Science Sequence	3 or 4
*General Studies	3
*General Studies	3
	16 or 17

Junior Year

First Semester	Crs.
AEN 005—The Engineering Profession	0
EM 313—Dynamics	3
EE 305—Elec. Circuits and Machinery	3
ME 220—Engineering Thermodynamics	3
AGR 266—Soils	4
AEN 305—Physical Properties of Soils & Biological Matls	3
	16

Second Semester	Crs.
AEN 006—The Engineering Profession	0
MET 301—Materials Science	3
ME 330—Fluid Mechanics	3
AEN 406—Physical Environment for Plants and Animals	3
EE 251—Intro. Use Digital Computers	2
EE 306—Elec. & Electronic Circuits	3
*General Studies	3
	17

Senior Year

First Semester	Crs.
AEN 007—The Engineering Profession	0
#AEN 416—Energy Sources & Mach. in Agr.	4
**Elective (Engr. Science)	3
*General Studies	3
†AEN 435—Prin. of Soil & Water Conservation Engr.	4
**Elective	3
	17

Second Semester	Crs.
AEN 008—The Engineering Profession	0
AEN 505—Engineering Analysis	3
ENG 181—Basic Public Speaking	3
**Elective (Mathematics)	3
**Elective	3
***AEN 425—Func. Design in Agr. Structures	4
‡AEN 446—Agr. Proc. & Electrification	4
	20

° Select from General Studies areas 4, 5, 6, 7 or 8 in consultation with academic adviser. It is suggested that one sequence be in Economics and one in Foreign Language, Humanities, or History.

°° To be selected in consultation with the academic adviser.

AEN 416 becomes AEN 417 for 3 credits effective September 1968.

°°° AEN 425 becomes AEN 427 for 3 credits effective September 1968.

† AEN 435 becomes AEN 437, *Design of Engineering Systems for Soil and Water Management*, effective September 1968.

‡ AEN 446 becomes AEN 447 for 3 credits effective September 1968.

FORESTRY CURRICULUM

Students interested in Forestry may enter the College of Agriculture and Home Economics and complete a plan of study that is comparable to the freshman and sophomore years of a four-year degree program. Kentucky is a participating member in the Southern Regional Plan for the education of foresters. Under this plan, state tuition aid is available to resident students who have satisfactorily completed the prescribed plan of study in Forestry for the freshman and sophomore years, and who then transfer to one of the accredited Southern Forestry Schools. This Tuition Aid (up to $350.00 per academic year plus an additional $60.00 for the summer camp) for the most part covers the difference between resident and non-resident tuition costs, and is available for the junior and senior years.

The following plan of study is suggested for students entering in this program and leading eventually to a Bachelor of Science degree in Forest Management or one of the other specialties.

Freshman Year

	Crs.
BOT 101 and 103—General Botany	6
CHE 110 and 112—Gen. College Chemistry or	10
CHE 102 and 104—Elem. Gen. Chemistry	8
ENG 101 and 102—Freshman Composition	6
*MA 110—College Algebra & Trigonometry	5
Physical Education	2
HIS 109—History of U. S. Since 1865 or	
HIS 240—History of Kentucky	3
Elective	3
Total	33 or 35

Sophomore Year

	Crs.
AGR 266—Soils	4
PHY 151—Introduction to Physics	3
GLY 104—Outlines of Geology	3
FOR 100—Elements of Forestry	3
ME 105—Basic Engr. Graphics	2
ENG 203—Comp. for Tech. Students or	
ENG 181—Basic Public Speaking	3
CHE 236—Organic Chemistry	4
ECO 251—Principles of Economics	3

CE 100—Plane Surveying	3
*BOT 201—Local Flora	4
BOT 219—Dendrology	2
Elective	3
Total	37

* MA 113 may be substituted for BOT 201.
° Non-degree credit effective September 1967.

To be eligible to transfer to a professional school of forestry, 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 fourteen students from Kentucky each year and for Tuskegee to accept one student 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 or Tuskegee 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 2.0 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.
ZOO 100—General Zoology	4
MA 110—College Algebra & Trigonometry	5
CHE 110—General College Chemistry	5
ENG 101—Freshman Comp.	3
	17

Second Semester	Crs.
GEN 106—Agr. Animal Sci.	4
CHE 112—General College Chemistry	5
ENG 102—Freshman Comp.	3
Elective (to be chosen from Botany, Agricultural Economics or Social Science)	3
HIS 108—His. of U.S. thru 1865 or HIS 109—His. of U.S. since 1865	3
	18

Second Year

First Semester	Crs.
PHY 211—Gen. Elem. Phy.	5
CHE 230—Organic Che.	3
CHE 231—Laboratory for CHE 230	2
ASC 280—Prin. of An. Nutrition	4
**AGE 100—Agr. Entomology or ZOO (second course)	3-4
	17-18

Second Semester	Crs.
PHY 213—Gen. Elem. Phy.	5
CHE 232—Organic Che.	3
CHE 233—Laboratory for CHE 232	2
***CLA 131—Med. Terminology	3
ASC 260-261—Genetics	4
	17

Third Year

First Semester	Crs.
GEN 102—Agr. Soc. Sc.	4
GEN 104—Agr. Plant Sc.	4
AEN 100—Principles of Agricultural Mechanics	3
MB 200—Prin. of Bacteriology	4
CLA 200	2
	17

Second Semester	Crs.
AGR 266—Soils	4
ASC 260, 261—Genetics	4
ECO 251—Prin. of Econ.	3
AEC 400—Agr. Mktg.	3
Electives	6
	16

Fourth Year

(At Auburn University—Standing of 2.0 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

° Requirements for admission to Tuskegee vary slightly from requirements for Auburn.

°° A second course in Zoology may be substituted on approval of adviser.

°°° Two semesters of Foreign Languages may be substituted on approval of adviser.

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 Veterinary Science and Forestry.
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.

AGRICULTURAL ECONOMICS

FACULTY

Aubrey J. Brown, chairman

Professors

Aubrey J. Brown	Ph.D., Illinois, 1946
John H. Bondurant	Ph.D., Cornell, 1943
George Boyd Byers	Ph.D., Iowa State, 1948
Dana George Card	Ph.D., Cornell, 1939
John C. Redman	Ph.D., Kentucky, 1951
John Bissell Roberts	M.S., Kansas State, 1935
Robert William Rudd	Ph.D., California, 1952
Dallas Milton Shuffett	Ph.D., Kentucky, 1956
Eldon Dee Smith	Ph.D., Wisconsin, 1954

Associate Professors

Wendell C. Binkley	M.S., Kentucky, 1940
Carl M. Clark	M.S., Oklahoma State, 1929
James Forrest Thompson	Ph.D., Chicago, 1962

Assistant Professors

Kurt Ramon Anschel	Ph.D., Michigan State, 1964
Barry Wright Bobst	Ph.D., Washington State, 1964
James E. Criswell	M.S., Kentucky, 1948
Joe Eugene Fuqua	M.S., Kentucky, 1956
Ernest D. Gooch, Jr.	Ph.D., Illinois, 1962
Willard H. Minton	M.S., Kentucky, 1951
John Guy Stovall	Ph.D., Kentucky, 1962
Robert S. Welsh	Ph.D., Ohio State, 1965

Course Descriptions

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: ECO 251; GEN 102. *Gooch and Welsh.*

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: AEC 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: AEC 400, or approval of instructor. *Clark.*

403 *Marketing Livestock and Livestock Products.* (2) II

Analysis of livestock and dairy markets; market organization, agencies, institutions, services; and public regulations. Prereq: AEC 400. *Gooch.*

404 *Marketing and Processing Poultry Products.* (2) I, S

Organization and operation of markets; grading, packaging and handling poultry and eggs. Lecture, 1 hour; lab, 2 hours. Prereq: AEC 400.

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: AEC 400.

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. *Card, Shuffett, and Bobst.*

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: AEC 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: AEC 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: AEC 400. *Anschel.*

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: AEC 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: GEN 102, ECO 251. *Criswell.*

415 *Farm Accounting.* (2) II
Development and analysis of farm records and farm accounts including farm cost accounting. Prereq: AEC 410. *Criswell.*

511 *Advanced Farm Management.* (3) II, S
An advanced analysis of management and managing farms. Prereq: AEC 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: AEC 410, or approval of instructor.

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: AEC 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 business. Field trips required. Prereq: AEC 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: AEC 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: AEC 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: AEC 410, and approval of instructor.

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: AEC 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: ECO 251, AEC 410.

550 *Agricultural Prices.* (3) II
Price behavior of agricultural products including supply-price relationships and their relation to the general price level. Prereq: ECO 251. *Anschel.*

ECONOMIC DEVELOPMENT

626 *Agriculture and Economic Development.* (3) I
Analytical consideration of role of agriculture in economic development in relation to over-all development strategy at various stages of growth. Theoretical and policy issues of particular relevance to the agricultural development in underdeveloped agrarian economies with various resource, social, political and economic systems. Prereq: ECO 525 or approval of instructor. *Smith.*

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 chairman 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: ECO 515 or equivalent (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-macro Theory.* (3) I
Selected aggregative models treated mathematically. Emphasis on maximization problems for linear systems. Leontief input-output models. Prereq: MA 113, ECO 515 or equiv. (Same as ECO 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: ECO 550, 618, AEC 630 or equivalent (same as Economics 691).

768 *Residence Credit for Master Degree.* (0)
May be repeated once. Prereq: Consent of advisor and chairman of department. *Staff.*

769 *Residence Credit for the Doctor's Degree.*
May be repeated indefinitely. Prereq: Consent of advisor and chairman of department. *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 chairman of department. May be repeated for a total of 9 credits. Brown and *Staff.*

AGRICULTURAL ENGINEERING

FACULTY

Blaine Frank Parker, chairman

Professor

Blaine Frank Parker — Ph.D., Michigan State, 1954
John Neal Walker — Ph.D., Purdue, 1961

Associate Professors

Jesse Byron Brooks — M.S., Auburn, 1950
Joe Millard Bunn — Ph.D., Iowa State, 1960
Wiley Hix Henson, Jr. — Ph.D., N.C. State College, 1962

Edward Manson Smith	M.S., Kansas State, 1950
Earl Robert Young	M.S., Minnesota, 1938

Assistant Professors

Gerald Martin White	Ph.D., Purdue, 1960
Elmon Eugene Yoder	M.S., Oregon, 1961

Course Descriptions

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. May be repeated indefinitely.

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. *Young.*

101 *Laboratory for Agricultural Engineering 100.*

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. *Young.*

213 *Laboratory for Agricultural Engineering 212.*

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. *Young.*

253 *Laboratory for Agricultural Engineering 252.*

400 *Farmstead Planning and Mechanization.* (3) I, II

Analysis of systems for handling feed, water, and waste products in agriculture. The processing and storage of farm products. Farmstead layout. Structural and environmental design. Lecture, one hour; lab, four hours. Prereq: AEN 100 or consent of instructor. *Walker and White.*

405 *Properties of Soils and Biological Materials as Related to Engineering.* (3)

A study of the properties of soil and biological materials which are needed in the engineering design of systems to produce, store, and process agricultural products. Lecture and recitation, two hours; lab, two hours. Prereq: Junior standing in Agricultural Engineering or consent of instructor.

406 *Environment for Plants and Animals as Related to Engineering.* (3)

A study of the thermal, moisture, light, and gaseous components of plant and animal environment with emphasis on interactions between these biological systems and their environment. Lecture and recitation, two hours; lab, two hours. Prereq: AEN 405 or consent of instructor.

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) II

The use of concepts learned in physical and engineering sciences in the design of energy converters and machinery for agriculture. Analytical and experimental approaches are used. Lecture, three hours; lab, two hours. Prereq: MA 431, EM 313, concur: ME 400, EM 331. *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: EM 331, CE 102. *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) I

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: ME 330.

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. *White.*

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: EE 306, ME 330, or CE 352. *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 maximum of 6 credits. *Staff.*

505 *Engineering Analysis.* (3) II

The use of professional analysis techniques in evaluating engineering problems related to the agricultural industry; determining the applicability of physical concepts to the solution of these problems; definition of specific engineering objectives, analysis, finding solutions and interpretation of solutions. Prereq: AEN 416, 425, 435, 446 or consent of instructor. *E. Smith.*

° AEN 416 becomes AEN 417 for 3 credits effective September 1968.

°° AEN 425 becomes AEN 427 for 3 credits effective September 1968.

† AEN 435 becomes AEN 437, *Design of Engineering Systems for Soil and Water Management*, effective September 1968.

‡ AEN 446 becomes AEN 447 for 3 credits effective September 1968.

506 *Greenhouse Design, Management, and Environmental Control.* (3)
Functional requirements of a greenhouse and the physical laws influencing these requirements. The influence of structural, physical, and biological factors on the environmental conditions will be emphasized. Prereq: HOR 335 or 512 and AEN 100 or consent of instructor. (Same as HOR 506).

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. (Graduate students only). Prereq: AEN 416.

525 *Environmental Design for Biological Systems.* (3) II
The influence of environmental factors on biological efficiency, design and selection of equipment and controls for providing environmental requirements of biological systems. Prereq: AEN 425, AEN 505.

535 *Soil and Water Conservation Engineering.* (3) II
Consideration of elements of hydrology related to agriculture; functional analysis, economic analysis and design of more complex systems for soil and water control and management. Prereq: AEN 435 and 505.

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. Graduate students only. Prereq: AEN 425.

618 *Power and Machinery Engineering.* (3) I, II
A consideration of fundamental concepts of energy and materials in the identification and mensuration of parameters needed in the development of new machines for agriculture. Prereq: AEN 416 and 505.

628 *Advanced Structural Design for Biological Systems.* (3) I, II
The use of similitude, dimensional analysis, and statistical theory in the analysis of selected agricultural structural problems. The prediction of system performance as environmental conditions change; and the analysis of system reliability. Prereq: AEN 535 or consent of instructor.

635 *Advanced Soil and Water Conservation Engineering.* (3) I, II
A consideration of advanced techniques useful in research, analysis, and design related to soil and water conservation facilities. Mathematical and statistical techniques and theory of models are included. Prereq: AEN 535 or consent of instructor.

646 *Advanced Agricultural Processing and Electrification.* (3) I, II
An analytical and descriptive study of advanced agricultural engineering topics related to agricultural processing and electrification, food preservation, quality measurement and control and the application of electromagnetic energy to agriculture. Prereq: AEN 548.

658 *Instrumentation in Agricultural Engineering Research.* (3) I, II
The principles and applications of measuring instruments and devices for obtaining experimental data. Prereq: Consent of instructor.

750 *Special Problems in Agricultural Engineering.* (1-3) I, II
Independent work on selected research problems in one of the various fields of Agricultural Engineering. Consultation and laboratory by appointment. Prereq: Approval of Chairman of Department.

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

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. (Graduate students only.) May be repeated twice. One class hour. *Staff.*

795 *Thesis.* (0) I, II, S
May be repeated twice.

AGRICULTURAL ENTOMOLOGY

FACULTY

Lee Hill Townsend, chairman

Professors

Lee Hill Townsend	Ph.D., Illinois, 1935
Richard Thurston	Ph.D., Rutgers, 1952
Juan Guadelupe Rodriguez	Ph.D., Ohio State, 1949

Associate Professor

Richard Lloyd Miller	Ph.D., Iowa State, 1962

Assistant Professors

Douglas Lee Dahlman	Ph.D., Iowa State, 1965
Fred William Knapp	Ph.D., Kansas State, 1961
Bobby Clifton Pass	Ph.D., Clemson, 1962
Rudolph A. Scheibner	Ph.D., Michigan State, 1963

Course Descriptions

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. Lecture, two hours; lab, two hours. *Townsend.*

101 *Laboratory for Agricultural Entomology 100.* (0)

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. Lecture, two hours; lab, two hours. Prereq: AGE 100. *Townsend.*

501 *Laboratory for Agricultural Entomology 500.* (0)

530 *Applied Entomology.* (3) II
Principles of insect damage, populations and distributions. Various types of natural and applied control, including problems of insecticide toxicity, resistance, and residues. Lecture, two hours; lab, two hours. Prereq: AGE 100.

531 *Laboratory for Agricultural Entomology 530.* (0)

532 *Medical Entomology.* (4) I, S
Study of Arthropod vectors of disease. Structure, collection, identification, control measures and life history studies. Given alternate years. Same as ZOO 532. Prereq: ZOO 534 or consent of instructor.

533 *Laboratory for Agricultural Entomology 532.* (0)

534 *Parasitology.* (4) I, S
Protozoan, helminth and arthropod parasites of man and domestic animals, emphasis on etiology, epidemiology, methods of diagnosis, control measure, and life histories. Techniques for host examination and preparation of material for study. Same as ZOO 534. Prereq: ZOO 100.

535 *Laboratory for Agricultural Entomology 534.* (0)

542 *Insect Taxonomy.* (4) I
Methods and principles of systematic entomology and zoology; characterization of taxonomic categories; and international rules of zoological nomenclature. Collection, preparation and identification of insect specimens. Given alternate years. Lecture, two hours; lab, four hours. Same as ZOO 542. Prereq: AGE 100 and ZOO 100.

543 *Laboratory for Agricultural Entomology 542.* (0)

595 *Independent Work.* (2-3) I, II, S
Special problems for individual students who are capable of pursuing independent investigations in the various divisions of entomology. Prereq: AGE 100 and any two of the following: AGE 530, 532, or 650. *Staff.*

602 *Insect Morphology.* (4) I
A study of internal and external insect structure, including function, and variation of form. Given alternate years. Lecture, two hours; lab, four hours. Same as ZOO 602. Prereq: AGE 100 and consent of instructor.

603 *Laboratory for Agricultural Entomology 602.* (0)

606 *Insect Toxicology.* (3) II
Toxic action of insecticides: preparation, use, and analysis of insecticides; residues; analytical methods in insect toxicology. Lecture, two hours; lab, two hours. Prereq: Consent of instructor.

607 *Laboratory for Agricultural Entomology 606.* (0)

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: ZOO 100, AGE 100, and consent of instructor. (Same as ZOO 620). *Rodriguez.*

621 *Laboratory for Agricultural Entomology 620.* (0)

630 *Insect Physiology.* (4) II
Principles of insect physiology, function of organs, circulation, reproduction, respiration, and digestion. Lecture, 2 hours; lab, 4 hours. Same as ZOO 630. Prereq: Consent of instructor.

631 *Laboratory to Accompany 630.*

650 *Advanced Applied Entomology.* (3) II
Bionomics of insects; respresentative insecticides, their characteristics, formulation, scope of use, safety factors, and methods of application. Lecture, two hours; lab, two hours. Prereq: AGE 100 or 500.

651 *Laboratory for Agricultural Entomology 650.* (0)

768 *Residence Credit for the Master's Degree.* (1 to 9 wks. residence)
May be repeated once. *Staff.*

780 *Entomological Problems.* (2-3) I, II
Investigations of chosen insect problems, including original work. Discussion and assignment of current insect subjects. Prereq: AGE 100, 510, 520, 550, 768. May be repeated once for a maximum of 6 credits. *Staff.*

781 *Entomological Seminar.* (0) I, II
Current problems in the field of entomology, with special reference to technical research.

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
Directed independent study of research relative to a particular problem in extension and the study of a selected problem. May be repeated to a total of 12 credits.

AGRICULTURE—GENERAL

001, 002, 003, 004 *Agricultural Colloquium.* (0 each)
A general analysis of the changes taking place in agriculture and their implications to a student of agriculture.

102 *Agricultural Social Science.* (4) I, II
A lecture and problems course involving the major concepts of the social sciences and their usefulness in agriculture. *Staff.*

104 *Agricultural Plant Science.* (4) I, II
To develop an appreciation of the plant sciences as they relate to agriculture and to develop an understanding of crop plant morphology, physiology, genetics and ecology and the relation of these to growth, management and utilization of crop plants. *Staff.*

106 *Agricultural Animal Science.* (4) I, II
The basic principles of animal nutrition, physiology, genetics, breeding, food processing and distribution as they apply to animal science. *Staff.*

107 *Laboratory for GEN 106.* (0) I, II

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.*

AGRONOMY

FACULTY

John Leonard Ragland, chairman

Professors

John Leonard Ragland	Ph.D., N.C. State, 1959
Charles Eugene Bortner	M.S., Kentucky, 1932
Herbert Fane Massey, Jr.	Ph.D., Wisconsin, 1952
William Albert Seay	Ph.D., Wisconsin, 1950
Roy Edward Sigafus	Ph.D., Cornell, 1951
Granville Woolman Stokes	Ph.D., Wisconsin, 1953
William Gregory Survant	Ph.D., Ohio State, 1951
Norman Linn Taylor	Ph.D., Cornell, 1953
William Chelcy Templeton, Jr.	Ph.D., Purdue, 1960
Gilbert Theodore Webster	Ph.D., Iowa State, 1949

Associate Professors

Harry Hudson Bailey	Ph.D., Michigan State, 1956
Samuel Clifford Bohanan	Ph.D., Cornell, 1963
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
James Watt Herron	Ph.D., Cornell, 1951
Andrew Jackson Hiatt	Ph.D., N.C. State, 1960
Michael John Kasperbauer	Ph.D., Iowa State, 1961
William Anderson Kendall	Ph.D., Ohio State, 1954
Frank Albert Loeffel	Ph.D., Minnesota, 1953
Doyle Eugene Peaslee	Ph.D., Iowa State, 1960
Ronald Edward Phillips	Ph.D., Iowa State, 1959
Timothy Henry Taylor	Ph.D., Penn State, 1955

Assistant Professors

Roger Allen Andersen	Ph.D., Wisconsin, 1963
Richard Irven Barnhisel	Ph.D., Va. Polytechnic, 1964
John Frederick Benner	Ph.D., Michigan State, 1962
Barry John Bloomfield	Ph.D., Cornell, 1965
Donald Burdick	Ph.D., Penn State, 1962
Harold Rhodes Burton	Ph.D., Louisville, 1964
Lowell Palmer Bush	Ph.D., Iowa State, 1964
Amber L. S. Cheng	Ph.D., So. California, 1948
Glenn Burton Collins	Ph.D., N.C. State, 1966
Claus Hans Grunwald	Ph.D., Missouri, 1965
Carol Jeanne Keller	Ph.D., California, 1966
Richie Howard Lowe	Ph.D., Oregon State, 1963
Shuh-Ji Sheen	Ph.D., Minnesota, 1958
John Leonidas Sims	Ph.D., Iowa State, 1960
Jones H. Smiley	Ph.D., Wisconsin, 1963
John Caswell Williams	Ph.D., Iowa State, 1960
Alexis Zane	Ph.D., Oklahoma, 1963
Paul Davis Legg	Ph.D., N.C. State, 1964

Course Descriptions

General Courses

370 *Seminar.* (1) II
Study and analysis of principal sources of agronomic literature. Reports and discussion of selected topics. May be repeated for a maximum of two credits. *Staff.*

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 *Residence Credit for Master's Degree.* (0) I, II, S
May be repeated once. *Staff.*

770 *Agronomy Seminar.* (1) I, II
Reports and discussion of problems and research in soils, crops and plant pathology. May be repeated to a maximum of 4 credits. *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.

207 *Laboratory for Agronomy 206.*

502 *Ecology of Economic Plants.* (3) I
Critical study of the response of economic plants to natural and man-modified environments. Two lectures and one two-hour lab period each week. Prereq: BOT 101 and AGR 206, or consent of instructor. *T. Taylor.*

503 *Weed Identification and Control.* (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: AGR 206. *Herron.*

504 *Laboratory for Agronomy 503.*

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: AGR 206 and BOT 530 or ASC 260. *Loeffel.*

507 *Laboratory for Agronomy 506.*

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; AGR 206 or consent of instructor. *Stokes.*

509 *Laboratory for Agronomy 508.*

510 *Pastures and Harvested Forages.* (3) II
A comprehensive study of forage crops with special emphasis upon their production in Kentucky. Lecture and recitation, 3 hours. Prereq: BOT 101; AGR 206 or consent of instructor.

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; AGR 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. Prereq: Approval of instructor. *Templeton.*

COURSES IN SOIL SCIENCE

366 *Fundamentals of Soil Science.* (4)
A study of the fundamental properties and processes of soils and their relation to plant growth. Prereq: CHE 104 or equiv. or concurrent, or consent of instructor.

367 *Laboratory for Agronomy 366.*

566 *Soil Biology.* (3) II
The nature and biochemical activities of the soil microflora; their significance in soil genesis and structure and their role in soil fertility. Lecture, two hours; lab, two hours. Prereq: AGR 366, MB 200. *Bloomfield.*

567 *Laboratory for Agronomy 566.*

568 *Soil Conservation and Management.* (3)
A study of the principles of wise land use and effective soil management with experience in their application. Lecture and discussion two hours; lab, two hours. Prereq: AGR 366.

569 *Laboratory for Agronomy 568.*

570 *Soil Fertility and Fertilizers.* (3) II, S
Sources and manufacture of fertilizer materials; soil reaction of elements essential for plant growth; effective use of fertilizers for various soil situations. Lecture and discussion, three hours. Prereq: AGR 266 or equiv. *Sims.*

573 *Soil Morphology and Mapping.* (3) I
Study of concepts of soil horizons and soil profiles, and the chemical, physical and mineralogical parameters useful in characterizing them. Use of soil survey equipment, preparation of soil maps and development of a land use plan for an assigned area. Lecture and recitation, two hours; lab, three hours. Prereq: AGR 366 and GLY 100 or consent of instructor. *Bailey.*

574 *Laboratory for Agronomy 573.*

575 *Soil Physics.* (4) I, S
Physical properties of soils with emphasis on soil water relations, and structure. Lecture and discussion, two hours; lab, four hours. Prereq: AGR 366 and approval of instructor.

576 *Laboratory for Agronomy 575.*

581 *Chemical Analysis of Soils and Plants.* (3) I

Laboratory emphasis on instrumental methods and techniques used in quantitative and qualitative chemical analysis of soil and plant materials and relation of these analyses to physical, chemical and biological systems. Lecture, one hour; lab, six hours. Prereq: AGR 366, CHE 226 or equiv., or approval of instructor. *Barnhisel.*

582 *Laboratory for Agronomy 581.*

599 *Special Problems in Agronomy.* (1-4)

May be repeated for a maximum of nine credits. Prereq: Consent of instructor.

652 *Soil Classification and Geography.* (3) II (even years)

A critical evaluation of the concepts of soil classification, with particular reference to the current U.S. scheme. Study of geographic locations and nature of their soil associations as related to gross considerations of soil genesis. Prereq: AGR 573 or consent of instructor. *Bailey.*

653 *Laboratory for Agronomy 652.*

660 *Advanced Soil Biology.* (2) I (odd years)

A critical evaluation of the current research status in selected aspects of soil biology. Prereq: AGR 566 or consent of instructor.

671 *Soil Chemistry.* (3) II (even years)

A study of the chemical characteristics of the soil and of the more important chemical processes in the soil. Lecture and discussion, two hours; lab, three hours. Prereq: AGR 570, 581, CHE 442 or consent of instructor. *Massey.*

672 *Laboratory for Agronomy 671.*

681 *Mineralogical and Chemical Analysis of Soils.* (3) II (odd years)

Laboratory emphasis on instrumental methods and techniques used in quantitative and qualitative mineralogical and chemical analysis of soils and relation of these analyses to physical, chemical and biological systems. Prereq: CHE 226, AGR 366, 581 or equiv. or approval of instructor. *Barnhisel.*

682 *Laboratory for Agronomy 681.*

712 *Advanced Soil Fertility.* (3) I

An integration of the effects of soil, climatic and physiological factors on the nutrition and dry matter accumulation of plants. Lecture and discussion, two hours; lab, two hours. Prereq: Agronomy 570 or consent of instructor. *Peaslee.*

713 *Laboratory for Agronomy 712.*

721 *Soil Genesis.* (3) II (odd years)

Critical study of theories and concepts in soil genesis and their relationships to soil morphology and classification. Analysis of soil properties and soil forming processes responsible for the development of unique soil pedons. Prereq: Consent of instructor. Bailey.

722 *Laboratory for Agronomy 721.*

741 *Clay Mineralogy.* (3) I (even years)

A comprehensive study of the crystal structures of clay minerals commonly found in soils and sediments. Lecture and discussion, two hours; lab, two hours. Prereq: GLY 212 and 213, AGR 681 or equiv. or consent of instructor. *Barnhisel.*

742 *Laboratory for Agronomy 741.*

COURSES IN BOTANY

(May be used for agricultural credit, subject to the approval of advisor).

501 *Plant Physiology.* (3-5) I

See course description under Botany.

701 *Plant Metabolism.* (3)

See course description under Botany.

634 *Cytogenetics.* (3) II

See course description under Botany.

ANIMAL SCIENCES

FACULTY

Professors

Wesley Patterson Garrigus	Ph.D., Illinois, 1935
Charles Elmer Barnhart	Ph.D., Iowa State, 1954
Ray Horn Dutt	Ph.D., Wisconsin, 1948
Theodore Russell Freeman	Ph.D., Penn State, 1937
Wyatt Marion Insko	M.S., West Virginia, 1927
Don Richard Jacobson	Ph.D., Maryland, 1956
James Dillon Kemp	Ph.D., Illinois, 1952
Donald Wayne MacLaury	Ph.D., Iowa State, 1955
Durward Olds	Ph.D., Illinois, 1956
Dwight Moody Seath	Ph.D., Iowa State, 1939
Dewey G. Steele	Ph.D., Wisconsin, 1948
Patch Gregory Woolfolk	Ph.D., Cornell, 1950

Associate Professors

Okra Jones Abbott	Ph.D., Wisconsin, 1956
John J. Begin	Ph.D., Penn State, 1960
Neil Wright Bradley	Ph.D., Illinois, 1958
Charles Frank Buck	Ph.D., Cornell, 1953
Charles Oran Little	Ph.D., Iowa State, 1960
George Ernest Mitchell, Jr.	Ph.D., Illinois, 1956
Arthur William Rudnick, Jr.	Ph.D., Minnesota, 1954
William York Varney	Ph.D., Michigan State, 1960

Assistant Professors

Charles H. Chaney	Ph.D., Kentucky, 1961
Guy Lee Monty Chappell	Ph.D., V.P.I., 1966
Larry Very Cundiff	Ph.D., Oklahoma State, 1965
Benjamin T. Dean	Ph.D., Missouri, 1961
Oliver Wendell Deaton	Ph.D., Mich. State, 1963
Hudson A. Glimp	Ph.D., Oklahoma, 1965
Roy C. Gray, Jr.	Ph.D., Auburn, 1964
Bruce Edward Langlois	Ph.D., Purdue, 1962
William Glen Moody	Ph.D., Missouri, 1963
E. Dale Purkhiser	Ph.D., Purdue, 1962
Henry England Randolph	Ph.D., Ohio State, 1962
John Robertson	Ph.D., Kentucky, 1960
Dallas Gene Waddill	Ph.D., Michigan, 1960
John Carlisle White	M.S., Kentucky, 1953
John C. Wilk	Ph.D., Minnesota, 1962

Instructor

Arthur Paul Graden	B.S., Kentucky, 1959

Assistant in Poultry

Thomas H. Johnson	B.S., Kentucky, 1948

Course Descriptions

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: CHE 102 or 110. *Buck.*

281 *Laboratory for Animal Science 280.*

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: CHE 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 of nutrition. Lecture and recitation, one hour; lab, 6 hours. Prereq: ASC 580. *Little.*

681 *Laboratory for Animal Science 680.*

682 *Nutrient Metabolism.* (5) S
Introduction to history, principles and present concepts of ruminant and non-ruminant mineral nutrition. Prereq: one course in introductory nutrition, 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, and Jacobson.*

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. Prereq: ASC 580. *Chaney.*

784 *Special Problems in Animal Nutrition.* (1-4) I, II, S
Approval of instructor required. May be repeated 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 for a total of 9 credits. Prereq: Consent of instructor. *Animal Nutrition*

COURSES IN ANIMAL SCIENCE (General)

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.*

103 *Laboratory for Animal Science 102.*

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: GEN 106. Not open to freshmen. *Staff.*

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. *Staff.*

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 curing. Lecture, two hours; lab, four hours. Prereq: GEN 106. Not open to freshmen. *Kemp and Moody.*

205 *Laboratory for Animal Science 204.*

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.*

207 *Laboratory for Animal Science 206.*

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: ASC 102. *Ryen.*

209 *Laboratory for Animal Science 208.*

300 *Live Animal and Carcass Evaluation.* (3) II
Correlation of live animal and carcass characteristics of beef cattle, hogs and sheep; relation of live animal and carcass traits to the economic value of the carcass; laboratory exercises in grading and evaluating meat animals; lectures on environmental and genetic effects on live animal and carcass merit. Lecture, one hour; lab, four hours. Prereq: GEN 106. *Moody.*

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: GEN 106, ASC 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: ASC 204, 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: ASC 204 or 206. *Moody.*

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 maximum of 2 credits. *Staff.*

395 *Special Problems in Animal Science.* (1-4) I, II, S
Approval of instructor required. May be repeated for a maximum of 9 credits. *Staff.*

500 *Animal Breeding.* (3) I
History of animal improvement; survey of hereditary traits in livestock, inbreeding and outcrossing; progeny tests and herd analysis. Lecture, three hours. Prereq: GEN 106, ASC 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: GEN 106, ASC 280. *Woolfolk.*

505 *Laboratory for Animal Science 504.*

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: GEN 106, ASC 280. *Bradley.*

507 *Laboratory for Animal Science 506.*

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: GEN 106, ASC 280. *Waddill.*

509 *Laboratory for Animal Science 508.*

771 *Animal Science Seminar.* (1) I, II
May be repeated twice for a total of 3 credits. *Garrigus.*

780 *Special Problems in Animal Science.* (1-4)
May be repeated for a maximum of nine hours. Prereq: Consent of instructor.

790 *Research in Meats.* (3) I, II, S
Problems involving original investigation. May be repeated twice for a total of 9 credits. Prereq: Consent of instructor. *Kemp and Moody.*

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. Prereq: Consent of instructor. *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. Prereq: Consent of instructor. *Bradley.*

794 *Research in Swine Husbandry.* (3) I, II, S
Problems involving original investigation. May be repeated twice for a total of 9 credits. Prereq: Consent of instructor. *Chaney.*

COURSES IN DAIRY SCIENCE

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. GEN 106. *Deaton.*

230 *Judging Dairy Products.* (2) II
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.*

231 *Laboratory for Dairy Science 230.*

232 *Advanced Dairy Products Judging.* (2) I
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: DS 230 or approval of instructor. *Freeman.*

233 *Laboratory for Dairy Science 232.*

235 *Dairy Plant Testing Methods.* (3) I
Purpose, principles, technic and interpretation of results of testing procedures essential to the control of all dairy processing operations. Lab, six hours. Prereq: GEN 106, CHE 104. *Rudnick.*

237 *Approved Dairy Practice.* (1)
A minimum of three months practical experience in an approved dairy plant. *Freeman.*

321 *Advanced Dairy Cattle Judging.* (2) I
Primarily for judging team candidates. Open only to those who have made good standings in the prerequisite courses. Lectures and lab. Prereq: GEN 106, DS 221, or consent of instructor. *Deaton.*

396 *Special Problems in Dairying.* (1-4) I, II, S
Approval of instructor required, may be repeated to a maximum of 9 credits. *Dairy Staff.*

520 *Dairy Cattle Feeding and Management.* (2-3) I
Application of principles of nutrition to dairy cattle feeding; current methods contributing to most profitable production of quality dairy products on the farm. Lecture, two hours; lab, two hours. Prereq: ASC 280. *Jacobson and Gordon.*

521 *Laboratory for Dairy Science 520.*

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: ASC 260. *Deaton.*

525 *Laboratory for Dairy Science 524.*

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: GEN 106, ASC 260, ZOO 100 or consent of instructor. *Olds.*

527 *Laboratory for Dairy Science 526.*

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: MB 200 or 400. *Langlois.*

531 *Dairy Bacteriology Laboratory.* (2) I
Laboratory to accompany DS 530, Dairy Bacteriology. Lab, four hours. Prereq: or concurrent: DS 530. *Langlois.*

533 *Advanced Dairy Bacteriology.* (3) II
Bacteriological principles and problems relating to specific dairy products and processes. Prereq: DS 530, 531. *Langlois.*

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: CHE 236, DS 235. *Freeman.*

535 *Laboratory for Dairy Science 534.*

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: DS 235. *Rudnick.*

537 *Laboratory for Dairy Science 536.*

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. 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.

684 *Advanced Ruminant Nutrition.* (3) II
Introduction to principles of ruminant metabolism in the utilization of feedstuffs for meat, milk and wool production. Prereq: One course each in nutrition, physiology and biochemistry, and/or consent of instructor. Jacobson and Mitchell.

768 *Residence Credit for Master's Degree.* (0) I, II, S
May be repeated once. *Dairy Science Staff.*

769 *Residence Credit for Doctor's Degree.* (0) I, II, S
May be repeated indefinitely. *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 Dairy Science.* (1-4) I, II, S
May be repeated to a maximum of twelve credits. Prereq: Consent of instructor. *Dairy Science Staff.*

795 *Research in Dairy Science.* (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.*

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 ZOO 100, Concur: ASC 261. *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 ASC 260, at student's option. *Steele.*

398 *Special Problems in Genetics.* (1-3) I, II, S
Approval of instructor required. May be repeated for a maximum of 9 credits. *Steele and Dutt.*

560 *Genetics.* (3) I, II, S
Lecture ASC 260 and assigned readings. Primarily for graduate students. Lecture, three hours. Prereq: BOT 101 or ZOO 100, concur: ASC 561. *Steele.*

561 *Genetics Laboratory.* (1) I, II
Similar to ASC 261 but additional work required. Primarily for graduate students. Lab, two hours. Concurrent with ASC 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: ASC 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: VS 501, ASC 500 or DS 524 or PTY 540. *Dutt.*

662 *Population Genetics.* (3) I
Introduction to principles of static and dynamic populations; statistical concepts and tools applied to quantitative inheritance. Prereq: One course each in statistics and genetics and consent of instructor. For graduate students only. *Cundiff.*

664 *Advanced Animal Breeding.* (3)
Specialized phases of genetics, selection, mating systems and population parameters applicable to synthesis of breeding programs for animal improvement. Prereq: ASC 260, 500 and AGE 530 or equivalents. *Cundiff.*

783 *Special Problems in Genetics.* (1-3) I, II, S
May be repeated for a maximum of 9 credits. Prereq: Approval of instructor. *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. Prereq: Consent of instructor. *Steele and Dutt.*

COURSES IN POULTRY SCIENCE

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: GEN 106. *Johnson.*

243 *Laboratory for Poultry Science 242.*

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: GEN 106, PTY 242. *Johnson.*

343 *Laboratory for Poultry Science 342.*

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: GEN 106. Approval of instructor. *MacLaury.*

347 *Laboratory for Poultry Science 346.*

397 *Special Problems in Poultry.* (1-4)
Approval of instructor required. May be repeated to a maximum of 9 credits. Prereq: Consent of instructor. *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: GEN 106, ASC 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: GEN 106. *Abbott.*

543 *Laboratory for 542.*

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: CHE 236 or equivalent and GEN 106 and ASC 580. *Begin.*

549 *Laboratory for Poultry Science 548.*

768 *Residence Credit for Master's Degree.* (0) I, II, S
May be repeated twice for a maximum of three credits.

771 *Animal Industry Seminar.* (1) I, II
May be repeated twice for a maximum of three credits.

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 for a total of 9 credits. Prereq: Consent of instructor. *Staff.*

COURSES APPLICABLE TO ALL DIVISIONS

768 *Residence Credit for the Master's Degree.*
(1 to 9 wks. residence)
May be repeated once. *Staff.*

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

FORESTRY

FACULTY

D. Boyd Richards, chairman

Professors

D. Boyd Richards — Ph.D., Syracuse, 1950
Oscar Malcolm Davenport — M.S., Purdue, 1940

Associate Professor

Richard Mark — Ph.D., Yale, 1965

Course Descriptions

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.*

105 *Laboratory for Forestry 104.*

200 *Seedling 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.*

201 *Laboratory for Forestry 200.*

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; MA 112; or approval of instructor. *Davenport.*

301 *Laboratory for Forestry 300.*

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.*

401 *Laboratory for Forestry 400.*

410 *Lumber.* (3) II
The production, processing and merchandizing of lumber. *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
This course is designed to meet the need for advanced work. Prereq: FOR 400 and 415, and approval of instructor. May be repeated for a total of 9 credits. *Davenport.*

HORTICULTURE

FACULTY

Hubert Charles Mohr, chairman

Professor

Hubert Charles Mohr	Ph.D., Texas A.&M., 1955

Associate Professors

Carl Edward Chaplin	M.S., Illinois, 1948
Donald James Cotter	Ph.D., Cornell, 1956
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
Leonard P. Stoltz	Ph.D., Purdue, 1965

Course Descriptions

102 *Elementary Floriculture.* (2) II
The elementary principles of growing flowers and decorative plants, as house plants, and outdoor culture. Lecture, two hours. Offered 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: BOT 101, 102, and approval of instructor. *Kelley.*

330 *Laboratory for Horticulture 329.*

331 *Landscape Design.* (3)
The illustration of the principles of landscaping and its use in the coordination and location of structures with respect to their surroundings. Lecture, 2 hours; lab, 2 hours. Prereq: One course in ART.

332 *Laboratory for Horticulture 331.*

397 *Special Problems in Horticulture.* (1-4) I, II, S
This course is designed to meet the need for advanced work. Prereq: Approval of instructor. *Staff.*

500 *Pest Control in Horticultural Crops.* (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: One semester of Entomology and consent of instructor. Offered in spring of even numbered years.

501 *Laboratory for Horticulture 500.*

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. Offered 1967-68 and alternate years.

503 *Laboratory for Horticulture 502.*

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. Offered 1966-67 and alternate years. *Chaplin.*

505 *Laboratory for Horticulture 504.*

506 *Greenhouse Design, Management, and Environmental Control.* (3)
Functional requirements of a greenhouse and the physical laws influencing these requirements. The influence of structural, physical, and biological factors on the environmental conditions will be emphasized. Same as AEN 506. Prereq: HOR 512 and AEN 100 or consent of instructor.

510 *Vegetable Crops.* (3) I
A study of the fundamental principles underlying commercial production of vegetables. Lectures, two hours; lab, two hours. Prereq: AGR 366. Offered 1966-67 and alternate years. *Knavel.*

511 *Laboratory for Horticulture 510.*

512 *Greenhouse Vegetable Crops.* (3) II
Principles of vegetable crop production of environmentally controlled growing structures; methods for controlling the environment and vegetable crops adapted to greenhouse production. Lecture, two hours; lab, two hours. Offered 1967-68 and alternate years. *Knavel.*

513 *Laboratory for Horticulture 512.*

515 *Turf Management.* (3)
Types of grasses used for turf; basic and applied principles of turf culture as they relate to the various phases of the turf industry, i.e., Ornamental Horticulture, Landscaping, sod nurseries, golf courses and athletic fields, parks and highways. Lecture, 2 hours, lab, 2 hours. Prereq: One course in BOT and one course in Soil Science.

522 *Landscape Planting Design.*
A detailed study of the use of various plant materials to express the principles of landscape design. Lecture, 2 hours; lab, 2 hours. Prereq: HOR 331, 527. *Abernathie.*

523 *Laboratory for Horticulture 522.*

524 *Floriculture II.* (3) I
A detailed study of specific groups of florists' crops, with particular reference to methods of control of flowering and growth. Lecture, 2 hours; lab, 3 hours.

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: HOR 331; BOT 101, 103. Offered alternate years. *Kelley.*

526 *Laboratory for Horticulture 525.*

527 *Ornamental Plants I.* (3)
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. For ornamental majors. Offered alternate years. Lecture, 1 hour; lab, 4 hours. Prereq: HOR 331.

528 *Laboratory for Horticulture 527.*

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

770 *Seminar.* (1) I, II, S
May be repeated twice for a total of 3 credits. *Staff.*

782 *Special Problems in Horticulture.* (1-4) I, II, S
This course is designed to meet the need for advanced work. Prereq: Approval of instructor. May be repeated for a total of 12 credits. *Staff.*

790 *Research in Horticulture.* (1-4) I, II, S
Prereq: Approval of instructors. May be repeated a maximum of 9 credits. *Staff.*

PLANT PATHOLOGY

FACULTY

Richard Alexander Chapman, chairman

Professors

Richard Alexander Chapman	Ph.D., Illinois, 1948
Stephen Diachun	Ph.D., Illinois, 1938
John Wieland Oswald	Ph.D., California, 1942
Granville Woolman Stokes	Ph.D., Wisconsin, 1953

Associate Professors

Raymond Earl Hampton	Ph.D., Wisconsin, 1960
Lawrence Henson	M.S., Kentucky, 1933

Assistant Professors

J. W. Hendrix	Ph.D., North Carolina State, 1963
Columbus Christopher Litton	M.S., Kentucky, 1953
Richard Allyn Reinert	Ph.D., Wisconsin, 1962
D. Donald Poole	Ph.D., Texas A.&M., 1957
M. R. Siegel	Ph.D., Maryland, 1962
Charles Yang	Ph.D., Wisconsin, 1964
S. J. Sheen	Ph.D., Minnesota, 1962

Course Descriptions

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. *Staff.*

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. Consent of instructor. *Diachun, Chapman.*

542 *Laboratory for 541.*

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: PPA 541 or BOT 541, and consent of instructor. *Staff.*

544 *Laboratory for 543.*

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: PPA 541 or BOT 541, and consent of instructor. *Diachun.*

657 *Laboratory for 656.*

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: PPA 541 or BOT 541 or ZOO 534, or consent of instructor. Will be offered in fall of odd numbered years. *Chapman.*

659 *Laboratory for 658.*

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 emphasizes methods used in investigating the physiological effects of diseases on plants. Discussion 2 hours; lab 2 hours. Prereq: PPA 541, BOT 501, or consent of instructor. *Hampton.*

661 *Laboratory for 660.*

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

769 *Residence Credit for the Doctor's Degree in Biological Sciences.*
1-18 weeks residence. May be repeated indefinitely. *Staff.*

770 *Plant Pathology Seminar.* (1) I, II
Reports and discussions of problems and investigations of problems in Plant Pathology. May be repeated three times. *Staff.*

784 *Special Problems in Plant Pathology.* (1 to 3) I, II, S
May be repeated to a maximum of nine credits. Prereq: PPA 541 or BOT 541, and consent of instructor. *Staff.*

794 *Research in Plant Pathology.* (1-4) I, II, S
Prereq: PPA 541 or BOT 541, and consent of instructor. May be repeated to a maximum of 12 credits. *Staff.*

RURAL SOCIOLOGY

(See also Sociology Department courses, College of Arts and Sciences)

FACULTY

Thomas R. Ford, chairman

Professors

Thomas R. Ford	Ph.D., Vanderbilt, 1951
Howard Wayland Beers Distinguished Professor	Ph.D., Cornell, 1935
James Stephen Brown	Ph.D., Harvard, 1950
A. Lee Coleman	Ph.D., Cornell, 1950
Charles Milton Coughenour	Ph.D., Missouri, 1953

Associate Professors

Frank Anthony Santopolo	Ph.D., Fordham, 1956
Harry Karl Schwarzweller	Ph.D., Cornell, 1958
E. Grant Youmans	Ph.D., Michigan State, 1953

Course Descriptions

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 HE 575. Prereq: SOC 151 or consent of instructor. *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.*

515 *Diffusion of Technology in Modern Society.* (3) I
A study of the personality, social structure, and change agent factors in the spread of new techniques among groups and individuals in modern society. Prereq: SOC 151, 153, or consent of instructor. *Coughenour.*

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. Prereq: SOC 151 or consent of instructor. *Schwarzweller.*

541 *Group Organization and Leadership.* (3) II
A study of the structure and dynamics of organized groups; leadership, membership participation, and the processes of problem-solving and group development. Lecture, 2 hours; lab, 2 hours. Prereq: SOC 151 or consent of instructor.

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.* (0)
(1 to 9 wks. residence)
May be repeated once. *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. May be repeated once for a maximum of 6 credits. *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 for a total of 6 credits. *Staff.*

VETERINARY SCIENCE

FACULTY

J. H. Drudge, acting chairman

Professors

J. H. Drudge	D.V.M., Michigan State, 1943, Sc.D., Johns Hopkins, 1950
John T. Bryans	Ph.D., Cornell, 1954
E. R. Doll	D.V.M., Michigan State, 1943
W. H. McCollum	Ph.D., Wisconsin, 1954
J. R. Rooney	D.V.M., Cornell, 1952

Associate Professor

H. D. Stowe	D.V.M., Michigan State, 1960, Ph.D., Michigan State, 1962

Assistant Professors

M. W. Crowe	D.V.M., Auburn, 1957
E. T. Lyons	Ph.D., Colorado State, 1963
R. G. Loy	Ph.D., Wisconsin, 1959
M. E. Prickett	D.V.M., Michigan State, 1954

Course Descriptions

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 Veterinary Science.* (3) I, II
Prereq: VS 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: VS 251, or approval of instructor.

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

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.

SCHOOL OF HOME ECONOMICS

C. Milton Coughenour,
Acting Director of the School

The School of Home Economics, organized in 1941, provides programs in resident teaching, research, and extension for the enrichment of family living. It synthesizes knowledge drawn from its own research, from research in the physical, biological, and social sciences and the humanities and applies this knowledge to improve the conditions of living in the home, the institutional household and the community. To this end home economics is concerned with a broad range of aspects of family living, including:

family relationships and child development

personal and family health

consumption and other economic aspects of personal and family living

nutritional needs and the selection, preservation, preparation and use of food

design, selection, construction and care of clothing, and its psychological and social significance

textiles for clothing and for the home

housing for the family and equipment and furnishings for the household

management in the use of resources so that the values and goals of the individual, the family and the society may be attained.

The fundamental aim of the resident teaching program of the School of Home Economics is to provide instruction of both a scientific and practical character which will develop individuals who are technically competent in home economics and who are capable of assuming leadership in society. Curricular programs in home economics prepare students for professions in education, business and industry, in dietetics and institution administration, in social service and research—all directed toward futhering community, national and world conditions favorable to family living.

Admission. Students may be admitted to the college when they have attained junior classification in the University. Students admitted to the University directly from high school and those who transfer from other colleges and universities who indicate home economics as their major field of study will be assigned an academic advisor from the home economics faculty to assist in the selection of proper courses or course sequence to fulfill requirements for a degree in home economics.

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 128 semester credits and 256 points. These represent the minimum requirements for graduation. In all cases the student is responsible for meeting the requirements for graduation.

Certain courses are required of all students in the various curricula; others are elective.

In consultation with his faculty advisor each student will plan and develop a curricular program. This program includes a choice of subject matter major and area of specialization, selection of required and elective courses which fulfill the requirements for graduation, preparation of class schedules, employment. The normal academic load is 16 credits per semester.

Transfer students are required to take a minimum of 15 credits of Home Economics in the University.

Changes in a curriculum to meet specific needs may be made if approved in accordance with the rules of the University Senate.

CURRICULA AND MAJORS IN HOME ECONOMICS

The basic curriculum in Home Economics includes the following four components:

A. General education component
B. Pre-professional component
C. Professional studies
D. Electives

A. *General Education Component*—All candidates for the B.S. degree in Home Economics are required to meet the general studies requirement of the University as follows:

Required:

Area II—Physical Sciences (options A and D will not be accepted), or Area III—Biological Sciences

Area VII—Social Sciences

Area V—Humanities

Elect two of:

Area I—Mathematics-Philosophy, or Area IV—Foreign Language

Area II—Physical Sciences, or Area III—Biological Sciences, whichever is not selected as a required area.

Area VI—History

Area VIII—Behavioral Sciences

In addition each student is required to complete the following:

	Sem. Hrs.
English Composition	6
Physical Education	2
Basic Design (Art 130 or equivalent)	2-3
Communications—to be selected from:	6
English 181, 203, 205	
Journalism 201, 203	

B. *Pre-Professional Component*—All candidates for the B.S. degree in Home Economics are required to have the following:

	Sem. Hrs.
HE 101 Food and Nutrition for Man	4
HE 120 Introduction to Textiles	3
HE 153 Family Relationships and Child Development	3

A maximum of three additional courses in home economics may be elected from the course offerings in the lower division.

C. *Professional Studies*—In order to attain the objectives of the study of home economics, the curricula are organized into four sections with respect to subject matter. The subject matter fields are Foods, Nutrition and Food Technology (including Institution Management); Home Management and Family Economics; Human Development and Family Relationships; and, Textiles, Apparel, Housing and Design.

Upon entering the School of Home Economics (or earlier if the student has selected her professional goal) each student will elect an area of specialization which reflects the student's particular vocational orientation and permits the selection of subject matter and general education courses relating to this goal. The areas of specialization are Science, Business, and Professions in home economics.

1. *Science in Home Economics*—The curricular program in Science is for the student interested in preparing for a vocation in which emphasis is placed on the application of science to a subject matter field. Some students, for example, may be interested in home economics extension, others may be interested in graduate work in their chosen subject matter field. In the Science specialization emphasis is placed on acquiring basic science courses in the early years in preparation for home economics courses in the junior and senior years.
2. Business in Home Economics—The curricular program in Business and home economics 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 those industries providing finished goods and services to individuals and families. Emphasis in the curricular program is given to general education in home economics, liberal arts and humanities with special emphasis on communications, economics, commerce, and a subject matter area in home economics.

3. *Professions in Home Economics*—The curricular program in the Professions relating to home economics is primarily for students planning: (1) to become dietitians and who must be certified by the American Dietetics Association, or (2) to specialize in pre-school education for the purpose of teaching in nursery schools and day care centers, and to teach vocational home economics.

The general requirements for the junior and senior year for the programs in Science, Business, and Professions in Home Economics are:

Group Requirements	*Science*	*Business*	*Professions* I[5]	II[6]
Subject Major[1]	18	18	21	
Specialty Support[2]	15		9	
Professional Support[3]		15	6	19
Foods and Nutrition				6
Textiles and Apparel				6
Housing and Design				9
Human Development and Family Relationships				8
Management and Family Economics	3	3	3	8
Electives	18[4]	18[4]	18	6

[1] A maximum of 30 hours in a subject matter area may be offered by the student in fulfilling minimum requirements of a degree.
[2] To include courses in science considered to be appropriate background for the subject matter area in which the student is majoring.
[3] To include courses in economics, business administration, accounting, social psychology, journalism, radio and TV, and/or education relating to the specific professional objective.
[4] A minimum of nine credits must be chosen from three subject matter areas in home economics not including the subject matter major area.
[5] Primarily for students majoring in dietetics or preschool education.
[6] Primarily for students majoring in vocational home economics.

D. *Electives*—All electives are subject to the approval of the student's advisor.

More detailed information relative to course requirements for each of the major areas of study is available in the School of Home Economics' Student and Advisor Handbook. Copies of this Handbook may be secured by writing to the Director, School of Home Economics, University of Kentucky.

GRADUATE WORK

The School of Home Economics offers graduate work leading to the degree of Master of Science in Home Economics with specializations in Foods and Nutrition, Textiles and Apparel, Management and Family Economics, and Human Development and Family Relationships. Some graduate assistantships are available for those who do well in research oriented undergraduate programs.

FOODS, NUTRITION AND FOOD TECHNOLOGY

FACULTY

Leonard V. Packett, chairman

Professor

Abby L. Marlatt — Ph.D., California, 1947

Associate Professors

Annie Richmond Brownlie — M.S., Columbia, 1948

Roberta Bleiler Hill — Ph.D., Michigan State, 1958

Leonard V. Packett — Ph.D., Texas A.&M., 1958

Assistant Professors

Ruth Boyden — M.A., California, 1924

Roberta Seat Taylor — M.A., Kentucky, 1941

Claudia Ellis Wells — M.S., Alabama, 1933

Instructor

Doris A. Tichenor — M.S., Kentucky, 1958

Course Descriptions

101 *Food and Nutrition for Man.* (4) I, II
Food composition, preservation, digestion, absorption and metabolism as related to selection of nutrients essential for human life, health, growth, reproduction, lactation and physical activity. A physiological approach to nutrition. Lecture, four hours. *Packett.*

204 *Principles of Food Preparation.* (3) I, II
Basic physical and chemical principles involved in preparation of foods in the "Basic Four" food groups, skills, sanitation, standards, and economics involved in preparation of foods of quality and maximum nutrient content. Lecture, one hour; lab, four hours. *Taylor and Combs.*

205 *Laboratory for Home Economics 204.* (0)

206 *Meal Planning and Service.* (3) I, II
To give students experience in planning and buying foods within different economic levels. Stress work simplification and social, cultural and personal aspects of family meal planning and dining. Develop creative expression in preparation and service of meals for all occasions. Lecture, one hour; lab, four hours. *Taylor.*

207 *Laboratory for Home Economics 206.*

311 *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. *Hill.*

312 *Laboratory for Home Economics 211.*

340 *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.*

341 *Laboratory for Home Economics 340.*

342 *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: HE 204. *Brownlie.*

343 *Laboratory for Home Economics 342.*

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: HE 340; ECO 251. *Brownlie.*

345 *Laboratory for Home Economics 344.*

401 *Principles of Nutrition.* (3)
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. Not open to home economics majors. Lecture and discussion, 3 hours.

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: HE 206. *Wells.*

403 *Laboratory for Home Economics 402.*

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: HE 402. May be repeated once for a total of six credits. *Staff.*

504 *Laboratory for Home Economics 503.*

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: HE 204, 311. *Brownlie.*

506 *Laboratory for Home Economics 505.*

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. *Staff.*

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.

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: HE 402, CHE 236 or approval of instructor.

511 *Laboratory for Home Economics 510.*

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: HE 510, 402. *Packett, Hill.*

513 *Laboratory for Home Economics 512.*

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: MB 200, HE 204.

515 *Laboratory for Home Economics 514.*

516 *Food for Children.* (3) II, S
Experience in selection, preparation and serving of food to young children. Emphasis is placed on the pre-school age and the factors important in establishing good food habits. Prereq: HE 206, 311, 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: HE 206. *Taylor.*

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: HE 204, ECO 251. *Brownlie.*

541 *Laboratory for Home Economics 540.*

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: HE 342. *Brownlie.*

543 *Laboratory for Home Economics 542.*

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: HE 340, 342. *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. *Brownlie.*

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. May be repeated 3 times for a maximum of 4 credits. Prereq: HE 503, or approval of instructor.

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.

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.*

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: HE 503. May be repeated once for a total of six credits. *Staff.*

771 *Seminar in Nutrition.* (2) II, S
May be repeated twice for a total of six hours.

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.

784 *Special Problems in Institution Management.* (1-3) I, II, S
Independent, advanced work. May be repeated for a total of six credits. *Brownlie.*

HOME MANAGEMENT AND FAMILY ECONOMICS

FACULTY

Helen M. Wilmore, acting chairman

Assistant Professors

Lois B. Combs	M.S., Tennessee, 1954
Agnes Lucille Magruder	M.S., Iowa State, 1928
Helen M. Wilmore	M.S., Kansas State, 1937

Course Descriptions

368 *Demonstration Techniques.* (3) II
Emphasis on planning and presenting food and equipment demonstrations. Lecture, one hour; lab, four hours. Prereq: HE 568.

369 *Laboratory for Home Economics 368.*

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, HE 261. *Magruder.*

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, HE 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: HE 562; prereq. or concurrent: HE 402. *Wilmore and Combs.*

564 *Laboratory for Home Economics 563.*

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: HE 261; prereq. or concurrent: PHY 151, 152, or 281. *Combs.*

569 *Laboratory for Home Economics 568.*

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: HE 563. *Wilmore.*

786 *Special Problems in Hame Management.* (1-3) I, II
Independent advanced work. May be repeated for a total of six credits. Prereq: Graduate standing. *Wilmore.*

HUMAN DEVELOPMENT AND FAMILY RELATIONSHIPS

FACULTY

Assistant Professors

Susan Anne Kelley	M.S., Illinois, 1959
Agnes Lucille Magruder	M.S., Iowa State, 1928
Jessie W. Ringo	M.A., Kentucky, 1954

Instructor

Patricia Ann Walker	M.S., Oregon State, 1959

Course Descriptions

153 *Family Relationships and Child Development.* (3) I, II, S
Personal relationships as they develop in courtship, are maintained in marriage and extended to children. Lecture two hours; discussion lab, two hours. *Staff.*

154 *Laboratory for Home Economics 153.* (0)

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 104 (Same as PSY 200.) *Staff.*

255 *Child Development: I.* (3) I, II
The interrelation of physical, social, emotional and intellectual development and its effects upon the behavior and guidance of children from conception to age six; with directed observation of children in the nursery school. Prereq: PSY 104, or equivalent or concurrent. Lecture, three hours; lab, one hour. *Staff.*

256 *Laboratory for Home Economics 255.*

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: HE 255.

351 *Laboratory for Home Economics 350.*

358 *Health and the Family.* (3) I, II
Stress is placed on planning and development of individual and family activities and programs for maintaining good health. Attention is given to community, state and national programs having significance for the health of individuals and families. Lecture, three hours.

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: HE 350. *Staff.*

396 *Supervised Nursery School Participation.* (3) I, II
Experience in teaching a nursery school group. Lecture, one hour; lab, four hours. Prereq: HE 350. May be repeated once for a total of six credits. *Staff.*

397 *Laboratory for Home Economics 396.*

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: HE 350.

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: HE 153, 350 or consent of instructor.

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: HE 350. *Staff.*

556 *Laboratory for Home Economics 555.*

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.

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.

775 *Seminar in Child Development.* (2-6) I, II, S
Preparation and presentation of reports of current investigations in child development. Prereq: Graduate standing.

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.

TEXTILES, APPAREL, HOUSING AND DESIGN

FACULTY

Assistant Professors

Mildred H. Botsford	M.S., Oregon State, 1950
Helen M. Wilmore	M.S., Kansas State, 1937

Instructors

Charlotte McCalla Bennett M.S., Louisiana State, 1965
Fern D. Letnes M.A., Cornell, 1965

Course Descriptions

120 *Introduction to Textiles.* (3) I, II
A study of textiles from fiber to finished fabric, analysis of the relationship between the properties and performance characteristics of fibers, yarns, weaves, fabrics, and finishes. Lecture, 2 hours; lab, two hours. *Bennett.*

121 *Laboratory for Home Economics 120.* (0)

227 *Principles of Clothing Construction and Selection.* (3) I, II
A study of the basic principles of clothing construction and selection as applied to individual needs. Opportunity is provided in laboratory for creative application through the modification of commercial patterns. Lecture, one hour; lab, four hours. Prereq: ART 130, HE 120. *Staff.*

228 *Laboratory for Home Economics 227.*

261 *Socio-economics of Housing.* (3) I, II
A study of the relationships between family composition, social values, and the housing needs of families; the study of the economics of housing, including the purchasing, sale, and rental of houses, house financing, governmental programs and regulations for housing. Lecture, three hours. *Wilmore.*

328 *Clothing and Pattern Designing.* (3) I, II, S
Development of foundation pattern, flat pattern designing, alteration. Application of design principles to garment. Lecture, one hour; lab, four hours. Prereq: HE 227. *Botsford.*

329 *Laboratory for Home Economics 328.*

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: HE 261; ART 130; or for non-majors, approval of instructor. *Letnes.*

331 *Laboratory for Home Economics 330.*

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: HE 120. *Botsford.*

521 *Laboratory for Home Economics 520.*

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: HE 227, 561, or approval of instructor. *Botsford.*

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: HE 227 or approval of instructor. *Botsford.*

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: HE 227, ART 105.

525 *Laboratory for Home Economics 524.*

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: HE 227. *Botsford.*

527 *Laboratory for Home Economics 526.*

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: HE 328. *Botsford and Bennett.*

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: HE 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: HE 330. *Letnes.*

531 *Laboratory for Home Economics 530.*

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: HE 120, ART 105. *Bennett and Letnes.*

535 *Laboratory for Home Economics 534.*

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: HE 330, or approval of instructor. *Bennett.*

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: HE 330, or approval of instructor. *Letnes.*

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. *Botsford.*

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.

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.

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. *Botsford.*

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.

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. Concur: HE 528.

GENERAL HOME ECONOMICS

100 *Introduction to Home Economics.* (1) I
Development and scope of home economics as a profession, its wide variety of career opportunities, with analysis of interests, aptitudes, proficiencies and education related to success in these areas. Lecture, one hour; discussion (optional), one hour. *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 as RS 513. Prereq: SOC 151 or consent of instructor. *Staff.*

768 *Residence Credit for the Master's Degree.* (0) I, II, S
May be repeated once.

Engineering

The College of Engineering offers programs leading to the Bachelor of Science degree and graduate degrees in the Departments of Agricultural, Chemical, Civil, Electrical, Mechanical and Metallurgical Engineering. Resting upon the conviction that creative accomplishment in the career of an engineer will most often be derived from an education that stresses major ideas and fundamental concepts of engineering rather than specific technologies, the academic programs in engineering provide for wide experience in the mathematical, physical and engineering sciences blended with the social sciences and humanities in such a way that makes it possible for the student to obtain both a thorough education in engineering and a liberal education. Such an approach provides the best preparation for the engineer who must envisage and develop the technologies of the future and deal with scientific advances at present unknown.

Engineers have the responsibility to translate the ever expanding reservoir of scientific knowledge into systems, devices and goods and to engage in the further expansion of knowledge and exploration. The future practice of engineering will demand increasingly higher levels of intellectual achievement and qualities of leadership not only in the world of technology but in the world of men. The visible achievements of engineering only reflect the intellectual achievements that made them possible. It is necessary to develop in intelligent young men and women the ability not only to master the ideas of others, but to generate new ideas of their own. Although the engineer deals extensively with facts and scientific fundamentals as a matter of course, he cannot rely on these alone. The engineer will inevitably face decisions which cannot be made on the basis of technical skill, but which require a broad and deep understanding of human values and behavior as developed by studies in the social sciences and humanities. He must also have the ability to meet situations where judgment and wisdom combined with scientific knowledge or technical skill can provide a solution.

Robert M. Drake, Jr., Ph.D., is Dean of the College of Engineering. Warren Ware Walton, M.S., is Assistant Dean.

The various curricula in the College of Engineering are broad, so that no student is limited to a narrow field of specialized knowledge, but of sufficient technical depth to provide a sound preparation for a career in engineering.

The first engineering degree from the University of Kentucky was granted in 1890. Since that time some six thousand degrees have been awarded in the various fields of engineering. There are among these alumni of the College of Engineering those who have distinguished themselves in the major fields of industry, government and education.

The members of the faculty of the College of Engineering are teacher-scholars of talent and skill. They are also competent engineers with high professional qualifications. Most have significant records of professional practice and industrial experience. Many of the faculty are in frequent demand as consultants to government and industry and thus make extracurricular contributions to our industrial strength. This professional activity is stimulating to the student and conveys an understanding of engineering in all of its aspects.

Concern for the individual is a most important feature of education in the College of Engineering. Close faculty-student relationships are necessarily a meaningful part of the educational process. The faculty, in addition to their duties related to instruction and research, serve as advisors to the student in the preparation of the academic program best matched to the student's needs and intellectual capabilities.

The College of Engineering is an integral part of the University of Kentucky, academically and physically. It is to the advantage of the student that in his studies in the sciences or in the humanities—in mathematics, in physics, in history, in English, in philosophy—he participates in the same courses, attends the same classes and meets in all respects the same standards as the students majoring in those fields. Every facility of the University is available to him.

The College of Engineering is housed in Anderson Hall, the building consisting of a two-story quadrangle and an eight story modern addition completed in 1966. The complex contains offices, classrooms, lecture halls, laboratories and the College of Engineering Library.

Anderson Hall is centrally located on the campus in close proximity to the Computing Center, to the main library and the libraries of the Departments of Mathematics, Physics and Chemistry. In addition to the Anderson Hall complex, instruction and research are carried on in the Wenner-Gren Aeronautical Laboratory and the Highway Research Laboratory—both located on the main campus.

The laboratories of the College of Engineering are equipped with modern instructional and research equipment to which additional, modern equipment is being added at an increasing rate to provide facilities by means of which students can participate in modern experimental engineering as a significant part of their educational experience.

The College is engaged in a number of research projects, and students interested in such investigations have ample opportunity to engage in work along the lines of their special fields of interest.

For Further Information, Address
THE DEAN
COLLEGE OF ENGINEERING
or
THE REGISTRAR
UNIVERSITY OF KENTUCKY
LEXINGTON 40506

Admission. Students admitted to the University directly from high school, and those who transfer from other colleges and universities who have not completed the pre-engineering requirements listed below, will register in the College of Arts and Sciences as pre-engineering students until the requirements are met. Each student will be assigned an academic advisor from the College of Engineering to assist in the selection of the proper courses or course sequences to complete the pre-engineering requirements in minimum time.

Pre-professional and professional courses for which the student has the proper prerequisites may be scheduled while registered as a pre-engineering student in the College of Arts and Sciences or in any other accredited college or university that offers the equivalent of these courses.

Any student may be admitted to the College of Engineering who has completed the pre-engineering requirements. These requirements are:

Completion of a minimum of sixty (60) semester credits including the following:

(a) One year of English composition;
(b) Mathematics through the first course in differential equations;
(c) One year of general college chemistry;
(d) One year of general college physics which requires a knowledge of calculus.

The remainder of the sixty credits should be selected from the pre-professional courses if available, from the General Studies areas, or science or mathematics (excluding credits in freshman college algebra and freshman college trigonometry).

Each student should study the curriculum in the engineering field of his choice to determine those courses he should take. These curricula are listed in a normal semester sequence under the different department headings on pages that follow.

Recommended Curriculum for Pre-engineering Students

Completion of this recommended pre-engineering curriculum will satisfy the requirements for admission to the College of Engineering. Since the requirements of the departmental curricula vary, *students are advised to refer to the curriculum for the area of major studies for more specific details.*

Freshman Year

First Semester	Crs.
ENG 101—Freshman Composition	3
MA 113—Analytics & Calculus I	4
CHE 110—General College Chemistry	5
*Elective—General	2
**Elective—General Studies	3
ENGR 001—The Engineering Profession	0
	17

Second Semester	Crs.
ENG 102—Freshman Composition	3
MA 211—Analytics & Calculus II	4
CHE 112—General College Chemistry	5
PHY 231—General College Physics	3
PHY 241—General College Physics Lab	2
ENGR 002—The Engineering Profession	0
	17

Sophomore Year

First Semester	Crs.
MA 212—Analytics & Calculus III	4
PHY 232—General College Physics	3
PHY 242—General College Physics Lab	2
***Electives	6 to 8
	15 to 17

Second Semester	Crs.
MA 431—Differential Equations	3
***Electives	12 to 14
	15 to 17

* Students planning to do their major work in Agricultural, Civil, Electrical or Mechanical Engineering should take ME 105—Basic Engineering Graphics. This course is not required in Chemical and Metallurgical Engineering.
** Select from General Studies areas 4, 5, 6, 7 or 8 in consultation with the academic advisor.
*** Selection should be made from General Studies or Pre-professional courses with curriculum for major area in mind, and in consultation with the Engineering academic advisor.

General Studies

The general studies component, required by the University of all students, stipulates a specified sequence

of courses from at least five or eight areas listed, with a minimum of six semester credits in each sequence.

A student who expects to graduate from the College of Engineering also must meet a requirement of the Engineers' Council for Professional Development, (ECPD), the accrediting agency for engineering colleges. This requires eighteen credits of humanistic-social studies.

The engineering student, in meeting the technical requirements of the department in which he wishes to earn a degree, will automatically complete two of the five required general studies sequences, that of Area I Mathematics-Philosophy and that of Area II Physical Sciences. This leaves a requirement of a sequence from three of the remaining six general study areas.

Courses listed in Areas IV through VIII of the General Studies meet the ECPD definition of humanistic-social studies, but courses listed in Area III do not meet the definition. Therefore, if the student restricts his remaining 18 credits to Areas IV through VIII, he will have completed both requirements. The student who wishes to take courses in the Biological Sciences area, Area III, may do so. However, he cannot use these courses to meet degree requirements unless they are specified in the curriculum of his choice, as is shown under Agricultural Engineering, or unless they are used as "free electives" in a department whose curriculum includes such electives.

It should be noted that the foreign language requirement may be met by completing the *fourth* semester in one language. Freshman foreign language does not meet either of the requirements discussed herein. A student who meets this language requirement by demonstrating equivalent competence by examination for any of the sophomore level language courses will have satisfied one General Studies area requirement, but he cannot use the examination to satisfy the ECPD humanistic-social studies requirement. He will need to take other courses in this or other acceptable areas of the General Studies courses.

Area I *Mathematics-Philosophy*

The general studies requirement in this area may be satisfied by the following:

MA 113—Analytics and Calculus I	(4)
MA 211—Analytics and Calculus II	(4)
MA 212—Analytics and Calculus III	(4)
MA 431—Differential Equations	(3)

Area II *Physical Sciences*

The general studies requirement may be satisfied by completing the following sequences:

CHE 110—Gen. Coll. Chemistry	(5)
CHE 112—Gen. Coll. Chemistry	(5)
PHY 231—Gen. Coll. Physics	(3)
PHY 232—Gen. Coll. Physics	(3)
PHY 241—Gen. Coll. Physics	(2)
PHY 242—Gen. Coll. Physics	(2)

Area III *Biological Sciences*

(Cannot be used to meet degree requirements unless these courses are specified in the curriculum, as shown in Agricultural Engineering, or unless they are used as "free electives" in a department whose curriculum includes such electives).

Area IV *Foreign Language*

A student may satisfy the general studies requirement in foreign language by passing the fourth semester courses in one language or by demonstrating equivalent competence by examination.

Area V *Humanities: Literature, Art, and Music*

The general studies requirement in the humanities may be satisfied by choosing one course from the following:

ENG 261—Survey of Western World Literature from the Greeks through the Renaissance	(3)
ENG 262—Survey of Western World Literature: 1660 to the Present	(3)
ENG 560—Comparative Literature I	(3)
ENG 561—Comparative Literature II	(3)
ENG 562—Comparative Literature III	(3)
CLA 524—Greek Literature in Translation	(3)
CLA 525—Latin Literature in Translation	(3)

plus one course from the following:

ART 203—Intro. to the Art of Western Civilization	(3)
MUS 200—Music in Western Civilization	(3)
ART 554—Ancient Art	(3)
ART 558—Renaissance Art in Italy	(3)
ART 560—Baroque Art	(3)
ART 562—Nineteenth Century Art	(3)
ART 564—Twentieth Century Art	(3)
MUS 282—Survey of Music Literature	(2)
MUS 580—Music in the Eighteenth Century	(3)
MUS 581—Nineteenth Century Music	(3)
MUS 587—Twentieth Century Music	(3)
MUS 589—History of American Music	(3)

Area VI *History*

A student may satisfy the general studies requirement in history by any one of the following options:

A. HIS 104—Europe to 1648	(3)
HIS 105—Modern Europe since 1648	(3)
B. HIS 108—History of the U.S. through 1865	(3)
HIS 109—History of the U.S. since 1865	(3)
C. HIS 109—History of the U.S. since 1865	(3)
plus one of the following:	
HIS 569—Cultural and Intellectual History of the U.S. since 1865	(3)
HIS 565—Recent History of the U.S., 1912 to 1939	(3)
HIS 566—Recent History of the U.S., since 1939	(3)
D. HIS 105—Modern Europe since 1648	(3)
plus one of the following:	
HIS 525—Europe since 1919	(3)
HIS 554—British History since 1870	(3)
E. Two courses selected from the following:	
HIS 229—The Ancient Near East and Greece to the Death of Alexander the Great	(3)
HIS 230—The Hellenistic World and Rome to the Death of Constantine	(3)
HIS 270—Early Middle Ages	(3)
HIS 271—Later Middle Ages	(3)
HIS 202—History of the British People to the Restoration	(3)
HIS 203—History of the British People since the Restoration	(3)
HIS 568—Cultural and Intellectual History of the U.S. to 1865	(3)
569—Cultural and Intellectual History of the U.S. since 1865	(3)

Area VII *Social Sciences*

A student may satisfy the general studies requirement in the Social Sciences by taking two of the following courses:

ANT 121—Intro. to Cultural Anthropology	(3)
SOC 151—Introductory Sociology	(3)
PS 151—American Government	(3)
GEO 152—Regional Geography of the World	(3)
ECO 251—Principles of Economics	(3)
ECO 252—Principles of Economics	(3)
ANT 533—Social Anthropology (same as SOC 533)	(3)
SOC 551—Principles of Sociology	(3)
PS 572—Modern Political Theory	(3)

Area VIII *Behavioral Sciences*

A student may satisfy the general studies requirement in the Behavioral Sciences by taking two of the following:

PSY 104—Basic Psychology I	(3)
PSY 106—Basic Psychology II	(3)
PSY 210—General Psychology (not open to students who have credit for PSY 104 or PSY 106)	
PSY 330—Experimental Psychology	(3)
PSY 501—Personality	(3)
PS 201—Introduction to Political Behavior	(3)
SOC 240—Collective Behavior	(3)
SOC 544—Social Psychology (same as PSY 544)	(3)
ANT 526—Culture and Personality (same as SOC 526)	(3)

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 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

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 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.

Requirements for Graduation. To receive the Bachelor of Science degree in any of the fields of engineering a student must meet the following requirements:

(a) Complete the University and College requirements relating to English and General Studies.

(b) Complete a minimum of 128 credits, exclusive of those earned in freshman college algebra, freshman college trigonometry, physical education and Reserve Officer Training programs, with a cumulative standing of not less than 2.0 on a 4.0 scale.

(c) Complete the required curriculum for the area of major studies.

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 Engineering Mechanics
Master of Science in Mechanical Engineering
Master of Science in Metallurgical Engineering
Master of Science in Nuclear Engineering
Doctor of Philosophy (Civil Engineering)
Doctor of Philosophy (Engineering Mechanics)
Doctor of Philosophy (Mechanical Engineering)
Doctor of Philosophy (Physical Metallurgy)

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 101—Freshman Composition	3
MA 113—Analytics & Calculus I	4
CHE 110—General College Chemistry	5
ME 105—Basic Engineering Graphics	2
* —General Studies	3
	17

Second Semester	Crs.
AEN 002—The Engineering Profession	0
ENG 102—Freshman Composition	3
MA 211—Analytics & Calculus II	4
CHE 112—General College Chemistry	5
PHY 231—General College Physics	3
PHY 241—General College Physics Lab	2
	17

Sophomore Year

First Semester	Crs.
AEN 003—The Engineering Profession	0
MA 212—Analytics & Calculus III	4
PHY 232—General College Physics	3
PHY 242—General College Physics Lab	2
** —Biological Sc. Sequence	3 or 4
* —General Studies	3
	15 or 16

Second Semester	Crs.
AEN 004—The Engineering Profession	0
MA 431—Differential Equations	3
EM 222—Solid Mechanics I	4
** —Biological Sci. Sequence	3 or 4
* —General Studies	3
* —General Studies	3
	16 or 17

Junior Year

First Semester	Crs.
AEN 005—The Engineering Profession	0
EM 313—Dynamics	3
EE 305—Elec Circuits & Machinery	3
ME 220—Engineering Thermodynamics	3
AGR 266—Soils	4
AEN 305—Physical Properties of Soils & Biological Matls	3
	16

Second Semester	Crs.
AEN 006—The Engineering Profession	0
MET 301—Materials Science	3
ME 330—Fluid Mechanics	3
AEN 406—Physical Environment for Plants and Animals	3
EE 251—Intro Use Digital Comput.	2
EE 306—Elec & Electronic Circuits	3
* —General Studies	
	17

Senior Year

First Semester	Crs.
AEN 007—The Engineering Profession	0
#AEN 416—Energy Sources & Mach in Agri	4
** —Elective (Engr Science)	3
* —General Studies	3
+AEN 435—Prin. of Soil & Water Conservation Engr.	4
** —Elective	3
	17

Second Semester	Crs.
AEN 008—The Engineering Profession	0
AEN 505—Engineering Analysis	3
ENG 181—Basic Public Seaking	3
** —Elective (Mathematics)	3
** —Elective	3
***AEN 425—Func Design in Agr. Struct.	4
++AEN 446—Agr Proc & Electrification	4
	20

° Select from General Studies areas 4, 5, 6, 7, or 8 in consultation with academic advisor. It is suggested that one of these sequences be in Economics and one in Foreign Language, Humanities, or History.

°° To be selected in consultation with the academic advisor.

#AEN 416 becomes AEN 417 for 3 credits effective September 1968.

°°°AEN 425 becomes AEN 427 for 3 credits effective September 1968.

+AEN 435 becomes AEN 437, *Design of Engineering Systems for Soil and Water Management*, effective September 1968.

++AEN 446 becomes AEN 447 for 3 credits effective September 1968.

CHEMICAL ENGINEERING

FACULTY

George Franklin Crewe, acting chairman

Professor

Samuel Charles Hite — Ph.D., Purdue, 1951

Associate Professor

George Franklin Crewe — M.S. Ch.E., W. Va., 1950

Assistant Professor

Noel Edward Moore — S.M. Ch.E., M.I.T., 1958

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING

Freshman Year

First Semester	Crs.
CME 001—The Engineering Profession	0
CHE 110—General College Chemistry	5
ENG 101—Freshman Composition	3
MA 113—Analytics & Calculus I	4
* —General Studies	3
	15

Second Semester	Crs.
CME 002—The Engineering Profession	0
CHE 112—General College Chemistry	5
ENG 102—Freshman Composition	3
MA 211—Analytics & Calculus II	4
PHY 231—General College Physics	3
PHY 241—General Colege Physics Lab	2
	17

Sophomore Year

First Semester	Crs.
CHE 226—Analytical Chemistry	3
CME 200—Process Principles	3
CME 201—Computational Laboratory	1
MA 212—Analytics & Calculus III	4
PHY 232—General College Physics	3
* —General Studies	3
	17

Second Semester	Crs.
CME 220—Engineering Thermodynamics	3
EM 222—Solid Mechanics I	4
CHE 230—Organic Chemistry	3

CHE 231—Organic Chemistry Lab	1
MA 431—Differential Equations	3
* —General Studies	3
	17

Junior Year

First Semester	Crs.
CME 005—The Engineering Profession	0
CHE 432—Organic Chemistry	3
CHE 433—Organic Chemistry Lab	1
CHE 440—Physical Chemistry	3
ME 330—Fluid Mechanics	3
—Elective (Mathematics)	3
* —General Studies	3
	16

Second Semester	Crs.
CHE 442—Physical Chemistry	3
CHE 443—Physical Chemistry Lab	2
ME 325—Elements of Heat Transfer	3
CME 422—Mass Transfer	3
EE 305—Electrical Circuits & Mach	3
MET 301—Materials Science	3
	17

Senior Year

First Semester	Crs.
CME 007—The Engineering Profession	0
CME 371—Seminar	1
CME 431—Chemical Engr Lab I	3
CME 451—Chemical Engr Process Design I	3
EE 306—Electrical & Electronic Circ	3
** Elective	3
* General Studies	3
	16

Second Semester	Crs.
CME 372—Seminar	1
CME 432—Chemical Engr Lab II	2
CME 452—Chemical Engr Process Design II	4
CME 562—Process Control	3
** Elective	3
* General Studies	3
	16

* Select from General Studies areas 4, 5, 6, 7 or 8 in consultation with academic advisor.

** To be selected in consultation with the academic advisor.

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. *Staff.*

200 *Process Principles.* (3)

Material and energy balances using the first law of thermodynamics, thermophysics and thermochemistry. Physical and chemical process analysis. Prereq. or concur: MA 211 and PHY 231.

201 *Computational Laboratory.* (1)

Digital and analog computation laboratory to accompany CME 200; lab, 3 hours. Prereq. or concur: CME 200.

220 *Engineering Thermodynamics.* (3)

Fundamentals of thermodynamics, review of first law, second and third laws, phase equilibria and chemical equilibria. Prereq. or concur: MA 212 and PHY 232.

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. Prereq: CME 422, CHE 232, 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 chairman of the department. *Staff.*

422 *Mass Transfer.* (3)

Fundamentals of diffusional and convective transport operations with applications to distillation, absorption, extraction and air-water contact operations. Prereq: ME 330 and/or concur: ME 325.

431 *Chemical Engineering Laboratory I.* (3)

Quantitative study of fluid flow, heat transfer, evaporation, etc., comparing the operation of actual equipment with theory. Special consideration of instruments and measurement techniques, problems in design and report writing. Lab, 9 hours. Prereq: CME 422.

432 *Chemical Engineering Laboratory II.* (2) II

Continuation of CME 431, covering diffusional operations such as distillation, absorption, and drying; laboratory, six hours. Prereq: CME 422, 431. *Crewe, Moore.*

451 *Chemical Engineering Process Design I.* (3) I

Introduction to process design calculations, optimum design and operation. Prereq: CME 422, CHE 232, 442. *Crewe.*

452 *Chemical Engineering Process Design II.* (4)

An introduction to applied chemical reaction kinetics with quantitative problems concerning chemical reactor design and the thermodynamic analysis of chemical processes, with a comprehensive process design problem. Lecture, 3 hours; lab, 1 hour. Prereq: CME 451.

562 *Process Control.* (3) I

The theory of automatic control devices and their application in industrial chemical plants. Lecture, two hours; laboratory three hours. Prereq: Consent of the instructor. *Moore.*

565 *Petroleum Refinery Engineering.* (3) II

Application of chemical engineering fundamentals to petroleum processing methods and equipment. Prereq: CME 422 or consent of the instructor. *Hite.*

CIVIL ENGINEERING

FACULTY

David K. Blythe, chairman

Professors

David K. Blythe	M.C.E., Cornell, 1950
Robert A. Lauderdale	Ph.D., M.I.T., 1958
Edward Everett Elsey	M.E., Kentucky, 1947
Hans Gesund	D.Engr., Yale, 1958
Clinton Kelly Hoffmann	C.E., Kentucky, 1947
Samuel Albert Mory, Jr.	C.E., Kentucky, 1946

Associate Professors

John Arthur Dearinger	M.S., Kentucky, 1948
Bobby Ott Hardin	Ph.D., Florida, 1961
John W. Hutchinson	Ph.D., Illinois, 1961
John R. Parker	M.S., Princeton, 1937
Laurence Chester Pendley	M.S., Purdue, 1949
George Pincus	Ph.D., Cornell, 1963
Don J. Wood	Ph.D., Carnegie Inst. of Tech., 1961

Assistant Professors

Carl E. Burkhead	Ph.D., Kansas, 1966
L. Douglas James	Ph.D., Stanford, 1964
George Land, Jr.	M.S., Kentucky, 1955
Thomas E. Morgan	M.S., Tennessee, 1954

Assistant Professor (Adjunct Series)

John A. Deacon	D.Eng., California, Berkeley, 1965

Lecturers

Robert C. Deen	Ph.D., Purdue, 1964
William Bright Drake	M.S., Kentucky, 1949
James Hobart Havens	A.B., Transylvania, 1942

3-2 CO-OPERATIVE PROGRAM

The Civil Engineering Department has a 3-2 Co-operative Program with the "University of the Americas" of Mexico City, in which the student attends his University as a pre-engineer for three years and then transfers to Kentucky to complete the requirements for his BS in CE degree. The student also earns his AB degree from the University of the Americas after completing one year of full-time study at Kentucky.

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN CIVIL ENGINEERING

Freshman Year

First Semester	Crs.
CE 001—The Engineering Profession	0
CHE 110—General College Chemistry	5
ENG 101—Freshman Composition	3
MA 113—Analytics & Calculus I	4
ME 105—Basic Engineering Graphics	2
* General Studies	3
	17

Second Semester	Crs.
CE 002—The Engineering Profession	0
CHE 112—General College Chemistry	5
ENG 102—Freshman Composition	3
MA 211—Analytics & Calculus II	4
PHY 231—General College Physics	3
PHY 241—General College Physics Laboratory	2
	17

Sophomore Year

First Semester	Crs.
CE 206—Descriptive Geometry	2
* General Studies	3
EM 222—Solid Mechanics I	4
MA 212—Analytics & Calculus III	4
PHY 232—General College Physics	3
PHY 242—General College Physics Lab	2
	18

Second Semester	Crs.
CE 100—Plane Surveying	3
* General Studies	3
EM 322—Solid Mechanics II	3
GLY 200—Elem Geology for Engineers	4
MA 431—Differential Equations	3
CE 200—Civil Engineering Problems	2
	18

POST SPRING SEMESTER SESSION

4 weeks (5 cr.)

Junior Year

First Semester	Crs.
CE 380—Structural Mechanics I	3
EM 313—Dynamics	3
** Elective (Mathematics)	3
ME 220—Engineering Thermodynamics I	3
* General Studies	3
	15

Second Semester	Crs.
EE 305—Electrical Circ & Machinery	3
MET 301—Materials Science	3
ME 330—Fluid Mechanics	3
CE 425—Soil Mechanics	3
** Elective (Engr. Science)	3
* General Studies	3
	18

Senior Year

First Semester	Crs.
CE 007—The Engineering Profession	0
CE 301—Civil Engineering Materials	2
CE 351—Hydraulics Lab	1
†CE 355—Water Supply and Sewage	3
CE 387—Steel Structures I	3
** Elective	3
* General Studies	3
	15

Second Semester	Crs.
CE 008—The Engineering Profession	0
CE 305—Constr Planning & Management	3
CE 340—Transportation Engineering	4
CE 371—Seminar	1
** Elective	3-4
** Elective (Design Course)	3
CE 392—Reinforced Concrete I	3
	17-18

Technical Electives are to be approved by the department chairman and may be selected in specific fields such as structures, highways, sanitary engineering, mining engineering or other planned objectives.

° Select from General Studies areas 4, 5, 6, 7, or 8 in consultation with academic advisor.

°° To be selected in consultation with the academic advisor.

† CE 340 or CE 355 may be taken here, depending on student's program of courses.

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
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 branches of the corresponding professional societies. May be repeated indefinitely. *Staff.*

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. or concur: MA 113. *Dearinger and Staff.*

101 *Field exercise for CE 100.*

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. Same as ME 105. *Hoffmann and Morgan.*

200 *Civil Engineering Problems.* (2) I, II
Analysis and solution of basic civil engineering problems; introduction to data analysis and computer programming. Lecture, two hours. Prereq or concur: MA 211. *Morgan.*

206 *Descriptive Geometry.* (2)
The graphical solution of spatial problems. Prereq: ME 105, PHY 231. Drawing room 6 hours. *Parker.*

211 *Route Surveying.* (2) S
Given at the Surveying Camp. Theory, field and office practice in route-surveys including the application of aerial photographs in this work. Prereq: CE 100, ME 105, PHY 231 and approval of the chairman of the department. *Blythe and Dearinger.*

213 *Control Surveys.* (1) S
Given at the Surveying Camp. Theory, field and office practice in the precise measurement of angles, distances, elevations, true azimuth and geodetic position. Hydrographic surveys. Prereq: Approval of chairman of department. *Dearinger and Staff.*

214 *Topographic Surveys.* (2) S
Given at the Summer Camp. Theory, field and office practice in topographic and boundary surveys, including the preparation of large scale topographic maps and property survey plats. Prereq: CE 100, ME 105, PHY 231 and approval of chairman of department. *Dearinger and Staff.*

301 *Civil Engineering Materials.* (2) I, II
A study of materials used in civil engineering construction and their basic physical and mechanical properties with emphasis on relation to fundamental structure of the material. Lecture, 1 hour; lab, 2 hours. Prereq: MET 301, EM 222 or 331. *Pendley.*

305 *Construction Planning and Management.* (3)
A study of the principles, methods and procedures involved in the administration of civil engineering construction including financial and legal fundamentals of contracts; specifications and critical path scheduling and quality control. Prereq. or concur: CE 340 or consent of instructor. *Elsey.*

328 *Foundation Engineering.* (3) II
Application of the principles of soil mechanics and structural mechanics to the design of retaining walls, bracing for excavations, footings, mat and pile foundations and to the analysis of the stability of earth slopes. Prereq: CE 425, CE 392. *Hardin.*

340 *Transportation Engineering.* (4)
Introduction to the planning and geometric design of rural and urban transportation facilities; drainage and subdrainage problems; subgrade soils; pavement thickness design. Prereq: CE 211, CE 352 or ME 330, CE 425. *Dearinger.*

341 *Laboratory for CE 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: CE 352 or ME 330. *Staff.*

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. *Wood.*

355 *Water Supply and Sewage.* (3) I, II
For general civil engineering students. Theory and design of water treatment and sewage disposal plants. Lecture, three hours. Prereq: CE 352 or ME 330. *Burkhead.*

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.*

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. *Hoffmann and Hutchinson.*

380 *Structural Mechanics I.* (3)
Analysis of statically determinate and statically indeterminate structures including beams, trusses, cables, arches and frames. Lecture and recitation, 3 hours. Prereq: EM 322 or 331. *Mory.*

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 and recitation, three hours. Prereq: CE 380. *Pincus.*

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: CE 380. *Gesund.*

395 *Independent Work in Civil Engineering.* (3)
Individually supervised study in one or more of the specialized topics of Civil Engineering which are not covered in regular courses. Independent research or design projects may also be selected. Open only to exceptional students as a technical elective. Prereq: Consent of dept. chairman and the instructor.

399 *Design of Structures.* (3)
Consideration of the overall factors involved in planning of structures. Detailed structural design and analysis of complete buildings and bridges, including drawings of selected portions. Lecture, 2 hours; drawing room, 3 hours. Prereq: CE 387, 392. *Mory.*

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 322 or 331. *Pendley.*

426 *Laboratory for CE 425.*

480 *Structural Mechanics II.* (3)
Continuation of CE 380 with emphasis on sophisticated methods of analyzing complex structures. Prereq: CE 380. *Mory.*

515 *Geometronics.* (3) II
Fundamental principles of geodesy, engineering astronomy and precise survey procedures; triangulation, trilateration and adjustment computations; theory of electronic distance measurement; applications to the horizontal and vertical control of engineering construction and photogrammetric mapping. Lecture, 2 hours; lab, 3 hours. Prereq: MA 431. *Dearinger.*

521 *Engineering Aspects of Surficial Soils and Landforms.* (3) II
Techniques of terrain analysis for civil engineering purposes through the use of air photo interpretation (quantitative and qualitative) and other sources of pedologic, geologic and topographic information. Lecture, 2 hours; lab, 3 hours. Prereq: GLY 200. *Dearinger.*

540 *Pavement Analysis and Design.* (3) II
Pavement subgrade soil factors affecting design and performance; types; and characteristics of pavements; sconomic comparison of pavement; aggregate and binder considerations; composition design of pavements including structural and durability problems. Lecture, 2 hours; lab, 3 hours. Prereq: CE 340. *Deacon and Pendley.*

542 *Highway Traffic Characteristics.* (3) I
Vehicle operating characteristics; drive, pedestrian and roadway characteristics as they individually, and collectively as traffic stream characteristics are related to the planning, design and operation of highway facilities. Lecture, 3 hours. Prereq: CE 340. *Hutchinson.*

543 *Development of Transportation Facilities.* (3) II
Analysis of factors affecting development of transportation facilities; history of transportation development; problems of highway geometrics, design standards and traffic estimates and assignment; basic planning and location principles; programming improvements, maintenance and new construction, concepts of highway management, finance and public relations. Lecture, 3 hours. Prereq: CE 340, 542, or consent of instructor. *Hutchinson.*

550 *Engineering Hydraulics.* (3)
Analysis of flow in closed conduits and natural and artificial open channels. Design of hydraulic structures. Lecture, 3 hours. Prereq: CE 352 or ME 330. *Land.*

553 *Hydrology.* (3) I, II
A study of the factors affecting the occurrence, movement and utilization of water including meteorological considerations, evaporation, transpiration, runoff relationships, hydrograph analysis, and ground water management. Prereq: ME 330 or CE 352 or consent of instructor. *James.*

555 *Engineering Economy.* (3) I
Economic evaluation and financial analysis of engineering alternatives in which the goal of economic efficiency is applied to engineering design. Lecture, 3 hours. Prereq: CE 305 and ECO 252 or consent of instructor. *James.*

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.* (3) I
Lectures and laboratory practice in principles, application and interpretation of analytical tests used in sanitary engineering research and plant control. Lecture, two hours; lab, three 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 I.* (3) I
Detailed study including experimental determination of the strength and deformation properties of granular and cohesive soils. Colloidal phenomena in soils as related to the behavior of clay soils are included. Lecture, two hours; lab, three hours. Prereq: CE 425 or consent of instructor. *Hardin and Deen.*

626 *Advanced Soil Mechanics II.* (3) I
Theoretical and experimental study of the flow of water through soils including steady seepage and consolidation. Detailed study including experimental determination of the compaction characteristics of soils and the effects of compaction on various soil properties. Lecture, two hours; lab, three hours. Prereq: CE 425, 625, or consent of instructor. *Hardin and Deen.*

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: CE 625 or consent of instructor. *Hardin and Deen.*

628 *Advanced Foundation Engineering.* (3)
Application of the principles of soil mechanics to the design and analysis of foundations. Lecture, three hours. Prereq: CE 625 or consent of instructor. *Hardin and Deen.*

629 *Soil Dynamics.* (3)
A study of the response of soils to dynamic loads including foundation vibration problems and the response of footings to impulse loads. Theories of wave propagation in granular and porous media and methods of measurement of the dynamic properties of soils in the laboratory are included. Lecture, 3 hours. *Hardin.*

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, program planning. Lecture, three hours. Prereq: CE 340. *Drake.*

642 *Highway Location Analysis.* (3) I, II
Optimization of highway location through a study of the effects of terrain, traffic, geometrics, standards and specifications, earthwork, structures, pavement, drainage, right of way acquisition, maintenance and road-user costs; application of computer-oriented methods of volumetric computations and economic analysis. Prereq: CE 340. *Dearinger.*

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: CE 340 or 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: CE 540 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: CE 540 or consent of instructor. *Havens.*

652 *Open Channel Flow.* (3)
The hydraulics of free surface flow including such topics as uniform flow, varied flow, unsteady flow, the hydraulic jump flow transitions, spillways and channel delivery. Lecture, 3 hours. Prereq: CE 550. *Staff.*

653 *Advanced Hydrology.* (3) II
Advanced discussion of special topics relating to hydrology including sediment transport, flow through culverts and bridges, frequency analysis, waves, infiltration, and computer models. Lecture, 3 hours. Prereq: CE 553. *James.*

654 *Hydraulic Structures.* (3)
Structural and hydraulic analysis required for the design of concrete and earth dams and appurtenant structures. Lecture, 3 hours. Prereq: CE 550. *Land.*

655 *Water-Resources Planning.* (3) II
Presentation of techniques for evaluating water-resources projects to meet social objectives with specific reference to such purposes as flood control, drainage, water supply, hydropower, navigation and recreation. Lecture, 3 hours. Prereq: CE 555. *James.*

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. *Lauderdale.*

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. *Lauderdale.*

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: CE 568, MB 400 and 401. *Burkhead.*

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: CE 568, MB 400 and MB 401. *Burkhead.*

668 *Advanced Instrumentation for Water Resources Research.* (3)
The theory and application of advanced techniques of analysis to water resources research. Prereq: CE 568. *Lauderdale.*

674 *Mechanics of Liquid Flow in Pipes.* (3)
Steady and unsteady one-dimensional pipe flow. Water hammer and surge tank analysis. Steady two-dimensional pipe flow. Digital and analog computer applications. Lecture, 3 hours.

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.*

682 *Experimental Structural Analysis.* (3)
Theory and practice of model analysis to facilitate the solution of unusual problems in structural engineering. Dimensional analysis, similitude requirements, materials, fabrication, loading and instrumentation of models, and interpretation of results. Lecture, 1 hour; lab, 6 hours. *Staff.*

686 *Advanced Metal Structures.* (3) I
Plastic analysis and design; shear, local and lateral buckling, compression members, welded, riveted and bolted connections, deflections and shakedown. Light gage cold-formed steel design. Strain hardening and stress concentrations; residual stresses, brittle fracture; fatigue. Torsion, thin-walled sections, multicell sections. Lecture, three hours. Prereq: CE 480. Concurrent: EM 531. *Pincus.*

690 *Suspended Structures.* (3) I, II
Theory and application of stress analysis and design as applied to suspended structures and suspension systems. Lecture, 2 hours; lab, 2 hours. Prereq: Consent of instructor. *Mory.*

691 *Advanced Reinforced Concrete Theory.* (3) II
Background and origin of modern reinforced concrete design procedures and codes. Comparison of American and foreign methods of analysis. Review of current research and projection to anticipated future changes in design and construction practices. Prereq: EM 531. *Gesund.*

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 480, EM 531, MA 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: CE 692 or consent of instructor. *Gesund.*

694 *Advanced Structural Analysis I.* (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: CE 380 and CE 392. *Mory.*

695 *Advanced Structural Analysis II.* (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: CE 694. *Mory.*

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.

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 Design 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 chairman of department. *Staff.*

790 *Special Research 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 chairman of department. *Staff.*

MINING ENGINEERING

001 *The Engineering Profession* (Freshman). (0) I, II
Mateer.

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. *Staff.*

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.

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: CE 100. *Staff.*

241 *Elements of Mining.* (3) I

Fundamental mining operations, prospecting and mine development. Lecture and recitation, three hours. Prereq: CHE 112, PHY 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 on the current literature. Prereq: Senior classification. Consent of instructor. *Swift.*

395 *Independent Work in Mining Engineering.* (3) I, II, S

Research for undergraduate departmental honors students. Prereq: Major and approval of departmental chairman. May be repeated three times for a total of 12 credits. *Swift.*

441 *Mining Methods.* (3) I

Surface and underground mining of coal, metallic ores and non-metallic minerals. Economic, engineering and operating factors. Lecture and recitation, three hours. Prereq. or concur: MET 301.

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. *Staff.*

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. *Staff.*

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. or concur: MET 301 and EE 305. *Staff.*

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. *Staff.*

542 *Coal Preparation II.* (3) II

A continuation of MIN 541. Lecture and recitation, two hours; lab, three hours. *Staff.*

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. *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 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. *Staff.*

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. *Staff.*

651 *Fuels and Their Combustion.* (3) I, II

Available fuels in the solid, liquid, and gaseous states. Emphasis will be on the utilization of fuels in the mineral industries. Technology of fuels. Physics and Chemistry of combustion. Combustion calculations. Lecture and recitation, three hours. *Staff.*

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. *Staff.*

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, three hours; drawing and mapping, six hours. May be repeated for a total of six credits. *Staff.*

768 *Resident Credit for the Master's Degree.* (0) I, II, S

(1 to 9 weeks residence). May be repeated once.

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. *Swift.*

780 *Special Problems in Mining Engineering.* (3) I, II, S

Open to graduate students who have the ability to carry on research. Each course consists of individual work in one of the various fields of mining engineering. May be repeated twice for a maximum of 9 credits. *Swift.*

790 *Special Problems in Mining Engineering.* (3) I, II, S

Open to graduate students who have the ability to carry on research. Each course consists of individual work in one of the various fields of mining engineering. May be repeated twice for a maximum of 9 credits. *Staff.*

ELECTRICAL ENGINEERING

FACULTY

Lyle Newton Back, acting chairman

Professors

Harry Alex Romanowitz — Ph.D., Michigan, 1948
Nathan B. Allison — Ph.D., Kentucky, 1948
Prasad Krishna Kadaba — Ph.D., U.C.L.A., 1950

Associate Professors

Raymond Jewell Distler — Ph.D., Kentucky, 1964
John Sterling Jackson, Jr. — M.S., California Institute of Technology, 1954
Silvio O. Navarro — Ph.D., Texas A. & M., 1955

Assistant Professors

Roy N. Adams — Ph.D., Vanderbilt, 1966
Lyle Newton Back — M.S., Kentucky, 1962
Eugene Bradford Bradley — Ph.D., Vanderbilt, 1964
Peter John Graham — M.A., Toronto, 1950
Martin C. Krimm — M.S., Kentucky, 1962
Jon Willard Petway — Ph.D., Georgia Institute of Technology, 1966

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

Freshman Year

First Semester	Crs.
EE 001—The Engineering Profession	0
MA 113—Analytics & Calculus I	4
CHE 110—General College Chemistry	5
ME 105—Basic Engineering Graphics	2
ENG 101—Freshman Composition	3
*General Studies	3
	17

Second Semester	Crs.
EE 002—The Engineering Profession	0
MA 211—Analytics & Calculus II	4
CHE 112—General College Chemistry	5
PHY 231—General College Physics	3
PHY 241—General College Physics Lab	2
ENG 102—Freshman Composition	3
	17

Sophomore Year

First Semester	Crs.
MA 212—Analytics and Calculus III	4
PHY 232—General College Physics	3
PHY 242—General College Physics Lab	2
EE 211—Circuits I	3
ME 250—Shop Theory	1
*General Studies	3
	16

Second Semester	Crs.
MA 431—Differential Equations	3
EM 222—Solid Mechanics I	4
EE 221—Circuits II	3
EE 222—Elec Engr Lab I	2
EE 251—Intro to Use Digital Comput.	2
*General Studies	3
	17

Junior Year

First Semester	Crs.
EE 435—Circuits III	3
EE 461—Electronics & Communications	3
EE 462—Elec Engr Lab II	2
EE 467—Electric & Magnetic Fields	3
ME 220—Engr Thermodynamics I	3
*General Studies	3
	17

Second Semester	Crs.
EE 006—The Engineering Profession	0
EE 415—Electromechanics	3
EE 416—Elec Engr Lab III	2
EE 420—Engineering Analysis I	3
EM 313—Dynamics	3
ENG 181—Basic Public Speaking	3
*General Studies	3
	17

Senior Year

First Semester	Crs.
EE 007—The Engineering Profession	0
EE 371—Seminar	1
EE 507—Electrical Controls I	3
**EE Elective	3
MET 461—Physical Metallurgy	3
**Elective (Engr Science)	3
**Elective	3
	16

Second Semester	Crs.
EE 008—The Engineering Profession	0
**EE Elective	3
**EE Elective	3
**EE Elective	3
EE 508 or 565 Elec Engr Lab IV or V	2
**Elective	3
*General Studies	3
	17

° Select from General Studies areas 4, 5, 6, 7 or 8 in consultation with academic advisor.

°° To be selected in consultation with the academic advisor.

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 *Circuits I.* (3) I, II, S

Fundamental laws and principles; interpretations, physical concepts; background for linear circuit analysis study. Prereq: MA 113. Concurrent: PHY 231, 241, MA 211. *Back.*

221 *Circuits II.* (3) I, II

Elementary circuit analysis. Study of series and parallel R-L-C circuits with single-phase sinusoidal driving functions. Recitation, 3 hours. Prereq: EE 211, PHY 231; MA 212. Concurrent: EE 222. *Back.*

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: EE 221. *Back.*

223 *Laboratory for EE 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. *Staff.*

305 *Electrical Circuits and Machinery.* (3) I, II

Study of d-c circuits, machines and control; analysis of single-phase and three-phase circuits. Three class hours. Prereq: MA 212, PHY 232. *Krimm.*

306 Electrical *and Electronic Circuits.* (3) I, II

Study of electronic principles and applications. Three class hours. Prereq: EE 305. *Staff.*

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: ENG 181. *Staff.*

372 *Seminar.* (1) I, II

Continuation of EE 371. Two class hours. Prereq: EE 371. *Staff.*

415 *Electromechanics.* (3) I, II

A study of construction, operating characteristics (by mathematical analysis), and applications of electrical machines. Three class hours. Prereq: EE 221. Concur: EE 416. *Krimm.*

416 *Electrical Engineering Laboratory III.* (2) I, II
Laboratory practice and experimental studies related to EE 415. Lecture, one hour; lab, three hours. Prereq: EE 407. Concur: EE 415. *Krimm.*

417 *Laboratory for EE 416.*
Staff.

420 *Engineering Analysis I.* (3) I, II
A study of engineering analysis stressing fundamental mathematical and physical principles; electrical duals, electrical-mechanical analogs; series solution of differential equations; Bessel and hyperbolic functions, Fourier analysis. Lecture and recitation, three hours. Prereq: MA 431; Concur: EE 461. *Allison, Graham.*

435 *Circuits III.* (3) I, II
Fundamentals of network theory in communications circuits; transmission lines and wave filters. Three class hours. Prereq: EE 221. *Graham, Back.*

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: EE 221, PHY 232, MA 212. Concur: EE 467, 462. *Staff.*

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: EE 222. Concur: EE 461. *Adams.*

463 *Laboratory for EE 462.*
Staff.

467 *Electric and Magnetic Fields.* (3) I, II
Field laws and theorems in vector form; fields in dielectric and magnetic media. Forces, moments, energy power. Brief introduction to time-varying fields. 3 class hours. Prereq: PHY 232, MA 212. Concur: EE 461. *Adams.*

507 *Electrical Controls I.* (3) I, II
Design and analysis of open-loop control components and systems. Three class hours. Prereq: EE 420. Prereq. or concur: EE 415, 416. *Jackson, Petway.*

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: EE 507. Concur: EE 572. *Staff.*

509 *Laboratory for EE 508.*
Staff.

511 *Information Theory.* (3) I
Time and frequency domains; sampling theorems; review of AM-FM; pulse modulation; probability and random signal theory; autocorrelation; entropy, coding schemes; channel capacity; noise. 3 class hours. Prereq: EE 420 and consent of instructor. *Distler.*

517 *Electrical Machinery II.* (3) I, II
Electro-mechanical energy conversion systems studies. Development of generalized equivalent circuits for various conditions of operation. Prereq: EE 415, 416. *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, 2 hours; problem session, 2 hours. Prereq: EE 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.

537 *Electric Power Transmission I.* (3) I
Transmission line parameters, generalized circuit constants; analysis of line performance. Three class hours. Prereq: EE 415, 416. *Krimm.*

538 *Electric Power Transmission II.* (3) II
Per-unit studies; symmetrical components; experimental studies on a-c network analyzer. Three class hours. Prereq: EE 537. *Krimm.*

562 *Electronics and Communications II.* (3) I, II
Feedback amplifiers, tuned and untuned amplifiers; oscillators, AM and U-H-F energy. Three class hours. Prereq: EE 461. *Allison, Bradley.*

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: EE 562. *Bradley. Bradley.*

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: EE 461. *Allison, Bradley.*

565 *Electrical Engineering Laboratory V.* (2) I, II
Laboratory practice and experiment exercises relating to studies in EE 564. Lecture, one hour; lab, three hours. Concur: EE 564. *Bradley.*

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: EE 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. Prereq: EE 420. *Allison, Adams.*

568 *Laboratory for EE 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. Nonlinear systems are briefly discussed. Three class hours. Prereq: EE 507. Concur: EE 508. *Jackson, Petway.*

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. Prereq: EE 221. *Graham.*

585 *Molecular Engineering.* (3) II
Molecular approach to the behavior of gaseous conductors, semiconductors, dielectrics and magnetic materials; emphasis on modern semi-conductor electronic devices such as masers, lasers, Esaki diodes, Zener diodes, and micromodules. Three class hours. Prereq EE 467. *Kadaba, Bradley.*

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 EE 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: EE 517, 567.

602 *Electromagnetic Energy Conversion II.* (3) II
Continuation of EE 601, with special attention to specific areas of machine types. Lecture and recitation, three hours. Prereq: EE 601.

606 *Electric Power Transmission.* (3)
The theory underlying the calculation and operation of long distance transmission circuits. Special attention to relay control. Recitation, 3 hours. Prereq: EE 538. *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: EE 520. *Distler, Graham.*

612 *Linear Circuit Analysis II.* (3)
Continuation of EE 611 with an introduction to non-linear systems. Prereq: EE 520. *Distler, Graham.*

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: EE 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: EE 461, 467. *Romanowitz.*

623 *Lines and Wave Guides.* (3)
Open-wire and coaxial lines, standing waves, stub matching; impedance transformation, rectangular and circular wave guides. Prereq: EE 564, 467. *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. *Kadaba, Bradley.*

626 *Microwave Engineering.* (3)
Generation, detection and measurement of microwave energy; vacuum tubes at ultra high frequencies, the klystron and the magnetron. Prereq: EE 467, 564, 565. *Allison, Kadaba.*

627 *Electromagnetic Fields.* (3)
Advanced studies in electromagnetic fields; antennas, radiation and propagation of energy. Prereq: EE 567. *Allison, Kadaba.*

631 *Discrete Information Theory I.* (3)
Entropy, Markov sources, algebra of codes, classification of codes, Shannon's theorems, compact codes, linear codes, error detection and error correction, syndrome vectors. 3 class hours per week. Prereq: Consent of instructor. *Distler, Allison.*

632 *Discrete Information Theory II.* (3)
Plotkin, Gilbert and other bounds, Hamming codes, Reed-Muller and other linear codes, cyclic codes, Bose-Chandhuri codes, sequential decoding, convolution encoding. 3 class hours per week. Prereq: EE 631. *Distler, Allison.*

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. *Navarro.*

711 *Network Synthesis I.* (3) I
The first of a two-semester sequence of courses giving a comprehensive treatment of modern network synthesis. Prereq: EE 611, 612. *Graham.*

712 *Network Synthesis II.* (3) II
The second of a two-semester sequence of courses giving a comprehensive treatment of modern network synthesis. Prereq: EE 711. *Graham.*

768 *Residence Credit for the Master's Degree.* (0) I, II, S
1-9 weeks residence. Maximum of 9 weeks can be applied toward master's degree with 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. *Allison.*

781 *Special Problems in Electrical Engineering.* (1)
Open to graduate students only. Individual work on an assignment approved by the chairman of the department. May be repeated 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 chairman of the department. May be repeated 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 chairman of the department. May be repeated for a total of nine credits. *Staff.*

ENGINEERING MECHANICS

FACULTY

Maurice A. Jaswon, chairman

Professor

Maurice A. Jaswon	Ph.D., Birmingham, 1949

Associate Professors

Staley Fields Adams	Ph.D., Colorado, 1965
Oscar W. Dillon, Jr.	Sc.D., Columbia, 1959
Donald C. Leigh	Ph.D., Cambridge, 1954

Assistant Professors

Peter Paul Gillis	Ph.D., Brown, 1964
T. Richard Robe	Ph.D., Stanford, 1966
Frank J. Rizzo	Ph.D., Illinois, 1964
David J. Shippy	Ph.D., Iowa State, 1963
Winston F. Yau	Ph.D., Princeton, 1966

Visiting Lecturer

Mohamed Gamal Hassan	A.R.C.S., London, 1963

The Department of Engineering Mechanics provides advanced formal training and an active research program leading to the M.S. and Ph.D. degrees. Although certain undergraduate courses are offered in the Department for the benefit of other programs in the College of Engineering, there is no baccalaureate degree program in Engineering Mechanics.

Some modern engineering problems are so complex that many empirically based design techniques do not apply. Sometimes they do not even exist. Engineering Mechanics offers an excellent background for the linking together of mathematics, physics and the engineering sciences which is necessary for the successful treatment of such problems. Those students with an aptitude for mathematics and who are interested in applying mathematics and physics to fundamental problems, would do well to consider work in Engineering Mechanics.

Course Descriptions

221 *Statics.* (3) I, II, S
A study of forces, vectors, couples, moments of areas and masses, center of gravity, and their application to engineering structures in two and three dimensions. Lecture and recitation, 3 hours. Prereq: PHY 231. Prereq. or concur: MA 211. *Staff.*

222 *Solid Mechanics I.* (4)
A study of equilibrium of solids by vector methods, forces, moments, equivalent force systems, equilibrium of solids, stress and strain, axial and biaxial systems, analysis of beams, torsion, strain energy, indeterminate systems. Lecture and recitation, 4 hours. Prereq: PHY 231. Prereq. or concur: MA 212. *Staff.*

313 *Dynamics.* (3) I, II, S
Motion of a particle, dynamics of moving bodies, impulse and momentum, work and energy, balancing, gyroscopy, advanced dynamics of rigid bodies. Prereq: EM 221 or 222. *Staff.*

322 *Solid Mechanics II.* (3)
Continuation of EM 222. Biaxial stress and strain, indeterminate beams and frames, columns, strain energy, plastic limit analysis, frames, experimental verification of Strength of Materials Theory, bending, tension, fatigue and limit loads. Lecture and recitation, two hours; lab, 3 hours. Prereq: EM 222. *Staff.*

331 *Strength of Materials.* (3) I, II, S
A study of stress and strain due to direct forces, shear, bending, torsion, eccentric loads and combined stresses. Lecture and recitation, 4 hours. Prereq: EM 221. Prereq. or concur: MA 212. *Staff.*

332 *Strength of Materials Laboratory.* (1) I, II
Experimental verification of Strength of Materials Theory; bending, torsion, tension of bars; loading of simple frame structures or machine parts including fatigue, time effects and limit loads. Prereq: EM 221; Concurrent: EM 331. *Staff.*

351 *Experimental Solid Mechanics.* (3) I, II
The fundamentals of mechanical measurement with illustrative experiments; an introduction to Photoelasticity with laboratory demonstrations; the design and performance of relatively complex Solid Mechanics Experiments. Lecture, two hours; laboratory, three hours. Prereq: EM 313, 322. *Staff.*

503 *Theoretical Elasticity.* (3)
An introductory mathematical account of the classical linear elastic solid. Stress, strain and displacement as tensor quantities; stress-strain relations; field equations for stress and displacement; wave propagation in solids; strain energy; anisotropy. Prereq: MA 433 or consent of instructor. *Jaswon.*

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 222. *Dillon.*

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 322. *Adams.*

532 *Experimental Stress Analysis.* (3)
Experimental stress analysis from an engineering viewpoint. Preliminary optics; stress-optic law; isoclinics and stress trajectories; strain gauges; rosettes; miscellaneous experimental techniques. Prereq: EM 531.

Prerequisite for graduate work: Students desiring graduate work in Engineering Mechanics may come from all branches of Engineering as well as from programs in mathematics and physics. The program is flexible with certain core courses generally required. Typical optional areas of concentration for the remainder of the program are in: Continuum Mechanics, Materials, and Dynamics. In addition to writing to the Graduate School, prospective students should contact the Chairman of the Department of Engineering Mechanics for information related to the various programs and for information regarding financial assistance.

603 *Theoretical Plasticity.* (3)
An introductory mathematical treatment of the perfectly plastic solid. Real and idealized materials; yield criteria; flow rules; experimental basis of the theory; contained plastic flow; some two-dimensional problems. Prereq: MA 433 or consent of instructor. *Dillon, Jaswon, Gillis.*

604 *Theoretical Plasticity II.* (3)
Continuation of EM 603. Limit analysis; plastic bending and torsion; structures and shells; thermoelasticity; plastic wave propagation. Prereq: EM 603. *Dillon, Jaswon, Gillis.*

605 *Foundations of Inelasticity.* (3)
A critical and constructive discussion of the assumptions and experimental evidence for inelastic material response from a viewpoint of the mechanist. Lecture, 3 hours. Prereq: EM 604 and 662. *Dillon.*

606 *Theoretical Elasticity II.* (3)
Continuation of EM 503. Two-dimensional systems; St. Venant theory of torsion and flexure; compatibility and incompatibility; body-forces; thermoelasticity; Volterra dislocations. Prereq: EM 503. *Jaswon.*

607 *Advanced Inelasticity.* (3)
A continuation of EM 605 with a study of the latest research results in the area of inelasticity. Lecture, 3 hours. Prereq: EM 605. *Dillon.*

632 *Theory of Elastic Stability* (3)
Buckling of centrally compressed bars. Detailed consideration of elastic and plastic buckling of prismatic bars under simultaneous action of axial and lateral loads. Buckling of frames, lateral buckling of beams, shear effect, energy methods. Lecture, 3 hours. Prereq: EM 531. *Jaswon, Adams.*

644 *Advanced Dynamics I.* (3)
An advanced course in the study of the dynamics of mechanical systems. Application of Lagrange's equations, Euler's angles, Coriolis acceleration, and other dynamical principles to mechanisms, rotating and reciprocating devices, and other mechanical systems. Prereq: EM 313, and MA 432, and consent of instructor. (Same as Mechanical Engineering 644). *Robe, Shippy.*

646 *Advanced Dynamics II.* (3)
Continuation of EM/ME 644. Conservation theorems and Hamiltonian formalism; non-linear mechanical systems; small vibrations; stability of mechanical systems. Prereq: EM or ME 644. (Same as Mechanical Engineering 646). *Robe, Shippy.*

651 *Numerical Methods in Potential Theory.* (3)
A modern numerical treatment of some classical problems in potential theory. Prereq: MA 433. *Jaswon.*

652 *Numerical Methods in Elasticity.* (3)
Continuation of EM 651. A modern numerical treatment of some difficult problems in classical elasticity. Prereq: EM 651. *Jaswon.*

661 *Nonlinear Continuum Mechanics I.* (3) I
An introduction to the continuum physics and mathematical theory of the nonlinear mechanical behavior of materials. Review mathematical background. Principles of continuum mechanics. Principles of constitutive equations. Lecture and recitation, 3 hours. Prereq: MA 431 or MA 462 or consent of instructor. *Leigh.*

662 *Nonlinear Continuum Mechanics II.* (3) II
Continuation of EM 661. Classes of materials. Finite elasticity and hyper-elasticity. Nonlinear fluids with memory. Approximation theory for memory functionals. Approximations to memory materials. Thermodynamics of memory materials. Lecture and recitation, 3 hours. Prereq: EM 661. *Leigh.*

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

769 *Residence Credit for the Doctor's Degree.* (0) I, II, S
(1 to 18 weeks.) May be repeated indefinitely. *Staff.*

MECHANICAL ENGINEERING

FACULTY

Robert M. Drake, Jr., chairman

Professors

Robert M. Drake, Jr. Ph.D., California, Berkeley, 1950
Willis Merle Carter Ph.D., Michigan, 1953
Karl O. Lange
Dr.Ing, Darmstadt Institute of Technology, 1930
Orville Watson Stewart M.S., Kentucky, 1955

Associate Professors

Richard C. Birkebak	Ph.D., Minnesota, 1962
Clifford John Cremers	Ph.D., Minnesota, 1964
James Ellis Funk	Ph.D., Pittsburgh, 1960
Oliver William Gard	M.S., Georgia Institute of Technology, 1952
Maurice Keith Marshall	M.S., Kentucky, 1956
James Francis Lafferty	M.S., Southern California, 1957
James F. Thorpe	Ph.D., Pittsburgh, 1960
Warren Ware Walton	M.S., Kentucky, 1953

Assistant Professors

Roy Donald Burberry	M.A., Kentucky, 1958
James McCleland Elliott	M.S., Kentucky, 1959
Horst E. Krause	Dr.Ing., Braunschweig, 1962
Harry Louis Mason	M.S., Kentucky, 1959
Orval Christy Stewart	M.S., West Virginia, 1961

Lecturer

Deh Chang Tao	Ph.D., Purdue, 1951
Clement C. Wilson	Ph.D., Purdue, 1964

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

Freshman Year

First Semester	Crs.
ME 001—The Engineering Profession	0
CHE 110—General College Chemistry	5
ENG 101—Freshman Composition	3
MA 113—Analytics & Calculus I	4
ME 105—Basic Engineering Graphics	2
*General Studies	3
	17

Second Semester	Crs.
ME 002—The Engineering Profession	0
CHE 112—General College Chemistry	5
ENG 102—Freshman Composition	3
MA 211—Analytics & Calculus II	4
PHY 231—General College Physics	3
PHY 241—General College Physics Lab	2
	17

Sophomore Year

First Semester	Crs.
ECO 251—Principles of Economics	3
MA 212—Analytics & Calculus III	4
PHY 232—General College Physics	3
PHY 242—General College Physics Lab	2
*General Studies	3
	15

Second Semester	Crs.
EM 222—Solid Mechanics I	4
MA 431—Differential Equations	3
ME 220—Engineering Thermodynamics I	3
*General Studies	3
*General Studies	3
	16

Junior Year

First Semester	Crs.
EE 251—Intro Use Digital Computers	2
EE 305—Elec Circuits & Machinery	3
EM 313—Dynamics	3
ME 321—Engineering Thermodynamics II	3
ME 330—Fluid Mechanics	3
MET 301—Materials Science	3
	17

Second Semester	Crs.
EE 306—Elec & Electronic Circuits	3
Elective (Mathematics)	3
ME 310—Engineering Experimentation I	3
ME 351—Manufacturing Engineering	4
ME 371—Seminar	1
Elective	3
	17

Senior Year

First Semester	Crs.
ME 007—The Engineering Profession	0
ME 311—Engr Experimentation II	3
ME 325—Elements of Heat Transfer	3
ME 343—Control Theory	4
*General Studies	3
**Technical Elective	3
	16

Second Semester	Crs.
ME 008—The Engineering Profession	0
ME 312—Engr Experimentation II	3
ME 344—Mechanical Design	4
*General Studies	3
**Technical Elective	3
**Technical Elective	3
	16

* Select from General Studies areas 4, 5, 6, 7, or 8 in consultation with academic advisor.
** To be selected in consultation with the academic advisor.

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.

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 techniques. Charts, maps and diagrams. Three two-hour periods a week. Same as CE 105. *Burberry.*

106 *Mechanical Engineering Graphics I.* (2) I, II

Graphical solution of space problems by the application of the principles of descriptive geometry. Same as CE 106. Prereq: ME 105 or CE 105. Drawing room, six hours. *Burberry.*

110 *Engineering Problems.* (1) I, II

Slide rule instruction with applications. Theory and application of the slide rule. Prereq: MA 110 or consent of instructor. *Staff.*

220 *Engineering Thermodynamics I.* (3) I, II

Fundamental principles of thermodynamics. Lecture and recitation, three hours. Prereq: PHY 232. Concur: MA 431. *Staff.*

240 *Mechanical Engineering Graphics II.* (2) I, II

Technical sketching and working drawings of machines and machine parts. Prereq. or concurrent: ME 106. Drawing room, six hours. *Staff.*

241 *Mechanisms.* (3) I, II

Movement of machine parts such as crank and link motions. Cams, gears, straight line and quick return motions. Prereq: PHY 211 or 231. ME 240. Lecture, two hours, laboratory, three hours. *Barber.*

250 *Shop Theory.* (1) I, II

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. *Stewart, O. C.*

252 *Manufacturing Methods.* (2) I, II

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. Plant visitations. Lecture and visual aids, three hours. Prereq: Sophomore standing. *Stewart, O. C.*

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: PHY 231. *Staff.*

301 *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: PHY 232. *Stewart, O. W.*

302 *Mechanical and Electrical Equipment for Buildings II.* (2) II

Continuation of ME 301. Lecture and recitation, two hours. Prereq: ME 301. *Stewart, O. W.*

310 *Engineering Experimentation I.* (3)

An instrumentation laboratory to provide the student with an understanding of the characteristics and application of modern instrumentation related to physical property determinations in Mechanical Engineering. Lecture, one hour; lab, four hours. Prereq: ME 220. *Stewart, O. W. and Staff.*

311 *Engineering Experimentation II.* (3)

A laboratory course to instruct the student in the performance of basic Mechanical Engineering components and systems and in the writing of reports on the results obtained. Lecture, one hour; lab, four hours. Prereq: ME 310, 321, 330. *Stewart, O. W. and Staff.*

312 *Engineering Experimentation III.* (3)

An experimental laboratory concerned with the analysis and/or synthesis of complex mechanical systems with emphasis on original work by the student. Lecture, one hour; lab, four hours. Prereq: ME 311, 325. Stewart, *O. W. and Staff.*

321 *Engineering Thermodynamics II.* (3) I, II

Continuation of ME 220. Lecture and recitation, three hours. Prereq: ME 220 and MA 431. *Staff.*

325 *Elements of Heat Transfer.* (3) I, II

Fundamental principles of heat transfer. Lecture and recitation, three hours. Prereq: ME 321, MA 431. *Cremers, Birkebak.*

330 *Fluid Mechanics.* (3) I, II

Fundamental principles of fluid flow. Lecture and recitation, three hours. Prereq: ME 220. *Thorpe, Wood and Staff.*

331 *Fluid Mechanics Laboratory.* (1) I, II

Laboratory exercises and demonstrations of fundamental fluid mechanics phenomenon. Laboratory, two hours. Prereq or concurrent: ME 330. *Elliott.*

341 *Machine Design II.* (3) I, II

Lecture and recitation, one hour. Drawing room, six hours. Prereq: ME 340. *Mason, Carter.*

342 *Laboratory for ME 341.*

343 *Control Theory.* (4)

Fundamentals of automatic control theory; describing differential equations; LaPlace transformation and overall transfer functions; frequency response and stability in terms of Boder and Nyquist diagrams; Root-Locus procedures and non-linearities. Lecture and recitation, four hours. Prereq: MA 431. *Funk.*

344 *Mechanical Design.* (4)

Fundamentals of design with methods of approximation. Introduction to optimum design considerations. Synthesis and problems on the design of various mechanical elements. Lecture and recitation, four hours. Prereq: Senior classification. *Mason, Carter.*

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 250 or ME 351.

351 *Manufacturing Engineering.* (4) I, II

A background course in the area of manufacturing processes and systems. Includes a study of machining operations, foundry mechanization, forging, sheet metal work, powder metal products, plastic molding and production machines and processes. Some laboratory work in machining and plant visitations. Lecture and visual aids, four hours; lab, three hours. Prereq: Consent of instructor.

352 *Plant Layout.* (3) I

Selection of processes and machines, material handling systems, and plant requirements. Lecture, two hours; drawing room, three hours. Prereq: ME 356. *Gard.*

353 *Laboratory for ME 352.*

354 *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, one hour; drawing room, six hours. Prereq: ME 341. *Mason, Gard and Carter.*

355 *Laboratory for ME 354.*

356 *Motion and Time Study.* (4) I, II

Principles and uses of motion economy and fundamentals of time study. Lecture and recitation, four hours. Prereq: ME 351. *Gard.*

357 *Laboratory for ME 356.*

360 *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: ME 321 or ME 400. *Stewart, O. W.*

361 *Laboratory for ME 360.*

362 *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. Prereq: ME 360. *Stewart, O. W.*

363 *Laboratory for ME 362.*

366 *Power Plant Engineering.* (3) II

Study of the characteristics of steam and internal combustion engineering generating power stations. Lecture and recitation, three hours. Prereq: ME 321. *Stewart, O. W.*

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. *Marshall, Carter.*

380 *Air Conditioning, Heating and Ventilating.* (4) I

Theory of air conditioning and the mechanical equipment of buildings. Lecture and recitation, four hours. Prereq: ME 321 and ME 330. *Walton.*

381 *Air Conditioning, Heating and Ventilating Design.* (3) II

Continuation of ME 380 and the complete design and layout of a year-round air conditioning system. Prereq: ME 380. *Walton.*

382 *Refrigeration.* (3) I

A course which deals with compression and absorption refrigeration machines and installations. Lecture and recitation, three hours. Prereq: ME 321 or ME 400. *Walton.*

395 *Independent Work in Mechanical Engineering.* (1-6)

Special research and problems for individual students who are capable of pursuing independent investigations. May be repeated for a maximum of 6 credits. Prereq: Junior in Mechanical Engineering and a standing of 3.0 or better in Mechanical Engineering courses. *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: PHY 232 and MA 212. *Staff.*

510 *Introduction to Nuclear Engineering.* (3)

An introduction to the application of radioactivity and nuclear energy in engineering. Application to measurements, process control and elementary nuclear design of neutron chain reactors. Lecture, three hours. Prereq: PHY 232, MA 431. *Lafferty, Funk.*

511 *Elements of Reactor Design.* (4) II

Characteristics of reactor materials; heat removal requirements; determination of reactor size; composition and configuration to satisfy the nuclear, thermal, hydraulic and mechanical design requirements. Lecture, three hours; lab, three hours. Prereq: ME 510. *Lafferty.*

512 *Lab for ME 511.*

517 *Instrumentation for Research.* (3) I

An exploration of modern instrumentation techniques and problems; transducer principles; analysis of dynamic response of instrumentation systems; theory of measurements; random processes; pressure; temperature, strain gages and inertial measurement techniques; magnetic, optical, electrostatic and other recording systems; automatic data reduction; measurement of errors. Prereq: Consent of instructor. *Staff.*

530 *Gas Dynamics.* (3)

Consideration of the mass, energy and force balances applied to flowing compressible fluids. Isentropic flow, diabatic flow, flow with friction, wave phenomena, and generalized one-dimensional gas dynamics. Lecture and recitation, three hours. Prereq: ME 321. *Marshall.*

531 *Laboratory for ME 530.*

532 *Fluid Transients and Power Control.* (3) II

A course in the analysis of fluid transients and the theory and design of fluid power controls and their application in engineering systems. Lecture, three hours. Prereq: ME 330. *Thorpe.*

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. Prereq: ME 530. *Marshall.*

565 *Laboratory for ME 564.*

590 *Elements of Aero-Space Technology.* (4) I

Flight performance of airborne and ballistic vehicles. Space vehicle propulsion and structures. The space environment. Lecture, three hours. Prereq: ME 321 and 330. *Lange.*

591 *Laboratory for ME 590.*

592 *Aero-Space Component Design.* (3) II

Preparation of formal proposal on a given requirement in the aerospace field. Execution of the design. Testing of a prototype under proper environmental conditions. Prereq: ME 590. *Lange.*

593 *Laboratory for ME 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.

610 *Nuclear Reactor Analysis.* (3) I

A lecture and problem course covering the use of the one-velocity Fermi Age group and elementary transport models in the design and analysis of reactor systems. Prereq: PHY 554, MA 432. *Lafferty, Funk.*

615 *Plasma Dynamics.* (3) II

A lecture course dealing with the study of basic laws of plasma physics, hydrodynamics, and electromagnetic theory in association with transport phenomena. Application of these principles to energy conversion systems. Lecture, three hours. Prereq: MA 432, ME 620. *Cremers.*

620 *Advanced Engineering Thermodynamics I.* (3) I

Critical treatment of the laws of thermodynamics, temperature scales; applications of theory to compressors and internal combustion engines; frequent reference to research papers. Lecture, four hours. Prereq: ME 321. *Carter, Drake.*

621 *Advanced Engineering Thermodynamics II.* (3) II

Continuation of ME 620. Prereq: ME 620. *Drake.*

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. Lecture, three hours. Prereq: ME 325 or equivalent or concurrent, MA 432. *Cremers.*

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. Lecture, three hours. Prereq: ME 625. *Drake.*

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. Lecture, three hours. Prereq: ME 325 or equivalent, or concurrent, MA 432. *Birkebak.*

628 *Convective Mass Transfer.* (3) II

A unified treatment of convective mass transfer; theory of mass transfer; Reynolds flow; calculation procedures for mass transfer; application to systems; simultaneous heat and mass transfer. Prereq: ME 325, 530. *Drake.*

630 *Theoretical Hydrodynamics.* (3)

Development of basic concepts: continuity, vorticity, irrotationality, stream function, velocity potential, momentum and energy theorems. Two dimensional potential flow theory, airfoil theory. Jets, helmholtz motions, free streamline theory. Vortex motion and theorems, wave motion. Prereq: ME 330, MA 432. *Thorpe.*

631 *Viscous Flow Theory.* (3)

Development of concepts of stress and strain rate in fluids; constitutive relations, derivation of fundamental equations of viscous flow. Development of fluid mechanics integral equations for viscous flow. Prereq: ME 330, MA 432. *Thorpe.*

632 *Compressible Fluid Flow.* (3)
Review and extension of one dimensional gas dynamics. Subsonic flow, Hodograph method and perturbation method. Supersonic flow, perturbation method, method of characteristics, oblique shocks. Unsteady wave motion and shock waves. Compressible boundary layers and interaction wave motion and shock waves. Prereq: ME 330, MA 432. *Thorpe.*

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 ME 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: ME 642. *Tao.*

644 *Advanced Dynamics I.* (3)
An advanced course in the study of the dynamics of mechanical systems. Application of Lagrange's equations, Euler's angles, Coriolis acceleration, and other dynamical principles to mechanisms, rotating and reciprocating devices, and other mechanical systems. Prereq: EM 313, MA 432. (Same as Engineering Mechanics 644).

645 *Systems Concepts and Analysis.* (3) I
Conceptual development and study of complex systems; their synthesis and design; analysis and optimization of system parameters. Input-output relationships; formulation of mathematical models, parameters and constraints on physical systems. Prereq: Consent of instructor. *Funk.*

646 *Advanced Dynamics II.* (3)
Continuation of EM/ME 644. Conservation theorems and Hamiltonian formalism; non-linear mechanical systems; small vibrations; stability of mechanical systems. Prereq: EM or ME 644. (Same as Engineering Mechanics 646.)

647 *System Optimization.* (3) II
A course in the theory and application of optimization techniques with emphasis on large engineering systems. Prereq: MA 433, EE 251 or CS 220 or equivalent. *Funk.*

648 *Automatic Guidance and Control.* (3) II
Theory of the automatic control of machines and vehicles. Mathematical models of sensors, computers and actuators. Transfer functions of various vehicles and machines. Effects of nonlinearities and noise. Problems of reliability; pneumatic, hydraulic, and electrical systems. Prereq: Consent of instructor.

662 *Propulsion Systems.* (3)
Theory of propulsion by jet; efficiencies, specific consumption; specific thrust, specific impulse. Primary jet devices; turbojet, Secondary jet devices for space propulsion; solar propulsion, arc ducted fan, ramjet, rocket, ram rocket, nuclear power plants. heating devices, ion drive, electro-magnetic drive. Prereq: ME 530. *Marshall.*

663 *Energy Conversion Processes.* (3) II
A course in the theory of operation of various types of energy conversion devices such as thermo-electric and thermionic converters, photovoltaic and solar cells, MHD engines, and fuel cells. Prereq: ME 321. *Funk.*

664 *Experimental Methods in Nuclear Engineering.* (3) I
A lecture and laboratory course covering the utilization of radiation in engineering, measurement and analysis of parameters pertient to reactor design and operation, and radiation shielding; reactor response and control studies using analog computer. Prereq or concur: ME 510. *Lafferty.*

665 *Nuclear Reactor Dynamics.* (3) II
Analysis of dynamic behavior of nuclear reactor systems; transfer function methods applied to nuclear reactor operation and control, stability and analysis from Nyquist and Bode plots, effects of feedback and compensation; instrumentation for reactor start-up and operate conditions. Prereq: ME 510. *Lafferty, Funk.*

666 *Radiation Damage and Shielding.* (3) II
A study of the effects of radiation on reactor materials and instrumentation. Macroscopic study of radiation absorption applied to radiation shielding and heat generation in reactors. Prereq: ME 664. *Staff.*

683 *Biotechnology.* (3)
The human body as a mechanical system responding to sustained and transient forces and pressures, such as occur in flight, space flight and industrial environments. The physical and behavioral reaction of organisms to dynamic, thermal, radiative and gravitational stresses. Mechanical, hydraulic and pneumatic performance of body subsystems. Use of the human parameters in the design of protective and prosthetic devices and life support systems. Prereq: Consent of instructor. *Lange.*

768 *Residence Credit for the Master's Degree.* (0) I, II, S
May be repeated once.

769 *Residence Credit for Doctor's Degree.* (0) I, II
May be repeated indefinitely.

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. *Staff.*

772 *Bio-Mechanics Seminar.* (1)
A weekly meeting of the staff and graduate students in Engineering, Physiology Science, Biophysics, Psychology, etc. for the discussion of research and recent developments in Biomedical Engineering such as Biodynamics. May be repeated two times. Prereq: Consent of instructor.

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 instructor. *Staff.*

METALLURGICAL ENGINEERING

FACULTY

James Graham Morris, acting chairman

Professors

Richard Shelby Mateer	Ph.D., Pittsburgh, 1950
Roy Erwin Swift	D.Engr., Yale, 1949

Associate Professor

James Graham Morris	Ph.D., Purdue, 1956

Assistant Professors

Robert J. DeAngelis	Ph.D., Northwestern, 1964
Robert Carlisle Duncan	M.S., Kentucky, 1957
Robert Skaggs	Ph.D., Iowa, 1967

Visiting Lecturer

Frank Dalburg Hoyt	M.S., Pennsylvania, 1954

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 113—Analytics & Calculus I	4
CHE 110—General College Chemistry	5
*General Studies	3
	15

Second Semester	Crs.
ENG 102—Freshman Composition	3
MA 211—Analytics & Calculus II	4
CHE 112—General College Chemistry	5
PHY 231—General College Physics	3
PHY 241—General College Physics Lab	2
	17

Sophomore Year

First Semester	Crs.
MET 003—The Engineering Profession	0
MA 212—Analytics & Calculus III	4
PHY 232—General College Physics	3
PHY 242—General College Physics Lab	2
ECO 251—Principles of Economics	3
CME 200—Process Principles	3
	15

Second Semester	Crs.
MA 431—Differential Equations	3
CME 220—Engineering Thermodynamics	3
ECO 252—Principles of Economics	3
*General Studies	3
*General Studies	3
	15

Junior Year

First Semester	Crs.
MET 261—Elem. of Physical Metallurgy	3
MET 361—Physical Metallurgy I	3
MET 321—Melting, Fabrication and Testing Metals	3
CHE 440—Physical Chemistry	3
EE 305—Elec Circuits & Machinery	3
Elective (Mathematics)	3
	18

Second Semester	Crs.
MET 363—Structure of Alloys I	3
MET 453—Metallurgical Kinetics	3
CHE 442—Physical Chemistry	3
CHE 443—Physical Chemistry Lab	2
EM 222—Solid Mechanics I	4
*General Studies	3
	18

Senior Year

First Semester	Crs.
MET 451—Metallurgical Thermodynamics	3
MET 463—Structure of Alloys II	3
MET 535—Mechanical Metallurgy I	3
MET 341—Extractive Metallurgy	3
MET 371—Seminar	1
**Technical Elective	3
Elective	3
	19

Second Semester	Crs.
MET 461—Physical Metallurgy II	3
MET 421—The Casting of Metals	3
MET 372—Seminar	1
**Metallurgical Elective	3
**Technical Elective	3
Elective	3
	16

* Select from General Studies areas 4, 5, 6, or 8 in consultation with academic advisor.

** To be selected in consultation with the academic advisor.

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.*

10 *Elements of Metallurgy.* (0) S
Basic metallurgy including various methods of heat treatment and other pertinent data. Eight weeks at two hours per week.

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. *Duncan.*

301 *Materials Science.* (3)
Microscopic and macroscopic structure as related to the properties of materials with engineering applications. Lecture and recitation, three hours. Prereq: CHE 112, PHY 232. *Duncan.*

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, two hours. Concur: EM 222 and CE 301.

305 *Engineering Materials.* (4) I, II
Interpretation of mechanical, chemical and physical properties of alloy, ceramics and organic materials in terms of atomic bonding, crystal structure, grain and fibre formation in aggregates. Laboratory techniques in X-ray diffraction, microscopy and engineering property tests. Lecture, two hours; recitation, one hour; lab, three hours. Prereq: PHY 232. *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; MET 351. *Swift.*

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 I.* (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: MET 363. *DeAngelis.*

363 *Structure of Alloys I.* (3) I

Elastic and plastic deformation, recovery and recrystallization of alloys; heat treatment of steel. Lecture, two hours; lab, three hours. Prereq: MET 261 or 301. *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

A continuation of MET 371. Prereq: Permission of instructor. *Swift.*

395 *Independent Work in Metallurgical Engineering.* (1-3) I, II, S

Research for undergraduate departmental students. Prereq: Major and approval of departmental chairman. May be repeated for a total of 6 credits. *Morris.*

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. *Swift.*

444 *Minerals Beneficiation Laboratory.* (1) II

Application of the principles studied in MET 443. Lab, three hours. Prereq: or Concur: MET 443. *Swift.*

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. *Foster.*

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 451. *Morris.*

461 *Physical Metallurgy II.* (3) I, II

High purity metals, nuclear alloys, powder metallurgy techniques. Lecture, 2 hours; lab, 3 hours. Prereq. or concur: MET 361. *DeAngelis.*

463 *Structures of Alloys II.* (3) II

Age hardening and diffusion in metal systems. Laboratory concerned with senior thesis type problems. 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. *Duncan.*

531 *Powder Metallurgy.* (3)

Study of the principles of powder metallurgy relating to alloys of unusual compositions, metal and non-metal combinations, porous and laminated products, composite metals, and high-melting alloys. Lecture and recitation, three hours. Prereq: Consent of instructor. *Swift.*

532 *Materials Science I.* (3) I

Modern ideas on the engineering properties of solids. Crystallography; properties; relations of properties to structure; thermodynamics; solid state reactions. Prereq: MA 433 or consent of instructor. *DeAngelis.*

535 *Advanced Mechanical Metallurgy I.* (3)

Elastic and plastic deformation of metallic crystalline solids; crystallographic nature of slip and twinning; work hardening, fracture and recovery. Lecture and recitation, three hours.

536 *Ceramic Engineering.* (3)

The nature of ceramic materials. The forming and thermal treatment of ceramic products. Consideration of the various properties usually encountered and required of ceramic materials inclusive of cermets. Lecture and recitation, three hours. Consent of instructor.

539 *Nuclear Metallurgy.* (3)

The metallurgy of such materials as are used in the various components of nuclear reactors with special emphasis on their physical metallurgy. Scientific principles in their broadest sense are emphasized. Material applicable to nuclear-reactor components in the ceramics, metal-ceramics, and other fields. Prereq: B.S. in Metallurgical Engineering or permission of instructor. *Mateer.*

550 *Corrosion.* (3)

The fundamental principles of corrosion control and the basic mechanisms related to a better understanding of the causes of corrosion. The application of principles to practical situations. Lecture and recitation, three hours. Prereq: Consent of instructor. *Swift.*

551 *Advanced Chemical Metallurgy I.* (3)

Study of reactions occurring during refining, based on principles of thermodynamics and kinetics. Examples from both ferrous and nonferrous metallurgy. Lecture and recitation, three hours. Prereq: Consent of instructor.

566 *Crystallography and X-ray Metallography.* (4)

Elements of crystallography, nature of x-rays, diffraction by crystal lattice, the structure factor and crystal structure determinations in metallic lattices, x-ray camera and diffractometer techniques and application of these to determination of phase diagrams, preferred orientation and residual stresses. Lecture, three hours; lab, three hours. *DeAngelis.*

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 Philosophy degree is offered in the field of physical metallurgy.

632 *Materials Science II.* (3) II

Continuation of MET 532. Classification of solids; atomic structure and bonding; relation of structure to properties; deformation behavior and failure. Prereq: MET 532. *DeAngelis.*

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.*

635 *Advanced Mechanical Metallurgy.* (3)

Theory of dislocations in crystals and their role in strength, plasticity, work hardening and fracture of crystalline solids. Lecture and recitation, three hours. Prereq: MET 535. *Fields, DeAngelis.*

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.*

641 *Advanced Production Metallurgy.* (3) I, II

Principles and practices used in the production of alloys with special stress upon any particular group of alloys that the student may choose. Reference reading and laboratory work are emphasized. Lecture, two hours; lab, three hours. *Swift.*

650 *Advanced Chemical Metallurgy.* (3)

Study of reactions of materials with chemical environments. Introduction to irreversible thermodynamics. Emphasis on current literature.

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 644. *Foster.*

661 *Advanced Physical Metallurgy I.* (3)

Study of the theory of phase transformations in metallic systems. Analysis of rate controlling processes for nucleation and growth controlled phase changes and for order-disorder reactions. Lecture and recitation, three hours. Prereq: MET 463 and permission of instructor. *Morris.*

662 *Advanced Physical Metallurgy II.* (3)
Solidification theory and mechanisms. Diffusion in solids. Prereq: MET 661 and permission of instructor. *Morris.*

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.*

666 *Diffraction Methods in Metallurgy.* (4) II
Application of thin foil electron transmission methods to the study of the defect structure of metals, theory of electron diffraction contrast phenomena, sample preparation, X-ray theory and methods applied to the study of deformation characteristics of metals, order-disorder transformations, and crystal structure analysis. Prereq: MET 566.

768 *Residence Credit for the Master's Degree.* (0) I, II, S
(1 to 9 weeks residence). May be repeated once.

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. Group and panel discussions. Required of all graduate students. May be repeated. *Swift.*

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.*

782 *Special Problems, Literature and Laboratory.* (3) I, II
A continuation of MET 781. Lab, 6 hours; consultation and lecture by appointment. May be repeated twice for a maximum of 9 credits.

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 16-week semesters. Eighty-three (83) semester hours in law are necessary to qualify for the J. D. 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 nineteen instructors and eleven library and secretarial personnel. They are assisted by various part-time teaching associates and 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 80,000 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 occupies a handsome new building of contemporary design constructed in 1965. Located in the central campus on South Limestone Street just south of Memorial Hall, this new Law Building was planned and designed to provide all of the special physical facilities required for a modern program of legal education. These facilities include a model Court Room-Auditorium; the Law Library; five classrooms; five seminar-conference rooms; faculty and staff offices; and offices for the Kentucky Law Journal, the Moot Court Board, the Legal Aid program, the Student Bar Association, the Research Institute, and visiting attorneys and others who come to the Law School for research and study.

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 136 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

William Lewis Matthews, Jr., A.B., L.L.B., LL.M., S.J.D., Dean of the College of Law, is on leave during 1966-67. Paul Oberst, A.B., LL.B., LL.M., is Acting Dean, 1966-67.

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 Practice Court and the Appellate Moot Court Program. The former was established as an integral part of the curriculum very soon after the College itself was created and the latter is provided through twelve 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, the Nathan Burkan Memorial 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 (maximum load: 7 semester hours) 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 meet the following requirements and be approved for admission:

1. The applicant must have received a bachelor's degree from an accredited institution or be on a combined-degree program which will entitle him to the bachelor's degree before he completes requirements for the J.D. degree.
2. The applicant must have taken the Law School Admission Test.
3. The applicant must have achieved a prelaw grade point average (on *all* college work attempted) and a Law School Admission Test Score according to the following criteria:
   (a) Those applicants having at least a 2.5 average and at least a 475 LSAT score will be admitted.
   (b) Those applicants having at least a 2.4 average and at least a 500 LSAT score will be admitted.
   (c) Those applicants having at least a 2.3 average and at least a 525 LSAT score will be admitted.
   (d) Those applicants not having the combination of grade point average and LSAT score stated above will be considered for admission by the Admissions Committee on the basis of their individual applications and may be admitted at the discretion of the Admissions Committee.

The Admissions Committee will give consideration to the prelaw grade record, the Law School Admission Test score, the academic improvement shown in the prelaw grade record, and the applicant's aptitude for law study. Applicants with a grade point average of less than 2.0 on all college work attempted will not be considered. Applicants with a grade point average below 2.3 and a LSAT score below 450 will not be admitted.

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.

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.

All law students are classified as, and should apply as, students with advanced standing.

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 should be submitted on or before March 1 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 1 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 must be received within the University deadline each year in order to 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.

The LSAT is prepared, given, and scored by the Educational Testing Service, Box 944, Princeton, New Jersey 08540, and application to take it is made directly to the Service by mail. It is given in November, February, April, and July or 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 in July or August of 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 seven years of college work (four years' prelaw and three years' law) is normally required for the J.D. degree, particular attention is called to the Arts-Law combined degree program whereby both the A.B. and J.D. degree 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 J.D. 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 J.D. degree. 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 catalogue.

A combined degree program which gives the undergraduate degree (A.B. or B.S.) and the law degree (J. D.) 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 University will make available to it the 28 semester 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 advisor about arranging this program. Students following a combined-degree program should be aware that the states of Ohio and Kansas do not admit to their bar examination or their bar law graduates who have entered on the study of law prior to receiving a bachelor's degree.

Students admitted to the College of Law as regular students will be eligible for the degree of Juris Doctor (J.D.) 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 academic standing of 2.0 (a numerical academic average of 60) or better.

Courses Offered in the College of Law

FACULTY

William L. Matthews, Jr., chairman

Professors

William L. Matthews, Jr.	S.J.D., Michigan, 1950
John Randolph Batt	LL.M., Yale, 1960
Richard Davenport Gilliam, Jr.	LL.B., Virginia, 1924
Willburt D. Ham	LL.M., Harvard, 1941
Eugene F. Mooney, Jr.	LL.M., Yale, 1963
Roy Mitchell Moreland	S.J.D., Harvard, 1942
Paul Oberst	LL.M., Michigan, 1942
James R. Richardson	LL.M., Yale, 1955
Robert A. Sedler	LL.B., Pittsburgh, 1959
Frederick W. Whiteside, Jr.	LL.B., Cornell, 1936

Associate Professors

William E. Bivin	LL.B., Kentucky, 1957
Raymond Ellinwood, Jr.	J.D., Chicago, 1965
W. Garrett Flickinger	J.D., Michigan, 1953
Dorothy Salmon	LL.B., Kentucky, 1938

Assistant Professors

Alvin L. Goldman	LL.B., N.Y.U., 1962
John E. Kennedy	LL.M., Yale, 1964
Robert G. Lawson	LL.B., Kentucky, 1963
A. Dan Tarlock	LL.B., Stanford, 1965
Robert M. Viles	LL.M., Yale, 1965
Charles G. Williamson, Jr.	LL.M., Georgetown, 1961

Adjunct Instructor

Joe C. Savage	LL.M., Harvard, 1965

The 83 semester hours for the J.D. degree include certain required courses, certain required courses in legal research and writing, one seminar, various professional experience options, 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, professional experience options, 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 two semesters are required courses. In the third, 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.

Course Descriptions

(All courses are lecture and recitation unless otherwise noted.)

FIRST YEAR SUBJECTS

301 *Legal Method.* (2) I

Dowling, Patterson and Powell, Materials for Legal Method (2nd ed.). Hodges' Harbrace Handbook.
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, Viles, Bivin, Ellinwood and Lawson.*

305,306 *Property I-II.* (1-2; 1-2)

Cribbet, Fritz and Johnson's Cases.
Basic course in property: possession, gifts, bona fide purchasers of personalty. Estates, uses, easements, and rights incident to ownership. *Flickinger and Tarlock.*

320 *Practice and Procedure I.* (3)

Chadbourn and Levin's Cases; Louisell and Hazard's Cases.
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 and Kennedy.*

350 *Economic Legislation.* (3) II

Selected materials.
An introduction to modern economic materials of importance to the lawyer, especially the economic background of social welfare legislation, governmental control of business and fiscal and tax laws. Sample legislative materials will be used to cover the conflicting economic and social interests surrounding the birth of legislation, the legislative process, and statutory interpretation. *Whiteside, Batt, and Mooney.*

354,355 *Torts I-II.* (3, 2) I, II

Seavey, Thurston 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. *Sedler and Williamson.*

501,502 *Contracts I-II.* (3, 2) I, II

Jones, Farnsworth and Young's Cases.
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, Bivin and Ellinwood.*

509 *Criminal Law.* (2) I

Moreland's Law of Homicide; Kadish and Paulson's Cases; 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. *Batt and Mooney.*

510 *Criminal Procedure.* (2) II

Donnelly, Goldstein and Schwartz's Cases.
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. *Batt and Mooney.*

511 *Legal Bibliography.* (1) I

Pollack's Legal Research.
Practical problems in the use of statutes, reports, digests, encyclopedias, annotated cases, citation books, periodicals, reference tables, and indices. *Salmon.*

534 *Remedies.* (3)

Nature of damages; nature of specific relief; personal interests; contractual interests; property interests; specific relief and the government.

SECOND YEAR SUBJECTS

300 *Legislation.* (2-3) II

Selected materials.
Nature and scope of legislative power; organization of legislative bodies; legislative process; legislation and the courts; interpretation of statutes. *Williamson.*

321 *Practice and Procedure II.* (2-3) I

Chadbourn and Levin's Cases; Louisell and Hazard's Cases.
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 and Kennedy.*

326 *Damages.* (2-3) 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.*

328 *Business Associations I.* (3) I

Conard and Knauss's Cases.
A study of traditional agency concepts (including the vicarious liability relationship in tort and contract); informal organizational relationships (joint enterprise, joint venture, voluntary unincorporated associations); organization, dissolution, and liquidation of partnerships; special problems pertaining to partnership property; limited partnerships. *Ham and Viles.*

329 *Constitutional Law I.* (2-3) I, II

Lockhart, Kamisar and Choper's Cases.
Governmental powers under the Constitution of the United States; federal judiciary—powers and jurisdiction; powers of Congress; powers of the President; powers of the state in areas of federal authority; intergovernmental relations. *Oberst and Goldman.*

330 *Constitutional Law II.* (2-3) I

Lockhart, Kamisar and Choper's Cases.
Rights, privileges, and immunities under the Constitution. National citizenship, due process, and equal protection. Procedural and substantive rights. Freedom of expression, enterprise, and religion. *Oberst and Goldman.*

331 *Creditors' Rights.* (2-3) II

Hanna and McLachlan's Cases (4th Ed.)
Enforcement of judgments; fraudulent conveyances; general assignments; creditors' agreements; receiverships; bankruptcy, assets, and distribution. *Viles.*

343 *The Legal Profession.* (2) II

Cheatham's Cases and Materials.
A study of professional problems including: ethics, discipline, unauthorized practice, duty to court and client, bar admission and organization, fees and office procedure. *Gilliam.*

347 *Business Associations II.* (3) II

Baker and Cary's Cases (3d ed. unabridged).
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 and Williamson.*

352 *Government Regulation of Business.* (2-3) II

Schwartz's Free Enterprise.
The body of law structuring economic organization and activities in a free enterprise national system. Major matters considered in the course are government creation and regulation of the legal monopolies, controls over collaborative conduct of competing economic entities, and legal controls over the vertical distributive relationship of suppliers, dealers, and customers. *Mooney.*

353 *Unfair Trade.* (2-3) II

Oppenheim's Cases.
Analysis of the various common law unfair competition areas; examination of statutory relief in areas of trade marks, copyright, and misleading advertising; survey and analysis of various portions of Federal Trade Commission Act and Robinson-Patman Act. *Flickinger.*

520 *Commercial Law.* (4) I

Braucher and Sutherland's Cases; Selected Statutes.
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. *Mooney and Ellinwood.*

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

McCormick's Cases.
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 and Lawson.*

524 *Insurance.* (2) II

Patterson and Young'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. *Lawson.*

525 *Oil and Gas.* (2) I

Williams, Maxwell and Meyers' 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. *Tarlock.*

532 *Taxation I.* (3) II

Bittner's Cases on Federal Taxation.
Problems in federal and state income taxation. *Whiteside.*

536 *The Federal Courts and the Federal System.* (3) I

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. *Staff.*

552 *Legislation.* (2-3)

Nature and scope of legislative power; organization of legislative bodies; legislative process; legislation and the courts; interpretation of statutes. Hours 2-3 per week.

THIRD YEAR SUBJECTS

302 *Practice Court.* (1) I, II

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 and Lawson.*

303 *Legal Research and Writing.* (1-3) I, II, S

Independent study of legal problems under faculty supervision, and supervised training in legal aid, moot court, and legal writing. (May be repeated 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 for a total of four credits.) *Staff.*

308 *Family Law.* (2-3) I

Harper's Problems of the Family.
Contracts to marry; the marriage status; annulment, divorce and separation; parent and child; infants and incompetent persons. *Batt.*

309 *Social Legislation* (Social Provisions for Individual Welfare). (2-3)

This course will cover the law of state and federal programs for individual welfare and economic security (such as Social Security and Unemployment Compensation), emphasizing the securing of rights of recipients under the programs and the complying with corresponding liabilities of employers and others. To be scheduled as a third year course.

327 *Workmen's Compensation.* (2-3) 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.*

345 *Wills and Future Interests.* (3) II

Leach's Cases; Leach and Logan's Cases and Text.
Future interests in property, including an intensive study of construction problems and the rule against perpetuities. *Flickinger and Tarlock.*

346 *Tax Planning.* (3) I

Bittker's Federal Taxation.
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. *Whiteside.*

348 *Corporation Finance Law.* (3) I

Baker and Cary's Cases (3d ed. unabridged).
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.*

351 *Taxation III—Advanced.* (2) II

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. *Staff.*

357 *Comparative Law.* (2-3) I

Berman's Justice in the USSR.
Foreign legal materials are analyzed to determine how the normative ordering concepts and procedures of other cultures might aid in the solving of certain American legal dilemmas. Materials from the Scandinavian, Soviet, and Japanese systems of jurisprudence are those most closely scrutinized. *Batt.*

540 *Conflict of Laws.* (3) I

Goodrich, Griswald and Reese's Cases (4th ed.)
Nature of the subject, penal laws, procedure, judgments, domicile, capacity, form, particular subjects, litigation, family law, inheritance, foreign administrators. *Sedler.*

541 *Trusts.* (3) I

Scott's Cases, (4th 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. *Flickinger.*

542 *Administrative Law.* (3) II

Gellhorn and Byse's Cases (4th ed.)
Establishment of administrative tribunals, limits on discretion. Notice and hearing, orders, methods of judicial relief, scope of judicial review. *Bivin.*

544 *Labor Law.* (3) I

Williams' Cases.
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. *Goldman.*

551 *Land Use Planning.* (2-3)

A comprehensive survey of the basic legal devices to control the use of land, theories of land use planning, nuisance, private agreements, zoning and zoning procedure, the role of the federal government in land planning, exercise of eminent domain, and selected Kentucky problems, such as rural zoning and proposed New Towns for Appalachia.

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 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 and those in preparation for junior and senior high school teaching have observation and student teaching in the local school systems and in the schools of nearby communities.

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 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.
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.

Lyman Vernon Ginger, M.A., Ed.D., is Dean of the College of Education.

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 most 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 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 phy-

sical education) with a standing of 2.0 or above in the following areas: in professional education, in majors, minors, or area of concentration; and over-all. He must also satisfy the University's residence requirements.

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.

Graduate Record Examinations and National Teachers Examinations as required of all seniors and the fee must be paid by the graduating senior.

Pre-professional Preparation recommended for all prospective teachers.

It is desirable that the student select a sequence of 12 to 18 hours from courses in psychology, sociology, anthropology, and philosophy. For approval of the courses, the student should see his advisor.

GENERAL INFORMATION

All students who expect to complete the requirements for teaching certificates are required to be enrolled in the College of Arts and Sciences for the freshman and sophomore years. During this time they will be expected to complete the College of Education requirements for that period in (a) General Studies Component, (b) Special Studies Component, (c) Professional Education courses, and (d) areas, majors, and/or minors.

All students who expect to receive teaching certificates, regardless of the college from which they graduate, must follow the General Studies Component required by the College of Education in addition to the requirements in their own college.

All students who expect to receive teaching certificates must apply for and be admitted to the Teacher Education Program before upper division courses in the required professional Education sequence may be taken.

All students who expect to receive teaching certificates and a degree from the College of Education must complete all requirements for the certificate before the degree is granted.

All students who remain in other colleges and expect to receive teaching certificates must complete all other requirements for certification before the certificate will be issued.

All students must be prepared to accept a student teaching assignment in any available location. Some schools in which student teaching is done are away from the Lexington campus and out of the Central Kentucky area.

All students who expect to receive certificates as elementary or junior high school teachers are required to transfer to the College of Education at the end of the sophomore year. If the decision to become a teacher is made after that time, however, extra work may be required if the proper courses have not been taken prior to transfer.

All students who expect to receive teaching certificates as teachers in elementary or junior high schools shall have advisors from the College of Education from enrollment to graduation. The student should request a College of Education advisor at the time of enrollment in the University of Kentucky. If he decides to become a teacher after enrollment in the University of Kentucky, he should request the Dean of the College of Education to appoint an advisor at once.

Students who expect to become teachers in senior high schools may follow one of three plans:

1. Transfer to the College of Education at the end of the sophomore year.
2. Transfer from Arts and Sciences to the College of Agriculture and Home Economics at the end of the sophomore year.
3. Remain in the College of Arts and Sciences for the duration of the program.

All students who expect to receive teaching certificates in senior high school must have two advisors regardless of the college in which they are enrolled. One advisor must be appointed by the Dean of the College of Education and the other by the chairman of the Department in which the student is majoring. These advisors should be appointed as soon as the student decides to become a public school teacher. The responsibility for securing these advisors rests with the student.

GENERAL STUDIES COMPONENT AREAS

The five general studies component areas required for graduation from the College of Education and required for a teaching certificate if the student graduates from another college are:

Area II—Physical Sciences
Area III—Biological Sciences
Area IV—Foreign Languages
or
Area V—Humanities: Literature, Art, and Music
Area VI—History
Area VII—Social Sciences

In addition to these five areas, all students are urged to take at least two courses listed in Area VIII, Behavioral Sciences. Students preparing to be teachers in junior high school or senior high school may substitute Area VIII, Behavioral Sciences, for Area III, Biological Sciences. Students in elementary education may not make this substitution.

Students who offer mathematics as a teaching major or minor may substitute Area I, Mathematics-Philosophy, for Area II, Physical Science.

Students who offer any Foreign Language as a major or minor may use the Foreign Language Area from the General Studies Component in place of the Speech-English section of the Humanities: Literature, Art, and Music Area from the General Studies Component if Speech proficiency is offered.

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
EDU 101—The Teacher in American Schools	3
EDU 202—Human Development and the Curriculum	4
Prereq: EDU 101, and PSY 104 or 106	
*EDU 324—Teaching Science and Social Learnings in the Elementary School	4
*EDU 329—Teaching Communicative Skills in the Elementary School	4
*EDU 331—Teaching Arithmetic in the Elementary School	3
EDU 333—Student Teaching in the Elementary School [and Seminar]	12
	30
EDU 543—Teaching in the Kindergarten (Required of Kindergarten Majors)	3

No more than two required Professional Education courses may be taken concurrently and all are prerequisite to student teaching.

Electives in Professional Education

(May be taken upon recommendation of advisor)

EDU 120—Arts and Crafts in the Elementary School	3
EDU 325—Teaching in the Elementary School	3
EDU 544—Visual Teaching	3
EDU 548—Educational Psychology	3
EDU 550—The Role of the Teacher and the Principal in Guidance	3

In addition to the requirements in the General Studies Components, the following Special Studies requirements must be met:

	Sem. Hrs.
Special Studies Component Requirements—Total hours required	55-58
HYG 110—Introduction to Human Biology & Health	3
P.E. Activity Courses	2
ENG 101 and 102—Freshman Composition	6
English (One course in Literature required. Must also include Speech—3 hours—or speech proficiency. If speech proficiency is offered, this 3 hours may be any elective in English or Humanities.)	6
PSY 104—Basic Psychology I and PSY 106—Basic Psychology II or PSY 210—General Psychology	3-6
ART 170 and 172—Public School Art	6
MUS 260—Music Fundamentals and Skills	3
MUS 261—Methods and Materials in Teaching Music	3
GEO 151—Elements of Geography GEO 152—Regional Geography of the World GEO 153—Societies Around the World } Choose 2	6
HE 401—Principles of Nutrition	3
LS 537—Children's Literature and Related Materials or EDU 542—Children's Literature	3
MA 201 and 202—Fundamentals of Elementary Math	6
PE 360—Physical Education in the Elementary School	2
Social Science elective in Sociology, Geography or History	3
General Studies Component Requirements—Total hours required (See section on General Studies Component requirements)	30-37
For best use of elective hours, consult advisor.	
Needed to graduate (including all elective and required courses)	130

° EDU 202 and formal admission to the teacher education program are prerequisites to EDU 324, 329, and 331.

REQUIREMENTS FOR TEACHING IN JUNIOR HIGH SCHOOLS

The special certification for junior high school teachers became effective in September, 1966. The junior high school certificate is valid in grades 5 through 9 and may be endorsed for teaching at the high school level for any subject assignment in which the teacher holds a regular high school teaching major or minor.

Teachers of art, music, physical education, and all vocational subjects will be eligible to teach in junior high school, provided they hold a certificate valid for high school or 12-grade teaching.

	Sem. Hrs.
Professional Educational Requirements—Total hours required	29
EDU 101—The Teacher in American Schools	3
EDU 202—Human Development and the Curriculum	4
*EDU 340—Teaching in the Junior High School	4
*EDU 520—The Secondary School Pupil (adolesc. psych.)	3
*EDU 541—Teaching Reading and Related Language Arts in the Secondary School	3
—Student Teaching	9
EDU 564—Modern Educational Problems	3

The minimum time recommended for completion of the program is 4 semesters. EDU 101 and EDU 202 may be taken concurrently if the student has only 3 academic periods for the completion of his work.

For those students who enter the program as juniors, seniors, or graduate students, EDU 301, American Public Education, 3 hours, may be substituted for EDU 101. The minimum time recommended for completion of the program is 4 semesters. However, EDU 301, and EDU 202 may be taken concurrently if the student has only 3 academic periods for the completion of his work.

In addition to the requirements in the General Studies Components, the following Special Studies requirements must be met:

	Sem. Hrs.
Special Studies Component Requirements—Total hours required	20-23
HYG 110—Introduction to Human Biology and Health	3
P.E. Activity Courses	2

° EDU 202 and formal admission to the Teacher Education Program are prerequisites to EDU 340, EDU 520, and EDU 541.

ENG 101 and 102—Freshman Composition	6
English	6
(One course in Literature required. Must also include Speech—3 hours—or speech proficiency. If speech proficiency is offered, this 3 hours may be any elective in English or Humanities.)	
PSY 104—Basic Psychology I and PSY 106—Basic Psychology II or PSY 210—General Psychology	3-6
General Studies Component requirements—Total hours required	30-37
(See section of General Studies Component requirements)	
For best use of elective hours, consult advisor.	
Needed to graduate (including all electives and required courses)	130

Preparation Plans for Academic Teaching

Each student preparing for junior high school teaching is required to meet the requirements of one of three plans for majors, minors, and semi-majors. Appropriate courses taken in the *general studies component* may be used in the teaching major, semi-major, and minor. Subjects may be counted ONLY one time in the teaching major, semi-major, or minor areas.

One of the following plans must be followed:

Plan 1. Two majors of at least 24 semester hours each and one semi-major of 12 semester hours.

Plan 2. One major of at least 24 semester hours and three semi-majors of 12 semester hours each.

Plan 3. One major of at least 30 semester hours, one minor of 18 semester hours, and one semi-major of 12 semester hours.

The subject areas shall total 60 semester hours in the combination of majors, minors, and semi-majors. Courses selected for majors, semi-majors, and minors should be selected from those listed for the senior high school unless otherwise specified by the advisor.

Subjects from which Majors May Be Chosen for Junior High Teaching

*Biology
*Biology (18 hours) and Health (6 hours)
Chemistry
Dramatics (6 hours) and Speech (18 hours)
Economics (6 hours) and Sociology (18 hours)
*English and Communications
French
Geography
German
History
History (18 hours, including Amer. History (6) and Political Science (6 hours)
*Humanities and Fine Arts
*Languages
Latin
*Mathematics
Physics
Political Science
*Science
*Social Science
Spanish

* These are new majors, developed for the junior high school preparation-certification and apply ONLY to that certificate. A description of these majors is given below.

Biological Sciences: 24 semester hours. Three semester hours of Botany and 3 semester hours of Zoology must be taken as a part of the Biological Sciences requirement.

English and Communications: 24-30 semester hours to be made up of composition, 6 semester hours; linguistics, advanced composition or phonetics, 3 semester hours; books and literature for adolescents, 3 semester hours; literature, 9 semester hours including at least 3 semester hours in American Literature.

Humanities and Fine Arts: 24 semester hours with a minimum of 6 semester hours in each of three fields to be chosen from the following: Music, Art, Humanities, appropriate Philosophy and appropriate Literature courses. The remaining 6 semester hours are to be electives from any of these fields.

Languages: 24 semester hours made up of any two languages with 12 semester hours or two full years of study each.

Mathematics: 24 semester hours including MA 201 and MA 202, designed especially to present the newer concepts of mathematics. The remainder will be chosen from the regular, planned curriculum.

Sciences: 24-30 hours with a minimum of 6 semester hours in each of three fields chosen from the following: Physics, Chemistry, Biological Sciences, and Earth Science. The student will be required to have at least 6 semester hours in Physical Science (Physics or Chemistry) and 6 semester hours in Biological Sciences.

Social Sciences: 24-30 semester hours with a minimum of 6 semester hours in each of three fields to be chosen from the following: History (required), Geography (required), Political Science or Government, Economics, Social Anthropology, and Sociology.

Subjects from which minors may be chosen for Junior High teaching. Eighteen semester hours required in *one subject.*

Biology
Chemistry
Speech
Sociology
French
Geography
German
History
Latin
Mathematics (must include MA 201 and MA 202)
Physics
Spanish

Subjects from which semi-majors may be chosen for Junior High teaching: Eighteen hours are required in all semi-majors which include a combination of subjects with at least 12 semester hours in one of the subjects. Twelve semester hours are required in a single subject for a semi-major.

Any Foreign Language
Biology
Chemistry
Dramatics (6 hours) and Speech (12 hours)
Geography
Geography (12 hours) and Geology (6 hours)
History
History (12 hours) and Political Science (6 hours)
Mathematics (must include MA 201 and MA 202)
Physics

Only one semi-major (12 hours) may be chosen from the following:

Art
Dramatics
Economics
Health
Journalism
Political Science
Psychology
Sociology
Speech

REQUIREMENTS FOR TEACHING IN SENIOR HIGH SCHOOLS

Requirements for preparation to teach in the senior high schools, including detailed requirements for teaching in special areas or subjects in grades one through twelve, are outlined below:

	Sem. Hrs.
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 must follow Sequence A.

A. Regular sequence for students who enter the Teacher Education program:

EDU 101—The Teacher in American Schools (freshmen, sophomores, or juniors)	3
EDU 202—Human Development and the Curriculum (sophomores or juniors) Prereq: EDU 101, and PSY 104 or 106	4
EDU 344—Teaching in the Senior High School Prereq: EDU 202 and formal admission to the Teacher Education Program (2nd semester Juniors and 1st semester Seniors)	4
Student Teaching (Seniors)	
EDU 564—Modern Educational Problems	3

It is recommended that one of the following electives be chosen after the completion of EDU 202:

EDU 550—Role of the Teacher and the Principal in Guidance	3
EDU 548—Educational Psychology	3
EDU 544—Visual Teaching	3
EDU 522—Educational Tests and Measurements	3

The minimum time recommended for sequence A is 4 semesters. However, EDU 101 and EDU 202 may be taken concurrently if the student has only 3 academic periods for the completion of his work.

For those students who enter the program as juniors, seniors, or graduate students, EDU 301, American Public Education, 3 hours, may be substituted for EDU 101. The minimum time recommended for completion of the program is 4 semesters. However, EDU 301, and EDU 202 may be taken concurrently if the student has only 3 academic periods for the completion of his work.

Note: In either sequence EDU 344 should be taken the last semester prior to student teaching. No course from the required sequence can be taken with EDU 344 or with student teaching.

B. *Professional Courses for Business Education Majors*

The following courses should be taken in sequence.

EDU 210—Foundations of Business Education in the High School	3
EDU 202—Human Development and the Curriculum Prereq: EDU 210, and PSY 104 or PSY 106	4
EDU 512—Teaching Bookkeeping and Accounting	3
EDU 514—Teaching General Business Subjects in Secondary Schools	3
EDU 393—Student Teaching in Business Education	9
EDU 564—Modern Educational Problems	3
EDU 511—Teaching Secretarial Subjects (elective)	3

C. *Twelve-grade Certificate in Music, Art, or Physical Education*

In addition to Professional Sequence A students seeking a twelve-grade certificate in Music, Art, or Physical Education must take EDU 325—Teaching in the Elementary School—after they have earned Junior classification. This means that EDU 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 *should be done* in an elementary school and half in a secondary school.

In addition to the requirements in the General Studies Components, the following Special Studies requirements must be met:

Special Studies Component Requirements—Total hours required	20-23
HYG 110—Introduction to Human Biology and Health	3
P.E. Activity courses	2
ENG 101 and 102—Freshman Composition	6
English (One course in Literature required. Must also include Speech, 3 hours, or speech proficiency. If speech proficiency is offered, this 3 hours may be any elective in English or Humanities.)	6
PSY 104—Basic Psychology I and PSY 106—Basic Psychology II or PSY 210—General Psychology	3-6
General Studies Components Requirements—Total hours required (See section on General Studies Component Requirements)	30-37

For best use of electives, consult advisor.

Needed to graduate (Including all electives and required courses)	130

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 with a minimum of 24 semester hours in each, or (3) one major and one minor when credit in both totals at least 54 semester hours and the minor is 24 semester hours.

BEGINNING WITH THE GRADUATING CLASS OF MAY, 1967, AND THEREAFTER, THE MAJORS AND MINORS MUST TOTAL 54 SEMESTERS HOURS.

Areas of Concentration

An area of concentration shall consist of 48 semester hours unless otherwise specified.

Majors

A major shall consist of 24 semester hours with the following exceptions:

1) In a combination of subjects, 30 semester hours are required *with not less* than 8 semester hours in each subject.
2) English (36 hours). One course in linguistics is required.
3) Spanish, French, German (30 hours). SP, FR, or GER 553 is recommended as one of the courses.

Minors

A minor shall consist of 24 semester hours.

1) In a combination of 2 subjects, *not less* than 6 semester hours are required in each subject.
2) English. One course in linguistics is required.
3) Spanish, French, German. SP, FR, or GER 553 is recommended as one of the courses.

STUDENTS WHO OFFER GEOGRAPHY, EARTH SCIENCE, POLITICAL SCIENCE, PSYCHOLOGY, SOCIOLOGY, SPECIAL EDUCATION OR ECONOMICS AS A MAJOR OR MINOR MUST HAVE ANOTHER MAJOR IN WHICH STUDENT TEACHING MAY BE DONE.

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 (60 hours)
Art
Biological Sciences
Business Education
*Accounting
*General Business
*Secretarial Practice
Chemistry
Earth Science
Economics and Sociology (30 hours)
English (36 hours)
French (30 hours)
Geography
German (30 hours)
Health and Physical Education (30 hours)
History
History and Political Science (30 hours)
Home Economics
Latin
Mathematics
Physical Education
Physics
Political Science
Sociology
Spanish (30 hours)
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 (24 hours)
Art
Biological Sciences
Business Education
*Accounting
*General Business
*Secretarial Practice
Chemistry
Earth Science
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*
See advisor in Art for proper courses.

(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 Business and Economics to be selected by the student with the approval of his advisor.

(3) English: A teaching area in English shall consist of 18 elective hours in addition to those required for the major. See advisor in English for the proper courses.

(4) *Health, Physical Education and Recreation:* A teaching area in health, physical education and recreation shall consist of 48 semester hours.

(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 of 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, with no fewer than 15 semester hours in each.

(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 each of these subjects.

° A major in any area in business education shall require 30 semester hours. A minor in any area shall require 24 semester hours.
°° A 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.

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. Since the curriculum is in a period of change with new courses being added and new programs being developed, specific courses are not being listed for majors and minors. The student should consult his advisor in the major field and file one plan card in the Office of the Dean of the College of Education and one with his Education advisor.

Art:

Consult Advisor in Art

Biological Sciences:

Consult advisor in Biological Sciences

Business Education:

Secretarial Sequence
General Business Sequence
Accounting Sequence
Consult advisor in Business Education

Chemistry:

Consult advisor in Chemistry

Earth Science (Major):

*Geology	12 semester hours
Climatology or Meteorology	one course
Astronomy	one course

Remaining courses are to be selected from the above fields or courses such as the following: geomorphology or physiography,* soil science, geophysics, geochemistry, oceanography, or physical geography.

The courses in geology shall include a course in field geology.

The following required supporting courses:

One year each of chemistry and physics
One year of mathematics, none below the level of college algebra

Earth Science (Minor):

*Geology	12 semester hours
Meteorology or Climatology	one course
Astronomy	one course

The courses in geology should include a course in field geology.

The following required supporting courses:

A total of three courses in chemistry and physics
One year of mathematics, none below the level of college algebra

For secondary certification, the minor must be taken in conjunction with a major in another science or mathematics.

Economics and Sociology:

(Required 15 hours of Economics and 15 hours of Sociology)
Consult advisor in Economics or Sociology

English:

Consult advisor in English

Geography:

Consult advisor in Geography

History:

Consult advisor in History

Latin (Classics):

Consult advisor in Classics

* Geomorphology or physiography may be included in the 12 semester hours of geology.

Languages, Modern Foreign:

French
German
Spanish
Consult advisor in that language

Library Science (Minor only):

Consult advisor in Library Science

Mathematics:

Consult advisor in Mathematics

Physics:

Consult advisor in Physics

Political Science:

Consult advisor in Political Science

Sociology:

Consult advisor in Sociology

Speech and Dramatic Arts:

Consult advisor in Speech and Dramatic Arts

REQUIREMENTS FOR TEACHING VOCATIONAL AGRICULTURE (SUMMARY)

College of Agriculture and Home Economics	Sem. Hrs.
Prescribed courses in agriculture	22
Group requirements in agriculture	36
Electives in agriculture	2-15
Total agriculture	60-73
Prescribed courses in other subjects (not Education)	9
Group requirements in other subjects (not Education)	37-39
Specialty support (Education or related science)	3-6
Agricultural Education (EDU 580-581)	18
Electives in other subjects	10
Total other subjects	67-80
Total required for graduation	140

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.

b) When Agricultural Education 580 and 581 are taken as an undergraduate, the 18 credits are to be used as electives at the undergraduate level.

c) The student should complete at least 9 credits in agricultural engineering, 3 credits in agricultural entomology, 6 credits in education, 3 credits in literature, and 3 credits in health and physical education as an undergraduate.

REQUIREMENTS FOR HOME ECONOMICS TEACHING (SUMMARY)

College of Agriculture and Home Economics
Effective entering freshmen, 1960

	Sem. Hrs.
General requirements in core	42-48
Core in home economics	42
Prescribed additional courses in home economics	12-13
*HE 227—Clothing Construction	
HE 328—Clothing and Pattern Designing	
HE 350—Child Guidance	

* May be omitted by passing test.

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.
PE 061—Field Trip	Jr	0	0	0	0
PE 141, 142, 143, 144—Football, Basketball, Track, Baseball					6*
PE 150—PE & Rec. Activities	Fr	2	2	2	2
PE 151—PE & Rec. Activities	Fr	2	2	2	2
PE 152—Tech. of Swimming	Sr			2**	2**
PE 250—PE & Rec. Activities	So	2	2	2	2
PE 251—PE & Rec. Activities	So	2	2	2	2
PE 280—Recreation Leadership	Sr				2
PE 281—Camp Leadership	So			2	2
PE 343—Hist. & Prin. of PE	Jr		3	3	3
PE 344—PE in Secondary School	Jr	3	3	3	3
PE 356—Sports Officiating	Sr			1***	1
PE 360—PE in Elementary School	Jr	2	2	2	2
PE 370—Safety, Training, First Aid	Jr	2	2	2	2
PE 520—Physiology of Exercise	Sr			3	3
PE 540—Org. & Adm. of PE	Sr		3	3	3
PE 545—Intro. to Tests & Meas.	Sr				3
PE 572—Kinesiology & Its Applica.	Sr				4
Electives (Approved by advisor)****		3	3	1	4

* One 2-hour athletic coaching course may be omitted.
** Or PE 252.
*** Or PE 357.
**** Selected from 300-courses or above.
Note: HE 401—Principles of Nutrition, is required in all PE 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.
PE 061—Field Trip	Jr	0	0	0
PE 150—PE & Rec. Activities	Fr	2	2	2
PE 151—PE & Rec. Activities	Fr	2	2	2
PE 152—Tech. of Swimming	Sr		2*	2*
PE 250—PE & Rec. Activities	So	2	2	2
PE 251—PE & Rec. Activities	So	2	2	2
PE 280—Recreation Leadership	Sr		2	2
PE 281—Camp Leadership	So		2	2
PE 343—Hist. & Prin. of PE	Jr	3	3	3
PE 344—PE in Secondary School	Jr	3	3	3
PE 358—Sports Officiating for Women	Sr		1	1
PE 359—Sports Officiating for Women	Jr			1
PE 360—PE in Elementary School	Jr	2	2	2
PE 370—Safety, Training & First Aid	Jr	2	2	2
PE 491—Dance in Education	Jr		4	4
PE 520—Physiology of Exercise	Sr			3
PE 540—Org. & Adm. of PE	Sr	3	3	3
PE 545—Intro. to Tests & Meas.	Sr			3
PE 572—Kinesiology & Its Applica.	Jr			4
Electives (Approved by advisor)**	Jr			5

* Or PE 252.
** Selected from 300-courses or above.
Note: HE 401—Principles of Nutrition, is required in all PE majors and areas of concentration.

HE 536—Interior Decoration Projects or	
HE 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.	
Professional Education	18-19
EDU 202—Human Development and the Curriculum or	
EDU 301—American Public Education	
EDU 586—Techniques of Teaching Home Economics	
*EDU 362—Student Teaching in Home Economics	
*EDU 588—Adult Education in Home Economics	
General electives	2-10
Total required for graduation	136

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 all college work done before the semester of student teaching. 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, 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, 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.

Consult with the advisor in Special Education for requirements in the various fields.

* Should be scheduled in same semester—either semester in senior year.

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—	Moore, Ramsey, and Sudduth
Secondary Teachers	
General—	Barnard, Ginger, F. Miller, Powell, Ravitz, Shipman, Smith, and Tatum
Agriculture—	Binkley and Lamar
Art—	Haines
Business Education—	Musselman and Humphreys
Home Economics—	Gorman
Industrial Education—	Baker
Music—	Holroyd and Shipman
Physical Education—	Seaton, Clay, Carr, Gilb, and Huff
Special Education—	Levy
Elementary Principal—	Cierley
Guidance Counselors—	Auvenshine, Martin, Russell, and Wilkie
Secondary Principal—	Cierley
Supervisor—	Ogletree
Attendance Officer—	Ogletree
Superintendent—	Kincheloe
Higher Education—	Martin

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 advisor.

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 advisor) 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):
*EDU 756—Fundamentals of Guidance

B. *Foundations* (3 hours required):
Three additional hours such as:
EDU 645—Foundations of Education or
EDU 661—Educational Sociology

C. *Curriculum and Instruction* (6 hours required):
*EDU 732—Principles of Curriculum Construction
For candidates with background in secondary education:
EDU 712—The Elementary School
For candidates with background in elementary education:
EDU 714—The Secondary School or
EDU 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):
*EDU 99—Orientation (no credit)
*EDU 633—Leadership Problems in Today's Education and
*EDU 634—Effective Educational Leadership (Offered together in block of 6 hours)
(Prerequisite: Admission to the program in Administration)
*EDU 639—Supervision of Instruction
(Prerequisite: EDU 633 and 634 and at least three years of teaching experience)

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:

* Required.

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)

Common Requirements for All Positions

	Sem. Hrs.
EDU 771—Seminar in Administration	6
EDU 792—Research Problems in Educational Administration	3
EDU 628—Field Problems in Curriculum Supervision	3
EDU Foundations	3
Behaviorial Science	3
	18

PLUS

Specialized Requirements for Specific Positions

For Superintendent

EDU 603—School Law	
EDU 604—School Buildings	
EDU 635—School Finance	6
Electives*	6
	12

For High School Principal

EDU 630—High School Administration	3
Electives*	9
	12

For Elementary Principal

EDU 629—Elementary Principal	3
Electives*	9
	12

For Supervisor

EDU 608—Internship	3
Electives*	9
	12
	30

* Electives must be approved by the advisor.

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 since September 1, 1964, superintendents are not 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)

	Sem. Hrs.
Required:	
EDU 755—Human Development and Behavior	3
EDU 756—Fundamentals of Guidance	3
EDU 522—Educational Tests and Measurements or	3
PSY 535—Psychological Testing	
EDU 758—Group Guidance Problems and Practices	3
EDU 760—Counseling Theory and Practice	3
EDU 761—Supervised Practice in Counseling (May be repeated to a maximum of 9 hours.)	3
EDU 661—Educational Sociology or	3
EDU 640—Philosophy of Education	

Electives: 9 hours from the following:

PSY 505—Human Senses and Perception	4
PSY 507—Psychology of Learning	4
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

As a part of the Master's degree program in Guidance and Counseling students may specialize in Rehabilitation Counseling by meeting the following requirements:

ANA 206—Elementary Anatomy	3
EDU 521—Introduction to Vocational Rehabilitation	3
EDU 522—Educational Tests and Measurements or	3
PSY 535—Psychological Testing	
EDU 527—Survey of Physical and Neurological Defects	3
EDU 657—Educational Statistics	3
EDU 664—Studies in Vocational Rehabilitation	3
EDU 760—Counseling Theory and Practice	3
*EDU 761-2—Supervised Practice in Counseling	3
EDU 764—Using Occupational and Educational Information in Counseling and Guidance	3
*EDU 777-2—Seminar in Counseling and Guidance	3
PSY 521—Abnormal Psychology	3
PSY 544—Social Psychology	3
PSY 640—Practice in Testing; Intelligence Tests	4
SW 530—Community Organizations for Social Work	3

Electives:

Three hours from Education, Psychology, Rural Sociology, Social Work, or Sociology as recommended by the advisor.

MASTER'S DEGREE PROGRAM— SPECIAL EDUCATION

All undergraduate requirements for a provisional teaching certificate must be met before this program can be completed for teacher certification in the Special Education Area.

Curriculum for Master's Degree (36 hours required)

Foundations of Education (6 hours required)

EDU 661—Educational Sociology (3)
EDU 657—Educational Statistics (3)
EDU 658—Problems in Educational Psychology (3)
(EDU 755—Human development and Behavior may be substituted for EDU 658)

Counseling and Guidance (6 hours required)

EDU 764—Using Occupational and Educational Information in Counseling and Guidance (3)

* Courses designated by the suffix–2 are specifically adapted to the Rehabilitation Counseling program.

EDU 521—Introduction to Vocational Rehabilitation (3)
or
EDU 756—Fundamentals of Guidance (3)

Special Education (12 hours required)
EDU 770—Seminar in Education of Exceptional Children (3)
EDU 526—Education of the Educable Mentally Retarded (3)
EDU 530—The Nature and Needs of Retarded Children
EDU 525—Education of the Orthopedically and Neurologically Handicapped (3)
EDU 527—Survey of Physical and Neurological Defects (3)
EDU 528—Technique of Teaching Distributive Education (2)
EDU 505—Education of the Trainable Mentally Retarded (3)

Psychology and Sociology (12 hours required)

**PSY 535—Psychological Testing	3
PSY 550—Speech Pathology: A Survey	3
PSY 560—Introduction to Clinical Audiology	3
PSY 561—Audiometry	3
PSY 631—Psychology of Language	2
PSY 640—Practice in Testing: Intelligence Tests	4
PSY 641—Psychological Measuring Instruments	3
SOC 509—The Family	3
SOC 536—Sociology of Deviant Behavior	3
SOC. 538—Juvenile Delinquency	3
SOC 632—Minority Groups	3

In the event of potential duplication of course work as a result of courses previously completed on the undergraduate level, additional electives may be selected from the areas of foundations, special education, psychology, or sociology.

MASTER'S DEGREE PROGRAM FOR TEACHERS IN ELEMENTARY EDUCATION

A. Professional education courses (12 hours required)

Curriculum block (6 hours required):
EDU 712—The Elementary School
EDU 732—Principles of Curriculum Construction

Reading (3 hours required):
EDU 740—Practicum in Teaching Reading & Related Language Arts

Human Development or Guidance (3 hours required):
EDU 739—Survey of Research in Human Development and Education
OR
EDU 756—Fundamentals of Guidance

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, EDU 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)
EDU 522—Educational Tests and Measurements
EDU 550—The Role of the Teacher and the Principal in Guidance
EDU 756—Fundamentals of Guidance

Choose one: (3 hours required)
EDU 645—Foundations of Education
EDU 658—Problems in Educational Psychology
EDU 661—Educational Sociology.

EDU 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, EDU 99, 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. *Five Courses Selected from the Following:* (15 hours)
EDU 513—Teaching Office Practice, Clerical Practice, and Office Appliances
EDU 514—Teaching General Business Subjects
EDU 615—Problems in Business Education
EDU 618—The Social Business Subjects in High School
EDU 622—Business Education in Colleges and Universities
EDU 623—Administration and Supervision of Business Education
EDU 626—Classification and Possible Use of Community Resources in Business Education
EDU 774—Seminar in Business Education
EDU 786—Independent Work in Business Education

** Prerequisite: EDU 522 or EDU 573.

* This program is being changed. Consult with advisor to determine effective dates.

EDU 544—Visual Teaching
EDU 661—Educational Sociology
EDU 714—The Secondary School
EDU 724—Organization and Supervision of Student Teaching
EDU 732—Principles of Curriculum Construction
EDU 756—Fundamentals of Guidance

B. *Elective* (3 hours)

C. *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.

MASTER'S DEGREE PROGRAM FOR TEACHERS IN AGRICULTURAL EDUCATION

EDU 645—Foundations of Education	5
EDU 714—The Secondary School	3
EDU 732—Principles of Curriculum Construction	3
EDU 670—Method in Teaching Vocational Agriculture	3
EDU 678—Selecting Teaching Materials	3
EDU 679—Adult Farmer Schools	3
EDU 680—Directing Farm Practice	3
EDU 682—Young-Farmer Schools	3

MASTER'S DEGREE PROGRAM FOR TEACHERS IN HOME ECONOMICS EDUCATION

EDU 687—Supervision in Home Economics Education (For Supervisors of Student Teachers)	3
EDU 683—Current Problems in Home Economics Education	3
EDU 684—Modern Trends in Home Economics Education	3
EDU 685—Home Economics Curriculum Construction	3
EDU 686—Evaluation in Home Economics Education	3
EDU 787 or 656—Research in Home Economics Education	3

MASTER'S DEGREE PROGRAM FOR TEACHERS IN INDUSTRIAL EDUCATION

EDU 535—Principles and Philosophy of Industrial Education	2
EDU 523—Vocational Guidance	2
EDU 518—Methods in Industrial Education	2
EDU 534—Organization and Operation of Part-Time and Evening Classes	2
EDU 714—The Secondary School	3
EDU 645—Foundations of Education	5
EDU 630—High School Administration	3
EDU 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
Leslie L. Martin — Ph.D., Indiana, 1952

Associate Professors

Ivan Russell — Ph.D., Michigan, 1955
Raymond A. Wilkie — Ph.D., Yale, 1954, Ph.D., Kentucky, 1960

Assistant Professors

John Bennett Anglin — Ed.D., Indiana, 1966
Charles Dwight Auvenshine — Ph.D., Missouri, 1962
Donald Clark — Ed.D., Florida, 1963
Car Foster — Ph.D., Purdue, 1965

Instructor

Marie Mason — Ph.D., Kentucky, 1966

Course Descriptions

521 *Introduction to Vocational Rehabilitation.* (3)
Survey of vocational rehabilitation: historical, legal, and administrative aspects of rehabilitation services; survey of rehabilitation services; and the role of the counselor in rehabilitation process.

664 *Problems in Vocational Rehabilitation.* (3) I, II
A study of actual cases of vocational rehabilitation clients emphasizing the various kinds of disabilities, the functional implication of disability, and the contribution of professional personnel in medical, social, psychological, and vocational areas. 2 hours, lecture; 3 hours, lab. Prereq: EDU 521.

665 *Practicum in Counseling Psychology.* (3) I, II, S
Supervised experience in application of diagnostic and interviewing techniques in a counseling service. 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. Concur: EDU 755.

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: EDU 755, 756.

761 *Supervised Practice in Counseling.* (3) I, II, S
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. (May be repeated twice to a maximum of 9 credits.) Prereq: EDU 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. Concur: PSY 641.

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 EDU 755 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 (EDU 761 or PSY 665), approval of advisor and staff.

DIVISION OF ADMINISTRATION & SUPERVISION

FACULTY

James Benjamin Kincheloe, chairman

Professors

Morris Berdyne Cierley	Ed.D., Illinois, 1953
Lyman V. Ginger	Ed.D., Kentucky, 1950
James Benjamin Kincheloe	Ph.D., Peabody, 1954
James Robert Ogletree	Ed.D., Columbia, 1956
Doris M. Seward	Ph.D., Syracuse, 1953
W. Paul Street	Ph.D., Northwestern, 1947

Associate 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: EDU 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: EDU 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 all phases of instruction at the college level. The course will include methods and principles of teaching, utilization of materials in teaching, a consideration of the teaching-learning process as it relates to the individual student, and the 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 and Admission Officers. (May be repeated once to a maximum of 6 credits.)

768 *Residence Credit for the Master's Degree.* (0) I, II, S

May be repeated once. *Staff.*

769 *Residence Credit for the Doctoral Degree.* (0) I, II, S

May be repeated indefinitely. *Staff.*

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: EDU 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

Carl D. Tatum, acting chairman

Distinguished Professor

Herbert Sorenson — Ph.D., Minnesota, 1928

Associate Professors

Richard I. Miller — Ed.D., Columbia, 1958
Leonard A. Ravitz — Ed.D., Maryland, 1957
John M. Rich — Ph.D., Ohio State University, 1958
Carl D. Tatum — Ed.D., Maryland, 1956

Assistant Professors

Clinton Collins — B.S., Wisconsin, 1955
David E. Denton — Ed.D., Tennessee, 1963

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 *Orientation Seminar for Graduate Students.* (0)

An orientation course for students who are entering the Graduate School for the first time.

101 *The Teacher in American Schools.* (2-3) 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.* (2-4) 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.* (2-3) I, II, S

An introductory course for juniors and seniors who have not had EDU 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 EDU 317.)

395 *Independent Work for Students in Education.* (3)

An independent study course open only to undergraduate students in the Honors Program. May be repeated once for a total of 6 hours.

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 SOC 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 education. (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. (Same as SOC 661.)

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.* (3) 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: Master's 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 EDU 661 or equivalent. (Same as SOC 750.)

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 EDU 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 EDU 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

Martha Virginia Shipman, acting chairman

Professors

Charles F. Diehl	Ph.D., Penn. State, 1949
James T. Moore, Jr.	Ed.D., Stanford, 1951
Wallace Zane Ramsey	Ed.D., Missouri, 1956

Associate Professors

Harry V. Barnard	Ed.D., Alabama, 1959
Albert S. Levy	Ed.D., Portia, 1953
Denver Sloan	Ed.D., Kentucky, 1956
William Tisdall	Ph.D., Illinois, 1962

Assistant Professors

Ronald Atwood	Ed.D., Florida State, 1966
Ollie Edward Bissmeyer, Jr.	Ed.D., Indiana, 1964
A. Edward Blackhurst	Ph.D., Pittsburgh, 1966
Vivan Burke	M.A., Kentucky, 1950
Alma Carl	M.A., Kentucky, 1953
Cornelius Hager	M.A., Kentucky, 1941
Margaret Bell Humphreys	M.A., Kentucky, 1943
David C. McMurtry	Ed.D., Indiana, 1966
Eric K. Sander	Ph.D., Western Reserve, 1964
Martha Virginia Shipman	M.A., Arkansas, 1937
C. Leland Smith	Ed.D., Kentucky, 1962
Martha Cooper Sudduth	Ed.D., Indiana, 1962
Beverly Stanley	M.A., Kentucky, 1959

Instructors

JoAnn F. Berryman	M.A., Kentucky, 1963
Thomas A. Burton	M.S., Indiana, 1963
Julian Cohen	M.A., Kentucky, 1961
Merle S. Clemons	M.A., Kentucky, 1963
Emily Huston Dawson	B.S., Western Reserve, 1937

Course Descriptions

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.

305 *Fundamentals of Secondary Education.* (2-3) 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.

324 *Teaching Science and Social Learnings in the Elementary School.* (2-4) 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.* (2-4) 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.

335 *Methods and Materials for Speech Evaluation and Therapy.* (3)

Procedures of examination for articulation and voice disorder; interviewing for information; therapy materials for children and adults. Prereq: Speech Pathology: A Survey.

340 *Teaching in the Junior High School.* (2-4) 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.* (2-4) I, II, S

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.

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.

500 *Speech Analysis and Perception.* (3)

Physics of sound; acoustic and structural properties of speech and their relationship to speech perception; analysis of speech intensity, fundamental frequency, wave composition, and time (rate, duration, and transitional change).

501 *Speech and Language Development.* (3)

The normative aspects of speech and language acquisition; application of linguistic and learning theory concepts; communication in lower animals; language and cognition.

505 *Education of the Trainable Mentally Retarded.* (3)

A study of modern classroom techniques for working with the trainable, or severely mentally retarded. Private and public day and residential school programs are considered. Attention is given to educational significance of multiple disabilities of retarded children.

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 *Education of the Orthopedically and Neurologically Handicapped.* (3)

A study of educational techniques, materials, and equipment used in teaching crippled, brain-injured and chronically ill children. Curriculum for both classroom and individual clinical teaching is included.

526 *Education of the Educable Mentally Retarded.* (3)

A study of modern classroom techniques for working with the educable, or mildly mentally retarded. Major emphasis is on curriculum development and teaching techniques.

527 *Survey of Physical and Neurological Defects.* (3)

A survey of causes, treatment, and educational implications of physical and neurological disabilities in school age children. Attention given to rehabilitation and life adjustment problems of individuals with single and multiple handicaps.

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.

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 *The Analysis and Correction of Reading Disabilities.* (3)

A study of current methods and materials useful in analyzing the problems of disabled readers and giving corrective help. Students will use what is learned in working with children who have less severe reading problems. Special sections will be organized for students in special education. Prereq: EDU 329 or 541, a course in testing, and work in linguistics.

541 *Teaching Reading and Related Language Arts in the Secondary School.* (3)

A study of current methods and materials useful in: (1) teaching reading and related language arts in secondary schools, and (2) improving reading ability in the content areas. Prereq: Nine hours of English.

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. (Same as LS 586)

549 *Sociological Aspects of Mass Communication.* (3)

The relationship between the organization of modern society and its communication media: Special emphasis is given the way in which cultural processes and social change have an impact upon the mass media, and upon the way in which the mass media influence cultural processes and social change. The social-psychological bases of communication are studied within a context of theory and research. Prereq: Six hours of Sociology. (Same as SOC 549.)

552-557 *Modern Educational Problems.* (3 ea.)

A brief survey of some of the problems in modern education.

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.

559 *Modern Educational Problems: Community Organization in Adult Education.* (3)
Problems of community organizations as they affect the adult life of the citizens of the community served.

560-562 *Modern Educational Problems.* (3 ea.)
A brief survey of some of the problems in modern education.

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)

567 *Modern Educational Problems.*
(Art Education)

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.

610 *Educational Evaluation of Exceptional Children.* (3)
An intensive study of, and laboratory experience in, the assessment of educational problems of exceptional children. Special emphasis is given to the relationship of physical, intellectual, emotional and social handicaps to performance in the individual or group setting. Class hours per week, 2; lab hours per week, 2. Prereq: EDU 522 and consent of instructor.

611 *Educational Remediation of Learning.* (3)
The study of, and laboratory experience in, the remediation of educational problems of exceptional children. Attention is given to the amelioration of learning disabilities in individual cases. Class hours per week, 2; lab hours per week, 2. Prereq: EDU 610 or consent of instructor.

613 *Articulation and Articulation Disorders.* (3)
Research and clinical findings on articulation and articulation disorders. Topics include articulation testing and prediction, variables related to articulation performance and articulation programming (therapy).

614 *Voice and Voice Disorders.* (3)
Research on voice and voice disorders. Topics include a review of voice physiology and organic and functional voice disorders.

617 *Cleft Palate and Cerebral Palsy.* (3)
Description, assessment and interdisciplinary management of organic speech disorders, particularly those associated with orofacial anomalies and dysarthria. Review of relevant research.

641 *A Study of Research and Theory in Teaching Reading in the Elementary School.* (3)
A systematic study of the research and theory and their application to the teaching of reading in the elementary school. Attention will be given to new developments in the field. Not available for credit to students who have had EDU 372. Prereq: EDU 329 and work in linguistics.

642 *A Study of Research and Theory in Teaching Language Arts in the Elementary School.* (3)
A systematic study of the research and theory and their application to the teaching of listening, oral and written communication, spelling, and handwriting in the elementary school. Attention will be given to new developments in the field. Not available for credit to students who have had EDU 566. Prereq: EDU 329 and work in linguistics.

643 *A Study of Research and Theory in Teaching Reading in Secondary Schools.* (3)
A systematic study of the research and theory and their application to the teaching of reading in the secondary schools. Attention will be given to new developments in the field. Not available for credit to students who have had EDU 568. Prereq: EDU 541 and work in linguistics.

647 *Disorders of Language.* (3)
Emphasis on adult aphasia and developmental language disabilities, theories, research findings, assessment procedures, and therapy approaches. (Same as PSY 647).

702 *Seminar in Speech Pathology.* (3)
Advanced coverage of the clinical and research literature on the etiology, description, assessment, and management of specific speech and language disabilities. The semester topic will be rotated. Topics will include stuttering, developmental language disabilities, cleft palate, cerebral palsy, etc. May be repeated twice for a maximum of 9 hours.

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 *Practicum in Teaching Reading and Related Language Arts.* (3)
Supervised practicum in analyzing problems in reading and related language arts and providing corrective work. Requires six hours per week in practicum with individual children or groups, plus two hours per week in seminar. A high level of knowledge in teaching reading is assumed. May be repeated to a maximum of 6 credits.

742 *Administration and Supervision of Public School Music.* (3)
A study of current trends in school music, curricula, testing programs, and other supervisory procedures. Offered either as an education course or as a music course using same number. (Same as MUS 742.)

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.* (3)
A historical survey of thought concerning the place and significance of music in the education of the individual and the group. (Same as MUS 744)

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 EDU 712 or 629. (May be repeated once to a maximum of 4 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 EDU 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 AND OFFICE EDUCATION

(BOE is the abbreviation for these courses.)

109 *Secretarial Applications of Accounting.* (3)
A study of accounting systems for the professions, small business, and institutions in which the secretary is responsible for the financial records. Prereq: ACC 107.

112 *Theory and Principles of Shorthand.* (3)
A study of the theory and principles of shorthand (Gregg) with emphasis upon development in reading, in writing, and in establishing basic foundations for transcription. Credit for this course will be validated upon completion of BOE 113. Prereq. or concur: ENG 101.

113 *Intermediate Shorthand and Transcription.* (3)
A continuation of the study of theory and principles of shorthand; development of dictation and transcription, with introduction of associated secretarial procedures and personnel relationships. Prereq: BOE 112, 117 or their equivalents.

117 *Typewriting.* (3)
Principles and techniques of typewriting are integrated with a thorough study of form, style, and arrangement of typewritten materials. Prereq. or concurrent: ENG 101.

118 *Advanced Typewriting.* (3)
A study of advanced principles and techniques of typewriting with emphasis upon planning and organizing a wide range of business communications media and upon meeting production standards essential to the operation of modern offices. Prereq: BOE 117 or its equivalent.

214 *Secretarial Procedures.* (3)
Further development of dictation and transcription proficiency with increasing emphasis upon a wide range of secretarial responsibilities and human relations. Open to freshmen with prerequisites. Prereq: BOE 113, 118 or their equivalents.

215 *Advanced Secretarial Procedures.* (3)
Development of high-level secretarial proficiency with special attention to the refinements of business communications and to the solution of office problems. Prereq: BOE 214 or its equivalent. Open to freshmen with prerequisites.

219 *Office Machines and Records Management.* (3)
A study of office machine processes, filing principles, systems, and records management.

301 *Office Internship.* (1)
Laboratory and office experience for advanced students in business and office education. Prereq: BOE 215 or consent of instructor.

302 *Office Internship.* (1)
Laboratory and office experience for advanced students in business and office education. Prereq: BOE 215 or consent of instructor.

303 *Office Internship.* (1)
Laboratory and office experience for advanced students in business and office education. Prereq: BOE 215 or consent of instructor.

445 *Office Administration and Services.* (3)
A study of the theory, principles, and techniques of modern office administration and services with emphasis on data processing systems and information handling.

556 *Business Research Reports.* (3)
Current problems in selected interest areas investigated by various research procedures with major emphasis placed upon sources of data, compilation and arrangement of data, documentation, bibliography, and effective presentation. Prereq: BOE 117 or its equivalent.

DIVISION OF INSTRUCTION

FACULTY

James H. Powell, chairman

Associate Professor

James H. Powell	Ed.D., Kentucky, 1963

Assistant Professors

Olive Barrett	M.A., Kentucky, 1949
Jess Gardner	Ed.D., Kentucky, 1964
Stella S. Gilb	M.A., Kentucky, 1942
Ruth Haines	M.A., Columbia, 1931
Eugene Huff	M.A., Tennessee, 1954
D. C. Kemper	M.A., Kentucky, 1933
Catherine Lytle	M.A., Kentucky, 1949
Fannie Miller	M.A., Kentucky, 1937
William Pafford	Ed.S., George Peabody, 1963
E. Leon Porter	Ed.D., Kentucky, 1960
Elizabeth Taylor	M.A., Kentucky, 1963

Sara Thomas	M.A., Kentucky, 1950
Ayleene Whitehead	M.A., Kentucky, 1961

Instructor

Edgar Minor	B.S., Western, 1951

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 HEALTH, PHYSICAL EDUCATION AND RECREATION

FACULTY

Don Cash Seaton, chairman

Professors

Don Cash Seaton	Ed.D., New York University, 1947
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 Professor

Maurice A. Clay	Ed.D., Kentucky, 1955

Assistant Professors

Stella Spicer Gilb	M.A., Kentucky, 1942
Eugene Huff	M.A., Tennessee, 1954
Bernard Mason Johnson	M.A., Kentucky, 1949
Alfred Marion Reece	M.A., Kentucky, 1946
Peggy Stanaland	M.S., Florida State, 1954

Instructors

Ruth H. Alexander	M.A., Kentucky, 1962
Billy Joe Brown	M.S., Southern Ill., 1962
Judith Lynne McCall	B.A., Butler, 1964
Gary Lee Hill	M.A., Indiana, 1964
Ada Mary Jobert	M.A., Kentucky, 1959
James Pheane Ross	M.S., Kentucky, 1950
Sue Collins Tussey	M.A., Tennessee, 1966

The Division of Health, Physical Education and Recreation is a new Division in the College of Education brought about by the transfer of the Department of Physical Education from the College of Arts and Sciences to the College of Education.

Service Courses (for Men and Women)

All students are encouraged to take two years of physical education for one hour credit of each semester successfully completed. They may choose from a large variety of activities including fitness classes, 18 different sports, the various dance forms and aquatics. (See Schedule of Classes for each semester.)

Some colleges require physical education for graduation and others grant credit for graduation. The student should consult

with a physical education advisor regarding the requirement and types of activity best suited to his needs.

The 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 $1.00 to $2.00 per semester, depending upon the activities included in the class in which enrolled is charged each student. This fee includes towel service, soap, locker rental and the privilege of using the equipment and facilities and swimming pool of the Department during non-class periods. Students must furnish their own swim suits.

Although neither locker nor uniform is required in golf or bowling, 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 $10.00, for bowling $.30 for each class attended.

Physical Education 100-125. (1 ea.) I, II, S
May be repeated for a maximum of six credits.

ACTIVITIES

(Practically all classes are co-educational.)

Aquatics
beginning swimming
diving
intermediate swimming
life saving—instructors (W.S.I.)
skin and scuba diving
synchronized swimming

Physical Fitness
figure improvement
weight training

Dance
ballroóm
ballet
folk and square
modern

Equestrian
horseback riding
horsemanship
polo
dressage

Individual and Dual Sports
archery
badminton
bowling
fencing
golf
handball
judo
recreation and outing
tennis
wrestling

Team Sports
basketball
field hockey
soccer
softball
touch football
track and field
volleyball

Gymnastics
apparatus
trampoline
tumbling

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 being 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. The general requirements for physical education majors are the same as for all other students in 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. No new students are being accepted in the topical majors. New programs will be developed in the dance, horsemanship and recreation. Such specialization in dance, horsemanship and recreation does not lead to teacher certification. However, persons wishing to teach may use their elective hours in dance, horsemanship or recreation.

NEW PROGRAMS PLANNED

The Division will have new programs in health, physical education and recreation which will be included in the next catalogue. For information regarding these revisions, write the Chairman of the Division of Health, Physical Education and Recreation.

Course Descriptions

(The standard abbreviation for these courses is PE rather than EDU.)

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.

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.

141 *Basketball Coaching Fundamentals.* (2) I
Theory and practice in coaching fundamentals involved in basketball. Four hours lab per week.

142 *Football Coaching Fundamentals.* (2) II
Theory and practice in coaching fundamentals of football.

143 *Track and Field Coaching Fundamentals.* (2) II
The theory and practice of coaching. Four hours lab per week.

144 *Baseball and Softball Coaching Fundamentals.* (2) II, S
Theory and practice in coaching fundamentals involved in baseball and softball. Six hours lab per week.

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.

185 *Jumping (Horseback.)* (1)
Practice in jumping over different obstacles for show and hunting. Prereq: Horsemanship or consent of instructor.

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.

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.

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. Lecture, one hour; lab, two hours.

286 *Equestrian Dressage.* (2)
The technique of training dressage. One hour lecture and two hours laboratory. Prereq: Horsemanship or consent of instructor.

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.

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.

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. Prereq: PE 343 or consent of instructor.

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.

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.

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 PE or consent of instructor.

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.

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.

386 *Applied Dressage.* (1)
The principles and practice of dressage movements in training for position and collection. Prereq: PE 286. Two hours lab.

388 *Equitation Teaching.* (2)
The techniques of horsemanship and methods of instruction. One hour lecture and two hours lab. Prereq: Horsemanship and ASC 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.

481 *Camping in Education.* (2) I, S
Purpose, history, organization, and conduct of camps of various types. Prereq: PE 281 or permission of instructor.

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 l'ecole (high school) riding. Prereq: PE 386. One hour lecture, two hours lab.

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.

520 *Physiology of Exercise.* (3) S
A comprehensive survey of the physiological and clinical aspects of exercise. Lectures and demonstrations, three hours. Prereq: ANA 206 and PGY 206, 207 or equivalent, 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. Prereq: PE 344 or equivalent.

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: PE 141 or consent of instructor.

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: PE 142 or consent of instructor.

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.

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: ANA 206 and PGY 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.

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: PE 491.

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.

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.

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 educational and recreational needs of all students. Prereq: PE 343, 344, 540.

651 *Facilities, Construction, and Equipment.* (2) S
Principles and standards for maintaining facilities, and planning construction; purchase and care of equipment. Prereq: PE 540.

685 *Administrative Practices in Recreation.* (3) I, S
A study of administrative functions concerned with policy determination, public relations, personnel practices, and routine details confronting the chief recreation officer and his staff associates. Prereq: PE 580 or consent of instructor.

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. Prereq: PE 290, 491, 592, 595, or consent of instructor.

720 *Sports Medicine.* (3) II, S
A study of the basic areas covered in sports medicine with readings and discussions of current international trends in the research and practice in this field. Prereq: Twelve semester hours credit in the field of biological science and consent of instructor.

741 *Current Studies and Trends in Health and Physical Education.* (3) I, 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.

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

770 *Seminar.* (2) I, II, S
A review of current literature in the field. Guidance in thesis writing. Two hours per week. May be repeated once.

780 *Problems in Recreation.* (2) II, 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. Prereq: PE 583 or 545 or SOC 581.

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.

783 *Problems in the Administration of Athletics.* (2) II, S
For athletic directors, supervisors, and athletic coaches. A study of lic school systems. Business management is also stressed. Two hours representative athletic administration procedures for colleges and pubper week.

DIVISION OF VOCATIONAL EDUCATION

FACULTY

Harold Roper Binkley, chairman

Professor

Vernon Armor Musselman	Ed.D., Oklahoma, 1946

Associate Professors

Walter Maurice Baker	M.A., Kentucky, 1931
Harold Roper Binkley	Ed.D., Kentucky, 1955
Floyd Cox	M.S., Kentucky, 1942
J. Alvin Dickinson	Ed.D., Oklahoma, 1966
Anna M. Gorman	Ed.D., Illinois, 1957
Carl Fletcher Lamar	Ph.D., Kentucky, 1957
George Lowell Luster	Ph.D., Ohio State, 1954

Assistant Professors

Evangeline Smith Kelsay	M.A., Kentucky, 1948
Inez Haile Hill	M.S., Kentucky, 1952
Leonard C. McDowell	Ed.D., Kentucky, 1964

Instructors

William Ray Bingham	Ed.D., Kentucky, 1966
Herbert Bruce, Jr.	Ed.D., Kentucky, 1965
Charles Byers	B.S., Murray, 1963
Bernard Thomas Fagan	Ed.S., Kentucky, 1960
Lela Hulette	M.A., Kentucky, 1954
Steve Marcum	M.A., Western, 1957
Devert Owens	M.S., Kentucky, 1958
Mavis Sparks	M.A., Kentucky, 1959

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.*

794 *Research in Agricultural Education.* (3)
Individual problems of importance to agricultural education.

795 *Research Problems in Agricultural Education.* (3) I, II, S
A continuation of EDU 794. (May be repeated twice to a maximum of 9 credits.) *Staff.*

BUSINESS EDUCATION

210 *Introduction to Vocational Education.* (2-3)
The history, status, philosophy, and objectives of vocational education in relation to general education.

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.*

DISTRIBUTIVE EDUCATION

515 *Problems in Distributive Education.* (2) 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. (May be repeated 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 4 credits.)

517 *Determining Teaching Content in Distributive Education* (2) 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. May be repeated to a maximum of 6 credits.

528 *Technique of Teaching Distributive Education.* (2) 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. May be repeated to a maximum of 6 credits.

HOME ECONOMICS EDUCATION

362 *Student Teaching in Home Economics.* (3-12) I, II

Practical application of methods in teaching various phases of home economics. Prereq: EDU 586.

586 *Technique of Teaching Home Economics.* (3) I, II

A study of methods of teaching as applied to home economics. Prereq: HE 227, 261; EDU 520.

588 *Adult Education in Home Economics.* (3) I, II, S

Problems in teaching vocational homemaking in day, part-time, and evening schools. Prereq: EDU 586; Concur: EDU 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: EDU 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: EDU 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. Prereq: Teaching experience.

687 *Home Economics Supervision.* (3) I, S

A course planned primarily to help prepare teacher-trainers and supervisors of home economics education. Prereq: EDU 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 EDU 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: EDU 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.* (3-12) 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.

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.

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.)

Business & Economics

The College of Business and Economics offers three programs of study leading to the degrees of Bachelor of Business Administration, Bachelor of Science in Accounting, and Bachelor of Science in Business and Economics. The Department of Economics also offers a program of study leading to the Bachelor of Arts in economics through the College of Arts and Sciences. The Bachelor of Science in Commerce is currently being awarded to students who entered the College prior to September 1966.

The College of Business and Economics was established at the University of Kentucky in 1925 as the College of Commerce. The name was changed to College of Business and Economics in 1966. The college includes the Department of Accounting, Department of Business Administration, Department of Economics, and Bureau of Business Research. These departments are housed in the Commerce Building, which was completed in 1964 and provides modern teaching and research facilities for students and faculty.

The College of Business and Economics is a member of the American Association of Collegiate Schools of Business which accredits undergraduate and master's programs in business administration. The programs of the college enjoy the Association's full accreditation.

The objective of the instructional program is to prepare the student for a life-long career in business, government, or research and teaching. The program is structured to provide the student with an opportunity to acquire a background in the basic areas of the arts and sciences, to obtain a broad knowledge of business and economics, and to study in depth one or more fields of special interest.

Admission

Students are admitted to the College of Business and Economics at the beginning of the junior year. Students already enrolled in the University of Kentucky at Lexington may apply for admission at the Office of the Dean of the College of Business and Economics. Students enrolled in other universities or in the University's Community Colleges should apply for admission through the Office of the Dean of Admissions of the University of Kentucky.

To be admitted the student must have completed sixty (60) semester hours of course work, including:

ENG 101 and 102, Freshman Composition
ACC 201 and 202, Principles of Accounting
ECO 251 and 252, Principles of Economics
ECO 207, Statistical Method
One course in each of five of the eight General Studies Areas (one of the areas must be Area II or Area III).

Requirements for Graduation

The baccalaureate degree programs of the College of Business and Economics require that the student present a total of 130 semester hours, including the courses required for admission and the courses indicated below in the several curricula of the college. At least 54 semester hours must be in courses above the sophomore level, i.e., in courses numbered 300 and above, and at least 40 per cent of the total of 130 semester hours must be in courses other than accounting and business administration. The student must also meet the University's requirements for completion of five of the eight General Studies Areas, one of which must be Area II or Area III. A grade-point average of 2.0 on all work attempted in the University of Kentucky is required for graduation.

Curricula

The College of Business and Economics offers three degree programs: Bachelor of Business Administration, Bachelor of Science in Accounting, and Bachelor of Science in Business and Economics. Students may also obtain a Bachelor of Arts in economics through a major in the College of Arts and Sciences.

The curriculum of each of the three degree programs has two parts: the College Core and the Departmental

Charles F. Haywood, Ph.D., is Dean of the College of Business and Economics. Joseph L. Massie, Ph.D., is Associate Dean, and Clyde L. Irwin, D.B.A., is Assistant Dean.

Major. The College Core is the same for all three degree programs, i.e., all students must complete the following courses:

College Core courses	*Sem. Hrs.*
BA 361, Marketing Management	3
BA 437, Business Management	3
BA 509, Business Law	3
BA 517, Corporation Finance	3
ECO 386, Economic Research	3
ECO 514, Intermediate Macro-Economic Theory	3
ECO 515, Intermediate Economic Analysis	3
	21

In addition to the College Core, the student must complete a Departmental Major consisting of 18 semester hours in one of the three departments in the college. The Bachelor of Business Administration is awarded to students who complete their Departmental Major courses in the Department of Business Administration. The Bachelor of Science in Accounting is awarded to students who complete their Departmental Major courses in the Department of Accounting. The Bachelor of Science in Business and Economics is awarded to students who complete their Departmental Major courses in the Department of Economics.

The curricula of the college afford the student considerable opportunity and freedom of choice to take elective courses outside the college. Preparation for a career in business can be combined with study in some depth in agriculture, engineering, and the various fields in the arts and sciences.

Student Organizations

The Commerce Student Association was organized in 1966 to provide more effective means for expression of the intellectual, professional, and social interests of the student body. Membership is open to all students who have been admitted to the college. A governing board, consisting of 30 members elected by the student body, directs the activities of the Association.

A chapter of Beta Gamma Sigma, the national honorary scholarship fraternity in commerce, was organized at the University of Kentucky in 1928. Seniors must rank in the upper 10 percent of the class in scholarship to be admitted to this recognition society. Delta Sigma Pi, a national professional commerce fraternity, is organized to encourage scholarship and research and to promote closer affiliations between the business world and students of commerce. Beta Alpha Psi, the national professional fraternity in accounting, established a chapter in the College of Business and Economics in 1952.

The Society for Advancement of Management granted a charter to the University of Kentucky Chapter in 1958. The Political Economy Club, organized several years ago by faculty and graduate students, welcomes interested undergraduate students.

The American Marketing Association is national in its scope but works with its established college affiliates to help promote an interest in marketing activities and research at the college level. The University of Kentucky chapter was established during the spring semester of 1962 and welcomes any and all students majoring in marketing or advertising that have attained a sophomore standing.

Business and Economics students also are eligible for many other general campus organizations and activities.

Employment

Assistance in finding suitable career opportunities for employment following graduation is provided by the Commerce Employment Association. The cost of membership is nominal and includes the publication of the student's picture and brief biographical statement in the annual issue of *Bargains in Brains*, which is distributed to leading businesses in the nation as well as in the state. The Commerce Employment Association was formed in 1933 and has enjoyed considerable success in the placement of the graduates of the college. The association is under the direction of elected student officers and a permanent secretary who is a member of the faculty.

ACCOUNTING

FACULTY

William W. Ecton, chairman

Professors

Wendell Everett Beals	M.B.A., Northwestern, 1931
Robert D. Haun	J.D., Michigan, 1939

Associate Professors

William W. Ecton	Ph.D., Missouri, 1966
Donald L. Richard	Ph.D., American, 1959
William A. Tolman	M.A., Kentucky, 1932
Robert O. Brown (Lecturer)	M.B.A., Chicago, 1962

Assistant Professor

Kenneth W. Cubbage	M.B.A., Colorado, 1957

Instructor

A. Clifford Wilson	M.A., Kentucky, 1963

Note: Changes in course offerings are anticipated during the 1966-67 academic year; therefore, the official offering for any semester should be obtained from the Dean's Office.

Course Descriptions

201 *Principles of Accounting.* (3)
Instruction in the science and adaptation of the accounts of going concerns, together with sufficient practice to acquire proficiency. Prereq: Sophomore standing.

202 *Principles of Accounting.* (3)
Continuation of ACC 201. Prereq: ACC 201.

301 *Intermediate Accounting.* (3)
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: ACC 202.

302 *Advanced Accounting.* (3)
Statements from incomplete data, comparative statements, partnerships, installment sales, consignments and agency and branch accounting. Application of funds statement. Prereq: ACC 301.

335 *Internship in Accounting.* (3)
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.

508 *Accounting Theory.* (3)
The function of accounting, asset valuation, recognition of revenue and expenses, and classification of equities, will be studied with a view to presenting a coordinated body of accounting theory. Prereq: ACC 297.

513 *Auditing.* (3)
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: ACC 297.

401 *Cost Accounting.* (3)
The place of cost accounting in the general field of accounting, special records and cost statistics, and application to particular businesses. Prereq: ACC 301 or concurrent enrollment.

402 *Income Tax Procedure.* (3)
The preparation of income tax returns for individuals and corporations of all classes and practical application of principles of accounting. Prereq: ACC 297.

528 *Advanced Managerial Accounting.* (3)
The use of standard costs, estimated cost systems and procedures, nonmanufacturing costs, budgetary control, and management uses of cost data. Prereq: ACC 518.

532 *C.P.A. Problems.* (3)
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: ACC 297.

533 *C.P.A. Problems.* (3)
A continuation of ACC 532.

546 *Accounting for Business Combinations.* (3)
Accounting records for consolidations and mergers, preparation of consolidated statements. Insolvency and receivership records and statements. Accounting for estates and trusts. Prereq: ACC 302 and senior standing.

548 *Data Processing in Accounting Systems.* (3)
Fundamentals of data processing for business organizations, including manual and automated applications, with emphasis on unit records, flow charts, and control procedures, in relation to both financial and non-financial data. Prereq: ACC 108.

559 *Accounting for Institutions and Regulated Industries.* (3)
The requirements of adequate accounting systems for various governmental units, including the recording of usual transactions and the form and consent of reports. Prereq: ACC 108.

570 *Controllership.* (3)
The organizational position of the Comptroller, his functions and objectives, his methods and procedures.

708 *Advanced Accounting Theory.* (3)
Critical examination of accounting concepts and standards. Study of current problems and contemporary developments reflected in accounting literature and reports. Prereq: ACC 296 or consent of instructor.

722 *Tax Accounting Problems.* (3)
Advanced tax accounting problems of a complex nature involved in income taxes, gift taxes, and death taxes under the federal and state laws. Prereq: ACC 547.

728 *Accounting for Control and Planning.* (3)
A study of the application of accounting and information and services in the recognition or solution of management problems in business. Prereq: ACC 107.

BUSINESS ADMINISTRATION

FACULTY

John Douglas, chairman

Professors

John Douglas	Ph.D., Cornell, 1960
Ernest Merrill DeVoe	Ph.D., Ohio State, 1946
N. William Hazen (Visiting)	Ph.D., California, 1934
Joseph L. Massie	Ph.D., Chicago, 1955
Ralph R. Pickett	Ph.D., Chicago, 1930
Lawrence X. Tarpey	Ph.D., Cornell, 1964

Associate Professors

Herman A. Ellis	D.B.A., Indiana, 1954
James L. Gibson	Ph.D., Kentucky, 1962
Homer Lewis	M.B.A., Michigan, 1930

Assistant Professors

Clyde L. Irwin	D.B.A., Illinois, 1966
Jan B. Luytjes (Visiting)	Ph.D., Pennsylvania, 1962
Ernest D. Moore	M.B.A., Mississippi State, 1963

Instructors

Martin B. Solomon	M.B.A., Kentucky, 1960
William J. Whitmore	M.B.A., Ohio State, 1964

Note: Changes in course offerings are anticipated during the 1966-67 academic year; therefore, the official offering for any semester should be obtained from the Dean's Office.

Course Descriptions

330 *Marketing Management.* (3)
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: BA 260.

331 *Product Planning.* (3)
An analysis of the means of product and price competition which a business firm has at its disposal. Emphasis will be placed upon the theories and principles which will assist marketing managers in planning to meet competition via product offerings. Prereq: BA 330.

332 *Marketing Communication Systems.* (3)
The design, development and management of marketing communications programs, including symbol systems, salesmen's presentations, advertising, publicity, and sales promotion with emphasis on the competitive and strategic value of communication in the marketplace. Prereq: BA 330.

335 *Business Management.* (3)
A study of planning, organizing and controlling; an interdisciplinary approach; actual decision-making cases.

341 *Business Law.* (3)
A survey of the principles of contracts, sales, bills and notes, and that portion of the law of torts applicable to business practices.

345 *Corporation Finance.* (3)
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: ECO 251 and 252 and ACC 108.

430 *Marketing Distribution Systems.* (3)
The design and management of complex marketing organizations and systems, including home-office marketing organizations, field sales forces, channel structures, and the logistics of microdistribution systems. Prereq: BA 330.

431 *Contemporary Marketing Problems.* (3)
A capstone course with emphasis on the contemporary problems in the field of marketing. Consideration will also be given to the development of marketing programs including the integration of product planning, marketing communications, and marketing systems. Prereq: BA 331, 332, and 430 or consent of instructor.

435 *Analysis of Organizational Behavior.* (3)
The behavior of business organizations and their participants is analyzed in the contemporary language of social psychology, systems, and models. Various theories of the firm are reviewed and evaluated. The interdependence of economic, social and behavioral factors is stressed. Prereq: BA 335.

439 *Business Policy.* (3)
Analysis of management problems, formulation of alternative courses of action, determination of policy decisions.

441 *Business Law.* (3)
A continuation of BA 341.

446 *Investments.* (3)
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: ECO 252.

447 *Life Insurance.* (3)
Economics of life insurance, organization and control, special forms of life insurance, and fundamental principles of rate-making. Prereq: ECO 252.

448 *Property and Casualty Insurance.* (3)
Public control; nature of contracts; analysis of reserve functions, and rate-making processes. Prereq: ECO 252.

450 *Quantitative Analysis in Management.* (3)
An introduction to quantitative techniques in management decisions. Includes basic linear programming, Monte Carlo, and waiting line theory. Prereq: BA 437.

456 *World Business.* (3)
Examines the impact of international business upon society from a political, cultural, and economic point of view. Particular stress will be given to U.S. business in international operations; its past involvement, present position, and future direction. Prereq: ECO 251-252, BA 335.

477 *College Business Management.* (2)
Elements of management, organization, budgetary procedure, financial accounting, procurement techniques and property management as applied in the business administration of colleges.

478 *College Business Management.* (2)
Elements of personnel management, public relations, investments and finance as related to college business management.

479 *College Business Management.* (2)
Case problems in plant operation, purchasing, insurance, bookstore operation and legal aspects of college management.

523 *International and Commercial Policy.* (3)
America's position in the world economy and its international accounts; United States tariff policies, war debts, financial cooperation and investment policy. Prereq: ECO 527.

549 *Market Research.* (3)
Training in the application of scientific method to research in fields of marketing. A major marketing investigation will be conducted by the class. Prereq: BA 260 and a course in statistics.

571 *Statistical Quality Control.* (3)
Elementary probability theory, control charts, acceptance sampling plans including single, double and sequential sampling.

572 *Sampling Techniques.* (3)
Application of sampling theory and significance testing in economic research, practical problems in sample design.

573 *Automatic Data Processing.* (3)
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. Prereq: Junior standing.

584 *Financial Markets and Institutions.* (3)
Analysis of securities markets, savings and loan associations, insurance companies, pension funds, credit unions, broker-dealer operations and government agencies with particular attention to their role in the flow of funds in the American economy. Prereq: ECO 505.

585 *Bank Management.* (3)
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: ECO 505 or consent of instructor.

626 *Comparative International Management.* (3)
A comparison of management concepts and practices in different countries and the role of management in economic development, an interdisciplinary approach emphasizing the impact of sociological-cultural factors, legal-political factors and education on management development. Prereq: BA 437 or consent of instructor.

717 *Corporate Financial Policy.* (3)
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 reserves, surplus, and dividends.

719 *Quantitative Methods in Business Decisions.* (3)
Application of mathematical analysis in business decision-making. Includes linear programming, total value analysis, incremental analysis, and other phases of operations research. Prereq: MA 211 and ECO 207.

720 *Statistics in Business Decisions.* (3)
Statistical analysis as applied to business decisions. Includes waiting line theory. Monte Carlo method, and sampling as applied to inventory control, quality control, and similar business problems. Prereq: ECO 207.

731 *Investment Management.* (3)
Evaluation of sources of information and advice concerning securities, methods of analysis and policies of individuals and institutions in the management of investment funds.

737 *Advanced Business Management.* (3)
A functional study of business management. Control devices and procedures for carrying out and testing policies.

738 *Production Management.* (3)
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.

755 *Theory of Organizational Behavior and Administration.* (3)
Experience in theory analysis, application and creation in the area of organizational behavior and administration. Prereq: BA 437 or consent of instructor.

760 *Advanced Marketing Management.* (3)
A critical study of significant trends, controversial issues and advanced techniques in the fields of marketing.

762 *Seminar in Marketing Theory.* (3)
A survey, analysis and evaluation of the current research in marketing theory. Detailed attention is given to problems of determining the meaning and boundaries of marketing theory. Emphasis is placed on introducing the student to the substantive content of marketing theories and their methodologies. Prereq: BA 760 or consent of instructor.

768 *Residence Credit for the Master's Degree.* (0)
May be repeated once. 1-9 weeks' residence.

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

771 *Seminar in Business Administration.* (3)
Each semester some topic currently discussed in scholarly journals in business administration will be studied intensively. May be repeated to maximum of 9 hours. Prereq: consent of instructor.

781 *Independent Work in Business Administration.* (1-6)
Designed for advanced students who undertake research problems to be conducted in regular consultation with the instructor. May be repeated to maximum of 6 hours. Prereq: consent of instructor.

ECONOMICS

FACULTY

Carlos C. Erwin, acting chairman

Professors

Cecil Clayton Carpenter	Ph.D., Illinois, 1932
John Leonard Fulmer	Ph.D., Virginia, 1939
Herbert Walter Hargreaves	Ph.D., Duke, 1941
Charles F. Haywood	Ph.D., California, 1955
Joseph Krislov	Ph.D., Wisconsin, 1954
John Talbot Masten	Ph.D., North Carolina, 1942

Associate Professors

Carl Cabe	Ph.D., Illinois, 1952
Virgil L. Christian, Jr.	Ph.D., Kentucky, 1956
Carlos C. Erwin	Ph.D., Illinois, 1952
Gerald Garb	Ph.D., California, 1957
Charles William Hultman	Ph.D., Iowa, 1960
Donald M. Soule	Ph.D., Wisconsin, 1953
Robert H. Stroup	Ph.D., Iowa, 1953
Walter W. Pearce (Lecturer)	M.A., Michigan, 1947

Assistant Professors

Charles W. Campbell	Ph.D., Virginia, 1966
Richard E. Gift	Ph.D., Duke, 1963
Leray Randolph McGee	Ph.D., Tulane, 1963
Alan R. Winger	Ph.D., Michigan, 1961

Instructor

Eliseo DaRosa	M.A., Chicago, 1957

Note: Changes in course offerings are anticipated during the 1966-67 academic year; therefore, the official offering for any semester should be obtained from the Dean's Office.

Course Descriptions

207 *Statistical Method.* (3)
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. Prereq: College algebra or its high school equivalent (2 years of high school algebra).

251 *Principles of Economics.* (3)
An introductory course. The Theory of Income and Employment and Value Theory. Not open to freshmen.

252 *Principles of Economics.* (3)
The major emphasis is on distribution theory and public policy. Prereq: ECO 251.

386 *Economic Research.* (3)
The sources, uses and application of statistical information in the analysis of economic problems. Prereq: ECO 252 and 207.

395 *Individual Work in Economics.* (1-6)
Students confer individually with the instructor. May be repeated to a maximum of 6 credits.

396 *Tutorial Work in Economics.* (1)
Open only to Arts and Sciences majors. *Masten.*

402 *Labor Economics.* (3)
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: ECO 252.

503 *Transportation.* (3)
Railways, waterways, highways, and airways. Rates, service, management, and regulations. Prereq: ECO 252.

504 *Public Finance.* (3)
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: ECO 252.

505 *Money and Banking.* (3)
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: ECO 252.

514 *Intermediate Macroeconomic Theory.* (3)
An analysis of classical, Keynesian, and post-Keynesian theories of national income and employment. Prereq: ECO 252.

515 *Intermediate Economic Analysis.* (3)
The output, price and factor proportion problems of firms in different market situations; some problems in industry behavior; coordination of basic economic processes. Prereq: ECO 252.

516 *Business Cycles.* (3)
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: ECO 252.

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: ECO 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: ECO 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: ECO 252 and 527.

523 *Social Determinants of Economic Behavior.* (3)
A study of the sociology of consumption, the effect of social values upon business and employee behavior, and the socioeconomic implications of welfare legislation. (Same as SOC 523)

524 *State and Local Taxation.* (3)
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.

525 *Economic Development.* (3)
A comparative study of economic progress in selected countries; growth patterns, theories of development and capital formation, interaction of social and economic change. Prereq: ECO 252.

527 *International Economics.* (3)
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 reparations. Prereq: ECO 252.

530 *Labor Legislation.* (3)
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: ECO 252.

534 *Advanced Economic History of the United States.* (3)
Population growth, immigration, territorial expansion, agriculture, manufactures, tariff, labor, industrial combinations, commerce, transportation facilities, money and banking, and conservation. Prereq: ECO 252.

542 *Soviet Area Economics.* (3)
The course is designed to provide an intensive study of economic principles, institutions, and policies which provide direction and coordination for the economic processes in the Soviet Union and Eastern European countries. Prereq: ECO 252 or consent of instructor.

550 *Advanced Business and Economic Statistics.* (3)
Advanced time series analysis, multiple and partial correlation, elementary analysis of variance and experimental design. Prereq: ECO 207 or consent of instructor.

554 *Urban Real Estate.* (3)
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: ECO 252.

555 *Industrial Relations.* (3)
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: ECO 252.

560 *Business Combinations.* (2)
Forms of combinations; the problem of monopoly; federal and state anti-trust legislation and court decisions. Prereq: ECO 252.

565 *Comparative Economic Systems.* (3)
A study of capitalism, socialism, fascism, communism, and cooperation, with attention to current experiments in economic planning. Prereq: ECO 252.

566 *Personnel Problems.* (2)
A case course in the problems of supervision of employees, and the personnel policies which promote productive efficiency. Prereq: ECO 555.

579 *Collective Bargaining.* (3)
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 considered. Prereq: ECO 402.

590 *Introduction to Mathematical Economics.* (3)
A review of mathematical approaches to economic theory. Models applicable to production, marketing and pricing problems. Prereq: MA 211; ECO 515 or equivalent. (Same as AEC 590)

600 *Business Economics.* (3)
The interrelations of economic laws with the social, political and legal framework of business, especially from the point of view of the industry and of the firm.

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: ECO 527, or permission of instructor.

602 *Analysis of International Trade.* (3)
The balance of payments and its analysis: 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: ECO 527 and ECO 601.

603 *History of Economic Thought.* (3)
A survey of the history of economic thought from the ancient period to about the end of the classical school. Prereq: ECO 252.

604 *Survey of Economic Theory Since the Austrian School.* (3)
This course is virtually a continuation of ECO 603.

605 *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: ECO 527.

606 *Municipal Finance.* (2)
City and county budget and related problems; debt, purchasing, treasury and revenue problems are studied in reports and seminar.

607 *Problems in Public Finance.* (2)
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.

608 *Problems in Public Finance.* (2)
This course is a continuation of ECO 607.

609 *History and Theory of Money and Prices.* (3)
The evolution of money, the rise of banking processes, and the causes of fluctuations in the general price level.

611 *Advanced Money and Banking.* (3)
A theoretical study of contemporary money and banking institutions with emphasis on central bank functions.

612 *Seminar in Monetary Theory and Policy.* (3)
A comprehensive and critical analysis of contemporary monetary theory and policy. Prereq: ECO 611 or consent of instructor.

618 *Economic Theory.* (3)
An intensive course covering contemporary micro-economic theory and the various analytical techniques used therein. Prereq: ECO 515 or written proficiency exam.

619 *Economic Theory.* (3)
Micro-economic theory. National income analysis and employment theory. The theory of inflation and an introduction to theories of economic development.

650 *Research Statistics I.* (3)
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.

651 *Research Statistics II.* (3)
Inferences involving linear transformations of random variables; individual degrees of freedom; complex analysis of covariance. Applications to economic and business data. Prereq: ECO 650.

655 *Advanced Personnel Management.* (3)
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.

656 *Research and Report Writing.* (3)
Investigations of business problems; sources, procedures, analysis, and presentation.

657 *Theory of Wages.* (3)
A critical analysis of contemporary wage theories, trade-union wage policy, wage differentials, wage adjustment to technological change, and wages and employment.

685 *Government Finance Administration.* (3)
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.

689 *Mathematical Economics-Micro Theory.* (3)
Consumer behavior and demand, theory of the firm, market equilibrium, optimality criteria and welfare maximization, selected topics in dynamics.

690 *Mathematical Economics-Macro Theory.* (3)
Selected aggregate models treated mathematically. Emphasis on maximization problems for linear systems. Leontief input-output models. Prereq: ECO 515 or equivalent, MA 113. (Same as AEC 690)

691 *Econometrics.* (3)
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: ECO 618 and AEC 630 or ECO 550, or equivalent. (Same as AEC 691)

768 *Residence Credit for the Master's Degree.* (0)
May be repeated once. 1-9 weeks' residence.

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

770 *Seminar.* (1-6)
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. May be repeated to a maximum of 6 credits.

780 *Research Problems in Economics.* (1-6)
May be repeated to maximum of 6 hours.
Students confer individually with the instructor.

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 pre-pharmacy courses in other institutions must furnish an additional transcript of all previous college work to the Dean of the College of Pharmacy.

Pre-pharmacy 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.

Basic Requirements for Admission to the College of Pharmacy

1 year English Composition
1 year Biology (General Botany, General Zoology)
1 semester Mathematics (Analytics and Calculus)

Joseph V. Swintosky, Ph.D., is Dean of the College of Pharmacy.

1 year Physics with laboratory
1 semester of Microbiology
1 semester of Economics

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.
CHE 110—General Chemistry	5
ENG 101—English Composition	3
BOT 101—General Botany	3
MA 113—Analytics and Calculus I	4
CHE 112—General Chemistry	5
ENG 102—English Composition	3
ZOO 104—Principles of Zoology	4

Second Year

Course	Cr.
PHY 211—General Physics	5
CHE 226—Analytical Chemistry	3-5
PHY 213—General Physics	5
ECO 251—Principles of Economics	3
MB 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.

The College of Pharmacy will accept credit in typing as an elective.

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 education with 110 semester hours of credit as shown below, constitute the course requirements for graduation.

PROFESSIONAL PROGRAM

Third Year

Course	Cr.
PCH 300—Organic Pharmaceutical Chemistry	5
PHR 810—Theoretical Pharmacy	4
PHR 805—Pharmaceutical Calculations	3
PHR 300—History & Ethics	3
MM 334—Physiology and Pharmacodynamics	4
	19
PCH 302—Organic Pharmaceutical Chemistry	5
PHR 820—Pharmaceutical Technology	4
PCH 304—Inorganic Pharmaceutical Chemistry	3
Elective	3
MM 346—Physiology and Pharmacodynamics	4
	19

Fourth Year

Course	Cr.
PCH 402—Pharmaceutical Analysis and Control	4
MM 220—Biological Pharmaceuticals	3
MM 330—Pharmacognosy	3
MM 450—Pharmacology and Toxicology	5
PHR 830—Theoretical Pharmacy	4
	19
PCH 400—Biochemistry	4
MM 342—Pharmacognosy	3
MM 462—Pharmacology and Toxicology	5
PHR 835—Pharmaceutical Law	3
PHR 840—Pharmaceutical Technology	4
	19

Fifth Year

Course	Cr.
PCH 404—Chemistry of Medicinal Products	3
PHR 850—Pharmaceutical Dispensing	5
PHR 855—Modern Therapeutic Agents	3
PHR 856—Pharmacy Management	3
Elective	3
	17
PCH 406—Chemistry of Medicinal Products	3
PHR 860—Pharmaceutical Dispensing	5
PHR 865—Modern Therapeutic Agents	3
PHR 866—Pharmacy Management	3
Elective	3
	17

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 usually 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 5,000 volumes and 200 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 chapters of three 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, a citizen of the United States, must be of good moral character, must satisfy the internship requirement of fifty-two weeks of not less than forty hours per week, under the direct personal supervision of a registered pharmacist, and must present to the Kentucky Board of Pharmacy a notebook covering the details of his internship 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 his examination grade.

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 beginning and the ending of the internship claimed as supplied by the applicant during his internship 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 internship.

d. The period of internship was earned in a pharmacy acceptable to the Board.

At least three (3) months of internship must be obtained after college graduation.

PHARMACEUTICAL CHEMISTRY

FACULTY

Arthur C. Glasser, chairman

Professor

Arthur C. Glasser — Ph.D., Ohio State, 1953

Assistant Professors

Milton J. Kornet — Ph.D., Illinois, 1962
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: CHE 110 and 112. *Kornet.*

301 *Laboratory for Pharmaceutical Chemistry 300.*

302 *Organic Pharmaceutical Chemistry.* (5) II
A course similar to Pharmaceutical 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: PCH 300. *Kornet.*

303 *Laboratory for Pharmaceutical Chemistry 302.*

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: CHE 110 and 112. *Johnson.*

305 *Laboratory for Pharmaceutical Chemistry 304.*

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: PCH 302. *Glasser.*

401 *Laboratory for Pharmaceutical Chemistry 400.*

402 *Pharmaceutical Analysis and Control.* (4) I
A course which deals with the application of analytical methods in the determination of the strength, purity and quality of drugs and pharmaceuticals; and includes the means by which quality can be assured in a fabricated pharmaceutical product. Laboratory exercises include analysis of raw materials and dosage forms. Lecture, three hours; lab, three hours. Prereq: CHE 226. *Johnson.*

403 *Laboratory for Pharmaceutical Chemistry 402.*

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: PCH 400 or equivalent. *Orth.*

406 *Chemistry of Medicinal Products.* (3) II
Continuation of Pharmaceutical Chemistry 404 including considerations of such topics as alkaloids, glycosides, steroids, and other chemotherapeutic agents. Lecture, three hours. Prereq: PCH 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 synthesis classification, properties, and uses of organic medicinal agents. Lecture, one hour; lab, six hours. Prereq: PCH 302 or equivalent. *Glasser.*

412 *Advanced Organic Pharmaceutical Chemistry* (3) II
A continuation of Chemistry 410. Lecture, one hour; lab, six hours. Prereq: PCH 302 or equivalent. *Glasser.*

PHARMACY

Howard Hopkins, chairman

Professor

Howard Hopkins — Ph.D., Nebraska, 1959

Associate Professors

Norman H. Franke — Ph.D., Wisconsin, 1956
Charles T. Lesshafft, Jr. — Ph.D., Purdue, 1955
Norman F. Billups — Ph.D., Oregon State, 1963

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.*

805 *Pharmaceutical Calculations.* (3) I
A systematic study of arithmetical problems encountered in Pharmacy. Lecture, three hours. *Billups.*

810 *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.*

811 *Laboratory for Pharmacy 810.*

820 *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: PHR 805 and 810. *Franke.*

821 *Laboratory for Pharmacy 820.*

830 *Theoretical Pharmacy.* (4) I
A continuation of Pharmacy 810 at a more advanced level. Lecture, three hours; lab, three hours. Prereq: PHR 820; PCH 302, 304. *Billups.*

831 *Laboratory for Pharmacy 830.*

835 *Pharmaceutical Law.* (3) II
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: PHR 300. *Staff.*

840 *Pharmaceutical Technology.* (4) II
A continuation of Pharmacy 820 at a more advanced level. Lecture, three hours; lab, three hours. Prereq: PHR 830. *Billups.*

841 *Laboratory for Pharmacy 840.*

850 *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: PHR 835 and 840. *Lesshafft.*

851 *Laboratory for Pharmacy 850.*

855 *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: PHR 840; PCH 304, 400, MM 346. *Hopkins.*

856 *Pharmacy 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: PHR 835 and ECO 251. *Staff.*

860 *Pharmaceutical Dispensing.* (5) II
A continuation of Pharmacy 850. The second semester's work is chiefly concerned with liquid prescriptions. Lecture, three hours; lab, four hours. Prereq: PHR 850. *Lesshafft.*

861 *Laboratory for Pharmacy 860.*

865 *Modern Therapeutic Agents.* (3) II
A continuation of PHR 855. Lecture, three hours. Prereq: PHR 855. *Hopkins.*

866 *Pharmacy Management.* (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: PHR 856. *Staff.*

870 *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 chairman. *Staff.*

880 *Introduction to Hospital Pharmacy.* (3) I, II
A presentation of the fundamental concepts and procedures involving the acquisition, distribution, and control of drugs by pharmacists in hospitals. It is designed to acquaint the student with hospital pharmacy as a specialized area of professional practice. Lecture, one hour; lab, eight hours. Prereq: MM 462 or consent of instructor. *Parker.*

895 *Independent Problems in Pharmacy.* (1-3) I, II, S
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

Charles A. Walton, chairman

Professor

Charles A. Walton — Ph.D., Purdue, 1956

Assistant Professors

Richard M. Doughty — M.S., Pittsburgh, 1953

Mark M. Luckens — Ph.D., Connecticut, 1963

Course Descriptions

220 *Biological Pharmaceuticals.* (3) I
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: MB 200. *Doughty.*

221 *Laboratory for Materia Medica 220.*

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: PCH 302 and BOT 101. *Doughty.*

331 *Laboratory for Materia Medica 330.*

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. *Walton and Staff.*

335 *Laboratory for Materia Medica 334.*

342 *Pharmacognosy.* (3) II
A continuation of MM 330. Lecture, two hours; lab, three hours. Prereq: MM 330. *Doughty.*

343 *Laboratory for Materia Medica 342.*

346 *Physiology and Pharmacodynamics.* (4) II
A continuation of MM 334. Lecture, three hours; lab, two hours. Prereq: MM 334. *Walton and Staff.*

347 *Laboratory for Materia Medica 346.*

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: MM 334, 346, PCH 400. *Walton and Staff.*

451 *Laboratory for Materia Medica 450.*

462 *Pharmacology and Toxicology.* (5) II
A continuation of MM 450. Lecture, four hours; lab, two hours. Prereq: MM 450 or equivalent. *Walton and Staff.*

463 *Laboratory for Materia Medica 462.*

470 *Drug Literature Evaluation.* (3) I
This course apprises the student of the pharmacological and toxicological principles and techniques employed in the clinical evaluation of drugs and enables the student to more effectively use clinical literature. It is designed as a natural continuation of MM 462. Prereq: MM 462. *Walton.*

472 *Clinical Drug Communications.* (3)
This course is designed as a natural continuation of MM 470 and serves the specific purpose of providing instruction and experience of such a nature and quality as to promote the professional role of the pharmacist in the communication of therapeutic information. Lecture, one hour; lab, six hours. Prereq: MM 470 and permission of instructor.

474 *Independent Problems in Toxicology.* (1-3) I, II, S
Selected problems requiring literature and laboratory research are designed to meet specific needs of graduate minors in toxicology and satisfy professional elective requirements for pharmacy students. Prereq: Permission of the instructor. May be repeated for a total of six credits. *Luckens.*

475 *Independent Problems in Pharmacognosy.* (1-3) I, II, S
Selected problems requiring literature and laboratory research are designed to meet specific needs of graduate minors in pharmacognosy and satisfy professional elective requirements for pharmacy students. Prereq: Permission of the instructor. May be repeated for a total of six credits. *Doughty.*

476 *Independent Problems in Pharmacology.* (1-3) I, II, S
Selected problems requiring literature and laboratory research are designed to meet specific needs of graduate minors in pharmacology and satisfy professional elective requirements for pharmacy students. Prereq: Permission of the instructor. May be repeated for a total of six credits. *Walton.*

486 *Poison Information and Control.* (3) I
A course designed to prepare individuals to organize and supervise (or gather data for) poison information centers. Subject matter includes: functions of poison information centers, sources for poison information for centers, type formulations of chemical specialties (household chemicals, cleansers, solvents, polishes, etc.), industrial chemicals, drugs and medicaments, cosmetics, etc., organizations and operation of centers and the role of cooperating specialists. Three lectures per week. Prereq: Permission of instructor. *Luckens.*

520 *Biotoxicology.* (3 or 5) I
A course concerned with the physiologic effects on man, animals, and plants of various toxic substances encountered in agriculture, industry, urban and rural environments, as well as the home. Lecture, 3 hours; lab, 4 hours (optional). Prereq: Permission of the instructor. *Luckens.*

530 *Biotoxicology.* (3 or 5) II
A continuation of MM 520. Lecture, three hours; lab, 4 hours (optional). Prereq: MM 520. *Luckens.*

540 *Environmental Toxicology and Occupational Hygiene.* (3) II
Recognition, evaluation and control of physical and toxicologic factors arising from industrial (including agricultural) environments, their influence on health and well-being of the worker and the community, and current practices in their elimination and/or mitigation. Lecture, three hours. *Luckens.*

Medicine

The profession of medicine is one that requires the selection of students who not only are competent intellectually but who possess a great capacity for compassion and a strong desire to be of service. Therefore, any selection process must be concerned with a candidate's total performance as a person. Not only must his academic ability be evaluated, but also his motivation, commitment, concern for and understanding of other people, and his ability to utilize effectively an intellectual environment and to resolve problems in a mature and forthright manner.

Evaluating these human qualities and estimating a candidate's potential is most difficult. However, it is essential for an Admissions Committee to do the best it can to select those candidates who appear most capable of becoming physicians skilled in the art, practice, and the humanity of medicine.

Preparation and Requirements for Application

Medical science and practice demand understanding of the physical, biological, psychological, cultural, and environmental factors and interrelationships which determine human behavior. Thus, in preparing for a medical education, preparation in the natural, behavioral, and social sciences, and in the humanities is essential. A candidate must demonstrate his capacity for advanced work not only by successfully completing upper division courses, but also where possible, by demonstrating his ability to work independently in a scholarly fashion. A consistently high level of academic performance in undergraduate college is important. Exceptions may be made for students whose performance in college shows impressive and continued improvement since a meaningful evaluation of student performance must consider many factors in addition to a grade point average.

Minimal course requirements are satisfied with two semesters of biological science, four semesters of chemistry, including organic chemistry, and two semesters of physics. Candidates also must complete at least one year of English with emphasis on communications skills such as reading, writing, and speaking. Courses in the natural sciences should include laboratory experience. Advanced work in mathematics as well as in the psychological and social sciences is highly recommended. Students also are encouraged to follow their special interests in philosophy, literature, or the fine arts. Courses in subjects such as human anatomy, medical biochemistry, medical bacteriology, and mammalian physiology are parts of the medical school curriculum and not only are not essential in premedical education, but are not advised.

While undergraduate students should contribute to the life of their college, membership in a large number of student organizations is not of importance in itself. It perhaps is more relevant for a student to belong to two or three organizations to whose programs he can make real contributions.

Procedure for Application

The University of Kentucky College of Medicine application should be completed and filed after July 1, 1967, but not later than January 15, 1968 for residents or December 15, 1967 for non-residents. All applicants should submit their applications as early in the admission period as possible.

In addition to filing a formal application with the College of Medicine, all applicants will be requested to submit official transcripts of their academic records and letters of recommendation from members of the faculty of their college or university. Detailed instructions are included with application materials. No application is acted upon until all necessary documents have been received.

Applicants are required to take the Medical College Admission Test. This test, for which there is a $15 fee, is given in May and October of each year. Its purpose is to measure general academic ability, general information and scientific knowledge. Students who are applying for admission to medical school are strongly advised to take the MCAT in the spring of

William R. Willard, B.S., M.D., Dr.P.H., D.Sc., is dean of the College of Medicine.

their junior year. Application blanks and information about this test usually are available from premedical advisers.

After a review of applications, the Committee on Admissions invites promising candidates to Lexington so that they may meet personally with members of the Committee. Interviews provide an opportunity for candidates to learn more about the school, its philosophy, and its programs and affords the Committee an opportunity to become acquainted with and assess the applicant.

Applications are reviewed as soon as possible after complete information is received. Applicants are informed periodically of the status of their applications and accepted applicants are notified promptly. In order to reserve a place in the class, successful applicants are required to make a deposit of $50 which is applied toward the first year's fees (See Acceptance Deposit under Financial Obligations). This deposit need not be made before January 15 for applicants accepted prior to this date, but must be paid promptly by applicants accepted after January 15. All acceptances for admission are contingent upon continued strong academic performance and demonstration of those personal qualities that led to selection. Admission also is contingent upon the passing of a physical examination conducted by the University of Kentucky Health Service.

Requests for further information or for application forms should be sent to:

Committee on Medical College Admissions
Medical Center
University of Kentucky
Lexington, Kentucky 40506

Acceptance Deposit

In order to reserve a place in the class, successful applicants are required to make a deposit of $50 by check or money order only which is applied toward the first year's tuition. This deposit is not refundable after January 15.

Tuition and Fees

Tuition and special fees for the College of Medicine total $600 a year for Kentucky residents and $1,280 for non-residents. Tuition and fees may be paid in four equal installments. The first installment is payable during registration week.

Other Expenses

Applicants should anticipate the following expenses in addition to tuition and fees:

a) The first two years, each student must have a binocular microscope approved by the College. A microscope may be purchased at an average cost of $400 to $500 or rented at the College of Medicine at an annual fee of $50.

b) The cost of necessary text books, supplies and instruments averages $250 a year.

c) Room and board may average $1,000 an academic year for single students.

d) Personal expenses including clothing, laundry, transportation, insurance, recreation and the like vary greatly but may average as much as $400 a year for single students.

National Board Examinations

In general, $2,300 is considered a minimum first year budget for a single resident student. A non-resident student must allow at least an additional $700 for higher tuition plus transportation. Very few students are able to maintain a minimum budget. Living costs are a little higher during the third and fourth years because irregular hours in clinical study necessitate paying more for food, services and local transportation. Married students with children should count on a minimum cost of $100 a month for living quarters, plus utilities, with considerably greater cost during the months when heat is required.

The College of Medicine requires that all of its students take the National Board Examinations as a requirement for graduation.

Part I, generally taken at the end of the second year of medical school, consists of a written examination in each of the following subjects: Anatomy, Physiology, Biochemistry, Pathology, Microbiology, and Pharmacology.

Part II, administered at the end of the fourth year, examines in Internal Medicine, Surgery, Obstetrics and Gynecology, Public Health and Preventive Medicine, Pediatrics, and Psychiatry.

Part III, a test of clinical competence, is usually taken during the latter part of the internship year.

As stated in the National Board of Medical Examiners, Bulletin of Information for January, 1966:

> The National Board of Medical Examiners is a voluntary and unofficial examining agency, the purpose of which is to prepare and to administer qualifying examinations of such high quality that legal agencies governing the practice of medicine within each state may, in their discretion, grant a license without further examination to those candidates who have successfully completed the examinations of the National Board and have met such other requirements as the National Board may establish for certification of its Diplomats.
>
> At present 50 of 55 licensing authorities in the States, the District of Columbia, and the territories of the United States accept the National Board Certificate as a suitable qualification for the practice of medicine.

Fees for the three part examination are as follows:

Registration	$ 5.00
Part I	20.00
Part II	25.00
Part III	50.00

Aside from its ultimate use for certification purposes, the results of the examinations may be employed by the faculty to assess each student's overall performance and serve in lieu of other examinations that the various college of medicine departments might administer.

Health Professions Student Loan Program

The Health Professions Student Loan Program was authorized by the Health Professions Educational Assistance Act of 1963, approved by Congress in September, 1963. The purpose is to increase opportunities for training physicians through the establishment of loan funds in medical schools from which low interest loans may be made to students who need such loans to pursue medical studies.

In brief, the law states that a loan may not exceed $2,500 for any student for any academic year; may be made only to a full-time student in good academic standing; shall be repayable over a 10-year period which begins three years after the student ceases to pursue a full-time course of study; shall bear interest on the unpaid balance beginning at the start of the 10-year repayment period, such interest to be 3% or the going federal rate at the time of the loan, whichever rate is greater.

Medical Education Loan Guarantee Program

The American Medical Association Education and Research Foundation states that their goal is "to help eliminate the financial barrier to medicine for all who are qualified and accepted by an approved training institution." All full-time medical students in good standing who are U.S. citizens may use this plan and borrow as much as $1,500 annually from September 1 to August 31. Up to a total of $10,000 may be borrowed over a period of seven years, but total educational loans from all sources may not exceed $15,000.

Applications may not be submitted more often than twice during the academic year and the minimum amount that will be loaned is $400. Loans must be in even multiples of $100. Simple interest of 5½% is in effect while the borrower is in training. No payment of interest is made during the training period and no compounding charge will be made by the bank for accrued interest during this period. When a student completes his training, the total amount he has borrowed plus all interest accrued to date becomes the face of a payoff note and there is maximum 10-year payout period allowed. Equal monthly payments must be maintained in retiring the total debt and interest is 6½% of the unpaid balance. Application forms and additional information are available in the Office of Student Services.

College of Medicine Loan Fund

Money for the College of Medicine Loan Fund has been provided by the following organizations:

The Kellogg Foundation
The Reeves Loan Fund
Texas Gas Transmission Corporation
Dr. Jack G. Webb Memorial Loan Fun
The Williamstown Rotary Loan Fund
The Women's Auxiliary, Fayette County Medical Society

Loans from this fund, which are processed through the University Loan Fund, carry 4% interest and must be repaid within seven years from the date of graduation. At present, because the fund is limited, a loan can be granted only to meet an emergency situation which could not have been foreseen in planning finances. The maximum available to an individual in any academic year is $250, although most loans will be for lesser amounts. In no case may a loan from this fund be requested as a basic part of a student's annual expenses. Short-term loans may be granted to cover a student's needs until other money is available. Application forms and counsel concerning these loans are available in the Office of Student Services at any time throughout the year.

Rural Kentucky Medical Scholarship Fund

Resident applicants who desire to apply for assistance through the Rural Kentucky Medical Scholarship Fund should write for information directly to the address given below. In general, students who receive aid from this Fund are obligated to practice in rural Kentucky for a number of years equal to the years of assistance received from the fund. Repayment and interest are explained in material received from the fund. It is possible to arrange to practice in critical areas of rural Kentucky and be relieved of the obligation to repay.

Rural Kentucky Medical Scholarship Fund
Kentucky State Medical Association
3532 Janet Avenue
Louisville, Kentucky 40205

Foundation Awards

Medical students may apply for grants from several foundations which have in the past included our students in their annual awards. Generally these awards go to students who have completed at least one year of medical school and, therefore, conditions are not outlined here. All pertinent information is given to students in attendance whenever applications are in order.

Scholarships

Limited scholarship aid is available. Awards are given to upperclassmen except for a few awards made

each year by the Admissions Committee at the time of acceptance to entering students with outstanding undergraduate records. Most scholarships are awarded on an annual basis and should not be anticipated as a continuous source of assistance after the first award has been received. Students in attendance may apply annually at an announced time in the spring. Award notices usually are sent out in July.

Contributors to the College of Medicine scholarship program are:

The American Medical Association—Education and Research Foundation
The Avalon Foundation
The Joseph Collins Foundation
The Ellis Fund
The Hubbell Fund
Ben Kilgore Memorial Fund
The Lexington Foundation for Medical Education and Research
Pfizer Laboratories Medical Scholarship
Reeves Scholarship Fund
The New York Life Insurance Company

Health Professions Scholarship Program

The Health Professions Scholarship Program which was enacted by Congress in 1965 states that the purpose of the scholarships is to enable talented students from low-income families to undertake the course of study required to become physicians. The scholarships are available only to those students who would not be able to enter school without such financial assistance. The amount of scholarship aid will depend each year upon the amount of money made available to the College of Medicine by the Public Health Service and by the number of students who qualify to participate in the program.

Outside Sources for Financial Aid

The Office of Student Services will assist any student who is attempting to secure a scholarship from an agency or foundation not connected with the College of Medicine (church group, lodge organization, etc.)

Student Employment

It is strongly recommended that students not work while in medical school. However, a student who has demonstrated that his academic performance is consistently satisfactory may work up to 10 hours a week, provided he secures permission from the Director of the Office of Student Services. Only in very unusual circumstances will an entering student be permitted to work before he has completed several months of the first year curriculum. Under no conditions should a student plan to support himself through parttime employment while in medical school. Neither the time requirements of the curriculum nor the rules of the medical faculty permit this. Students are reminded that as the curriculum is presently organized, only the summers following the first and second years are available for summer employment.

Medical Students House

The Foundation for Medical Education and Research was organized by a group of physicians in Lexington to maintain a house which provides free living quarters for 12 medical students. The students are selected from those who reside in a prescribed section in the eastern half of Kentucky and who require financial assistance to enter or remain in medical school. One of the students in residence functions as house manager. Cooking facilities are available for anyone who wishes to prepare his own meals. The Office of Student Services acts as liaison between the Foundation and students wishing to apply for residence in Medical Students House.

Office of Student Services

The Office of Student Services is concerned with assisting students to function as effectively as possible in the achievement of their educational goals. To this end, the Office administers programs relating to admissions, orientation, counseling, summer fellowships, financial aid and other student personnel functions. Since it has been delegated broad responsibilities by the University Registrar's Office, the Office also maintains student records and issues official transcripts.

Student Progress

The emphasis on close relationships with the faculty enables each student to assess as frequently as he wishes his effectiveness as a learner. Thus, students are well aware of the quality of their performance at any given time during the academic year. In June, each student's performance is individually considered by the faculty. If the performance is judged to include areas of serious weakness, the student may be required to take supplementary examinations, repeat portions of his work or he may be dropped. In general, a student must maintain a cumulative grade point average of at least 2.00 out of a possible 4.00 in order to be considered in good academic standing.

A student may be denied permission to continue at any time regardless of his academic standing if, in the opinion of the faculty, questions of character, or mental or physical health make such action mandatory. Fitness for the practice of medicine is the basic criterion on which all decisions relating to promotion or continuance are made.

MEDICAL TECHNOLOGY

FACULTY

Wellington Buel Stewart, chairman

Professors

Wellington Buel Stewart	M.D., Rochester, 1945
Rudolph J. Muelling, Jr.	M.D., Louisiana State, 1950
Daniel L. Weiss	M.D., Columbia, 1946

Associate Professors

Herbert Braunstein	M.D., Hahnemann, 1950
John Arthur Koepke	M.D., Wisconsin, 1956
Duane Tweeddale	M.D., Creighton, 1951

Assistant Professors

Louis D. Dubilier	M.D., Rochester, 1950
Mary Frances James	M.S., Alabama, 1961
Irene Roeckel	Dr.M.Sc., Heidelberg, 1948
Wilmier Talbert, Jr.	M.D., Washington (St. Louis), 1956

Instructor

Jennie Dee Seaton	M.S., Minnesota, 1963

The Medical Technology curriculum is a program of the School of Allied Health Professions of the Medical Center leading to a B.S. degree in Medical Technology.

The four-year program satisfies the University requirements for a B.S. degree, the educational requirements of the Council on Medical Education of the American Medical Association for Medical Technologists, and the prerequisites for national certification by the Registry of Medical Technologists (ASCP).

The Medical Technology curriculum provides breadth in general education through fulfillment of the General Studies Area requirements of the University, a strong foundation in the basic sciences essential to Medical Technology, and professionally oriented instruction and experience in the Department of Pathology of the College of Medicine and the Clinical Laboratories of the University Hospital. The curriculum prepares graduates not only for professional work in clinical, public health and research laboratories, but also provides an educational background for graduate studies in Medical Technology or its related fields.

Students desiring to follow a Medical Technology major will register for the first two years in the College of Arts and Sciences but will be assigned an advisor from the Department of Medical Technology.

CURRICULUM LEADING TO THE DEGREE OF B.S. IN MEDICAL TECHNOLOGY

Freshman Year

First Semester

	Crs.
ENG 101—Freshman Composition	3
CHE 102 or 110—General Chemistry	5
MA 113—Analytics and Calculus	4
*Area Studies	3
	15

Second Semester

ENG 102—Freshman Composition	3
CHE 104 or 112—General Chemistry	5
ZOO 100—General Zoology	4
*Area Studies	3
	15

Sophomore Year

First Semester

CHE 230 and 231—Organic Chemistry	5
Foreign Language	3
ANA 206	3
*Area Studies	3
**PAT 820—Introduction to Medical Technology I	1
	15

Second Semester

MB 200—Principles of Bacteriology	4
CHE 232 and 233—Organic Chemistry	5
Foreign Language	3
PGY 206—Elementary Physiology	3
*Area Studies	3
**PAT 821—Introduction to Medical Technology II	1
	19

Junior Year

First Semester

MB 500—Pathogenic Bacteriology	4
ZOO 534—Parasitology	4
PHY 211—General Elementary Physics	5
ZOO 513—General Histology	4
PAT 830—Medical Technology Seminar, I	1
	18

Second Semester

MB 550—Immunology and Serology	5
PHY 213—General Elementary Physics	5
CHE 226—Analytical Chemistry	5
PAT 831—Medical Technology Seminar, II	1
Elective	3
	19

Senior Year

A student must have a minimum of 97 credits (exclusive of Physical Education or Military Science), including the courses listed for the junior year or their equivalents, for admission to the senior year of professional instruction and a cumulative 2.0 point average.

Fifty-two (52) weeks of professional instruction and practicum are required at the University of Kentucky Medical Center to meet the requirements of the Board of Schools of Medical Technology (ASCP) and the Council on Medical Education of the American Medical Association. Senior classes start early in June of each year and cover a period of thirteen and one-half months. University scheduled holidays and between-semester vacations are allowed.

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* Choice between fulfillment of Areas VI, VII or VII. All must fulfill Area V.

** Not required but highly recommended for all students majoring in Medical Technology.

	Crs.
PAT 840—Medical Technology I, Introductory Methodology and Professional Orientation	8
PAT 841—Medical Technology II, Laboratory Practicum	3
PAT 851—Medical Technology III, Advanced Practicum	7
PAT 861—Medical Technology V, Advanced Practicum	7
PAT 871—Medical Technology VII, Advanced Pacticum	0
PAT 852—Medical Technologry IV, Clinical Pathology Lectures with Parasitology	3
PAT 862—Medical Technology VI, Clinical Pathology Lectures	3
PAT 872—Medical Technology VIII, Correlation & Review	0
	31

Course Descriptions

820 *Introduction to Medical Technology I.* (1)

Presentation of information about the profession of Medical Technology and the various phases of laboratory medicine involved in the training for and practice of the specialty. Taught by lectures, films, demonstrations and field trips. Prereq: None (Recommended in sophomore year but not required.)

821 *Introduction to Medical Technology II.* (1)

Continuation of PAT 820, with emphasis on the Medical Technologist as part of the health team and the types of career opportunities available to them. Prereq: None (Recommended in sophomore year but not required.)

830 *Medical Technology Seminar I.* (1)

An introduction to disease processes, their manifestations and related laboratory studies used in diagnosis and treatment. Taught by lectures. Prereq: None (Required in junior year, first semester.)

831 *Medical Technology Seminar II.* (1)

Continuation of introduction to disease processes and demonstration of the role of technologists in the practice of medicine. Taught by case presentations and/or lectures. Prereq: None (Required in junior year, second semester.)

840 *Medical Technology I—Introductory Methodology and Professional Orientation.* (8)

Introduction to basic methodology in clinical chemistry, blood banking, hematology, urinalysis, serology and miscellaneous clinical pathological studies, as well as professional orientation. Taught by lectures, demonstrations, visual aids, laboratory practice and problem solving sessions in 12 weeks June to August at start of senior year. Prereq: Admission to professional program for senior year.

841 *Medical Technology II—Laboratory Practicum.* (3)

Practical instruction and experience in six different areas, four of which are primarily bleeding services. On the bleeding services there will be supervised practice in the collection of venous and capillary blood for many types of specimen, e.g., blood cultures, serum for Chemistry and Serology, blood for transfusion, Microchemical studies and diluted for blood counts. Blood collecting experience will be with both ambulatory and hospitalized patients and individuals of all ages from the newborn to the senile. A period will be spent in serum processing for Chemistry and one in electrophoretic analysis of plasma proteins and hemoglobins. Taught by demonstration and supervised practice in 12 weeks June to August at start of senior year. Prereq: Admission to professional program for senior year.

The following three courses are taught in the fall and spring semesters and 10 weeks May to July after the senior year:

851 *Medical Technology III—Advanced Practicum.* (7)

861 *Medical Technology V—Advanced Practicum.* (7)

871 *Medical Technology VII—Advanced Practicum.* (0)

For practical professional instruction, Medical Technology students are rotated individually through seven training disciplines. The order of rotation will differ but in the combined period of time allocated for the above three courses, each will have completed the same assignments. The seven disciplines are: (a) Microbiology (Bacteriology, Mycology and Parasitology); (b) Immunohematology and Blood Banking; (c) Clinical Chemistry; (d) Hematology; (e) Histologic Technique; (f) Urinalysis and Miscellaneous Clinical Pathology; and (g) Serology. Taught by demonstrations, reading assignments, supervised practice and discussion.

PAT 851: Prereq: PAT 840 and 841

PAT 861: Prereq: PAT 840, 841, 851, 852

PAT 871: Prereq: PAT 840, 841, 851, 852, 861, 862

In the same way, the following three courses are taught in the fall, spring and summer following the senior year:

852 *Medical Technology IV—Clinical Pathology Lectures.* (3)

Lectures in Immunohematology and Blood Banking Problems, Clinical Chemistry, Clinical Hematology, and Clinical Parasitology. Taught by lectures, audio-visual aids and laboratory studies of slides and preserved specimens in Parasitology. Prereq: PAT 840 and PAT 841.

862 *Medical Technology VI—Clinical Pathology Lectures.* (3)

Lectures in Histologic Technique, Medical Bacteriology, Virology, and Mycology and the Urinary System and Urine in Disease. Taught by lecture demonstrations and use of audio-visual aids. Prereq: PAT 840 and PAT 841.

872 *Medical Technology VIII—Correlation and Review.* (0)

A period of correlation and review during which students will attend seminars, grand rounds and other sessions at the Medical Center pertinent to laboratory medicine, correlation seminars based on case studies and a series of directed review sessions. Prereq: PAT 840, PAT 841, PAT 851, PAT 852, PAT 861, PAT 862.

Nursing

FACULTY

Marcia A. Dake, dean

Professors

Marcia A. Dake	Ed.D., Columbia, 1958
Hessel H. Flitter	Ed.D., Pennsylvania, 1958

Professor of Clinical Nursing

Loretta Denman	Ph.D., Ohio State, 1962

Associate Professors of Clinical Nursing

Jean Hayter	Ed.D., Columbia, 1961
Virginia Lane	M.A., Chicago, 1950
L. Mae McPhetridge	M.A., Columbia, 1956
Lois J. Merrill	M.S., Colorado, 1959
Muriel A. Poulin	M.S., Colorado, 1960

Assistant Professors

Ruth Bishop	M.A., Columbia, 1962
Ernest Denny	M.A., Boston, 1965
Mary C. Dowe	M.N., Emory, 1961
Jerry Hargardine Fine	M.S., Cincinnati, 1963
Barbara L. Fox	M.S., Western Reserve, 1963
Louise Jimm	M.S., Western Reserve, 1959

Instructors

Ruth D. Berry	M.S.N., Wayne, 1964
Mae Frazier	M.P.H., Michigan, 1960
Anna E. Groff	M.S., Colorado, 1963
Ella K. Harmon	M.P.H., Minnesota, 1963
Elizabeth S. Hellebusch	B.S.N., Nazareth, 1957
Dorothy B. Sanders	M.A., Syracuse, 1963
Ruth I. Stoll	M.S., Wayne, 1966

Marcia A. Dake, M.A., Ed.D., is Dean of the College of Nursing.

Teaching Associates of Clinical Nursing

Carolyn Hooper	M.S.N., Pennsylvania, 1962
Delores E. Johnson	M.S., Minnesota, 1966
Doris O'Connor	B.S.N., Kentucky, 1963

Associate Degree Nursing Education Coordinator

Marie L. Piekarski	M.S., Pennsylvania, 1957

Admission

Requirements and process for admission to the College of Nursing for students desiring to enter directly from high school and for registered nurses (graduates of state approved schools of nursing) are in the process of revision.

All persons interested in pursuing work toward the degree Bachelor of Science in Nursing at the University of Kentucky are advised to contact the Dean of the College of Nursing for up-to-date information.

Curriculum

Persons interested in pursuing the University of Kentucky program leading to the degree Bachelor of Science in Nursing are strongly advised to make initial contact directly with the College of Nursing for accurate up-to-date information. This contact is particularly essential for individuals planning to complete any college course work prior to entering the College of Nursing. Accurate and up-to-date information will be supplied from the College of Nursing.

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 54 students per year. In addition to the dental curriculum, the College also recognizes its responsibility for the training of auxiliary personnel.

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

Dean

Alvin Leonard Morris
D.D.S., Michigan, 1951; Ph.D., Rochester, 1957

Associate Dean

Harry M. Bohannan
D.M.D., Louisville, 1953; M.S.D., Pennsylvania, 1961

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 particularly well-qualified out-of-state candidates will be admitted each year, and 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.

COMMUNITY DENTISTRY

FACULTY

Wesley O. Young, chairman

Professor

Wesley O. Young
D.M.D., Oregon, 1947; M.P.H., Michigan, 1951

Associate Professor

Jack D. Zwemer
D.D.S., Illinois, 1946; M.S., 1951; Ph.D., 1954

Assistant Professor

Arlon G. Podshadley
D.D.S., St. Louis, 1951; M.S.D., 1964

Instructors

Sherwin R. Fishman
D.D.S., Michigan, 1956; M.P.H., 1964
Edith R. Sanders — M.P.H., Michigan, 1964

Visiting Instructor

Edward R. Gernert
D.M.D., Louisville, 1944; M.P.H., Harvard, 1957

The Department of Community Dentistry is concerned primarily with the non-clinical aspects of the students' educational experience which will help them to be effective practitioners and active participants in the activities of their communities. This general objective is shared by the entire College.

The primary emphasis in teaching is on:

1. current knowledge about preventing dental disease and how the dentist can apply this knowledge for patients in his office and for the total community;
2. knowledge and skill about community organization and structure which will help newly graduated dentists to choose a practice location and function effectively as a member of the community;
3. the skills necessary to talk with patients and educate them about the importance of dental health;
4. the practical problems the newly graduated dentist will have in establishing and managing an effective dental practice.

The Department of Community Dentistry has courses in the first, third and fourth years in the dental school curriculum. Small group discussions are used throughout these courses so that every student may participate in the discussions. Trips are made to schools and other institutions to see at first hand the dental problems that exist in large groups of people. Visits are made to dental offices to see the practical problems of managing an office. During the third year, a five day visit is made to a community in Kentucky to study personally the total health and social problems of the community and how the dentist can participate as a community leader to help solve these problems.

These experiences are designed to help the student understand himself, his patients, and his community so that he may better appreciate his responsibilities to his family, his community, and his profession.

RESTORATIVE DENTISTRY

FACULTY

Gordon J. Christensen, chairman

Professors

Michael T. Romano — D.D.S., Temple, 1941
Raymond C. Bard — Ph.D., Indiana, 1949

Associate Professor

Harry C. Lundeen — D.D.S., Minnesota, 1952

Assistant Professors

Arthur W. Aplin D.M.D., Oregon, 1955; M.S.D., 1964
Gordon J. Christensen
D.D.S., U.S.C., 1960; M.S.D., 1963, Washington
Walter E. Dilts — D.M.D., Louisville, 1949
William K. Elwood
D.D.S., Ohio State, 1957; Ph.D., Wayne State, 1965
William L. Pogue
D.D.S., St. Louis, 1951; M.S.D., 1966
Clair D. Reitz — D.D.S., Pennsylvania, 1955
Walter R. Teteruck
D.D.S., McGill, 1961; M.S.D., Indiana, 1963

Donald A. Welk
D.D.S., Washington, 1962; M.S.D., 1965
Robert M. Woods D.D.S., Ohio State, 1960

Instructors

John W. Coughlin D.D.S., Loyola (Chicago), 1963; M.S.D., Washington, 1965
Warren E. Fischer D.M.D., Louisville, 1952
Gaines E. Huey D.D.S., Maryland, 1954
Leonard N. Johnson Ph.D., Michigan, 1965
Laban T. McClure D.D.S., Ohio State, 1944
Robert H. West D.M.D., Kentucky, 1966
John W. Wittrock D.D.S., Missouri, 1960

The purpose of the Department of Restorative Dentistry is to develop dental practitioners who will preserve and maintain the natural dentition of man by patient education, therapeutics and the restoration and replacement of teeth. This goal is accomplished in the following ways:

(1) by imparting to students the relationship between general health, diet, oral hygiene, drug therapy, and other factors, and the prevalence of dental caries, trauma, erosion, attrition, abrasion, and other pathologic dental conditions, and

(2) by helping students develop the clinical ability to restore or replace effectively the pathologically affected or missing dental tissues to anatomic form and proper function.

The courses in Restorative Dentistry are designed to correlate the basic sciences with the clinical sciences. Therefore, unlike the practice at many dental colleges, students here treat patients during their first year in dental school. An increasing quantity of patient treatment is accomplished by each student as he continues through the four years.

First Year Courses

1. Restorative Dentistry—The prevention, diagnosis and treatment of diseases of individual teeth. Students treat patients during about one-fifth of this course.
2. Dental Morphology—The anatomy of the human teeth.
3. Principles of Occlusion—The methods by which natural teeth chew food.
4. Dental Physical Sciences—The physical characteristics of materials used in dentistry and the relationships of these materials to oral tissues.

Second Year Courses

1. Restorative Dentistry—Advanced treatment of individual teeth, and treatment of missing posterior teeth with fixed appliances or "bridges." Students treat patients during about one-third of this course.
2. Occlusion—This course, which is taught conjointly with the Department of Prosthodontics, involves the methods by which artificial teeth or dentures chew food.

Third Year Courses

1. Restorative Dentistry—The prevention, diagnosis and treatrior teeth with fixed appliances or "bridges" and the esthetic restoration of diseased, individual anterior teeth.
2. Restorative Dentistry, Clinic—Clinical application of previously taught preventive and treatment concepts.
3. Occlusion—Diagnosis and treatment of disharmonies in the way natural teeth chew food.

Fourth Year Courses

1. Restorative Dentistry—Advanced clinical application of the principles of Restorative Dentistry. Students are responsible for the complete oral treatment of several patients.
2. Occlusion—Advanced literature review of pertinent subjects related to the physiology and anatomy of the chewing mechanism.

ORAL DIAGNOSIS AND ORAL MEDICINE

FACULTY

Stephen F. Dachi, chairman

Professor

Alvin L. Morris
D.D.S., Michigan, 1951; Ph.D., Rochester, 1957

Associate Professor

Stephen F. Dachi
D.M.D., Oregon, 1956; M.S.D., Indiana, 1961

Assistant Professors

Richard J. Burch D.D.S., Washington, 1931
Robert H. Johnson
D.D.S., McGill, 1962; M.S.D., Indiana, 1964
James W. Little D.M.D., Oregon, 1958; M.S., 1963

Instructors

Richard C. Bartlett D.M.D., Louisville, 1952
Lawrence R. Bean D.D.S., Ohio State, 1961
W. Spalding Green, Jr. D.M.D., Louisville, 1962
James C. Murphy D.M.D., Louisville, 1962

The didactic program of the Department of Oral Diagnosis and Oral Medicine consists of formal courses in each of the first three years, as well as clinical conferences, seminars, and hospital assignments during the third and fourth years.

The objectives of the first-year course are to introduce the student to clinical dentistry, expose him to early contact with patients, and to teach him certain diagnostic procedures. In addition, the relations of oral health to general health and the role of the dentist as a member of the hospital team are stressed. The student rotates through the oral diagnosis clinic, the radiology clinic, and the hospital dental service.

The second-year course covers subjects in the field of oral diagnosis, such as diagnosis of dental pain, diagnosis of soft tissue lesions, and principles of treatment planning. Oral Pathology and Oral Roentgenology also constitute an important portion of this conjoint course.

The third-year course represents a conjoint effort among the departments of Oral Diagnosis, Oral Pathology, Internal Medicine, and Psychiatry. It incorpo-

rates diverse types of material into a unified activity and stresses the relation of systemic disease to oral disease as well as the influence of emotional problems on management of dental patients.

The clinical conferences, seminars, and hospital assignments of the fourth year are designed to aid the student in refining his techniques in diagnosis, treatment planning, case presentation and patient management.

ORAL PATHOLOGY

FACULTY

Sheldon Rovin, chairman

Professor

Donald E. Flieder D.D.S., Iowa, 1947; M.S., 1954

Associate Professor

Sheldon Rovin D.D.S., Michigan, 1957, M.S., 1960

Assistant Professors

William John Begue Ph.D., Minnesota, 1963

Harmon C. Bickley, Jr.
D.D.S., Michigan, 1959; Ph.D., Rochester, 1963

Ernest R. Lalonde
D.D.S., Buffalo, 1962; M.S.D., St. Louis, 1964

The major objectives of the Department of Oral Pathology are to give the student an understanding of the fundamentals of oral disease and to teach how to approach the diagnosis of these diseases. The relationship of oral disease to systemic disease is emphasized.

Formal contact with the students occurs during the second, third and fourth years. Individual teaching with small groups in laboratories and seminars receives considerable emphasis.

ORAL SURGERY

FACULTY

Emmett R. Costich, chairman

Professor

Emmett R. Costich
D.D.S., Pennsylvania, 1945; Ph.D., Rochester, 1954

Associate Professor

Richard G. Topazian D.D.S., McGill University, 1955

Assistant Professor

John A. Capodanno
D.D.S., Temple, 1959; M.S., Michigan, 1963

Instructors

Joe Wilson Daugherty D.M.D., Louisville, 1951

William Caden Kranz D.M.D., Louisville, 1951

Oral Surgery is that part of dental practice which deals with the diagnosis, the surgical and adjunctive treatment of the diseases, injuries and defects of the human jaws, and associated structures.

The students receive a background of fundamental knowledge and technique for the clinical problems they will treat in their future general practice of dentistry. Such problems include the removal of teeth, surgical modification of the soft tissues to facilitate the placement of dentures or other prosthetic restorations, the treatment of severe infections and abscesses, the removal of tissue for cancer detection, emergency care of fractured jaws, and other operations.

The student is prepared to meet specific problems in his future practice. He is also taught to detect, appreciate, and appropriately refer to the specialist in oral surgery, those problems which in his judgement lie beyond his operating range. Some students with strong interests are encouraged to further work in oral surgery after they have received their dental degree. This program requires three years beyond dental school. Such a program is offered by the Oral Surgery Department.

ORTHODONTICS

FACULTY

William R. Proffit, chairman

Assistant Professor

William R. Proffit D.D.S., N. Carolina, 1959; Ph.D., Medical College of Va., 1962; M.S.D., Wash., 1963

Louis A. Norton D.M.D., Harvard, 1962

Orthodontics is the area of clinical dentistry which deals with malocclusion (failure of the teeth to properly bite together). The Department of Orthodontics participates in teaching growth and development to first and second year dental students. Preventive and interceptive orthodontics is emphasized in lectures and clinical teaching for third and fourth year students.

PEDODONTICS

FACULTY

John R. Mink, chairman

Professor

John R. Mink D.D.S., Indiana, 1956; M.S.D., 1961

Assistant Professors

Ian C. Bennett B.D.S., Liverpool, 1956; D.D.S., Toronto, 1959; M.S.D., Washington, 1964

Milton E. Gellin D.D.S., Western Reserve, 1946

Robert Henry Spedding
D.D.S., Indiana, 1960; M.S.D., 1963

Instructor

Clem Hill D.M.D., Louisville, 1949

Pedodontics is that phase of dentistry which is primarily concerned with the oral health of both preschool and school age children. Since oral health is intimately

related to total health, it is imperative that each dental student develops an understanding of the normal physical, mental and social development of children.

In order to provide successful dental services for children, the student must be familiar with the unique physical, mental, and social activities of each age group, and he must be able to recognize traits considered to be uncharacteristic for each group. Once the student is familiar with these growth and development patterns, he should be able to evaluate each child's behavior and thus successfully manage the child in the dental environment.

Each student must demonstrate an ability to diagnose and treat, if possible, the abnormal changes of the oral soft and hard tissues. He must also demonstrate that he can provide instruction to the child and parent in the use of preventive measures that are necessary to maintain an excellent level of oral health.

In the first year, the student is exposed to anatomy of the primary dentition in a dental morphology course. Various preventive principles are introduced and discussed in a preventive dentistry course and the principles of growth and development of the child are presented with special emphasis placed on extra- and intra-oral structures.

In the second year, the student learns to perform several technical procedures in laboratory exercises conducted in the clinic. Various clinical procedures for the child patient are presented in lecture, slide and television demonstrations, and each student treats carefully selected children in the clinic.

During the third year, the student attends one-hour weekly lectures and in the clinic provides dental services for children of all ages. Once again during the year preventive dentistry is stressed.

Although no formal lectures are offered during the fourth year, at specified times, the students meet with the Pedodontic faculty to discuss problems that they have encountered during their extensive clinical activity. These sessions enable the students to exchange ideas and provide a mechanism of advancement in the skills related to dentistry for children.

Since the majority of new dentists in private practice treat a relatively large number of children in their dental offices, it is imperative that high quality dental services be made available. It is the responsibility of the Department of Pedodontics to provide its graduates with the knowledge and skill to perform this quality of dentistry for their younger patients.

PERIODONTICS AND ENDODONTICS

FACULTY

Stanley R. Saxe, chairman

Professor

Harry M. Bohannan
D.M.D., Louisville, 1953; M.S.D., Pennsylvania, 1961

Associate Professors

Stanley R. Saxe
D.M.D., Harvard, 1958; M.S.D., Washington, 1960
Clifford Ochsenbein — D.D.S., Baylor, 1945

Associate Clinical Professor

Raymond G. Luebke
D.D.S., Michigan, 1951; M.S.D., Washington, 1964

Assistant Professors

Robert K. Davis — D.D.S., Western Reserve, 1948
Paul R. Courant — D.M.D., Harvard, 1962

Instructors

Donald K. Carman — D.M.D., Louisville, 1955
Harold E. Hamburg
D.D.S., Indiana, 1963; M.S.D., 1965
Theodore S. Sobkov — D.D.S., Maryland, 1962
James G. Burch
D.D.S., Ohio State, 1962; M.S.C., Ohio State, 1966
Jack Hutton — D.M.D., Louisville, 1953
William H. Tudor — D.M.D., Louisville, 1962
Andrew T. Polites — D.M.D., Louisville, 1955
John Petrich — D.D.S., Loyola, 1959
David Vaughn — D.M.D., Louisville, 1962

Acting Director of Endodontics

Thomas P. Mullaney
D.D.S., Loyola, 1961; M.S.D., Indiana, 1965

The objective of both Periodontics and Endodontics is the preservation of the natural dentition in health and comfort. Periodontics is concerned with the diseases of the supporting soft and hard tissues of the teeth. Endodontics is concerned with the diseases of the dental pulp, within the hard structure of the tooth.

In both disciplines the application of treatment procedures and techniques are based on the basic sciences, especially anatomy, pathology, and microbiology.

Periodontics begins in the first year of the curriculum, stressing the concept of prevention of dental disease. This concept is applied to the patients seen during the first year together with the treatment of simple inflammatory disorders of the supporting soft tissues. In the second year, basic surgical techniques are learned and applied. As part of total dental care for a patient the student becomes grounded in advanced surgical techniques during the third year of the curriculum. The fourth year of school allows the student to gain experience in providing periodontal therapy in conjunction with any other dental needs of the patient.

Endodontics begins in the third year curriculum by teaching basic instrumentation and allowing the student to progress to the actual treatment of patients.

The fourth year provides the student with advanced clinical experience in the treatment and preservation of teeth which would otherwise be lost due to disease.

PROSTHODONTICS

FACULTY

Davis Henderson, chairman

Assistant Professors

Davis Henderson — B.S.D., D.D.S., Northwestern, 1939
Marvin R. Lutes — D.M.D., Louisville, 1949

Instructors

Charles W. Ellinger — D.D.S., Ohio State, 1959; M.Sc., 1965
Arthur O. Rahn — D.D.S., Marquette, 1958
Karl W. Lange — D.M.D., Louisville, 1960
Aleck N. Begley — D.M.D., Louisville, 1948
Robert C. Wesley — D.M.D., Louisville, 1954

The Department of Prosthodontics includes both Complete and Removable Partial Dentures and Maxillo-facial restorations. Complete dentures are those restorations that are made for patients who have lost all of their natural teeth. Removable Partial Dentures are made for patients who have some of their own natural teeth remaining to which these restorations are attached. Maxillo-facial restorations are made for patients who have gross defects of oral and associated structures and facial structures. This part of Prosthodontics often involves the artificial replacement of missing eyes, ears, noses, cheeks, and jaws.

Prosthodontics is a biomechanical science in that a combined knowledge of the biology of the tissues of the oral cavity and mechanical principles as related to stress must be applied. The appearance of the patient, his ability to masticate, and his relationship to society are all greatly affected by this phase of dentistry.

Courses

First Year

ANA 531, *Combined Gross and Neuroanatomy.* (6)
ANA 532, *Combined Histology and Embryology.* (4)
ANA 533, *Oral Histology.* (2)
BSC 810, *Concepts of Dental Behavioral Science.* (2)
Community Dentistry 810, *Practice Management.* (1)
Community Dentistry 811, *Dental Literature.* (1)
CDS 810, *Preventive Dentistry I.* (1)
CDS 811, *Dental Morphology.* (2)
CDS 812, *Principles of Occlusion.* (3)
CDS 813, *Preclinical Dental Physical Sciences.* (2)
ODM 810, *Diagnosis.* (3)
PEN 810, *Dental Practice (Periodontics)* (3)

Second Year

BCH 501, *Biochemistry for Dental Students.* (6)
CD 820, *History of Dentistry.* (0)
CDS 820, *Growth and Development.* (2)
CDS 821, *Anesthesiology.* (1)
CDS 822, *Occlusion-Development of Articular Patterns* (2)
ODM 820, *Oral Diagnosis and Oral Pathology.* (3)
OS 820, *Oral Surgery I.* (1)
PDO 820, *Pedodontics I.* (2)
PAT 324, *Human Pathology* (4)
PEN 820, *Peridontics I.* (3)
PGY 502,503, *Principles of Physiology.* (5)
PR 810, *Preclinical Removable Partial Prosthodontics* (2)
PR 820, *Removable Partial Prosthodontics I.* (2)
PR 821, *Complete Denture Prosthodontics I.* (4)
RSD 810, *Restorative Dentistry.* (4)
RSD 811, *Preclinical Fixed Prosthodontics.* (2)
RSD 820, *Operative Dentistry.* (4)
RSD 821, *Preclinical Fixed Partial Prosthodontics.* (2)

Third Year

CBI 831, *Cell Biology for Dental Students.* (4)
CD 830, *The Environment of Dental Practice.* (2)
CDS 830, *Preventive Dentistry II.* (1)
CDS 832, *Occlusion—Diagnosis and Treatment of Occlusal Disharmonies.* (1)
CDS 835, *Principles of Medicine and Pathology.* (5)
ODM 830, *Clinical Oral Diagnosis.* (2)
OS 830, *Oral Surgery II.* (2)
ORT 830, *Introduction to Orthodontics.* (1)
PDO 830, *Pedodontics II.* (3)
PEN 830, *Periodontics II.* (3)
PEN 835, *Endodontics I.* (2)
PEN 836, *Endodontics II.* (2)
PHA 831, *Fundamental Pharmacodynamics.* (2)
PR 830, *Removable Partial Prosthodontics II.* (3)
PR 831, *Complete Denture Prosthodontics II.* (3)
RSD 830, *Dental Practice (Operative).* (3)

RSD 831, *Introduction to Esthetic Fixed Restorations* (3)

Fourth Year

CD 840, *Practice Management II.* (2)

CDS 842, *Applied Oral Physiology (Occlusions)* (2)

CDS 843, *Applied Oral Biology.* (1)

ODM 840, *Clinical Oral Diagnosis II.* (1)

ODM 841, *Fourth Year Conferences.* (2)

ORT 840, *Clinical Orthodontics.* (3)

OS 840, *Clinical Oral Surgery.* (3)

PDO 840, *Clinical Pedodontics.* (4)

PEN 840, *Clinical Periodontics.* (4)

PEN 845, *Clinical Endodontics.* (3)

PHA 840, *Pharmacology & Therapeutics for Dental Students.* (2)

PR 840, *Clinical Prosthodontics.* (4)

RSD 840, *Clinical Operative Dentistry.* (4)

RSD 841, *Clinical Fixed Prosthodontics.* (4)

Architecture

ARCHITECTURE is the art of making spaces and structures for human activities. Architecture shapes and gives meaning to the environment; it is the architecture of a civilization which ultimately remains as a symbol to its spirit and aspirations, and as a testament to the lives of its people.

The traditional professional duties of the architect are to plan, design and supervise the construction of buildings. The contemporary concern for creation of a more orderly and humane environment has broadened the architect's role to include a professional responsibility in the development of regional and community plans designed to achieve a balance of economic growth and human viability.

The objective of the School of Architecture and its curriculum is to promote the development of those qualities of professional skill, competence and social awareness which the architect must command if architecture is to enhance contemporary life and remain as an enduring and valid expression of our society.

The Curriculum

A five year program in Architecture at the University of Kentucky was established in September, 1960, to meet the increasing need for professionally trained persons in the architectural profession and building industry of the Commonwealth of Kentucky and the nation. The School is fully accredited by the National Architectural Accreditation Board.

The instructional program requires the successful completion of a minimum of ten semesters of work (166 semester credits) for the degree, Bachelor of Architecture. The curriculum is divided into two divisions. The lower division of two years will allow the student to meet the general requirements of the University with appropriate counselling from the faculty of the School of Architecture. Following the successful completion of Lower Division studies in the College of Arts and Sciences, the student may be admitted to the final three years, Professional Studies in the School of Architecture. All students admitted to the University, and those who transfer from other colleges and universities who have not completed the Lower Division requirements, will register in the College of Arts and Sciences until all requirements are met.

Prior to admission to the Professional Studies Program students must complete the course in Basic Architecture (ARC 201 and 202) normally taken in their second collegiate year. Transfer students arriving at the University after completing lower division requirements elsewhere will be given an opportunity to receive credit for Basic Architecture by taking an equivalent course offered during the summer session.

A component of general studies is required of all students in the curriculum. Requirements in the physical sciences and mathematics are satisfied by completing the Lower Division program. In addition, each student must complete a minimum of eighteen semester credits chosen from at least three of the following general studies areas: foreign language, humanities, history, social sciences, and behavioral sciences. At least one general studies component and at least one course in each of the other two general studies components must be completed prior to admission to the School of Architecture. Students will obtain approval of their academic advisor for the general studies sequence.

The first two years of the Professional Studies Program will be essentially the same for all students in the School and will offer a broad professional core curriculum with additional opportunities for elective or general studies. This core program consists essentially of three concurrent sequences in architectural studio, architectural history, and systems, conceived as a unity of experiences encompassing the skills, concepts, and principles demanded in the solution of contemporary architectural problems.

The final year of professional study will allow each student to expand his individual interests in preparation for an advanced degree or architectural internship leading to licensure. The elective studies component during the Professional Studies Program is designed to assist the student in preparing for specialized interests and at the same time to extend the opportunities in-

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Charles P. Graves, B.S., B.Arch., M.Arch., is Dean of the School of Architecture.

itiated in the general studies component. The professional elective component is designed to allow greater opportunities for individual interests of the student in architectural subjects at the advanced level and to reinforce the selected topical studies offered in the advanced architectural problems sequence.

The curriculum outlined below will apply only to all new and transfer students. Others may secure information from the office of the Dean.

FACULTY

Charles P. Graves, dean

Professor

Charles P. Graves — M.Arch., Pennsylvania, 1957

Associate Professors

Herbert Greene — B.Arch., Oklahoma, 1952
John W. Hill — M.Arch., Pennsylvania, 1959
James Philip Noffsinger — D.Arch., Catholic University of America, 1955
James A. Prestridge — M.S.Arch., Columbia, 1949; M.C.P., Pennsylvania, 1964

Lecturers

Vito A. Girone — Diploma in Architecture and City Planning, Cranbrook Academy of Art, 1940
Donald Q. Wallace — B.S.C.E., Kentucky, 1959
Woodrow W. Wilkins — M.S.Arch., Columbia, 1953

Assistant Professors

Clyde R. Carpenter — B.Arch., Pennsylvania, 1962
Charles F. Davis, III — M.Arch., Massachusetts Institute of Technology, 1966
Richard S. Levine — M.Arch., Rensselaer Polytechnic Institute, 1963
Christopher L. Risher — M.S.Arch., Columbia, 1966

Instructors

Stephen C. Deger — M.S.Arch. Eng., Illinois, 1966
John D. Ray, Jr. — M.Arch., Cranbrook Academy, 1966
Eldridge M. Wells, III — B.F.A., Auburn, 1965

Visiting Lecturers and Critics

D. Lyle Aten — B.S.L.A., Illinois, 1951
Joseph H. Clark — M.L.A., Harvard, 1961; Diploma, Royal Academy, Copenhagen, 1962
Klaus Dunker — Diploma in Architecture, Technische Hochschule, Hanover, 1962
William A. Gray — M.Arch., Pennsylvania, 1949
Pedro L. Koe-Krompecher — D. RR. POL., "Erzsbet" University, Pecs, 1942; Diploma in Arch., "Jozsef" Techn. U., Budapest, 1926
James L. Leggett, Jr. — Ph.D., Purdue, 1953
Jasper D. Ward — B.Arch., Massachusetts Institute of Technology, 1948

LOWER DIVISION STUDIES

Students admitted to the University directly from high school, and those who transfer from other Colleges and Universities who have not completed the Lower Division requirements listed below, will register in the College of Arts and Sciences until all requirements are met. Each student will be assigned an academic advisor from the School of Architecture to assist in programming an appropriate selection of courses to fulfill the professional degree requirements.

Lower Division—Year One

	Crs.
ENG 101 and 102—English Composition	6
MA 122 and 222—Fundamental Concepts of Mathematics	6
Elective or General Studies Component	18
	30

Lower Division—Year Two

ARC 201 and 202—Basic Architectural Studies	10
PHY 151 and 152—Introduction to Physics	6
Elective or General Studies Component	18
	34

PROFESSIONAL STUDIES

Students who have successfully completed a minimum of sixty (60) semester credits including the requirements in English, Mathematics, Physics and the Elective Studies Components and who have successfully completed the requirement in Architectural Studies may be admitted to the School of Architecture and the Professional Studies program upon approval of the Admissions Committee of the School of Architecture. (Equivalent work in the Architectural Studies requirement at other institutions will be determined only after submission of a portfolio.)

Professional Studies—Year One

	Crs.
ARC 810 and 811—Architectural Studio	8
ARC 820 and 821—History of Architecture	6
ARC 830 and 831—Systems	8
ARC 840—Theories of Urban Form	3
ARC 850—Professional Practice	3
Elective or General Studies Component	6
	34

Professional Studies—Year Two

ARC 812 and 813—Architectural Studio	8
ARC 822 and 823—History of Architecture	6
ARC 832 and 833—Systems	8
Elective or General Studies Component	12
	34

Professional Studies—Year Three

ARC 910 and 911—Advanced Architectural Problems	10
Professional Elective Component	24
	34

CREDITS REQUIRED FOR BACHELOR OF ARCHITECTURE DEGREE

Professional and Related	100
General Studies	30
Electives	36
Total	166

THE FACULTY

The full-time faculty is assisted by visiting critics and visiting lecturers. The faculty is well qualified by diverse experience and formal training, maintaining a vital and continued relationship with the profession through practice and research. Staff members from other disciplines on campus offer several courses in the program.

During each of several recent years, a visiting foreign lecturer has been in residence at the School of Architecture for an extended period to teach in the design studios and to offer special elective courses in his particular field of interest. It is anticipated that this program will be continued as a vital part of the educational and teaching programs of the school.

PHYSICAL PLANT

The School of Architecture is located in Pence Hall, just south of the main library, on the central campus. The newly renovated building contains studio-drafting rooms, seminar and classrooms, a large lecture theatre, gallery and jury space, faculty offices, an architectural reference library, dark room facilities and a model shop.

SPECIAL ACTIVITIES

The School of Architecture sponsors a program of visiting lecturers which brings architects and related professionals of wide reputation to the campus for public lectures and to work in the design studios for periods ranging from several days to several weeks or longer.

The school gallery features a series of exhibitions of contemporary buildings, graphic art, paintings, sculpture and drawings.

STUDENT ACTIVITIES

A student chapter of the American Institute of Architects has been chartered at the University of Kentucky. This student professional society participates in the many programs of the school and sponsors several professional and social events during the year, including a required annual field trip to an urban center for advanced students and a beaux-arts ball. The Society also provides liaison with the state and national professional societies and contact with other schools of architecture.

FIELD TRIP

As a part of the requirements for the Bachelor of Architecture degree, each student must complete a minimum of three field trips offered annually by the School of Architecture. One field trip must be taken concurrent with ARC 202 and two field trips must be taken during the third through the fifth year of study. The field trips visit major urban centers to study selected works of architecture and of the related professions of landscape architecture and planning. A laboratory fee will be charged for the field trips to cover transportation and lodging expenses.

SCHOLARSHIPS AND PRIZES

Several scholarships are presented each year to qualified students in the School of Architecture. Information on scholarships and scholarship applications may be obtained by writing to the Director, Office of School Relations, University of Kentucky, Lexington, Kentucky 40506.

Several prizes and awards are given each year to outstanding students in architectural design, architectural history and academic courses.

FEES

In addition to University fees, students registered in the School of Architecture are required to pay a studio fee of $1.50 each semester and a fee of $75.00 for each of the two required field trips to cover costs of lodging and transportation. The latter is due at the beginning of the two spring semesters in which the student is registered for the field trip courses. In addition, students registered in ARC 202 are required to pay a $15.00 fee for the field trip scheduled concurrent with it.

SUMMER SESSION

Summer courses in Professional Studies are not generally offered. However, in order to accommodate transfer students and entering students who have completed two years in a Community College (including credit in ART 110 or ART 130), ARC 203, Basic Architecture, will be offered in Summer Session only.

Each student is strongly urged to spend at least one summer in the employ of a general contractor on a construction job site, and to spend at least one summer in the employ of a registered architect prior to graduation. This experience will be especially beneficial during the academic training of the student and should be obtained early in the curriculum.

ADMISSION

The following admission requirements will become effective for the entering class of September 1967.

Beginning architectural students are generally accepted in the School of Architecture only in the fall semester after completion of lower division requirements including the two semesters' work in basic architecture. The latter requirement may be met, by transfer students only, by registering for ARC 203 in the summer session prior to entering the School of Architecture. Students enrolled at the University for lower division work who have expressed an intention to enter the architectural program are counselled by members of the Faculty of Architecture during their first two academic years. All students must be in good academic standing at the time of enrollment in the School and admission to the Professional Studies Program.

Each applicant should visit the campus of the University for a personal interview. Transfer students should have their application forms completed and in the Office of the Dean of Admissions 30 days prior to the beginning of the term in which the student plans to enroll.

THE DEGREE OF BACHELOR OF ARCHITECTURE

No student enrolled in the School of Architecture as a regular student will be admitted as a candidate for the professional degree of Bachelor of Architecture (B.Arch.) until he has successfully completed the requirements of the first four years of the five-year curriculum.

To be eligible for the professional degree of Bachelor of Architecture a student must meet the following requirements:

(a) completion of the University requirements relating to English and General Studies

(b) complete a minimum of 166 semester credits, exclusive of those earned in physical education and reserve officer training programs, with a cumulative standing of not less than 2.0 on a 4.0 system.

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

010 *Architectural Field Trip I.* (0) II
A field trip for students in ARC 202 to visit and study selected works of architecture and of the related professions of landscape architecture and planning. Required of all students registered in ARC 202. Laboratory fee. *Staff.*

020 *Architectural Field Trip II.* (0) II
A field trip for students enrolled in the 3rd through the 5th Year programs to visit a major urban center to study selected works of architecture and of the related professions of landscape architecture and planning. Required of all students in Architecture. Laboratory fee. Prereq: ARC 010 or consent of Dean; Junior classification. *Staff.*

030 *Architectural Field Trip III.* (0) III
Same as ARC 020. Laboratory fee. May be repeated twice. Prereq: ARC 020 or consent of Dean. *Staff.*

120 *Architectural Graphics I.* (4) I
A basic course for Architectural students encompassing the theoretical exploration of color, aesthetic judgment and physical phenomena of two and three dimensional representation and introducing the various media and techniques inherent in freehand graphical representation. Lecture: two hours, studio, six hours. *Gunther, Staff.*

121 *Architectural Graphics II.* (2) II
Freehand drawing for architectural students that will develop an individual approach and expression using such diverse materials as pencil, ink, paint, etc. Studio: six hours. Concurrent: ARC 122. *Gunther, Staff.*

122 *Basic Architecture.* (2) II
An introduction to basic problems of architecture: natural forces and primary shelter; cultural convention and architectural response; structure and geometry through individual and team studies of contemporary and historic architectural, site planning, and urban design archtypes. Lecture, seminar, independent reading. Student presentation of analysis and criticism of assigned research problems utilizing drawings and models. Lecture: one hour, studio: six hours. Prereq: ARC 120. *Gunther, Staff.*

123 *Architectural Descriptive Drawings.* (1) II
Descriptive Drawing, projections, shades and shadows, perspective drawing. Lecture: one hour, studio: two hours. Concurrent: ARC 122. *Gunther, Staff.*

210 *Architectural Studio I.* (4) 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. *Greene, Staff.*

211 *Architectural Studio II.* (4) I, II
A continuation of ARC 210. Residential and small building design. Studio, twelve hours. Prereq: ARC 210. *Greene, Staff.*

220 *Materials and Construction Methods I.* (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: ARC 210. *Greene, Staff.*

221 *Materials and Construction Methods II.* (2) II
A continuation of ARC 220. Methods of construction and choices of systems. Lecture, one hour; studio, three hours. Prereq: ARC 220.

232 *History of Architecture Survey.* (3)
A survey of the development of architecture in relation to the 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. Not open to students in Architecture. (Cross-listed with ART 232).

330 *Architectural Studio III.* (4) I, II
Architectural problems with emphasis on materials and detail in the design process. Studio, twelve hours. Prereq: ARC 211.

331 *Architectural Studio IV.* (4) I, II
A continuation of ARC 330 with additional emphasis on building design related to site. Studio, twelve hours. Prereq: ARC 330 and approval of instructor.

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. Pre-historic through Greek. Lecture, three hours. Prereq: Consent of instructor. *Noffsinger.*

333 *Theory and History of Architecture II.* (3) II
A continuation of ARC 332. Roman through Gothic Architecture. Lecture, three hours. Prereq: ARC 332. *Noffsinger.*

340 *Architectural Studio V.* (5) I
Collaborative and individual projects in community planning and design. Prereq: ARC 331. *Hill, Staff.*

341 *Architectural Studio VI.* (5) II
Advanced architectural problems in design. Collaborative work with Civil and Mechanical Engineering students. Studio, twelve hours. Prereq: ARC 340. *Hill, Staff.*

342 *Theory and History of Architecture III.* (3) I
A continuation of ARC 333. Renaissance through 19th Century Revival Architecture. Lecture, three hours. Prereq: ARC 333. *Noffsinger.*

343 *Theory and History of Architecture IV.* (3) II
A continuation of ARC 342. Modern Architecture. Lecture, three hours. Prereq: ARC 342. *Noffsinger.*

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 ARC 340. *Patterson, Fogle, Prestridge.*

347 *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. Seminar: four hours. Prereq: Approval of instructor. *Prestridge.*

350 *Architectural Studio VII.* (6) I, II
Comprehensive problems in architectural design. Studio, fifteen hours. Prereq: Successful completion of first four years of curriculum and approval of design faculty. *Prestridge.*

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, twenty-five hours. Prereq: ARC 351. *Staff.*

353 *Theory of Architecture V.* (2) I
A continuation of ARC 343. Seminar four hours. Prereq: ARC 343 and approval of instructor. *Noffsinger.*

356 *Professional Practice I.* (2) I
Office administration, specifications, cost estimating, contracts, legal problems, insurance and professional ethics. Lecture, two hours. Prereq: ARC 331. *Wilkins.*

357 *Professional Practice II.* (2) II
A continuation of ARC 356. Lecture, two hours. Prereq: ARC 356. *Wilkins.*

361 *Structures I.* (3) II
A unified study of the statics and dynamics of particles and rigid bodies: Newton's Laws, forces, couples, moments of areas and masses, shear and moment diagrams, impulse and momentum, work and energy. Lecture, recitation: three hours. Prereq: PHY 211 and MA 211 or being taken concurrently.

362 *Structures II.* (3) I
Mechanical properties of materials. Idealized materials versus true materials. Stresses and strains, combination of stresses and strains due to various loading conditions, experimental measurements of loads and strains. Members of ideal materials in torsion, bending and axial load—deflections and buckling. Energy considerations, stress concentrations, dynamic loads and fatigue. Lecture, recitation: three hours. Prereq: ARC 361.

363 *Structures III.* (3) II
Simply supported beams of actual materials—stresses and deflections. Columns of actual materials—short term and long term behavior, buckling, safety. Connections in statically determinate structures. Design of simple statically determinate trusses and frames in common structural materials. Lecture, recitation: three hours. Prereq: ARC 362. *Staff.*

364 *Structures IV.* (3) I
Soils, foundations and retaining structures. Determination of loads, design criteria, codes. Design of an actual simple structure. Lecture, recitation: three hours. Prereq: ARC 363. *Staff.*

365 *Structures V.* (3) II
Continuous beams, rigid frames and arches of ideal materials elastic and plastic, influence lines. Continuous beams, rigid frames and arches of actual materials. Truss deflections. Connections for continuity. Code design of two-way reinforced concrete slabs. Lamella roofs and arch trusses. Lecture, recitation: three hours. Prereq: ARC 364. *Leggett.*

366 *Structures VI.* (3) I
Advanced structural systems—irregular slabs, folded plates, shells. Individual research. Lecture, recitation: three hours. Prereq: ARC 365 and approval of instructor. *Leggett.*

371 *Seminar.* (1) I
Design Seminar. A critical evaluation by each student of his principles and philosophy prior to final year. Seminar: two hours. Prereq: Approval of instructor. *Hill, Carpenter.*

432 *Seminar in Architectural History.* (2) I, II
A research seminar in special problems of architectural history and philosophy. Prereq: Approval of instructor. *Staff.*

BASIC ARCHITECTURE SEQUENCE

The first in a two semester sequence devoted to organization theory and the identification and definition of architectural design determinants in the various disciplines: perception theory, mechanisms of control; social institutions, implications of social structure and cultural convention; material properties, studies analogous and preliminary to materials systems, material dogma and myth. Emphasis throughout on the development of skills in the various media of architecture.

201 *Basic Architecture I.* (5) I
An introduction into those forces and requirements which define the architectural problem: physical and environmental forces, cultural conventions, and visual design phenomena. Lecture, 2 hours; studio, 12 hours. Prereq: Sophomore standing.

202 *Basic Architecture II.* (5) II
A continuing study of the impact of the general parameters of the architectural problem on building form and complexes, with special reference to visual design phenomena. Lecture, 2 hours; studio, 12 hours. Prereq: ARC 201 and approval of instructor.

203 *Basic Architecture.* (8) S
A combination of the material in Architecture 201 and 202. Offered in the summer session for transfer students only. Lecture, 8 hours; studio 25 hours. Prereq: ART 110 or ART 130.

ARCHITECTURAL STUDIO SEQUENCE

A sequence of four semesters covering a full range of problems in design. Integration of design determinants is stressed, together with the definition and consideration of detail conditions and problem limits.

810 *Architectural Studio I.* (4) I
Investigation of the internal physical systems which comprise building; systems and their integration in architectural solutions. Lecture, 1 hour; studio, 12 hours. Prereq: Admission to the School of Architecture.

811 *Architectural Studio II.* (4) II
Continuation of the investigation of internal physical systems; introduction of methodologies for ordering and rationalizing their integration in architectural solutions. Lecture, 1 hour; studio 12 hours. Prereq: ARC 810.

812 *Architectural Studio III.* (4) I
Investigation of the external systems which influence architecture; program, functional and theoretical design considerations. Lecture, 1 hour; studio, 12 hours. Prereq: ARC 811.

813 *Architectural Studio IV.* (4) II
A continuation of the investigation of external systems generating architectural form. Lecture, 1 hour; studio, 12 hours. Prereq: ARC 812.

HISTORY OF ARCHITECTURE SEQUENCE

A sequence of four semesters in study, analysis and synthesis of the relationships which have evolved between man's architectonic expressions and his socio-economic and cultural developments. Selected examples illustrating aesthetic theories, principles and philosophies of design, political influences, structural concepts, environmental factors, and urban evolution.

820 *History of Architecture I.* (3)
Elementary developments to the World-State. Lecture, 3 hours. Concurrent: ARC 810.

821 *History of Architecture II.* (3) II
The Medieval aesthetic and the Renaissance ideal. Lecture, 3 hours. Prereq: ARC 820. Concurrent: ARC 811.

822 *History of Architecture III.* (3)
Renaissance permeation. Lecture, 3 hours. Prereq: ARC 821. Concurrent: ARC 812.

823 *History of Architecture IV.* (3) II
Contemporary evolution and manifestation. Lecture, 3 hours. Prereq: ARC 822. Concurrent: ARC 813.

SYSTEMS SEQUENCE

A sequence of four semesters which approaches the architectural problem as an integration of physical systems. The scope of the courses includes Mechanical and Electrical Systems, and Material, Construction and Structural Systems.

830 *Systems I.* (4) I
Introduction to systems; emphasis on systems as mechanisms of environmental control; material systems as common discipline; statical and mechanical properties of materials; elementary structural systems; elementary mechanical systems. Lecture, 1 hour; recitation, 2 hours; studio, 3 hours. Concurrent: ARC 810.

831 *Systems II.* (4) II
A continuation of Architecture 830. Lecture, 1 hour; recitation, 2 hours; studio, 3 hours. Prereq: ARC 830. Concurrent: ARC 811.

832 *Systems III.* (4) I
Advanced structural systems; three dimensional structural organization; integration of complex building systems. Lecture, 1 hour; recitation, 2 hours; studio, 3 hours. Prereq: ARC 831. Concurrent: ARC 812.

833 *Systems IV.* (4) II
A continuation of Architecture 832. Lecture, 1 hour; recitation, 2 hours; studio, 3 hours. Prereq: ARC 832. Concurrent: ARC 813.

840 *Theories of Urban Form.* (3) I
Discussion of socio-economic forces and theories of planning affecting urban form. Discussion of contemporary theories of urban form, theories related to the functional elements or urban areas and comprehensive urban form. Lecture, 2 hours; seminar, 2 hours. Concurrent: ARC 810.

850 *Professional Practice.* (3) I, II
Professional and ethical responsibility to profession and community; procedural matters pertaining to practice and management. Lecture, 3 hours.

ADVANCED ARCHITECTURAL PROBLEMS SEQUENCE

A sequence of two semesters dealing with comprehensive problems and special studies in specific areas of contemporary architectural thought and technology. Advanced design problems to be selected by the student in relation to his professional objective.

910 *Advanced Architectural Problems.* (5) I, II
Advanced topical studies in architecture. Prereq: Approval of Architectural Faculty. By appointment.

911 *Advanced Architectural Problems II.* (5) I, II
Same as Architecture 910. Prereq: ARC 910. By appointment.

Graduate School

THE UNIVERSITY OF KENTUCKY began offering graduate work in 1870, and awarding graduate degrees in 1876, although the Graduate School as a distinct unit was not organized until 1912.

The Graduate School is concerned with advanced study and research carried on by the faculty and students of all colleges and departments. Under it the total graduate resources of the University are merged in order to promote the achievement of knowledge in an atmosphere of free and lively inquiry.

Graduate work is offered in all colleges in the University.

The following advanced degrees are conferred:

MASTER OF ARTS
MASTER OF SCIENCE
MASTER OF SCIENCE IN AGRICULTURE
MASTER OF ARTS IN COMMUNICATIONS
MASTER OF SCIENCE IN HOME ECONOMICS
MASTER OF SCIENCE IN AGRICULTURAL ENGINEERING
MASTER OF SCIENCE IN CIVIL ENGINEERING
MASTER OF SCIENCE IN CLINICAL NUTRITION
MASTER OF SCIENCE IN ELECTRICAL ENGINEERING
MASTER OF SCIENCE IN ENGINEERING MECHANICS
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
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 PHILOSOPHY

The degree of Doctor of Philosophy is offered with major work in the following fields: Agricultural Economics, Anatomy, Animal Sciences, Biology, Biochemistry, Chemistry, Diplomacy and International Commerce, Economics, Education, Engineering Mechanics, English, French, Germanic Language, History, Mathematics, Mechanical Engineering, Metallurgical Engineering, Microbiology, Pharmacology, Physics, Physiology and Biophysics, Political Science, Psychology, and in the combined fields of Sociology and Rural Sociology. Minor work may be carried in any department offering graduate courses.

Lewis W. Cochran, Ph.D., is Acting Dean of the Graduate School.

Organization of the Graduate School

THE GRADUATE FACULTY consists of the Dean of the Graduate School and all persons appointed thereto by the President of the University in the manner set forth below. As the chief University agency for the promotion of the ideals of graduate study, it determines the policies of the Graduate School and makes recommendations to the University Faculty on such matters as require the approval of that body, and it may make recommendations on other matters to the President, or to other administrative officials. All rules affecting graduate work and the inauguration of new graduate majors must be approved by the Graduate Faculty.

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

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

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

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

The Dean and His Office. The Dean of the Graduate School is charged with the administration of the policies adopted by the Graduate Faculty and the University Faculty relating to graduate studies. He presides over all meetings of the Graduate Faculty and calls meetings of this faculty whenever he thinks it advisable or whenever requested to do so by one fourth of the membership. He makes recommendations to the Graduate Faculty respecting the requirements for advanced degrees, the regulations necessary to insure a high standard of graduate work, the departments of colleges authorized to offer courses leading to graduate degrees, and all other aspects of the graduate program. He appoints a committee for each graduate student, arranges for final examinations, advises students with regard to their studies and the requirements of the Graduate School, and in all other ways administers the graduate program in the interests of efficient instruction and the highest attainment possible on the part of each graduate student. He is responsible for determining and certifying to the Registrar candidates who have fulfilled requirements for advanced degrees, and he reports annually to the President of the University on the work of the Graduate School and its needs.

The President and the Dean of the Graduate School are members ex-officio of all committees of the Graduate Faculty.

The Graduate Council is composed of eleven members and the Dean of the Graduate School, who is chairman. There are eight elected representatives and three members appointed by the Dean of the Graduate School. One of the elected members is from the College of Agriculture and Home Economics, two from the College of Arts and Sciences, one from the College of Commerce, two from the College of Education, one from the College of Engineering, and one from the College of Medicine. The member or members from each of these colleges are elected by the Graduate Faculty members in that college. The term of office of the elected and appointed members is three years, and no member may succeed himself until three years have elapsed since the completion of his last term.

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

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

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

Directors of Graduate Study. A director of graduate study serves as advisor to each student majoring in his area until the student has a thesis director. The director of graduate study then recommends that this thesis director be appointed the student's advisor or committee chairman. In areas where these are not required, the director of graduate study is the advisor for all students not writing theses. All student classification schedules must be endorsed by the student's adviser.

If it is desirable, a director of graduate study may recommend that additional advisors in the area be appointed. A director of graduate study who is to be absent from the University for as long as a semester must call this fact to the attention of the Dean so that a substitute may be appointed.

Directors of graduate study make annual reports to the Dean of the Graduate School on the progress and needs of graduate work in their areas in time to permit the Dean to use this information in his annual report to the President of the University.

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

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

Honorary Degrees. The selection of candidates for honorary degrees originates in the Graduate Faculty, and the Graduate Faculty makes its recommendations to the University Faculty.

Honorary degrees are normally conferred at the May Commencement, but may be conferred at other times with the approval of the Graduate Faculty. Recipients must be present in order to receive honorary degrees.

Admission

A student who is a graduate of a fully accredited institution of higher learning and has a grade-point standing of 2.5 on a basis of 4.0 may apply for admission to the Graduate School by submitting to the Graduate Admissions office two official transcripts of all college courses and a written application blanks may be obtained from the Admissions office of the Graduate School. A student with a grade-point average of less than 2.5, or a graduate of a non-accredited institution, may be admitted only after the graduate record examination or other evidence acceptable to the Dean of the Graduate School and to the Department indicate that he is capable of doing satisfactory graduate work. Individual departments may establish higher requirements.

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 demonstrate his ability to write accurate and effective English or he may have to satisfy certain prerequisites which he omitted in his undergraduate curriculum. Deficiencies are determined by the department in which the major work is to be done. Ordinarily, a graduate student may begin a full

program in any field in which he has a balanced undergraduate major or its equivalent.

Admission to the Graduate School entitles a student to take such courses as he desires, provided he has the necessary prerequisites. *However, admission does not automatically make a student a candidate for a graduate degree.*

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

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. They may take graduate courses, but these may not apply toward a degree from the University.

THE GRADUATE RECORD EXAMINATION

All students working for graduate degrees must take the Graduate Record Examination (the Aptitude Test, and the Advanced Test in the major subject). This must be done no later than the first term of graduate work.

APPLICATION FOR FULL GRADUATE STANDING

A graduate student desiring to earn a graduate degree must be approved for full graduate standing by the department in which he intends to major and by the Graduate School. 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 to full graduate standing, a student (in addition to meeting the admission requirements) must have scores on the Graduate Record Examination satisfactory to the department concerned and to the Dean of the Graduate School, and a *B* average or higher on all graduate work completed at the University of Kentucky.

Graduate work taken before a student is admitted to full graduate standing will be evaluated by the Director of Graduate Study in the major area and by the Dean of the Graduate School at the time the application for full graduate standing is considered.

GRADUATING SENIORS AS PART-TIME GRADUATE STUDENTS

A senior in the University of Kentucky lacking no more than six credit hours for graduation and having an undergraduate average of at least 2.5 may register in the Graduate School with the consent of his college dean and the Dean of the Graduate School. Approval of the appropriate director of graduate study is required if the student is to be an applicant for a degree. The total load of such a student may not exceed twelve credit hours. The graduate residence assigned is one and one-half weeks for each credit hour of graduate work beyond the six or fewer credit hours needed to complete undergraduate requirements. The incidental fee is 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 is 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 enroll in the Graduate School under these conditions must fill out in duplicate a petition listing the course or courses to be taken in order to complete their undergraduate requirements. The petition must be approved by both deans concerned.

General Requirements for All Advanced Degrees

COURSES AND GRADES

All courses numbered 500 through 799 may be counted for credit toward a graduate degree provided they are approved as an appropriate part of the student's graduate program by graduate advisor or committee. Courses numbered 400 to 499 carry graduate credit for non-majors only. An over-all average of *B* on all work taken as a graduate student, as well as a *B* average on all work carrying graduate credit, must be attained before an advanced degree may be awarded. All work is to be counted and none of it may be omitted in computing the average except those grades in courses which do not give graduate credit may be omitted from a student's average by the Dean of the Graduate School on recommendation of the student's advisor. *D* grades are not given to graduate students. An "incomplete" (*I*), unless the Dean of the Graduate School grants an extension of time, must be removed within one calendar year after the close of the term in which the *I* is assigned if the student is to receive credit.

DROPPING OF COURSES

During the first ten class days of the term a graduate student may drop a regular course without a grade, provided he has the approval of his instructor, his director of graduate study, and the Dean. Regular courses may not be dropped later in the term without the assignment of a grade: *W* if a student withdraws passing, *E* if he is failing. However, only under very special circumstances may be allowed to withdraw from a class within two weeks of the final examination period.

GRADES

The official grades of graduate students are recorded in the office of the Registrar. The Registrar provides official transcripts on the same basis as for undergraduate students. Also, he provides the Dean with the grades of all students in order that the Dean may be able to advise students concerning their programs.

The grading of graduate students is done according to the following scale:

A—high achievement	4 grade points per credit
B—satisfactory achievement	3 grade points per credit
C—minimum passing grade	2 grade points per credit
E—failure	0 grade points per credit
I—incomplete	see explanation below
S—satisfactory	see explanation below

A grade of *I* (incomplete) may be assigned to a graduate student if a part of the work of a course remains undone and there is a reasonable possibility that a passing grade will result from completion of the work. No student may graduate with an *I* on his record without the permission of his advisor and the approval of the Dean of the Graduate School.

A grade of *S* (satisfactory work in progress) may be recorded for students in graduate courses which carry no credit; and in graduate seminars, independent work courses,

and research courses which extend beyond the normal limits of a semester or summer term. The grade may not be given to a student in a course carrying credit if the student has done unsatisfactory work or if he has failed to do a reasonable amount of work. The project must be substantially continuous in its progress. When the work has been completed, a final grade will be substituted for the *S*.

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

REGISTRATION AND CLASSIFICATION

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

Before registering, a graduate student must obtain his advisor's approval of his proposed program.

STUDENT LOADS AND SHORT COURSES

The normal load of a graduate student during any semester is twelve credit hours, and under no circumstances may it exceed fifteen credit hours. In the summer session the normal load is six credit 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 advisors. 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 5 credit hours. A student may petition for a waiver of this rule if he meets the following conditions: (1) has satisfactorily completed six credit hours of graduate work; (2) has attained higher than national average scores on the aptitude and advanced tests of the Graduate Record Examination; (3) and has appropriate employment facilities and conditions. Two short courses of 4 weeks or less, or two full-term courses and a short course, may not be taken simultaneously. A short course may not carry credit greater than the number of weeks during which it is offered.

"RESIDENCE" DEFINED

One of the requirements to be met by a candidate for an advanced degree is that of residence. Meeting this requirement does not, however, qualify a candidate for a degree. A longer time may be required to meet other requirements.

Full-time residence (18 weeks) requires a minimum of 9 credit hours of graduate course work, or the equivalent in thesis research during the regular academic term. In the summer session full-time residence (9 weeks) requires a minimum of 6 credit hours. Part-time residence is computed on the basis of one and one-half weeks of residence for each credit hour earned, except for short courses of less than eight weeks, in which case the number of residence credits may not exceed the actual number of weeks involved. If a full-time student becomes a part-time student by failing courses or dropping courses, he receives one and one-half weeks of residence per credit hour in courses completed with a satisfactory grade.

The summer school student is assigned full residence (9 weeks) provided he is taking courses which together require residence for the full eight weeks and provided he earns a minimum of six credit hours, whether in short courses alone or in a combination of short and full-term courses.

The Registrar makes the computations for short courses and recommends to the Graduate Office the amount of residence earned. The final evaluation of residence, as well as of course and other requirements, rests with the Dean of the Graduate School.

A master's candidate working on his thesis and in need of residence credit may register for a maximum of nine weeks of residence in course No. 768 in the appropriate department.

A doctoral candidate working on his thesis and in need of residence credit may register for course No. 769 in the appropriate department.

TIME LIMIT FOR DEGREES

No course or residence credit may be given for graduate study completed more than eight years prior to the end of the semester at which the student expects to receive his degree unless such credit or residence is specifically validated by the Graduate Council on written recommendation of the appropriate director of graduate study. No course or residence credit may be validated in this manner if completed more than twelve years prior to the end of the semester in which the student expects to receive his degree.

GRADUATION

Advanced degrees may be conferred at the close of any semester or summer session, but commencement exercises are held only at the close of the academic year. 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 the next 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 the close of a given semester or term must make formal application (at the Graduate Office) for the degree within the first two weeks of the semester or term.

FEES

Registration fees per semester are $140 for residents of Kentucky, $410.00 for non-residents. Part-time graduate students who are legal residents of the state pay $17.00 per semester credit; non-residents pay $46.00 per semester credit. Resident students carrying full loads in the summer will pay $80.00, non-resident students, $220.00. The Registrar determines the status of one's residence for purposes of assessing fees. All fees are subject to change without notice.

Graduate fellows, graduate assistants, and instructors pay the fees assigned to Kentucky residents.

General Requirements for All Master's Degrees

TRANSFER OF CREDITS

With the approval of his graduate advisor, the dean, and the Registrar, a student may transfer up to six credit hours (but no residence) toward the satisfaction of the minimum

requirements for masters' degrees, provided the work in question was taken while he was enrolled in residence in an approved graduate school.

EXTENSION AND CORRESPONDENCE WORK

Under certain conditions, up to six of the credit hours required for any master's degree may be earned in 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 a 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

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

A student may work toward only one master's degree at a time. He must establish at least one year of residence while earning a second master's degree.

RESIDENCE

The minimum residence required for the M.A. and M.S. degrees is one academic year of 36 weeks. A portion of this residence may be earned in part-time work, but normally candidates for masters' degrees must spend at least two full summer terms or one semester in full-time residence at the University. For individual superior students the full-time residence requirement may be waived if recommended by the director of graduate study in the student's major area and approved by the Graduate Dean. Minimum eligibility for being so recommended includes: (1) the satisfactory completion of 12 credit hours of graduate work, (2) the attainment of national average scores on the Graduate Record Examination, and (3) the availability of employment facilities and conditions which make feasible satisfactory completion of degree requirements while the student is fully employed. A total graduate program may not be made up entirely of courses offered in short terms of 3 or 4 weeks each, and not more than one-third of the course work requirements for a degree may be taken in courses that meet only once a week.

This statement does not mean, however, that the work described for each individual can always be completed in the minimum length of time designated for the degree. Services performed as a graduate assistant or inadequate preparation for graduate work, for example, generally make a longer period of study necessary.

EXAMINATIONS

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

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

FEES

Before any master's degree may be conferred the student must pay a commencement fee of $22.50 at the Bursar's office.

Requirements for the Degrees of Master of Arts and Master of Science

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.

Plan A

In addition to meeting all general requirements for masters' degree (see above) the candidate must complete at least 24 semester credit hours of graduate course work with a standing of 3.0 (*B*) or higher, satisfy the language requirements, and write a thesis. A candidate must have a major area (defined usually as an academic department) and must (with the exceptions noted below) take at least two thirds of his courses in this area; the other one third may be taken in this area or in areas which have a graduate relationship to it. In Education and Agriculture only one half of the work must be in the major area. When the setting up of major topics seems to require it, the Dean or (in unusual cases) the Graduate Council may, on recommendation of the appropriate director of graduate study, authorize courses taught outside the major to count on the major.

Thesis

Two typewritten, unbound copies of the thesis 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. These copies must be approved by the thesis director and the appropriate director of graduate study, must be on 100 per cent rag or cotton fiber paper, and must be in a form acceptable to the Graduate School. Instructions for the preparation of theses should be obtained from the Graduate Office before the thesis is typed. The candidate must also submit an abstract of his thesis which does not exceed two hundred words and is suitable for publication. The final examination may not be taken before

the thesis has been accepted by the Graduate School Office.

Theses must be developed under the direction of a member of the Graduate Faculty, except that in special cases the Graduate Dean may authorize a staff member not on the Graduate Faculty to serve as co-director. Collaborative group effort by two or more graduate students is not forbidden, but there must be enough independent effort to enable each student to make a separate contribution and to prepare an indivitdual thesis.

Each thesis must be acceptable to the examiing committee at the time of the final examination.

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

> Unpublished theses submitted for the masters' and doctors' degrees and deposited in the University of Kentucky Library are as a rule open for inspection, but are to be used only with due regard to the rights of the authors. Bibliographical references may be noted, but quotations or summaries of parts may be published only with the permission of the author, and with the usual scholarly acknowledgments.
>
> Extensive copying or publication of the thesis in whole or in part requires also the consent of the Dean of the Graduate School of the University of Kentucky.
> A library which borrows this thesis for use by its patrons is expected to secure the signature of each user.
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Foreign Language Requirement:

A reading knowledge of a modern foreign language is required. Ordinarily this language will be French, German, or Russian, but another language may be substituted if it can be shown to be pertinent to the student's program and is approved by the advisor and the Dean of the Graduate School. The language requirement must be satisfied by an examination given by the appropriate language department of the University or by such persons as the Graduate Dean may specify. A candidate for a degree in the language which is his native tongue must do a full minor (one third of his work) in areas in which English is the language employed.

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 credit hours of course work may be substituted for a thesis and that in some 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.

A student should consult his advisor for any additional requirements that may have been set up for Plan B by his area of study.

Specialized Master's Degrees

Special requirements concerning the Master of Science in Agriculture, the Master of Science in Home Economics, the Master of Science in Library Science, the Master of Arts in Education, the Master of Science in Education, the Master of Science in Public Health, the Master of Music, the Master of Business Administration, and the Masters' Degrees in Engineering are explained in the Graduate School Bulletin which outlines departmental offerings.

Requirements for the Degree of Doctor of Philosophy

The degree of Doctor of Philosophy is conferred upon a candidate who, after completing not fewer than three years of graduate work devoted to study of a special field of knowledge, presents a satisfactory thesis, passes a comprehensive examination on his dissertation subject and chosen field, and shows sufficient promise of scholarly attainment.

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 evidenced both by the student's grasp of subject matter and by his capacity to do research.

THE STUDENT'S ADVISOR AND SPECIAL COMMITTEE

The director of graduate study in the student's major area serves initially as the student's advisor and signs his schedule before it is presented to the Dean. When the thesis director has been chosen, the student's special committee is set up by the Dean after he has conferred with the student, the director of graduate study, and the thesis director.

The special committee consists of the thesis director as chairman, two or three other members from the major area, and at least one representative from each minor area—in all, no fewer than five members. This committee advises the applicant and sets the requirements which the student must meet before he may be admitted to the qualifying examination. The special committee keeps minutes of all meetings and sends abbreviated copies to the Dean to be made a part of the student's record. Ordinarily this committee determines when the qualifying examination is to be administered, and the chairman schedules the examination in writing, sending a copy of the announcement to the Dean. The committee is the final judge on a majority basis of the questions to be asked on the qualifying examination and of whether the student passes.

A department which elects to do so may give a uniform departmental qualifying examination to its candidates instead of delegating full responsibility to the special committee.

MAJOR AND MINOR SUBJECTS

Every applicant for the Ph.D. degree must select one major area of study and no more than two minor areas, at least one of which must be outside the major area. The

major area is one in which the student intends to concentrate his efforts.

The minor area(s) must be approved by the representative of the major area and by the Graduate Dean, and the subjects to be taken in the minor area(s) by the representative of the minor(s) on the special committee. Normally, at least one-sixth of a student's time should be devoted to an outside minor, but if the student appears already to have an adequate degree of proficiency in an acceptable area, he may, with the approval of his special committee (including the representative of the minor area), be permitted to proceed to this portion of his qualifying examination without taking additional course work.

RESIDENCE

A minimum of three collegiate years of resident graduate work is required for the doctorate. At least two semesters (exclusive of summer sessions) of the required residence above the master's degree (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 not more than half-time assignment as a research or teaching assistant. "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 director of graduate study in the area, the Dean of Admissions, and the Dean of the Graduate School. Ordinarily, however, graduate students may be allowed only one year of residence toward the doctorate for earlier study which has been used to satisfy the requirements for a master's degree or masters' degrees.

A year of residence is required after the qualifying examination before the degree is conferred. If an examination is completed within the first six weeks of a semester, that semester will count as half of the year. If a student has passed his qualifying examination but has earned less than one year of residence after the qualifying examination, he may petition the Graduate Dean for a waiver of this requirement in order to complete his dissertation in absentia. Even if the petition is granted, however, a minimum of one academic year must elapse between the time of the qualifying examination and the conferring 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 scholarly accomplishment.

LANGUAGE REQUIREMENTS

An applicant must have a reading knowledge of at least two modern foreign languages, normally to be chosen from French, German, and Russian. (A department or interdisciplinary Ph.D. program, with the special permission of the Graduate Council, may be authorized to offer only one foreign language.) With the approval of the student's special committee, the director of graduate study in the area, and the Graduate Dean, however, certain substitutions may be made.

1. Some other language may be substituted for one of those normally required if it can be demonstrated that the student's scholarly needs will be better served thereby.
2. In special cases fluency in one foreign language may be substituted for a reading knowledge of two languages.

If after four semesters of full-time graduate work (i.e., above the A.B.) the student has not satisfied the foreign language requirement, he must have the special approval of his advisor and the Graduate Dean before registering for further work. The language requirement must be satisfied before the applicant may be admitted to the qualifying examination. Proficiency in foreign languages is determined by examinations conducted by the appropriate language department or by such persons as the Graduate Dean may suecify.

THE QUALIFYING EXAMINATION

A qualifying examination is required of all applicants for the doctorate in order to determine whether the applicant should be admitted to candidacy. Normally this examination is prepared by the student's special committee and should be taken during or after the student's fourth semester of full-time graduate study, or the equivalent. This examination is both written and oral and covers both the major and the minor areas. The special committee reports to the Dean the result of the examination. If the result is failure, the committee recommends the conditions to be met before another examination may be administered. The minimum time before another examination may be given is six months. The same committee, or as many of the members as are available, plus those added by the Dean to fill vacancies, gives the second examination. This examination must be completed and the result reported to the Graduate Dean within sixty days of the beginning of the examination. A third examination may not be allowed.

THE THESIS

Each candidate must present a thesis which is the result of original research and adds to or otherwise modifies what was previously known on the subject. Unless the director of the thesis specifically recommends departures, the thesis must be in conformity with the instructions prepared by the Graduate School, must be on 100 per cent rag or cotton fiber paper, and must be satisfactory in style and composition.

Before the thesis is formally submitted, the student must bring it to the Graduate Office to have it checked for form. Two typewritten copies of the thesis (unbound) 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 thesis. When theses are submitted, a standard form containing RULES FOR THE USE OF THESES must be prepared and must be included with the manuscript, before the title page.

It is expected that every doctoral thesis will be worthy of publication either in its entirety in book form or as articles in the leading journals and periodicals of the field. The candidate is urged to make every reasonable effort to obtain such publication for his own sake and in the interest of the Graduate School, and is required to make a deposit of $50.00 in order to guarantee publication. If within five years after the degree is received a substantial portion of his thesis has been published, the director of graduate study in his area may recommend that the deposit be refunded. Failing to meet the publication requirement, he will forfeit his deposit and the thesis will be microfilmed and copyrighted by the University 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 theses may be purchased at cost. The abstract of each microfilmed thesis will be printed in an issue of Microfilm Abstracts (published by University Microfilms, Ann Arbor, Michigan).

THE FINAL EXAMINATION

After the acceptance of the thesis by the special committee and the Dean of the Graduate School, the candidate is given a final oral, or, if the examining committee elects, an oral and a written examination. The examining committee consists 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 director of graduate study (or his delegate) serves as chairman of the committee. Other members include the thesis director, a third representative of the department, a representative of the minor area, and one member of the Graduate Faculty associated with neither the major nor minor area. (The President of the University and the Dean of the Graduate School are ex-officio members of all examining committees.) The final examination includes a defense of the thesis and may be as comprehensive in the major and minor areas as the committee desires to make it. In all decisions the majority opinion of the committee prevails. If the committee is evenly divided, the candidate fails.

If the candidate fails, the committee may recommend to the Graduate Dean the conditions under which the candidate may have another examination. This examination will be administered by as many of the original committee members as are available, plus new members appointed by the Dean to fill vacancies.

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.

Before any doctor's degree may be conferred, a fee of $27.50 must be paid at the Bursar's office. The graduation fee covers the cost of the diploma and the hood.

Requirements for the Degree of Doctor of Education

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

1. No foreign languages are required for the Ed.D. degree.
2. A minimum of 72 credit hours is required, at least one third and not more than one half of which 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 of the College of Education, must declare at least one area other than Education when their special committees are appointed. Two members must be chosen from areas outside the College of Education.

The Dean of Admissions, 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.

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, must (1) have a master's degree, (2) ordinarily have a standing of 3.4 or higher on his graduate work, (3) meet the requirements for a teaching certificate or have credentials appropriate to his field of specialization, and (4) have at least 30 credit hours in 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 30 credit hours of graduate work beyond the master's degree of which at least 15 must be in courses numbered 600 or above.

The division or department in which the student majors is responsible for helping 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 student must complete an independent research problem (equal to 3 but not to exceed 6 credit hours) and submit a written report, a copy of which is 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 hours of residence credit earned beyond the master's degree from an institution which is approved to offer work above the master's level

Final Examination

The final examination required of all candidates is administered by an examining committee consisting of at least three qualified members recommended by the advisor and the director of graduate study and appointed by the Dean of the Graduate School.

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 taken his work with a view to obtaining a degree subsequently desire to

become an applicant for a degree, the number of credit hours he is to receive for work already done will be determined at the time he applies for admission as applicant for the degree.

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 association, the University of Kentucky Graduate Research Program has at its disposal all of the facilities of the National Laboratories in Oak Ridge and of the research staffs of these laboratories. When masters' and doctoral candidates have completed their course work, it is possible by special arrangement for them to go to Oak Ridge to work on their research problems and prepare their theses. In addition, it is possible for staff members of the University to go to Oak Ridge for varying periods, usually for not less than three months, for advanced study in their particular fields.

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

Information concerning stipends and other matters may be obtained from the office of the Graduate School or from the Chairman of the University Relations Division of the Oak Ridge Institute of Nuclear Studies, Box 117, Oak Ridge, Tennessee.

Southern Regional Training Program in Public Administration

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

Advanced Study and Research by Guests of the University

When appropriate resources are available at the time desired, the President of the University, upon the recommendation of the Dean of the Graduate School and the department affected, will welcome 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.

Graduate School Fellowships

Kentucky Research Foundation Fellowships: The Kentucky Research Foundation supports several graduate fellowships of $1,800 to $2,400, each carrying with it waiver of out-of-state fees.

Haggin Fellowships: The Haggin fellowships, endowed by Margaret Voorhies Haggin in memory of her father, George Voorhies, carry a stipend ranging from $1,500 to $2,400, plus remission of out-of-state fees.

Both Haggin fellowships and Kentucky Research Foundation fellowships are open to all students who hold a bachelor's degree or higher from any college or university of recognized standing. All fellows 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. The award is paid in nine equal monthly installments.

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 $2,500 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.

Forms for making application 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.

Other Fellowships

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.

J. Stephen Watkins Foundation Fellowship for Civil Engineering: The Watkins Fellowship, contributed by the J. Stephen Watkins Foundation, carries a stipend of $2,400, plus remission of out-of-state fees, and will be offered every other year beginning in 1965.

Information concerning other fellowships (National Science Fellowships, National Science Traineeships, NASA Traineeships, National Defense Fellowships, etc.) may be obtained from the Graduate Office.

Research and Teaching Assistantships

Most departments employ part-time teaching and research assistants at stipends ranging up to $3,000, plus waiver of out-of-state fees. Information concerning assistantships may be obtained from the various departments.

University Extension

University Extension is the successor to the University of Kentucky Extended Programs, established in 1957. The Department of University Extension was organized in 1919, but 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 1964. The basic purpose of University Extension is to extend the resources and facilities of the University by means of various services and programs.

Correspondence Study Program

Correspondence study, which was organized at the University of Kentucky in 1919, is one of the oldest methods of extension instruction of the University. It combines the essence of classroom work—guidance of a University instructor—with the advantage of individual instruction and the convenience of studying and learning at home. The program is primarily designed for students who wish to continue their formal education, but for various reasons do not find it practicable to do residence work or attend organized classes.

Correspondence courses cover essentially the same subject matter as the same or parallel courses offered to resident students on the main campus. The student is brought in contact with the instructor for a course through the use of a study guide, supplementary reference materials, research assignments, and a final examination. Correspondence courses are prepared, assignments corrected and graded, and outlines kept current by some of the outstanding faculty members of the University. The Correspondence Study Program encompasses curricular offerings in five of the ten colleges and in twenty different departments of the University. The high school program encompasses forty different courses in the subject areas of English, social studies, mathematics, commerce, foreign languages, history, health and psychology. With a few exceptions in the area of practical engineering, all courses are available for credit. A student, however, may pursue any course on a non-credit basis at his discretion.

R. D. Johnson, M.A., Ed.D., is Dean of University Extension.

Students must meet the enrollment requirements for a course, including any prerequisites specified for a particular course. An official transcript, however, is not required as a requisite to enrollment.

Some of the regulations governing Correspondence Study are as follows:

1. Not more than twenty-five percent or 32 semester hours of the requirements for a baccalaureate degree at the University of Kentucky may be earned by correspondence.
2. A student may enroll for a correspondence course any time during the calendar year.
3. A student has one year from the date of enrollment in which to finish a correspondence course.
4. Three-fourths of the total amount of credit required for the issuance of any certificate in Kentucky must be in residence credit.
5. A student in residence at the University of Kentucky must have the permission of his dean to register for a correspondence course.
6. Students who have been dropped by the University must be reinstated before they will be allowed to enroll for a correspondence course.
7. A student who has failed a course in residence at the University of Kentucky will not be permitted to repeat the course by correspondence without the permission of his dean.
8. The credit hours assigned to a correspondence course will be considered in determining the load of a resident student at the University of Kentucky. Credits earned by correspondence will be credited to the term in which the course is completed.
9. Graduate credit is not granted by the University of Kentucky for work taken by correspondence. Graduate students, however, may do correspondence work, and the credit earned can be applied toward undergraduate major and/or minor fields for certification purposes.

The tuition fee for a correspondence course is $14.00 per semester hour, plus a $2.00 service charge per course. The fee for a high school course is $22.00 per one-half unit, or one semester's work, plus a $2.00

service charge per course. The service charge for all correspondence 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 each Community College and in communities throughout the state when requested by a school official 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 University Extension, University of Kentucky. Groups other than teachers desiring courses should contact University Extension, 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 $14.00 per semester hour. The fee for graduate credit is $17.00 per semester hour. A student auditing a course will pay the regular fee. An out-of-state student will pay $37.00 per semester hour for undergraduate credit and $46.00 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 one-half of his tuition. Requests for refunds should be made at the office of Extension Class Program, University Extension. No refund will be made after mid-semester. All refunds must be claimed before July 1 of each year.

Admission to the Graduate School: A student may take Extension Courses for which he has prerequisites. A 600 or 700 level course may be taken only by a student having a bachelor's degree. A student need not apply for admission to Graduate School until he is ready to enroll on campus. Such students will register as "Unclassified." If the student had a bachelor's degree from an accredited college at the time he took a certified graduate level course, he will be able to use the credit for graduate school purposes under the following circumstances: (a) For transfer purposes it will be labeled "Extension." "Certified for graduate credit." Acceptance by another graduate school is entirely the prerogative of that school. (b) It may count for graduate credit at the University of Kentucky provided: (1) The course grade is B or higher. (2) The student gains admission to and enrolls in the Graduate School and was eligible for admission at the time the course was taken. (Grades on such extension courses may never count towards admission.) (3) The student's director or special committee recommends use of these credits and the recommendations are approved by the Graduate Dean. (4) No more than 6 credits of extension courses are involved. (5) The student has not transferred his

quota of credits from another graduate school (The combined total of extension and transfer credits shall not exceed 6 for the master's degree).

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 and advisor. 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, by presenting their 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 $14.00 per semester hour for undergraduates and $17.00 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: $37.00 per semester hour for undergraduate credit, and $46.00 per semester hour for graduate credit.

Conferences and Institutes

The Conference and Institute Program serves as the centralized agency through which the University's academic, administrative and operational facilities are co-ordinated to extend continuing educational service to citizens throughout the state.

In co-operation with the academic colleges, conferences, institutes and similar short-course study programs can be organized for business and professional groups.

Each program is specifically designed to include selected topics that are of greatest practical interest to the participants. The teaching staffs are composed of both University staff members and visiting lecturers and consultants.

The classroom and cafeteria facilities, and when possible, the housing facilities of the University are made available to visiting groups participating in these programs. The University's Carnahan House Conference Center, located near the main campus, also provides adequate conference accommodations for certain groups and is operated by the Office of Conferences and Institutes for this purpose.

Council on Aging

The University of Kentucky has a deep and abiding interest in people, including those who are nearing retirement and those who have fulfilled their obligations to their job or profession. To give substance to this concern the Board of Trustees has created the Council on Aging, an integral division of the University Extension.

The Council on Aging is a multiple disciplinary agency with representatives from the colleges and departments of the University. It is also related by cooperative working agreements to the Kentucky Division on Aging, a division of State Government.

The purposes of the Council include: the development of a high degree of sensitivity to the various aspects of aging among all members of the University faculty and staff; the promotion of an interest in study and research about aging; and the extension of this interest and knowledge outward from the campus to people everywhere.

The objectives of the Council are accomplished through a variety of programs. Notable among these are: the Herman L. Donovan Senior Citizens Fellowship which permits any person over 65 years of age to enroll for regular University courses without the payment of fees. Fellowship recipients may take courses for no credit or work toward a degree.

The Council is developing a material and resource center. In this activity it is cooperating with the University libraries. Various local, state, and national agencies are contributing publications, films, and other related materials. The Center is already in use by citizens seeking information on programs and services for older people.

The Council sponsors a number of educational programs. In cooperation with the Commission on Aging and the institutions of higher education in the state, it is now engaged in a two-year effort designed to develop viable programs and services to the communities of the Commonwealth. Outstanding national authorities in social gerontology are serving as consultants for this program which also incorporates the Governor's Conference on Aging.

Extension Civil Defense Program

The Extension Civil Defense Program offers intensive non-credit training courses and conferences for professional, part-time and volunteer civil defense personnel. Programs include Shelter Management, Radiological Monitoring for Instructors, Civil Defense Management, Radiological Defense Officer, and Orientation Conferences for public officials.

The programs are presented in cooperation with the Department of Defense, Office of Civil Defense, and the Kentucky Division of Civil Defense. Classes are held in different locations throughout the state and each is designed to meet the particular training and education need of the individual community.

Courses are organized through local civil defense officers. There is no registration fee for any of the programs and all instructional material is furnished through the University.

Other Services

Kentucky High School Speech League. The University of Kentucky, Division of University Extension, 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 confeernces for teachers and students.

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)
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)
Multiple and partial correlation, test of reliability, sample surveys, and other techniques for agricultural research. Prereq: AEC 530 or equivalent.

631 *Statistics for Agricultural Research: Plant and Animal Sciences.* (3)
Analysis of variance and covariance; statistical considerations in the design of experiments; tests of significance and confidence limits. Prereq: AEC 530 or equivalent.

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. Prereq: College algebra.

422 *Biological Statistics II.* (2)
Analysis of variance for single and multiple classifications, covariance, randomized block and crossover designs, factorial systems, split plot designs, individual contrasts, analysis of growth curves. Prereq: BSC 421 or equivalent, or consent of instructor.

Business Administration

571 *Statistical Quality Control.* (3)
Elementary probability theory, control charts, acceptance sampling plans including single, double and sequential sampling.

572 *Sampling Techniques.* (3)
Application of sampling theory and significance testing in economic research, practical problems in sample design.

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: ECO 207.

Economics

207 *Statistical Method.* (3) I, II
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. Prereq: College algebra or its high school equivalent.

386 *Economic Research.* (3)
The sources, uses, and application of statistical information in the analysis of economic problems. Prereq: ECO 252, 207.

550 *Advanced Business and Economic Statistics.* (3) I, II
Advanced time series analysis, multiple and partial correlation, elementary analysis of variance and experimental design. Prereq: ECO 207 or consent of instructor.

651 *Research Statistics II.* (3) I, II
Inferences involving linear transformations of random variables; individual degrees of freedom; complex analysis of covariance. Applications to economic and business data. Prereq: ECO 650.

691 *Econometrics* (cross-listed as AEC 691). (3)
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: ECO 618; AEC 630 or ECO 550 or equiv.

Education

657 *Educational Statistics.* (3) I, II
A non-mathematical study of the applications of statistical and graphical methods to educational data.

Mathematics

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.

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 *Advanced Mathematical Statistics.* (3)
Theory of sampling, the Chi-square distribution, testing statistical hypotheses. Prereq: MA 521.

Chemistry

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: CHE 542 and MA 431.

Sociology

502 *Methods of Demographic Analysis.* (3)
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. Prereq or concur: SOC 501 and one of following introductory statistics courses: ECO 207, BSC 421 or AEC 530.

581 *Techniques of Social Investigation.* (3)
A study of the practical applications of sociology in organizing, conducting, and interpreting social surveys, and other forms of sociological research. Prereq: SOC 151 and an introductory course in statistics.

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 SOC 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 104 and 106 or 210.

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.

611 *Psychological Research.* (3)
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 610.

777 *Seminar in Mathematical Psychology.* (3)
Topics in psychology which are receiving detailed mathematical analysis. Examples are mathematical learning theory, decision and judgment processes, advanced application of probability and statistics in psychological theory. Prereq: PSY 610.

Community Colleges

Community College Administrative Personnel

Dean	
Ellis F. Hartford	Ed.D., Harvard, 1942
Associate Dean	
Stanley Wall	Ed.D., Kentucky, 1956
Assistant Dean	
Edsel T. Godbey	Ed.D., Kentucky, 1959
Administrative Assistant	
Albert J. Hauselman	M.A., Kentucky, 1961
Business Officer	
B. J. Burnett	M.S., Kentucky, 1958
Program Assistant	
Margaret Knox Morgan	A.M., Missouri, 1962
Coordinator, Associate Degree Nursing Program	
Marie Piekarski	M.S., Pennsylvania, 1957

University Community College System

The University of Kentucky Community College System is a unique organization designed to realize the advantages of University membership on the one hand, and community orientation on the other. Each college is an integral part of the University with the same standards of admission and operation as apply to the parent institution. And each college, through its local advisory board and other ties, relates itself to the needs of the community.

Until the early 1960's University Centers in Kentucky served some of the functions generally attributed to community colleges, but their programs were closely joined to the parent institution. The Community College Act was passed by the Kentucky General Assembly in 1962. On the recommendation of President John W. Oswald, and with the approval of the Board of Trustees, the University of Kentucky Community College System was formed in 1964.

Ellis Ford Hartford, A.B., M.A., Ed.D., is Dean of Community College System.

Today the system comprises nine colleges, located at Ashland, Covington, Cumberland, Elizabethtown, Fort Knox, Henderson, Hopkinsville, Prestonsburg and Somerset, and a Technical Institute at Lexington. New colleges are planned for Maysville, Louisville and Hazard within the next two years.

The community colleges have been charged with three functions:

1. to offer transfer curricula for those who wish to complete the first two years of a baccalaureate program;
2. to offer two-year associate degree programs designed to prepare the student for immediate employment on a technical or semiprofessional level;
3. to provide continuing educational opportunities for citizens of their immediate areas.

Courses taken in the community colleges which parallel University offerings are freely transferable to the main campus or to another four-year institution.

Credits earned in curricula not offered on the University campus are chiefly of a technical or semiprofessional nature, leading to an associate degree or certificate. In general, courses designated as technical are nontransferable toward a baccalaureate degree at the University of Kentucky.

The community colleges also offer a variety of noncredit courses and services of a professional, vocational, or cultural nature for adults. These activities include evening classes, workshops, seminars, short courses, concert series, exhibits, lectures and dramatic productions to meet in-service, reeducation and cultural needs as expressed in the community.

Ashland Community College

Robert L. Goodpaster, director

Assistant Professors or Senior Instructors

Opal Skaggs Conley	M.S., Kentucky, 1943
Klara Rosa Cook	Dr. Theol., Zurich, 1946
Henry Jackson Daily	M.A., Kentucky, 1946
George J. Edwards	M.A., Minnesota, 1948
Robert L. Goodpaster	Ed.D., Kentucky, 1961

Robert D. Halladay — M.S., Ohio, 1953
Dorothy Seaberg Hope — M.S., North Carolina, 1947
Leonard Jack LeRoy — M.A., Marshall, 1960
Ann Elizabeth McCall — M.A., Marshall, 1961
Nancy Turman McClellan — A.B., Kentucky, 1954
George William O'Brien — Ph.D., Kentucky, 1958
John T. Smith — Ed.D., Kentucky, 1961
John Buckingham Sowards — B.A., Marshall, 1951
Elizabeth Ann Walthall — M.A., Marshall, 1953
William Godfrey Wheeler — LL.B., Kentucky, 1940

Instructors

Thomas Albert Allemang — M.A., Southern Illinois, 1964
Ellis Broughton — M.A., Eastern Kentucky, 1962
Kenneth B. Colebank — M.A., Pennsylvania State, 1960
William Benjamin Culbertson — A.B., Berea, 1960
Nikola Ghassomians — M.A., Kentucky, 1964
Dewey Greear — M.A., Morehead, 1966
Carole Griffiths — M.A., Marshall, 1965
Richard P. Hedlund — M.A., Kentucky, 1964
Jeannette Hill Jennings — A.B., Kentucky, 1957
Annabel Romig Lenning — M.A., Marshall, 1966
George Livingston — M.S., West Virginia, 1963
Sandra L. Noe — M.A., Kentucky, 1962
Sarah P. Pyles — M.A., Kentucky, 1963

Bursar-Recorder

Martha L. Tate — B.A., Morehead, 1940

Elizabethtown Community College

James S. Owen, director

Assistant Professors or Senior Instructors

Lila E. Kieser — M.A., Peabody, 1965
James S. Owen — Ed.D., Auburn, 1956

Instructors

Linda Nell Alvey — M.S., Kentucky, 1964
Martha Doris Bain — M.A., Kentucky, 1965
Phyllis P. Brandenburg — M.A., Kentucky, 1964
Modesto del Castillo — M.S., New Mexico, 1966
Michael B. Coyle — M.A., Vanderbilt, 1966
Jean K. Custer — B.S.N., Kentucky, 1965
Charles Deusner — M.A., Kentucky, 1962
Ernest Luther Hill — M.A., Kentucky, 1954
J. Robert Hill — M.A., Peabody, 1962
Charles J. Isbell — M.S., Kentucky, 1962
Martha A. T. Knudson — M.Ed., Maryland, 1954
Harry G. Lee — B.A., Georgetown, 1961
Powell McCourt Livesay — B.S., Richmond, 1965
Marshall D. Myers — M.A., Eastern Kentucky, 1966
Emil Peter III — M.B.A., North Carolina, 1965
Donald B. Phillips — M.S., North Dakota State, 1966
Margaret Jean Ryan — A.B., Kentucky, 1964
Bill Gene Smith — B.S., Georgetown, 1961
Robert E. Toohey — M.A., Kentucky, 1961
Thomas L. Updike, Jr. — M.A., Kentucky, 1959
Mary Maurice Utley — M.A., Western Kentucky, 1963
Donald F. Wallace — M.A., Georgia State College, 1965

Bursar-Recorder

Robert Keen — M.A., Eastern Kentucky, 1957

Librarian

Betty Jane McFarland
M.A., Peabody, 1961; M.A. L.S., Peabody, 1964

Fort Knox Community College

James Allison Jones, acting director

Assistant Professors or Senior Instructors

Thomas Elmer Gaston — M.A., Kentucky, 1960
James Allison Jones — M.S., Georgia, 1949

Instructor

Fred Marshall Kimmey, Jr. — M.A., Indiana, 1961

Henderson Community College

Marshall Arnold, director

Assistant Professors or Senior Instructors

Marshall Arnold — Ed.D., Missouri, 1956
Mildred Bennett — M.S.N.Ed., Indiana, 1959
Ronald W. Butler — M.A., Kentucky, 1960
Arch Sanders Lacefield — M.A., Kentucky, 1950
Ernest L. Overfield — M.A., Vanderbilt, 1954
Dorothy Rothrock Tapp — M.S., Chicago, 1948

Instructors

Michael J. Barthel — M.A., Texas, 1961
Carl Best Boyd, Jr. — M.A., Kentucky, 1964
Albert C. Braden — M.A., Ohio State, 1964
Mildred Duncan — B.S.N., Evansville College, 1962
Ira Dean Elkins — M.S., Oklahoma, 1950
Bettye Juanita Klauss — M.S.N.Ed., Indiana, 1965
Jeordano S. Martinez — M.S., Southern Illinois, 1966
Larry Eugene Myers — B.S., Ball State, 1966
Dianne M. Overton — M.S., Southern Illinois, 1965
Rosemarie Page — B.S.N., Indiana, 1966
Jane Lovell Pfingston — M.A., Western Kentucky, 1964
Wayne Shrubsall — M.A., Ball State, 1966
David A. Watkins — M.A., Western Kentucky, 1966

Bursar-Recorder

Jewell G. Addison — B.S., Kentucky, 1950

Librarian

Maralea Arnett — B.S. L.S., Peabody, 1937

Hopkinsville Community College

Thomas L. Riley, director

Assistant Professors or Senior Instructors

J. Brooks Major — Ph.D., Vanderbilt, 1966
Thomas L. Riley — Ph.D., Chicago, 1965

Instructors

James E. Barnes — M.A., Vanderbilt, 1965
Elizabeth Claiborne — M.A., Wittenberg, 1941
Leslie B. Crane — M.A., Peabody, 1966
Charles E. Fothergill — M.A., Kentucky, 1966
Desmond R. Hargis — M.A., Peabody, 1962
Benjamin T. Harrison — M.A., Los Angeles State, 1964
Grace E. Johnson — M.A.E., School of the Art Institute, Chicago
Stephen Mohler — M.A., Missouri, 1966
Joseph Murphy — M.A., Kentucky, 1966
Frances G. Thomas — M.A., Austin Peay, 1962
M. W. Twyman — M.A., North Carolina, 1966
Carlton D. Wall — M.A., Peabody, 1965
Clara E. Wheeler — M.A., Kentucky, 1945
Rebecca G. Williams — M.A., Kentucky, 1965
J. D. Wright — M.S., Kentucky, 1966

Bursar-Recorder

John W. Adams — M.S., Kentucky, 1960

Librarian

Frederick B. Gardner — M.S.L.S., Indiana, 1966

Northern Community College

Thomas Lee Hankins, director

Associate Professors

Thomas Lee Hankins — M.S., Kentucky, 1940
Charles G. Talbert — Ph.D., Kentucky, 1952

Assistant Professors or Senior Instructors

Virginia L. Bryan — M.A., Columbia, 1962
William M. Byron — M.A., Kentucky, 1957
Mary Ann Clark — M.A., Columbia, 1959
Dixiana Smith — M.A., Columbia, 1957

Instructors

Martin Brown — M.S., Xavier, 1963
Larry Lee Dickson — M.A., Ball State, 1966
Jane M. Dotson — M.A., Cincinnati, 1961
Sandra Easton — M.Ed., Cincinnati, 1965
Rosalie Kay Gleim — M.A., Purdue, 1960
Burton G. Livingston — M.A., Michigan, 1965
Mary Seward Livingston — M.A., Michigan, 1965
Carol A. McGuire — B.S.N., Catherine Spalding, 1960
James L. Perkins — M.A., Kentucky, 1964
Rae Stetler Reynolds — M.A., Cincinnati, 1966
Clara H. Richards — M.A., George Washington, 1941
Sue Ellen Riddell — M.A., Kentucky, 1965
Terence Robbins — M.A., Butler, 1964
Margery T. Rouse — M.A., Kentucky, 1944
Carolyn Lucille Rudorf — M.A., Illinois, 1950
Stanley Schulman — M.A., Ohio, 1965
Clifford J. Stone — M.B.A., Xavier, 1956
Mary S. Sweeney — M.A., Columbia, 1966
Louis R. Thomas — M.A., Miami University, 1963

Bursar-Recorder

Paul R. Schott — B.S., Kentucky, 1959

Librarian

Marion F. Smith — B.S., Simmons College, 1939

Prestonsburg Community College

Henry A. Campbell, Jr., director

Assistant Professors or Senior Instructors

Doris A. Berry — Ed.D., Indiana, 1963
Henry A. Campbell, Jr. — Ph.D., Texas, 1963

Instructors

Larry E. Askins — M.Math, Tennessee, 1963
Samuel Bittman — M.A., Iowa, 1966
Robert Blackledge — M.S., Georgia, 1962
Elizabeth E. Boyd — M.A., Missouri, 1966
Phyllis Rhea Burnett — M.A., Morehead, 1963
Marigrace Barnett Cottrell — M.A., Morehead, 1966
J. Richard Cummings — M.A., Duke, 1962
John C. Douglass — M.S., New Mexico State, 1965
Walter Frasure — M.A., Morehead, 1963
Joseph E. Jeffries — M.A., Mississippi, 1965
Neleta Jeffries — M.S., Mississippi, 1965
Jeanne Jerrems — M.F.A., Art Institute of Chicago, 1953
Gus M. Kalos — M.S., Indiana, 1959
Thomas C. Knuckles — M. Foreign Studies, Maryland, 1950
Uldis Kukainis — M.A., Indiana, 1964
John Charles Maxwell — M.A., Calif.-Berkeley, 1965
Ruth Carole Rea — M.A., New Mexico, 1966
Ray Reed — M.S., Kentucky, 1960
Gopal K. Sharma — M.S., Missouri, 1962
Larry D. Stanley — M.A., Kentucky, 1964
Carolyn Turner — M.A., Kentucky, 1965
Laura Weddle — B.A., Georgetown, 1955; A.B. in Ed., Kentucky, 1959
Leo Weddle — M.A., Kentucky, 1959
Larry White — M.S., Kansas State College of Pittsburg, 1960
Vernon Wiegand — M.B.A., Cincinnati, 1964

Bursar-Recorder

Glendon Cowan — B.S., Lincoln Memorial, 1957

Librarian

Robert J. Wallace — M.S.L.S., Kentucky, 1959

Somerset Community College

Roscoe D. Kelley, director

Robert F. Gloor — M.D., Loma Linda, 1954
Roscoe D. Kelley — D.Ed., Auburn, 1958

Instructors

Mary L. Bacon — M.A., Kentucky, 1964
Susan Cunagin — M.A., Louisville, 1966

John M. Dykes — M.S., Ohio State, 1962
Charles T. Hughes — M.A., Kentucky, 1964
Betty J. Gibson — M.A., Tennessee, 1960
Margaret G. Johns — M.A., Eastern Kentucky, 1963
John J. Madura — M.A., Murray, 1964
Eleanor Terry Norfleet — M.A., Western Kentucky, 1963
Donald F. Orwin — A.B., Kentucky, 1947
Larry Schenck — M.A., Iowa, 1962
Harold D. VanHook — M.A., Eastern Kentucky, 1962
Bonnie Young — M.A., Appalachian State Teachers College, 1966
William Young — M.A., Appalachian State Teachers College, 1964
Steven Ran Smith — M.A., Georgia, 1963
Carl D. Wright — M.S., Indiana, 1962

Visiting Instructor

Meredith J. Cox — M.A., Peabody, 1923; D.L., Duke, 1929

Bursar-Recorder

Charles Edward Hurt — M.A. Ed., Eastern Kentucky, 1952

Librarian

Freda L. Howell — Ph.B., Chicago, 1928; B.L.S., Minnesota, 1946

Southeast Community College

James C. Falkenstine, director

Assistant Professors or Senior Instructors

James C. Falkenstine — Ed.D., Kentucky, 1965
David L. Hughes — M.S., Wisconsin, 1953

Instructors

Robert Arnold — M.A., Kent State, 1965
Thomas M. Bowen — B.S., Lincoln Memorial, 1959
Joyce A. Bryan — M.Ed., South Carolina, 1960
Betty Anne Chambers — M.A., Kentucky, 1961
Larry Craft — M.S., Kentucky, 1965
William M. Davis — M.A., Kentucky, 1966
Walter P. Gerlach — M.A., Kentucky, 1963
Joanne Hogue — M.B.A., Indiana, 1950
Jessie Paul Jones — M.A., Southern Mississippi, 1965
Richard Lindstrom — M.A., Louisville, 1962
Edith Joy Pennington — A.B., Berea, 1962
Royce Lee Pennington — M.A., State University of Iowa, 1965
Emerson Therriault — M.A., Southern California, 1951
Charles Willis — M.A., North Texas State, 1958

Visiting Instructor

Sara Cameron Hancher — A.B., Kentucky, 1959

Bursar

Robert Bryan — B.S., Berea, 1956

Librarian

Gertrude A. Dale — M.A.L.S., Peabody, 1962

Lexington Technical Institute

Charles T. Wethington, Jr., acting director
(Ph.D., Kentucky, 1966)

Assistant Professors or Senior Instructors

Florence Irwin — M.A., Columbia, 1963
Donald W. Rice — D.D.S., Illinois, 1959

Instructors

John T. Kemper — Assoc. in Dent. Tech., S.I.U., 1964
Nannette Nelson — B.S.N., Ohio State, 1963
Madeline Billow Wickens — B.S.N., Cincinnati, 1966
Lorraine Zix — M.S., Syracuse, 1965

Bursar-Recorder

Agnes Spence — B.S., Kentucky, 1946

Forestry and Wood Technician School

Wood Utilization Center, Quicksand, Ky.

C. Austin Eckerline, director
(B.S., Wood Products Engineering, Syracuse, 1947)

Superintendent

Donald H. Graves — M.S., Florida, 1965

Instructors

Stanford J. Lunstrum — B.S.F., Iowa State, 1962
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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

Architecture Bulletin

Community College System Bulletin

Dentistry Bulletin

Education Bulletin

Engineering 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

Campus View (illustrated map)

Information on the University Community Colleges at Ashland, Covington, Cumberland, Elizabethtown, Fort Knox, Henderson, Hopkinsville, Prestonsburg, and Somerset, is available from the Community College System Office. For information on extension, evening, and correspondence courses, write to University Extension.

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 40506, 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

Student Affairs—Vice President, Student Affairs

Living accommodations—University Housing Office

A particular college and its program—Dean of the College

Community Colleges—Dean of Community Colleges

Graduate work—Dean of the Graduate School

Summer Session—Director of the Summer Session

Class extension and correspondence study—Dean of University Extension

Agricultural extension—Director of Agricultural Extension

Scholarships and Loans—Director of School Relations

General information about the University—Vice President—University Relations

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