

1961

## 1961-1963 Southern Illinois University Bulletin Carbondale Campus (College of Liberal Arts and Sciences)

Southern Illinois University Carbondale

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# Southern Illinois University

*Bulletin*



*College of Liberal Arts and Sciences*

**CARBONDALE CAMPUS 1961-63**

# Objectives of Southern Illinois University

## TO EXALT BEAUTY

IN GOD,  
IN NATURE,  
AND IN ART;  
TEACHING HOW TO LOVE THE BEST  
BUT TO KEEP THE HUMAN TOUCH;

## TO ADVANCE LEARNING

IN ALL LINES OF TRUTH  
WHEREVER THEY MAY LEAD,  
SHOWING HOW TO THINK  
RATHER THAN WHAT TO THINK,  
ASSISTING THE POWERS  
OF THE MIND  
IN THEIR SELF-DEVELOPMENT;

## TO FORWARD IDEAS AND IDEALS

IN OUR DEMOCRACY,  
INSPIRING RESPECT FOR OTHERS  
AS FOR OURSELVES,  
EVER PROMOTING FREEDOM  
WITH RESPONSIBILITY;

## TO BECOME A CENTER OF ORDER AND LIGHT

THAT KNOWLEDGE MAY LEAD  
TO UNDERSTANDING  
AND UNDERSTANDING  
TO WISDOM.

College of  
Liberal Arts and Sciences  
*Announcements for 1961-1963*



SOUTHERN ILLINOIS UNIVERSITY BULLETIN  
Volume 3                      Number 11                      December, 1961  
Second-class postage paid at Carbondale, Illinois.  
Published by Southern Illinois University, monthly  
except in September, when published semimonthly.



The following issues of the *Southern Illinois University Bulletin* may be obtained without charge from General Publications, Southern Illinois University, Carbondale, Illinois.

General Information  
Summer Session (Carbondale)  
Summer Session (Edwardsville)  
Schedule of Classes (Carbondale)  
Schedule of Classes (Edwardsville)  
General Announcements (Edwardsville)  
Graduate School  
College of Education  
College of Liberal Arts and Sciences  
School of Agriculture  
School of Applied Science  
School of Business  
School of Communications  
School of Fine Arts  
School of Home Economics  
University Institutes  
Division of Technical and Adult Education

All intending students should have the General Information Bulletin (issued once a year), plus the special bulletins of the various educational units in which they are most interested.

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Acting Chief Academic Adviser Marjorie Shank, A.M. (Clark)	1923
Registrar and Director of Admissions Robert A. McGrath, Ph.D. (Iowa)	1949

## *This Bulletin . . .*

covers in detail questions concerning the College of Liberal Arts and Sciences. It does not cover all questions concerning Southern Illinois University. For complete information about the University the prospective student should refer to the General Information bulletin.

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# University Calendar, 1961-1962

## SUMMER SESSION

Session Begins	Monday, June 19
Independence Day Holiday	Tuesday, July 4
Final Examinations	Wednesday–Thursday, August 9–10
Commencement	Friday, August 11

## FALL QUARTER

New Student Week (Carbondale)	Sunday–Tuesday, September 17–19
New Student Week (Edwardsville)	Saturday–Sunday, September 16–17
Quarter Begins	Wednesday, September 20
Thanksgiving Recess	Wednesday, 12 noon–Monday, 8 A.M. November 22–27
Final Examinations	Monday–Saturday, December 11–16

## WINTER QUARTER

Quarter Begins	Tuesday, January 2
Final Examinations (Carbondale)	Monday–Saturday, March 12–17
Final Examinations (Edwardsville)	Wednesday–Monday, March 14–19

## SPRING QUARTER

Quarter Begins	Monday, March 26
Memorial Day Holiday	Wednesday, May 30
Final Examinations	Wednesday–Tuesday, June 6–12
Commencement (Carbondale)	Wednesday, June 13
Commencement (Edwardsville)	Thursday, June 14

Summer classes begin on Tuesday, June 20. During a quarter, Carbondale day classes begin on the second day of the quarter. Carbondale evening classes (5:45 P.M. or later) begin on the first day. Classes on the Edwardsville campuses begin on September 21, January 4, and March 28.

# University Calendar, 1962-1963

## SUMMER SESSION

Session Begins	Monday, June 18
Independence Day Holiday	Wednesday, July 4
Final Examinations (8-week session)	Wednesday–Thursday, August 8–9
Commencement	Friday, August 10
Final Examinations (Summer Quarter)	Thursday–Friday, August 30–31
Quarter Ends	Friday, August 31

## FALL QUARTER

New Student Week	Friday–Sunday, September 21–23
Quarter Begins	Monday, September 24
Thanksgiving Recess	Wednesday, 12 noon–Monday, 8 A.M. November 21–26
Final Examinations	Wednesday–Tuesday, December 12–18

## WINTER QUARTER

Quarter Begins	Wednesday, January 2
Final Examinations	Wednesday–Tuesday, March 13–19

## SPRING QUARTER

Quarter Begins	Wednesday, March 27
Memorial Day Holiday	Thursday, May 30
Final Examinations	Thursday–Wednesday, June 6–12
Commencement (Carbondale)	Thursday, June 13
Commencement (Edwardsville)	Friday, June 14

Summer classes begin on Tuesday, June 19. During the fall, winter, and spring quarters, day classes begin on the second day of the quarter. Evening classes (5:30 P.M. or later) begin on the first day of the quarter.



ACK

LANGUAGE AND PHILOSOPHY

12  
6274

RNELL

Deutsche Sibel · Otto Kallwitz 5

ANATOMY OF THE NERVOUS SYSTEM

LARSELL

611.8  
L334  
1951

APPLETON CENTURY CROFTS

FORMS & FUNCTIONS OF 20TH CENTURY ARCHITECTURE

1

HAMLIN

COLUMBIA

724.91  
H223F  
v.1

KLINE

Mathematics IN WESTERN Culture

OXFORD

510.9  
K65m  
cop.2

THE COLUMBIA ENCYCLOPEDIA



SECOND EDITION

R031  
C726  
1950

COLUMBIA UNIVERSITY PRESS

Modern Europe in World Perspective

1914 to the Present

Anderson  
940.5  
A546m

Rinehart



# The University

SOUTHERN ILLINOIS UNIVERSITY was established in 1869 as Southern Illinois Normal University. The shortened name became official in 1947 by action of the state legislature.

For some years after its establishment, Southern operated as a two-year normal school. In 1907 it became a four-year, degree-granting institution, though continuing its two-year course until 1936. In 1943 the state legislature changed the institution, which had been in theory exclusively a teacher-training school, into a university, thereby taking official recognition of the great demand in the area for diversified training.

The Graduate School, approved in 1943, at first granted only the Master of Science in Education degree. In 1948 it was authorized to grant also the Master of Arts and Master of Science degrees. In 1952 the Master of Fine Arts degree was added to this list, and in 1955 the Doctor of Philosophy degree was added. The Master of Music and the Master of Music Education degrees were authorized in 1956.

In 1949 the Belleville Residence Center was established and the Alton and East St. Louis residence centers in 1957. In 1958 the Southwestern Illinois Residence Office was created to co-ordinate and direct the University's educational activities in the Madison-St. Clair counties area. In 1959 the Southwestern Illinois Campuses were recognized as a unit co-ordinate with the Carbondale campuses.

## LOCATION

The general administrative offices for the University's campuses at Carbondale, Southern Acres, and Little Grassy Lake are located at Carbondale. The central administrative offices directing the University's educational programs at Alton and East St. Louis are located at Edwardsville.

The facilities at Carbondale now include more than twenty-five



hundred acres of land, thirty-six permanent buildings, and numerous temporary buildings. These buildings house classrooms, auditoriums, laboratories, libraries, offices, living quarters, cafeterias, and farm equipment and animals. The Little Grassy Lake and Southern Acres campuses are each about ten miles from Carbondale.

The facilities of the former Shurtleff College have been leased by the University for the operation of the Alton campus. The East St. Louis campus is located at the former East St. Louis High School building.

## SESSIONS

The academic year is divided into three quarters. Each quarter is approximately twelve weeks in length.

The fall quarter opens near the middle of September and closes just prior to the Christmas vacation period. The winter quarter begins early in January and ends about the middle of March. The spring quarter begins the latter part of March and ends about the second week in June. Definite dates for each quarter may be found in the University Calendar.

In addition to the three quarters, there is an eight-week summer session which begins immediately following the close of the spring quarter. The summer session consists of a comprehensive program of courses offered by the departments of the University. In addition to the courses which run the full eight weeks, there are workshops and short courses covering shorter periods of time.

## REGULATIONS

The University and its various instructional units reserve the right to change the rules regulating admission, instruction, and graduation; to change courses and fees; and to change any other regulation affecting the student body. Such regulations shall go into force whenever the proper authorities so determine, and shall apply both to prospective students and to those who have enrolled in the University.

Each student must assume responsibility for his progress by keeping an up-to-date record of the courses he has taken and by checking periodically with his adviser and the Registrar's Office. Responsibility for errors in program or in interpretation of regulations of the University rests entirely upon the student. Advice is always available on request.

A copy of the regulations governing student life may be obtained from the Office of Student Affairs on the campus which the student attends.

# College of Liberal Arts and Sciences

AFTER THE LEGISLATIVE action in 1943, which changed Southern into a university, a College of Liberal Arts and Sciences was established. The official University Bulletin for 1943-44 gives requirements for the College of Arts and Sciences with sixteen departments.

The college has continued to strengthen its program until at the present time its departments number seventeen in addition to several special study areas such as Asian studies and Russian studies.

## OBJECTIVES

The College of Liberal Arts and Sciences provides for specialized education in the fields of instruction covered by its departments. The college also is a service instructional unit for other colleges, schools, and institutes contributing both to the specialized and general education of their students.

A liberal arts education attempts to develop individuals with minds which are capable of seeking and evaluating; which are adaptable and independent.

## FACILITIES

Owing to its geological history and location the Southern Illinois area is richly endowed floristically and faunistically, so that the area is outstanding for studies in the biological and earth sciences. A group of three greenhouses and headhouse and a herbarium of about 30,000 specimens are added special facilities for the biological sciences.

The antiquity of the land and its early occupancy by people make the area an excellent place for the study of archaic cultures. The more recent past is also rich historically.

Available for use by the physical and natural sciences and also other departments of the University is an electron microscope. Electronic computing machines are available in the Data Processing and Computing Center, and their uses and operation are taught in some mathematics courses.

## PROGRAMS OF INSTRUCTION

### DEGREE PROGRAMS

The College of Liberal Arts and Sciences grants the Bachelor of Arts degree with the following majors and minors. Suggested programs appear in the next chapter of this bulletin.

Anthropology	Geography	Philosophy
Art <sup>1</sup>	Geology	Physics
Asian Studies <sup>2</sup>	Government	Physiology
Biological Sciences	Health Science	Psychology
Botany	History	Religion <sup>2</sup>
Central European Studies <sup>2</sup>	Home Economics <sup>1</sup>	Russian Studies <sup>2</sup>
Chemistry	Inter-American Studies	Sociology
Economics <sup>1</sup>	Mathematics	Speech <sup>1</sup>
English	Microbiology	Theater <sup>1</sup>
Foreign Languages	Music <sup>1</sup>	Zoology

<sup>1</sup>These are liberal arts majors, not professional majors. Course descriptions and suggested curricula appear in the following issues of the *Southern Illinois University Bulletin*: School of Fine Arts for art and music, School of Business for economics, School of Home Economics for home economics, School of Communications for speech and theater. See page ii for source of bulletins.

<sup>2</sup>Minors only.

### *PREPROFESSIONAL PROGRAMS*

Students planning to take preprofessional courses in any of the following areas should register in the College of Liberal Arts and Sciences:

Dentistry	(3 or 4 years)	Pharmacy	(1 to 4 years)
Law	(3 or 4 years)	Physical Therapy	(2 or 3 years)
Medicine	(3 or 4 years)	Public Health	(3 or 4 years)
Medical Technology	(2 or 3 years)	Theology	(2 to 4 years)
Occupational Therapy	(2 or 3 years)	Veterinary Science	(3 or 4 years)

Preprofessional students may obtain, subject to certain conditions, a bachelor's degree after three years' work (144 quarter-hours) at Southern and one or more years' work in a professional school. During their three years of residence at Southern they need to have completed all requirements other than elective hours for the bachelor's degree which they are seeking. In some cases the completion of major and minor requirements is possible by their taking certain courses at the professional school, but this is permitted only upon the prior approval of the appropriate department chairman. Also, there needs to be completion of at least one year of professional work with acceptable grades in a Class A medical school, a Class A dental school, a Class A veterinary school, or an approved law school. In all cases, all university graduation requirements must be met. It is advisable for a student interested in this program to make his decision to seek a bachelor's degree before entering the professional school so that any questions may be clarified at an early date.

DENTISTRY, MEDICINE, MEDICAL TECHNOLOGY, OCCUPATIONAL THERAPY,  
PHARMACY, PHYSICAL THERAPY, VETERINARY SCIENCE

Professor Harold M. Kaplan is the chairman of a medical advisory committee established to advise all students planning to enter medical school or dental school or to train themselves for careers in related fields.

All such students should plan their curricula very carefully. They will all need at least two years' work in chemistry, including some qualitative and some organic chemistry, and one year of biology (zoology). Since they are not expecting to receive degrees from Southern, they will not necessarily be held to all the requirements for the bachelor's degree at this University; they must, on the other hand, keep constantly in mind the requirements for admission and the later required courses in the special schools which they wish to attend. Each student should write for the catalog of the professional school he plans to enter.

## LAW

Since law touches practically every human interest, a good general college background is strongly recommended. But as a rule, the pre-legal student is expected to choose a field of concentration in the social studies such as government, economics, history, sociology, psychology, or possibly philosophy.

Law schools normally require three years of pre-legal college study, and usually prefer four years of study and completion of requirements for the Bachelor of Arts degree. If the proper arrangements are made in advance, it is possible to obtain the Bachelor of Arts degree at Southern Illinois University by completing three years of pre-legal study and one year of successful work in an accredited law school. All university graduation requirements must be met, and ordinarily the student should plan to major in government. Three years of study in law school lead to the LL.B. degree. Admission requirements include adequate pre-legal grades, and sometimes the passing of a law school admission test which is offered annually over the nation.

The skills most needed in law are (1) an excellent command of the English language, both written (Department of English) and spoken (Department of Speech); (2) precision in thought (logic and other courses in philosophy, and courses in mathematics and the sciences); (3) some ability in the use of figures (a knowledge of accounting is regarded as very important); and (4) ease in understanding Latin phrases (Latin or French, in high school or college, is helpful).

The subject matter of particular value would include (1) government (national, state and local, and constitution principles); (2) history (American and English, to obtain the background for understanding legal institutions and principles); (3) economics; (4) psychology; (5) sociology; (6) anthropology; (7) philosophy, including ethics; and (8) geography.

In addition to private practice, lawyers are needed in many areas such as business, labor, government, politics, and international relations. Students with special interests should choose electives in those fields, in addition to obtaining as broad a background as possible.

## PUBLIC HEALTH

The public health curriculum is a preprofessional course designed to meet the current demand for trained personnel in the public health fields. Planned specifically for those students interested in public health sanitation and public health laboratory work, the curriculum crosses departmental boundaries to give one a good basic background in the sciences and



social studies. Students with good academic records in this program should have no difficulty in securing admission to a school of public health for graduate work.

The curriculum is sufficiently broad to accommodate students who are interested in premedical or pre dental careers. Sufficient electives are provided so that minors can be worked out in chemistry or zoology.

#### THEOLOGY

Any student who plans to enter a graduate theological seminary should consult his clergyman or his major professor at the earliest possible date. He should obtain a catalog of the seminary he plans to enter and prepare himself to meet its specific entrance requirements. The American Association of Theological Schools, which is the accrediting agency accepted by most theological schools, suggests a broad, basic education with an emphasis upon ability to think, speak, and write clearly and correctly. No undergraduate major in religion is offered at Southern Illinois University but the American Association of Theological Schools believes that such undergraduate specialization is not usually desirable. Students, however, may present a minor in religion. Among suitable majors leading to the required bachelor's degree are philosophy, history, and sociology.

The American Association of Theological Schools regards the following as a minimum list of fields of study that a student should have before beginning study in a seminary. The work in these fields should be evaluated on the basis of his mastery of these fields rather than in terms of semester hours or credits. That this recommendation may help the student faced with the practical problem of selecting courses, however, it is suggested that he take approximately three-fourths of his college work in the following specific areas:<sup>1</sup>

English. Literature, composition, speech, and related studies (English 390, Journalism 393, Radio-Television 161, Speech 102, 103)—at least six semesters.

History. Ancient, modern European, and American (History 304, 416)—at least three semesters.

Philosophy. Orientation in history, content and method (Philosophy 301, 320, 340, 360, 381, 382, 383)—at least three semesters.

Natural sciences. Preferably physics, chemistry, and biology (Physics 101, 102; Chemistry 111, 112; Botany 101; Zoology 100)—at least two semesters.

Social studies. Psychology, sociology, economics, political science, anthro-

<sup>1</sup> Courses offered at Southern Illinois University which should be useful in supplying this background are in parentheses.

pology, education (Psychology 301, 305, 401; Sociology 102, 241, 320, 351, 380, 484; Economics 310, 450; Government 370, 441; Educational Administration and Supervision 355)—at least six semesters including at least one semester of psychology.

Foreign languages. One or more of the following: Latin, Greek, Hebrew, German, French (Greek 101, 102, 103)—at least four semesters.

Religion. The pretheology student may well seek counsel of the seminary of his choice in order to use the resources of his college most profitably.

Attention is also called to religion courses offered for credit by the off-campus foundations and to the courses in philosophy of religion, sociology of religion, and world religion offered on campus.

## PUBLIC AFFAIRS RESEARCH BUREAU

First organized as a Local Government Center in 1951, the Public Affairs Research Bureau was approved as an agency of the College of Liberal Arts and Sciences by the Board of Trustees effective July 1, 1958.

The bureau concerns itself with making available certain findings of its staff to various agencies such as public schools, municipalities, business organizations, state and federal government and others in a position to apply these findings in the public interest.

## STUDENT ORGANIZATIONS AND ACTIVITIES

Several academic departments have clubs or other interest groups to allow majors in special areas to become better acquainted with one another and with faculty members and to investigate further their special interests. The following departments have clubs: anthropology, botany, chemistry, English, foreign language (Spanish and German), government (International Relations Club, Young Democrats Club, Young Republicans Club), geology, history, philosophy, and psychology. The following departments have national honors societies: mathematics (Pi Mu Epsilon), government (Pi Sigma Alpha), geography (Gamma Theta Upsilon). The chemistry department has a student affiliate of the American Chemical Society.

In the college there is a Liberal Arts Honors Society, and students of the college qualifying scholastically are eligible for membership in Phi Kappa Phi.

The College of Liberal Arts and Sciences encourages a broad student

activity program with opportunities for all students to participate. The many organizations augment the student's educational experiences by assisting him in learning how to plan and carry out responsibilities, how to work with others, how to make wise use of leisure time, and how to develop leadership.

Additional information about student organizations and activities appears in the student handbook *Your Life, Southern Style*, available from the Office of Student Affairs, and in the General Information issue of the *Southern Illinois University Bulletin*.

## ADMISSION TO THE COLLEGE

Candidates for admission to the College of Liberal Arts and Sciences should have included in their high school program four units of English, three to four units of mathematics including at least the equivalent of one and one-half units of algebra and one unit of geometry, two units of laboratory science, a unit of social studies other than American history, and two units of a foreign language with Latin preferred.

Inquiries concerning admission to the College of Liberal Arts and Sciences should be addressed to the University's Admissions Office. Application for admission should be initiated at least thirty days in advance of the desired entrance date. High school seniors should start the admission process during the first semester of their senior year, but their formal admission will not be considered until after receipt of the high school record showing completion of the seventh semester of high school work.

COMPLETE DETAILS concerning admission, tuition, fees, housing, financial assistance, and student employment are given in the General Information bulletin. For a free copy write to General Publications, Southern Illinois University, Carbondale, Illinois.

## TUITION AND FEES

At the present time legal residents of Illinois registered for more than eight hours of credit pay a total of \$61.50 per quarter. This includes \$42.00 tuition, a \$5.00 book rental fee, a \$5.00 student union building fund fee,



and a \$9.50 student activity fee. Out-of-state students pay an additional \$50.00 tuition, or a total of \$111.50. Students registered for eight hours or fewer pay one-half tuition, one-half book rental fee, and full student union building fund fee; they have the option of paying the student activity fee.

## ADVISEMENT

To insure that an undergraduate student is properly advised concerning the course of study which will fulfill the general University requirements and prepare him for his chosen career, academic advisement has been made the special responsibility of a selected group from the teaching faculty. The College of Liberal Arts and Sciences has a chief academic adviser and a number of assistant advisers.

## REQUIREMENTS FOR THE BACHELOR'S DEGREE

Although the following requirements should be met by degree candidates of all colleges and divisions, it should be noted that the general degree requirements of the University have been undergoing intensive study with a view to giving the students of the University further options and providing them with more effective backgrounds not only for their professional careers but also for their standing as citizens in the communities to which they go after graduation. At such time as these new requirements can be published, all students will be notified and the transition from the old system of requirements to the new will be handled with as little inconvenience as possible to all concerned.

Each candidate for the degree must complete a minimum of 192 hours of credit in approved courses. At least 64 must be in senior college courses, of which 48 must be earned at Southern, 16 of which may be earned in extension from Southern. Each student must have a "C" average, and grades not lower than "C" in subjects aggregating at least three-fourths of the work. A "C" average is required in the major subject. These averages are required for the credit made at Southern as well as for the total record.

The *quarter hour* is the unit of credit used at Southern and throughout this bulletin. One quarter hour is two-thirds of a semester hour.

Except for Bachelor of Music Education and Bachelor of Music degree students, the following requirements should be met by all bachelor's degree candidates of the University within the first two years of attendance.

REQUIREMENTS	HOURS	COURSES
Social Studies	20	Economics 205, Geography 100, 300, Government 101, 300, History 101, 102, 103, 201, 202, Sociology 101 (work in four of the five departments). To satisfy Illinois law, a candidate must take Government 101 or 300 or History 201 or 330 or pass a test on national and state constitutional principles.
Humanities	18	
English	(9)	English 101, 102, 103
English	(6)	English 205, 206, 209, 211, 212
Art or Music	(3)	Art 120, Music 100
Biological Sciences	9	
Health Education	(4)	Health Education 100
Botany or Zoology	(5)	Botany 101, 102, 202, Zoology 100
Mathematics and Physical Sciences	12	Chemistry, physics, and mathematics (work in two of the three departments)
Practical Arts and Crafts	3	Agriculture, business administration, home economics, industrial education (not required if the student has had any such work in high school)
Physical Education	6	Activity courses
Air Science (Men only)	3	Air Science 110, 210, 220, six quarters of leadership laboratory, and three elective courses must be satisfactorily completed before this requirement is fulfilled.
TOTAL	71	

### *COLLEGE OF LIBERAL ARTS AND SCIENCES REQUIREMENTS*

In addition to the above requirements, a candidate for a degree in the College of Liberal Arts and Sciences must have the following:

1. Four hours in philosophy or psychology.
2. A reading knowledge of a foreign language. This ordinarily requires nine hours of university study or its equivalent.
3. Competency in English as demonstrated by examination at the end of the junior year.

4. A major of at least 42 hours and a minor of at least 24 hours in an academic department of the college. Requirements of the major department must be satisfied.

In the curricula suggested in the final chapter of this bulletin, reference is made to College of Liberal Arts and Sciences requirements. The 37 hours entered for each such reference include requirements 1 and 2, above, and a 24-hour minor.

### TEACHING CERTIFICATE

Students enrolled in the College of Liberal Arts and Sciences may meet the state requirements for a limited high school teaching certificate by using as their electives the following prescribed courses in the College of Education. The high school certificate is valid for four years for teaching in grades six through twelve of the common schools, renewable in periods of four years upon successful teaching and professional growth satisfactory to the county superintendent of schools.

#### MINIMUM PROFESSIONAL EDUCATION REQUIREMENTS FOR LIBERAL ARTS STUDENTS

Students in the College of Liberal Arts and Sciences who desire to meet only the minimum state standards for certification are to take the following program in professional education. Such students are advised to consult the 1961-63 College of Education bulletin for a statement of requirements which will become effective July 1, 1963.

1. Introductory Psychology .....	4
2. Educational Psychology, including human growth and development .....	3
3. Methods and Techniques of Teaching .....	3
4. History and Philosophy of Education .....	3
5. Guidance and/or Tests and Measurements .....	3
6. Student Teaching .....	8
7. Methods of Teaching Reading .....	3
8. Instructional Materials .....	3
9. Electives in professional education .....	1

The student should be familiar with the requirements for admission to student teaching. (The requirements are stated in the College of Education bulletin.) Also, he should check with his adviser as early as the beginning of the junior year to see that he has met or will meet the requirement of knowing the provisions and principles of the Constitution of the United States and of the State of Illinois.

# Instructional Units

## ANTHROPOLOGY

Professor Philip J. C. Dark, Ph.D. (Yale)	1960
Professor John Charles Kelley, Ph.D. (Harvard)	1950
Professor Walter W. Taylor, Ph.D. (Harvard), Chairman	1958
Associate Professor Pedro Armillas, Dip. (Barcelona)	1960
Associate Professor Charles Henry Lange, Ph.D. (New Mexico)	1955
Associate Professor Carroll L. Riley, Ph.D. (New Mexico)	1955
Assistant Professor Melvin Leo Fowler, Ph.D. (Chicago)	1959
Assistant Professor George W. Grace, Ph.D. (Columbia)	1960
<hr/>	
Visiting Lecturer Laura Thompson, Ph.D. (California)	1961

The areas of specialization are those of archaeology, ethnology, social anthropology, and linguistics. Faculty members of the department have had personal field experience in North, South, and Central America, Europe, Africa, and Oceania. In northern Mexico the department has more specialists and more field experience than any other anthropological organization. Studies of Southern Illinois, which is rich in anthropological and archaeological materials, are carried on continuously.

### *REQUIREMENTS FOR A MAJOR IN ANTHROPOLOGY*

Formal declaration of a major in anthropology should not be made before the end of the sophomore year. Prospective majors are urged to complete their general studies program as soon as possible in order to concentrate on anthropological studies during the junior and senior years. All course requirements for a major in anthropology can be fulfilled during the last two years of undergraduate study. The 300-level courses should be taken during the junior year, 400-level courses during the senior year.

Majors are expected to familiarize themselves with the contents of certain basic anthropological publications, whether these fall within the required courses or not. A list of these publications will be provided, and the student is expected to work out a reading program under the supervision of his adviser.

### SUGGESTED CURRICULUM IN ANTHROPOLOGY

The following curriculum leads to the Bachelor of Arts degree with a major in anthropology in the College of Liberal Arts and Sciences.

<i>General Degree Requirements</i> (See page 10.) .....	71
<i>College of Liberal Arts and Sciences Requirements</i> (See page 11.)....	37
<i>Requirements in the Department of Anthropology</i> .....	48
Anthropology 300, 303, 304, 307, 308, 309, 400, 401, 404, 405, 408, 409	
<i>Related Requirements for the Major</i> .....	24
A minimum of 4 hours is required in each of the following: geography, geology, philosophy, psychology, sociology, zoology.	
<i>Duplication of Requirements</i> .....	-19
Courses taken to satisfy the Related Requirements may be se- lected in such a way that they also satisfy other requirements. If courses are so selected, then up to 19 hours may be deducted here to avoid counting them twice in the total.	
<i>Electives</i> .....	31
<i>Total</i> .....	192

A minor in anthropology consists of Anthropology 300, 400, 409, and 12 hours in any other courses. The student is advised to consult the department before selecting his electives.

### COURSE DESCRIPTIONS

- 110-4. THE WAYS OF MANKIND. A survey of human origins and of human customs throughout the world, from earliest times to the present day. Development of Man as a biological and a cultural being. Relationships and comparisons of Western and non-Western cultures. For freshmen and sophomores only.
- 300-4. MAN'S PLACE IN NATURE. Man as a biological being, his relationships to other living things. Human origins and development. Concept of race and the races of mankind. Human genetics and normal human variation.
- 303-4. PREHISTORY OF THE OLD WORLD. A survey of man's earliest



- cultural beginnings. Paleolithic and Neolithic periods in Europe, Africa, the Near East, and Asia.
- 304-4. THE ORIGINS OF CIVILIZATION. A study of the complex environmental and cultural factors that led to the rise and fall of early high-cultures in both Old and New Worlds.
- 307-4. PEOPLES AND CULTURES OF THE NEW WORLD. The biological and cultural history of the American Indian and the Eskimo from the earliest known times to the present day.
- 308-4. PEOPLES AND CULTURES OF EUROPE AND AFRICA. The biological and cultural history of Man in Europe and Africa during the proto-historic and historic periods.
- 309-4. PEOPLES AND CULTURES OF ASIA AND OCEANIA. The biological and cultural history of man in Asia and Oceania during the proto-historic and historic periods.
- 400-4. MAN AND CULTURE. The nature of culture and cultural process. Relationships of culture and man as an individual and as a group. Emphasis on "the anthropological point of view."
- 401-4. LANGUAGE IN CULTURE. Language as a part of culture. Linguistics and the study of culture.
- 404-4. PRIMITIVE ART AND TECHNOLOGY. The development of man as a tool-using and art-loving being. Artistic and technological traditions of non-Western peoples, past and present.
- 405-4. SOCIAL ANTHROPOLOGY. A comparative approach to the organizational features of human groups. Functional aspects and distributions of kinship, political, religious, and economic systems.
- 408-4. HISTORY OF ANTHROPOLOGICAL THOUGHT. The growth of Anthropology to about 1850, followed by a more intensive survey of the concepts and ideas of anthropology during the past hundred years.
- 409-4. ANTHROPOLOGY AND MODERN LIFE. The applications of anthropological principles to the solution of problems of the modern world. Contributions of anthropology to the work of the educator, social worker, administrator, business man, government official, and other specialists dealing with man in Western and non-Western cultures.
- 413-3. INTRODUCTION TO GENERAL LINGUISTICS. The theory and method of linguistics. Analysis and classification of languages.
- 414-3. GENERAL PHONETICS AND PHONEMICS. The theory and practice of linguistic recording and the analysis of sound systems.
- 415-3. GENERAL GRAMMATICAL ANALYSIS. The theory and method of analyzing grammatical systems.
- 420-3. INDIANS OF NORTH AMERICA. A survey of proto-historic and historic Indian and Eskimo cultures north of Mexico.
- 421-3. INDIANS OF MESO-AMERICA. A survey of the native peoples of Mexico and Central America, their history and their contributions to modern mestizo culture.
- 422-3. INDIANS OF SOUTH AMERICA. A survey of the native peoples of South America and the West Indies, their history and their contributions to the life of modern nations.
- 430-3. ARCHAEOLOGY OF NORTH AMERICA. A survey of prehistoric Indian and Eskimo cultures north of Mexico.

- 431-3. **ARCHAEOLOGY OF MESO-AMERICA.** A survey of prehistoric Indian cultures of Mexico and Central America.
- 432-3. **ARCHAEOLOGY OF SOUTH AMERICA.** A survey of prehistoric Indian cultures of South America.
- 462-3. **SOCIAL ORGANIZATION.** Deals specifically with those aspects of social organization which are based on kin and status relationships.
- 465-3. **RELIGIONS OF THE WORLD.** The origins of religion and a survey of religions past and present. Emphasis on the beliefs of non-Western peoples.
- 470-3. **CULTURAL BACKGROUND OF ART.** The role of culture in artistic expression. Art as a system in culture. The artist's role in society. Aesthetic aspects and appreciation of non-Western art.
- 475-3. **CULTURAL BACKGROUND OF EDUCATION.** How societies pass on their cultural patterns. Comparative study of educational processes over the world. Our own methods and goals in helping non-Western peoples adapt themselves to Western culture.
- 480-3. **CULTURE-HISTORY OF SOUTHERN ILLINOIS.** A survey of the human occupation of southern Illinois from earliest Indian times to modern communities and ethnic groups.
- 481-3 to 6. **SEMINAR IN ANTHROPOLOGY.** The topic and instructor will vary. Students should consult the department before enrolling.
- 483-3 to 6. **RESEARCH IN ANTHROPOLOGY.** Guided research upon anthropological problems. Students should consult the department before enrolling.
- 485-3 to 6. **READING IN ANTHROPOLOGY.** Guided reading designed to cover special topics and to fill gaps in the student's basic anthropological background. Prerequisites: previous course work in anthropology and consent of department.
- 490-3. **THEORY AND METHOD IN ARCHAEOLOGY.** The conceptual schemes of archaeological research and the methods which implement them in practice.
- 491-5. **ARCHAEOLOGICAL FIELD METHODS.** The theory, methods, and techniques of field research in archaeology. Training and practice is offered in surveying, photography, field recording, and other basic skills required by the archaeologist.
- 495-3. **FIELD AND RESEARCH METHODS IN ETHNOLOGY.** Methods used in the field and in the analysis and presentation of research on living peoples. Organization, field situations, and documentary research will be stressed.
- 497-3 to 9. **FIELDWORK IN ANTHROPOLOGY.** Students should consult the department before enrolling.

Courses on the 500 level are for graduate students only.

- 500-3. **PRO-SEMINAR.** Anthropology as an academic and research discipline. A survey of the personnel and source materials of the profession, Professional standards, ethics, values, aims.
- 513-3. **HISTORICAL LINGUISTICS.** An introduction to the study of the processes of language change and linguistic techniques of reconstruction.
- 520-3. **ETHNOLOGY OF THE GREATER SOUTHWEST.** Problems pertaining to the cultures of arid America.

- 525-3. MESO-AMERICAN CHRONICLES. Comparative study of the pre-Spanish writings of the Indians of Meso-America.
- 526-3. COLONIALISM AND NATIVE CULTURES IN LATIN AMERICA. The impact of European conquest and dominance upon the native peoples and cultures in Latin America.
- 527-3. NEGRO CULTURES OF THE CARIBBEAN. Their origins and development and their relationships with the other cultures, Indian and European, of the Caribbean area.
- 529-3 to 9. ETHNOLOGICAL CULTURES OF THE NEW WORLD. Intensive study of selected areas and cultures. Students should consult the department before enrolling.
- 530-3. ARCHAEOLOGY OF THE EASTERN UNITED STATES. The prehistoric cultures east of the Rocky Mountains.
- 531-3. ARCHAEOLOGY OF THE GREATER SOUTHWEST. The prehistoric cultures of arid America.
- 533-3. MEXICAN ARCHAEOLOGY. The non-Maya cultures of prehistoric Mexico.
- 534-3. MAYA ARCHAEOLOGY. Prehistoric Maya cultures of southern Mexico and Central America.
- 539-3 to 9. ARCHAEOLOGICAL CULTURES OF THE NEW WORLD. Intensive study of selected areas and cultures. Students should consult the department before enrolling.
- 540-3. ETHNOLOGY OF EUROPE. Problems pertaining to the traditional and contemporary cultures of Europe. Population movements and the spread of ideas as background for the modern ethnic situation.
- 541-3. ETHNOLOGY OF RUSSIAN ASIA. Problems pertaining to the cultures of northern Asia.
- 543-3. ETHNOLOGY OF AFRICA. Problems pertaining to the cultures of Africa, with emphasis on negro Africa.
- 546-3. ETHNOLOGY OF SOUTHERN ASIA. Problems pertaining to the cultures of India, southeast Asia, and Indonesia.
- 547-3. ETHNOLOGY OF OCEANIA. Problems pertaining to the cultures of Australia and the Pacific Islands: Melanesia, Micronesia, and Polynesia.
- 549-3 to 9. ETHNOLOGICAL CULTURES OF THE OLD WORLD. Intensive study of selected areas and cultures. Students should consult the department before enrolling.
- 559-3 to 9. ARCHAEOLOGICAL CULTURES OF THE OLD WORLD. Intensive study of selected areas and cultures. Students should consult the department before enrolling.
- 562-3. PEASANT CULTURES. The theory of "peasant society" and comparative analysis of particular communities so classified.
- 565-3. BUILDING OF CULTURES. The factors involved in the growth, change, and breakdown of cultural patterns. Theories of innovation and culture change.
- 570-3. TECHNOLOGY IN CULTURE. Intensive study of the locus and function of technologies in culture as exemplified in selected areas in Oceania, Africa, North America, and elsewhere.
- 575-3. CULTURAL THEMES AND VALUES. Comparative study of systems of beliefs, interests, goals which influence and guide the individual's participation in his own and other cultures.



- 580-3. CULTURE-HISTORY AND CULTURE-ECOLOGY OF NORTHERN MEXICO. A joint faculty-student seminar designed to attack problems arising from Departmental field-work in central and northern Mexico and the American Southwest.
- 581-3 to 9. GRADUATE SEMINAR IN ANTHROPOLOGY. Students should consult the department before enrolling.
- 582-3 to 9. ADVANCED PROBLEMS IN ARCHAEOLOGY. Guided research upon archaeological problems. Students should consult the department before enrolling.
- 584-3 to 9. ADVANCED PROBLEMS IN CULTURAL ANTHROPOLOGY. Guided research upon problems of ethnology, social anthropology, and linguistics. Students should consult the department before enrolling.
- 585-3 to 9. ADVANCED READING IN ANTHROPOLOGY. Guided reading designed to cover special topics and to fill gaps in the student's specialized anthropological background.
- 597-3 to 9. GRADUATE FIELDWORK IN ANTHROPOLOGY. Students should consult the department before enrolling.
- 599-3 to 9. THESIS.
- 600-3 to 48. DISSERTATION.

## ASIAN STUDIES

Within the College of Liberal Arts and Sciences, a student may minor in Asian Studies. To qualify for this minor, a student must present a minimum of thirty hours; the thirty hours are to be chosen from at least three departments from a list of offerings approved by the Committee on Asian Studies. These approved courses cover areas of instruction in anthropology, art, economics, geography, government, history, and philosophy.

In the future, the minor in Asian Studies may be expanded to include work in the languages of the Far East, South and/or Southeast Asia.

A leaflet describing the program is available from Professor Ping-chia Kuo, Chairman, Committee on Asian Studies, Southern Illinois University, Carbondale, Illinois.

## BIOLOGICAL SCIENCES

The following curriculum leads to the Bachelor of Arts degree. The curriculum is designed to give the student a broad training in the biological sciences and to prepare him for teaching biology in the high school. Courses in allied fields of science are included to provide a background for complete understanding of the biological sciences.

<i>General Degree Requirements</i> (See page 10.) .....	71
<i>College of Liberal Arts and Sciences Requirements</i> (See page 11.) ....	37

BIOLOGICAL SCIENCES	19
<i>Requirements in Biological Sciences</i> .....	70
Botany 101, 202, 203, 470	19
Microbiology	5
Physiology	5
Zoology 101, 102, 103	15
Electives in botany and zoology to complete at least 40 hours in one department and at least 20 hours in the other	26
<i>Related Requirements for the Major</i> .....	36
Astronomy	4
Chemistry (3 courses)	12
Geology	4
Mathematics (2 courses)	8
Physics	8
<i>Duplication of Requirements</i> .....	-37
Courses required for the major also satisfy 20 hours of College of Liberal Arts and Sciences Requirements and 17 hours of Gen- eral Degree Requirements. These hours are deducted here to avoid counting them twice in the total.	
<i>Electives</i> .....	15
<i>Total</i> .....	192

A student may undertake this program in the College of Education in which case he must satisfy all requirements of that college for the Bachelor of Science in Education degree. The requirements for the major are the same in both colleges.

During his freshman year, any student following this program (in either college) should consult the chairman of the Department of Botany or of the Department of Zoology. A detailed curriculum is available in the departmental office.

## BOTANY

Professor Ladislao v. Olah, Ph.D. (Stephen Tisza, Hungary)	1959
Professor John W. Voigt, Ph.D. (Nebraska)	1950
Professor Walter B. Welch, Ph.D. (Chicago), Chairman	1938
Associate Professor William C. Ashby, Ph.D. (Chicago)	1960
Associate Professor Margaret Kaeiser, Ph.D. (Illinois)	1947
Associate Professor Ralph W. Kelting, Ph.D. (Oklahoma)	1961
Assistant Professor Howard G. Applegate, Ph.D. (Michigan State)	1960
Assistant Professor Donald A. Eggert, Ph.D. (Yale)	1961
Assistant Professor William M. Marberry, A.M. (Illinois)	1939

Assistant Professor Robert H. Mohlenbrock, Ph.D. (Washington University)	1957
Assistant Professor Aristotel J. Pappelis, Ph.D. (Iowa State)	1961
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Visiting Professor Frits W. Went, Ph.D. (University of Utrecht, Netherlands)	1959-60
Lecturer LaDoris Harms Hoppesch, M.S. (Southern Illinois)	1960-62

### SUGGESTED CURRICULUM IN BOTANY

The following curriculum leads to the Bachelor of Arts degree with a major in botany in the College of Liberal Arts and Sciences. Prospective majors are urged to consult with a departmental counselor.

<i>General Degree Requirements</i> (See page 10.) .....	71
<i>College of Liberal Arts and Sciences Requirements</i> (See page 11. )....	37
<i>Requirements in the Department of Botany</i> .....	42
Botany 101, 202, 203, 310, 315, 320	29
Botany electives to complete 42 hours	13
<i>Recommended Courses Related to the Major</i> .....	34-35
Chemistry 110, 230, 240, 350	16
Mathematics 106 or 111, 210	8-9
Microbiology 100 or 301	5
Zoology 100	5
<i>Duplication of Requirements</i> .....	-17
The courses listed above also satisfy 17 hours of general-degree and college requirements. These hours are deducted here to avoid counting them twice in the total.	
<i>Electives</i> .....	24-25
<i>Total</i> .....	192

A minor in botany consists of a minimum of five courses including 101, 202, and 203.

### COURSE DESCRIPTIONS

- 101-5. GENERAL BOTANY. An introductory study of the morphology, anatomy, and physiology of the seed plants including vegetative and sexual reproduction; identification and recognition of common trees by leaf and stem characteristics. Laboratory and field studies.
- 131-5. FIELD BIOLOGY. A course for those who are planning to teach in the elementary schools; methods for the identification of various types of plants and animals; location of source material suitable for teaching nature study. Laboratory and field work costs about \$5.

- 202-5. GENERAL BOTANY. A study of representative plants of the great plant groups; classification; evolution of the plant kingdom. Laboratory, and one all-day field trip may be required. Student cost about \$5. Prerequisite: 101.
- 203-5. TAXONOMY OF LOCAL SEED PLANTS. A study of the characteristics of plants at the family, generic, and specific levels, with special reference to prominent families of flowering plants in southern Illinois. Also included will be collecting techniques and instruction in the use of botanical keys. Some all-day field trips required. Student cost about \$5. Prerequisite: 101.
- 308-5. TAXONOMY OF CULTIVATED PLANTS. A study of the classification of woody and herbaceous cultivated plants, both exotic and native. Three all-day field trips cost about \$6. Prerequisites: 101, 203.
- 310-5. PLANT ANATOMY. An introduction to cell division, development, and maturation of the structures of the vascular plants. Laboratory. Prerequisites: 101, 202.
- 311-5. GENERAL BACTERIOLOGY. (Same as Microbiology 301.) Primarily a course for advanced students in other biological and physical sciences. An advanced treatment of cytology, theories and techniques of staining, physiology, enrichment cultures, and classification of microorganisms and their agricultural, industrial, and medical relationships. Not open to students who have had Microbiology 100 or 201. 3 hours lecture. 4 hours laboratory. Prerequisite: one course in botany or zoology and organic chemistry.
- 315-4. PLANT GENETICS. A general course involving principles of evolution and genetics of plants. Prerequisite: minor in agriculture, botany, or zoology.
- 320-5. ELEMENTS OF PLANT PHYSIOLOGY. A study of the functions of plants and their relation to the various organs. Laboratory. Prerequisite: 101. Desirable antecedent: organic chemistry.
- 321-3. ELEMENTARY BOTANICAL MICROTECHNIQUE. Methods in preservation and preparation of plant materials, both non-vascular and vascular. Prerequisite: one year of botany.
- 340-5. PLANT ECOLOGY. A general course, consisting of studies on the ecology of individual plants and plant communities. Some all-day field trips required. Cost to student about \$5. Prerequisites: 101, 202, 203.
- 355-5. PLANT PATHOLOGY. (Same as Microbiology 355 and Plant Industries 355.) A study of plant diseases caused by fungi, bacteria, and viruses. Special attention given diseases of southern Illinois plants. Laboratory and field trips. Prerequisite: 101, 202, 301, or consent of instructor.
- 390-2 to 4. READINGS IN BOTANY. A course of individually assigned readings in classical botanical literature; both oral and written reports required; open only to undergraduate students. Prerequisite: a major or minor in botany and consent of instructor.
- 391-2 to 5. SPECIAL PROBLEMS IN BOTANY. Individual laboratory or field work under supervised direction. Both written and oral discussions required; open only to undergraduate students. Prerequisite: major or minor in botany and consent of department.
- 404-5. THE ALGAE. Structure, development, and relationships of the algae. Laboratory and some field work. Prerequisites: 101, 202.



- 405-5. MYCOLOGY. Structure, development, and relationships of fungi. Problems of economic and scientific interest stressed. Laboratory. Prerequisites: 101, 202.
- 411-5. THE BRYOPHYTES AND PTERIDOPHYTES. Structure, development, and relationships of the liverworts and mosses, and the ferns and fern allies. Laboratory. Prerequisites: 101, 202.
- 412-5. THE SPERMATOPHYTES. Structure, development, and relationships of the gymnosperms and angiosperms. Laboratory. Prerequisites: 202, 203.
- 425-5. ADVANCED PLANT PHYSIOLOGY I. Water relations, mineral nutrients, and colloidal phenomena in plants. Laboratory. Prerequisites: 101, 320. Desirable antecedents: year of chemistry, some physics.
- 426A-3. BIOCHEMISTRY AND PHYSIOLOGY OF MICROORGANISMS. (Same as Microbiology 425.) 3 hours lecture. Prerequisites: Microbiology 201 and organic chemistry.
- 426B-2. BIOCHEMISTRY AND PHYSIOLOGY OF MICROORGANISMS. (Same as Microbiology 426.) 4 hours laboratory.
- 427-4. MINERAL NUTRITION OF PLANTS. (Same as Plant Industries 427.) Covers the absorption, translocation, function, and interaction of inorganic nutritive elements in green plants with application to forest, agronomic, and horticultural species. Prerequisite: 320.
- 428-3. PLANT NUTRITION. The role and function of organic compounds in plants. The physiological importance of carbon-, nitrogen-, and phosphorus-containing compounds are stressed. Prerequisites: organic chemistry, minor in botany or agriculture.
- 430-5. ADVANCED PLANT PHYSIOLOGY II. Photosynthesis, plant pigments, plant foods, enzymes, respiration, growth, and movement. Laboratory. Prerequisites: 101, 320. Desirable antecedents: year of chemistry, some physics.
- 440-4. ECOLOGY OF GRASSES AND GRASSLANDS. Structure, analysis, and dynamics of grassland communities; structure and growth of individual species. Field and laboratory work costs about \$5. Prerequisite: 340 or consent of instructor.
- 451-5. INTRODUCTION TO FLORISTICS. Principles involved and methods used in the analysis of the flora of an area; introduction to literature of taxonomic Botany. Field trips cost about \$5. Prerequisite: 203 or consent of instructor.
- 455-4. MEDICAL MYCOLOGY. Fungi which are responsible for infection of man and animals. Problems of classification, identification, isolation, and activity of these fungi. Prerequisites: 405, Microbiology 100 or consent of instructor.
- 457-4. FOREST PATHOLOGY. Nature and control of forest and shade tree diseases. A study of tree diseases in forests, parks, streets, and nurseries. Fungi important in decay and stain of timber and its products will be included. Prerequisite: Botany 355 or consent of instructor.
- 470-4. METHODS OF TEACHING HIGH SCHOOL BIOLOGY. A study of methods, consisting of consideration of objectives, different types of courses, teaching the scientific method, laboratory method, project method, field methods, measurements, evaluation, and other problems in the teaching of the biological sciences. Prerequisite: Minor in botany or zoology or consent of instructor.

480-4. CLASSIC PRINCIPLES OF BOTANY. Theories, principles, and developments in the various divisions of the plant sciences. Prerequisites: 101, 131, or 350, or consent of instructor.

Courses on the 500 level are for graduate students only.

501-4. PLANT BIOLOGY FOR HIGH SCHOOL TEACHERS. Field work is required. The principles of plant biology are illustrated in the field. Emphasis is placed on the relation of the plant to the environment. Two lectures and two laboratories per week. Open to all graduate students. Prerequisite: one year of biological science.

502-2. RECENT DEVELOPMENTS IN BIOLOGICAL SCIENCES. (Same as Zoology 502.) A series of lectures based upon recent research, designed to acquaint the teacher with advances and changes in concepts. Prerequisite: one year of biological science.

503-5. ANGIOSPERM TAXONOMY I. Discussion of classical systems of classification; systematic treatment of all families of Monocotyledoneae. Prerequisite: 203.

504-5. ANGIOSPERM TAXONOMY II. Discussion of classical systems of classification; systematic treatment of all families of Dicotyledoneae. Prerequisite: 203.

505-3. ADVANCED TAXONOMY FOR HIGH SCHOOL TEACHERS. Designed to aid those persons now teaching high school who have had some previous work in taxonomy. Course adapted to meet the needs of the students. 4 hours of field work on alternate Saturdays. Prerequisite: 203, or equivalent.

520-5. PHYSIOLOGY OF THE FUNGI. Environmental and nutritional factors involved in the growth, reproduction, and metabolism of the fungi. Prerequisite: consent of instructor.

522. ADVANCED HISTOLOGICAL TECHNIQUE. Preparation and presentation of research materials. Laboratory work only. Prerequisite: consent of department. Credit on work completed.

525-5. CYTOLOGY. Microscopical study of protoplasm, including cellular and nuclear divisions, discussion of submicroscopical structure and of cellular metabolism. Prerequisite: consent of instructor.

526-5. CYTOGENETICS. The study of the structure and mechanism of the cell and of the chromosomes related to heredity. Prerequisites: 315 and consent of instructor.

533-3 to 4. GROWTH AND DEVELOPMENT IN PLANTS. External and internal factors as they affect development and growth of plants, photoperiodism, and the role of growth-promoting substances. 1 hour to be arranged. Prerequisite: 320 or consent of instructor.

540-5. ECOLOGY OF FORESTS AND ARABLE LANDS. Forest areas in North America. Developmental and structural analysis of forest types. Species characteristics. Environmental factors influencing plant growth on forest and on arable lands. Saturday field trips may be required. Approximate cost \$5. Prerequisite: 340 or equivalent.

542-3. GENECOLOGY AND COMMUNITY CONCEPTS. Implications of findings on the nature of plant adaptation to environment. Genetics and physiological ecology viewpoints. Considered at the species and community levels. Prerequisites: 203, 315, 320, 340, or consent of instructor.

- 543-5. EXPERIMENTAL ECOLOGY. Experiments on plant response to environmental factors. Design of experiments. Statistical methods. Presentation of individual research findings. Laboratory. Prerequisite: 320, 340, or consent of instructor.
- 551-4. THE NATURAL VEGETATION OF THE CENTRAL MISSISSIPPI BASIN—UPLAND. Floristic studies of the vegetation which occurs in the central basin of the Mississippi River. Emphasis on upland plants. Field trips cost about \$5. Prerequisite: 203.
- 552-4. THE NATURAL VEGETATION OF THE CENTRAL MISSISSIPPI BASIN—AQUATIC. Floristic studies of the vegetation which occurs in the central basin of the Mississippi River. Emphasis on aquatic plants. Field trips cost about \$5. Prerequisite: 203.
- 555-4. ADVANCED PLANT PATHOLOGY I. Diseases of field crops, horticultural crops, and trees incited by Ascomycetes and Basidiomycetes. Prerequisite: 355 or consent of instructor.
- 556-4. ADVANCED PLANT PATHOLOGY II. Diseases of field crops, horticultural crops, and trees incited by Ascomycetes and Basidiomycetes. Prerequisite: 355 or consent of instructor.
- 557-4. ADVANCED PLANT PATHOLOGY III. Diseases of field crops, horticultural crops, and trees incited by bacteria and viruses. Prerequisite: 355 or consent of instructor.
- 570-2 to 5. READINGS.
- 580-1 to 4. SEMINAR. To be taken by all graduate students. Course will be modified to meet the needs of the students enrolled.
- 590-2 to 4. INTRODUCTION TO RESEARCH. Methods of presentation of research materials, including written reports, graphs, photographs, bibliographies.
- 591-3 to 9. RESEARCH. Assignments involving research and individual problems. Prerequisite: consent of department. Students to register for not fewer than 3 hours per quarter.
- 599-3 to 9. THESIS. Work involved in the research for and presentation of a thesis. Not more than 9 hours nor fewer than 5 hours will be allowed on thesis work. Student advised to take no more than 3 hours per quarter. Total hours in 591 and 599 cannot exceed 15 hours to be applied toward the master's degree.
- 600-3 to 48. DISSERTATION.

## CHEMISTRY

Professor Talbert Ward Abbott, Ph.D. (Illinois), Emeritus (1961)	1928
Professor Roger E. Beyler, Ph.D. (Illinois)	1959
Professor Elbert H. Hadley, Ph.D. (Duke)	1947
Professor J. W. Neckers, Ph.D. (Illinois), Chairman	1927
Professor Robert A. Scott, Ph.D. (Illinois), Emeritus	1923
Professor Kenneth Van Lente, Ph.D. (Michigan)	1931
Associate Professor Boris Musulin, Ph.D. (Northwestern)	1956

Associate Professor Robert E. Van Atta, Ph.D. (Pennsylvania State)	1954
Assistant Professor James N. BeMiller, Ph.D. (Purdue)	1961
Assistant Professor Wilbur N. Moulton, Ph.D. (Minnesota)	1956
Assistant Professor Douglas E. Sellers, Ph.D. (Kansas State)	1958
Assistant Professor Russell F. Trimble, Jr., Ph.D. (Massachusetts Institute of Technology)	1954
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Lecturer Dwight N. Garrison, M.S. (Michigan)	1959-62
Lecturer James P. Scannell, Ph.D. (California)	1960-61

The following minimum requirements for chemistry majors will be initiated with the class of 1961 and subsequent classes, and wherever possible for preceding classes.

A student majoring in chemistry must have a 3.0 average in chemistry courses to start the second year of the major. He must have a 3.5 average in chemistry courses, and/or consent of the department, to start his third and fourth years of work toward the major.

### SUGGESTED CURRICULA IN CHEMISTRY

The following curriculum leads to the Bachelor of Arts degree with a major in Chemistry in the College of Liberal Arts and Sciences and meets the requirements of the American Chemical Society. A student desiring to follow this curriculum should consult the Department of Chemistry for a recommended curriculum outline covering in detail his four years of study.

<i>General Degree Requirements</i> (See page 10.) .....	71
<i>College of Liberal Arts and Sciences Requirements</i> (See page 11.) ..	37
<i>Requirements in the Department of Chemistry</i> .....	67-71
Chemistry 111, 112, 113, 221, 235 or 331, 341, 342, 343, 375, 461, 462, 463, 411, 432, 433, 446, 490	64-67
Chemistry 412, 447, 451, 452, 471 (any one)	3-4
<i>Related Requirements for the Major</i> .....	39
Mathematics 111, 112, 113, 251, 252, 253	27
Physics (one year)	12
<i>Duplication of Requirements</i> .....	-36
The courses listed above also satisfy 36 hours of general-degree and college requirements. These hours are deducted here to avoid counting them twice in the total.	
<i>Electives</i> .....	14-18
<i>Total</i> .....	<hr/> 192



The following curriculum leads to the Bachelor of Arts degree with a major in chemistry in the College of Liberal Arts and Sciences.

<i>General Degree Requirements</i> (See page 10.) .....	71
<i>College of Liberal Arts and Sciences Requirements</i> (See page 11.) ..	37
<i>Requirements in the Department of Chemistry</i> .....	48
Chemistry 111, 112, 113, 221, 375, 432, 490	24
Chemistry 305, 306; or 341, 342, 343	8 or 14
Chemistry 235 or 331, 460; or 461, 462, 463	8-12
Chemistry electives selected from 350, 411, 412, 433, 446, 447, 451-452, 471 to bring total hours in chemistry to at least 48	1-8
<i>Related Requirements for the Major</i> (See ACS Curriculum, above.)	39
<i>Duplication of Requirements</i> (See ACS Curriculum, above.) .....	-36
<i>Electives</i> .....	33
<i>Total</i> .....	192

A minimum of twenty-four hours of chemistry is required for a minor including 111, 112, and at least one course from each of two of the following fields: analytical chemistry, biological chemistry, organic chemistry. Some chemistry course sequences constituting acceptable minors are: 111, 112, 113 plus one of the following sequences: 235 and 240; or 221, 305, 306; or 221, 240, 350; or 230, 240, 350; or 305, 306, 350; or 235, 305, 306; or 235, 305, 306, 350. Another acceptable sequence is 111, 112, 230, 305, 306, 350.

### COURSE DESCRIPTIONS

Chemistry service courses for non-chemistry majors are listed immediately after the 500-level courses.

- 111-5, 112-5. CHEMICAL PRINCIPLES AND INORGANIC CHEMISTRY. Required for engineering students and all students requiring more than one year of chemistry. 3 lecture, 1 quiz, and 4 laboratory hours per week. High school chemistry is not a prerequisite.
- 113-5. INORGANIC AND QUALITATIVE ANALYSIS. 2 lecture, 1 quiz, and 6 laboratory hours per week. Prerequisite: 112.
- 221-3. QUALITATIVE ANALYSIS. 2 lecture and 3 laboratory hours per week. Prerequisite: 113 and knowledge of logarithms.
- 235-5. GENERAL QUANTITATIVE ANALYSIS. A course particularly for pre-professional students. 3 lecture and 6 laboratory hours per week. Prerequisite: 113 and knowledge of logarithms.
- 305-4. ORGANIC CHEMISTRY. A course for chemistry minors and pre-professional students. 3 lecture and 3 laboratory hours per week. Prerequisite: 112.

- 306-4. ORGANIC CHEMISTRY. 2 lecture and 6 laboratory hours per week. Prerequisite: 305.
- 331-3. INTRODUCTORY QUANTITATIVE ANALYSIS. 2 lecture and 3 laboratory hours per week. Prerequisite: 221.
- 341-4. ORGANIC CHEMISTRY. 3 lecture and 3 laboratory hours per week. Prerequisite: 113.
- 342-5, 343-5. ORGANIC CHEMISTRY. 3 lecture and 6 laboratory hours per week. Prerequisite: 341.
- 375-0 to 2. SENIOR SEMINAR. Required of seniors majoring in chemistry.
- 401-3 to 5. GENERAL AND INORGANIC CHEMISTRY—REFRESHER. Prerequisite: one year of college chemistry or equivalent. Not to be counted toward chemistry major or minor.
- 403-3 to 5. ANALYTICAL CHEMISTRY-REFRESHER. A condensed introduction to or review of analytical chemistry. Aspects of both qualitative and quantitative analysis will be included. 3 lectures and 2 optional laboratory periods per week. Prerequisite: 1 year of college chemistry.
- 404-3 to 5. ORGANIC CHEMISTRY—REFRESHER. Prerequisite: one year of college chemistry or equivalent. Not to be counted toward chemistry major or minor.
- 408-4. MODERN CHEMISTRY. A review of chemical principles, including chemical bonds and equilibrium, and some organic compounds. Prerequisite: 1 year of chemistry. Not open to majors or minors in chemistry.
- 409-5. MODERN CHEMISTRY. A continuation of 408. Includes chemical bonding and reactions, with some descriptive inorganic chemistry. Prerequisite: 1 year of chemistry. Not open to majors or minors in chemistry.
- 411-3. INTERMEDIATE INORGANIC CHEMISTRY. Modern inorganic chemistry involving atomic structure, chemical bonds, complexes, and chelate structures; chemistry of familiar and less familiar elements. 3 lecture hours per week. Prerequisites: 235 or 331, 306 or 343.
- 412-3. INORGANIC PREPARATIONS. A study of several important types of inorganic syntheses. 1 lecture and 6 laboratory hours per week. Prerequisite: 411.
- 432-4. INSTRUMENTAL ANALYTICAL TECHNIQUES. Theory and practice of common instrumental analytical measurements. 2 lecture and 6 laboratory hours per week. Prerequisites: 235 or 331, 306 or 343, and one year of physics.
- 433-4. INTERMEDIATE QUANTITATIVE ANALYSIS. A comprehensive study of complex methods of analysis, with emphasis on separations. 2 lecture and 6 laboratory hours per week. Prerequisite: 460 or 462.
- 444-3. ORGANIC REACTIONS. An intermediate course with emphasis on monofunctional compounds. 3 lecture hours per week. Prerequisite 343.
- 446-4. QUALITATIVE ORGANIC CHEMISTRY. A systematic study of the separation and identification of organic compounds by a procedure based on solubility and classification reagents. 2 lecture and 6 laboratory hours per week. Prerequisite: 306 or 343.
- 447-3. QUANTITATIVE ORGANIC CHEMISTRY. The determination of functional groups and elements commonly found in organic compounds by selected methods of analysis; illustration of general method of procedure in the field of quantitative organic chemistry. 1 lecture and 6 laboratory hours per week. Prerequisite: 306 or 343, 235 or 331.

- 451-4. **BIOCHEMISTRY.** Carbohydrates, fats and related substances, proteins and amino acids, enzymes, digestion, absorption, and detoxication. 3 lecture and 3 laboratory hours per week. Prerequisites: 306 or 343, 235 or 331.
- 452-4. **BIOCHEMISTRY.** The blood and lymph; acid-base regulation; metabolism of carbohydrates, lipids, and proteins; urine; calorimetry and energy metabolism; nutrition and vitamins; and hormones. Analysis of blood and urine. 3 lecture and 3 laboratory hours per week. Prerequisite: 451.
- 460-5. **THEORETICAL CHEMISTRY.** A one-quarter course on the traditional aspects of physical chemistry without the requirement of calculus. 4 lecture and 3 laboratory hours per week. Prerequisites: 235 or 331, 306 or 343, and one year of physics or consent of instructor.
- 461-4. **PHYSICAL CHEMISTRY.** Gases, liquids, solids, solutions, homogeneous and heterogeneous equilibria. 3 lecture and 3 laboratory hours per week. Prerequisites: 331 (may be taken concurrently), 343, twelve hours of physics, and one year of calculus.
- 462-4. **PHYSICAL CHEMISTRY.** A continuation of 461, including chemical kinetics, electrical conductance, electromotive force, and electrolytic equilibrium. 3 lecture and 3 laboratory hours per week. Prerequisite: 461.
- 463-4. **PHYSICAL CHEMISTRY.** A continuation of 462, including chemical thermodynamics, the quantum theory, nuclear structure, photochemistry, atomic and molecular structure. 3 lecture and 3 laboratory hours per week. Prerequisite: 462.
- 471-3. **INDUSTRIAL CHEMISTRY.** A survey course on modern industrial chemistry and an introduction to chemical research processes. 3 lecture hours per week. Prerequisite: 306 or 343.
- 476-3. **SPECIAL METHODS IN TEACHING CHEMISTRY.** A course to help the teacher improve his presentation of chemistry, particularly the use of the year-long filmed chemistry series. Prerequisite: 1 year of public school chemistry teaching.
- 490-2. **CHEMICAL LITERATURE.** A description of the various sources of chemical information and the techniques for carrying out literature searches as well as an introduction to nomenclature. 2 lecture hours per week. Prerequisites: 235 or 331, 306 or 343, reading knowledge of German or consent of instructor.
- 496-2 to 6. **CHEMICAL PROBLEMS.** Investigation of relatively simple problems under the direction of a staff member. Prerequisites: senior standing, major in chemistry with 4.0 average, and consent of department.

Courses on the 500 level are for graduate students only.

- 511-3. **ADVANCED INORGANIC CHEMISTRY.** A theoretical and empirical treatment of chemical bonding and molecular structure. Lecture. Prerequisite: 460 or 461.
- 512-3. **ADVANCED INORGANIC CHEMISTRY.** A systematic consideration of the chemistry of the elements, including special topics such as non-aqueous solvent systems, inorganic stereochemistry, and silicon analogues of organic compounds. Lecture. Prerequisite: 511.
- 513-3. **ADVANCED INORGANIC CHEMISTRY.** A continuation and extension of 512. Lecture. Prerequisite: 512.

- 531-3. THEORY OF QUANTITATIVE ANALYSIS. The phenomena utilized in analytical chemistry, with emphasis on separation, organic reagents, and complex methods. Lecture. Prerequisite: 433 or equivalent.
- 532-2 or 3. INSTRUMENTAL METHODS OF ANALYSIS. Theory and practice of instrumental measurements in analysis with emphasis on commercial samples and applications to research. Lecture and laboratory. Two credits only to students presenting credit in 432. Prerequisite: 460 or registration in 462.
- 533-3. INDUSTRIAL ANALYTICAL METHODS. Theory of analytical procedures and techniques, current industrial applications. Lecture. Prerequisite: 532.
- 541-3. ADVANCED ORGANIC CHEMISTRY. A survey of the important classes of organic compounds. Lecture. Prerequisite: 343.
- 542-3. ADVANCED ORGANIC CHEMISTRY. Descriptive and theoretical organic chemistry. Lecture. Prerequisite: 541.
- 543-3. ADVANCED ORGANIC CHEMISTRY. A continuation of 542. Lecture. Prerequisite: 542.
- 551-3. ADVANCED BIOCHEMISTRY. A survey of recent advances in amino acid metabolism, protein biosynthesis, enzymic catalysis, and nucleic acid biochemistry. Lecture. Prerequisite: 452.
- 552-3. ADVANCED BIOCHEMISTRY. Chemistry, biochemistry, and industrial uses of carbohydrates (including polysaccharides) and lipids. Lecture. Prerequisite: 452.
- 553-3. ADVANCED BIOCHEMISTRY. Biosynthetic mechanisms of photosynthetic and chemosynthetic organisms. Lecture. Prerequisite: 452.
- 561-3. CHEMICAL THERMODYNAMICS. Basic methods and theories as applied to chemical problems. Lecture. Prerequisites: 463, diagnostic examination.
- 562-3. ATOMIC AND MOLECULAR STRUCTURE. A survey of basic principles in atomic spectroscopy, quantum chemistry, and statistical thermodynamics. Lecture. Prerequisites: 511, 561.
- 563-3. CHEMICAL KINETICS. Factors determining the rates of chemical reactions. Lecture. Prerequisite: 562.
- 575-1 to 3. GRADUATE SEMINAR. Advanced level talks presented and discussed by graduate students. Required for all graduate students.
- 576-3. GENERAL SEMINAR FOR TEACHING CHEMISTRY. Will include recent advances in chemistry, technology, and current problems in science education. Prerequisite: 1 year of public school chemistry teaching.
- 596-3 to 9. ADVANCED CHEMICAL PROBLEMS. Independent study and investigation in selected advanced fields under the supervision of a staff member. Prerequisite: consent of department chairman.
- 599-3 to 15. RESEARCH AND THESIS. Research in the several fields of chemistry. Prerequisite: consent of department chairman.

#### CHEMISTRY SERVICE COURSES

- 101-4. GENERAL CHEMISTRY. A survey course for students who wish only to satisfy the general education requirements in physical science. A terminal course and not for chemistry majors and minors or for agriculture, home economics, pre-medical, pre-engineering, and other students who require more than one term of chemistry. Composition and



states of matter, valence, formulas and equations, solutions and electrolytes; water, oxygen, carbon, sodium, and iron. Lecture and laboratory.

The following series of service courses is offered for the benefit of non-chemistry majors who require a condensed knowledge of various branches of chemistry for application in their major fields.

- 110-4. GENERAL AND INORGANIC CHEMISTRY. A survey course not open to engineering students or to students requiring more than four terms of chemistry. A brief introduction to the structure of the atom and chemical bonding; acids, bases, salts, and pH; and a study of the properties and reactions of some of the more common elements. 3 lecture and 3 laboratory hours per week.
- 230-4. GENERAL ANALYTICAL CHEMISTRY. A survey course in chemical analysis not open to chemistry majors. A brief introduction to various analytical methods. Qualitative and quantitative measurements, including gravimetry, volumimetry, colorimetry, and other techniques. 2 lecture and 6 laboratory hours per week. Prerequisite: 110 or 112.
- 240-4. ORGANIC CHEMISTRY. A survey course in organic chemistry not open to chemistry majors. A brief introduction to aliphatic and aromatic compounds with emphasis on those of biological importance. 3 lecture and 3 laboratory hours per week. Prerequisite: 110 or 112.
- 350-4. BIOLOGICAL CHEMISTRY. A brief introduction to metabolism, nutrition, and the chemistry of the important biological processes in plants and animals. 3 lecture and 3 laboratory hours per week. Prerequisite: 240 or 306 or 343.

## ENGLISH

Research Professor Harry T. Moore, Ph.D. (Boston)	1957
Professor James G. Benziger, Ph.D. (Princeton)	1950
Professor E. C. Coleman, Ph.D. (Illinois)	1946
Professor Robert D. Faner, Ph.D. (Pennsylvania)	1930
Professor Jesse W. Harris, Ph.D. (Illinois)	1939
Professor W. B. Schneider, Ph.D. (Chicago), Chairman	1936
Professor Charles D. Tenney, Ph.D. (Oregon)	1931
Professor Georgia Gantt Winn, Ph.D. (Pittsburgh)	1947
Associate Professor Frances M. Barbour, M.A. (Washington University)	1925
Associate Professor Daniel Cook, Ph.D. (California)	1957
Associate Professor Edith S. Krappe, Ph.D. (Pennsylvania)	1929
Associate Professor William E. Simeone, Ph.D. (Pennsylvania)	1950
Associate Professor E. Earle Stibitz, Ph.D. (Michigan)	1952
Assistant Professor Julia M. Barber, A.M. (Illinois), Emerita (1957)	1936



Assistant Professor Charles S. Blinderman, Ph.D. (Indiana)	1956
Assistant Professor Winifred Burns, A.M. (Illinois)	1939
Assistant Professor George C. Camp, Ph.D. (Indiana)	1947
Assistant Professor Elizabeth A. Cox, A.M. (Kansas), Emerita (1949)	1920
Assistant Professor John Joseph Leonard, M.A. (Iowa)	1959
Assistant Professor Fred K. Lingle, A.M. (Illinois)	1948
Assistant Professor Robert B. Partlow, Jr., Ph.D. (Harvard)	1957
Assistant Professor Roy G. Pickett, Ph.D. (Iowa)	1957
Assistant Professor Raymond S. Rainbow, Jr., Ph.D. (Chicago)	1949
Assistant Professor Walter F. Staton, Jr., Ph.D. (Pennsylvania)	1955
Assistant Professor Howard W. Webb, Jr., Ph.D. (Iowa)	1956
Instructor Martha M. Clark, M.A. (Southern Illinois)	1953
Instructor Charles T. Crowe, M.A. (Southern Illinois)	1958
Instructor Diana L. Dodd, M.A. (Southern Illinois)	1955
Instructor Betty Lou H. Mitchell, M.A. (Southern Illinois)	1949
Instructor Edna S. Travis, M.S. in Ed. (Southern Illinois)	1948

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Visiting Professor Thomas W. Baldwin, Ph.D. (Princeton)	1958-60, 1961-62
Lecturer Myra Becker, M.A. (Columbia)	1959-61
Lecturer Leon Bennett, M.A. (Southern Illinois)	1959-62
Lecturer Evelyn Tripp Berdahl, M.A. (Chicago)	1958-62
Lecturer Francisco Betancourt, B.A. (San Jose State)	1961-62
Lecturer Bert O. Bishop, M.A. (Southern Illinois)	1960-62
Lecturer William Carroll, M.A. (Southern Illinois)	1960-62
Lecturer Thomas Cassidy, M.A. (Notre Dame)	1958-62
Lecturer John F. Frank, M.A. (Johns Hopkins)	1960-62
Lecturer Mary Hartzog, M.A. (Texas Western)	1961-62
Lecturer Charles Hearn, M.A. (Southern Illinois)	1960-62
Lecturer Lewis J. Hilliard, M.A. (Southern Illinois)	1959-62
Lecturer Frances Huff, M.A. (Southern Illinois)	1954-62
Lecturer Bettie Shull Hughes, M.A. (Missouri)	1958-62
Lecturer Charlotte Koomjohn, M.A. (Miami University)	1956-62
Lecturer Marie Loucks, M.A. (Southern Illinois)	1960-62
Lecturer Carl Lutes, M.A. (Columbia; Southern Illinois)	1959-62
Lecturer Joan Martin, M.A. (Southern Illinois)	1960-62
Lecturer John McCall, Ph.D. (Florida State)	1957-62
Lecturer Charlotte McLeod, M.A. (Southern Illinois)	1957-58; 1959-62
Lecturer Virginia Meredith, M.A. (Miami)	1961-62
Lecturer Emilyn S. Morris, M.S. in Ed. (Southern Illinois)	1959-62
Lecturer Peter Notaras, M.Ed. (Illinois)	1957-62

Lecturer James Waldo Read, M.A. (Southern Illinois)	1960-61
Lecturer Mabel M. Schwartz, M.A. (Southern Illinois)	1961-62
Lecturer Mary Simon, M.A. (Illinois)	1959-62
Lecturer Beatrice Stegeman, M.A. (Southern Illinois)	1960-61
Lecturer Edith Waddock, M.A. (St. Louis)	1961-62
Lecturer Muriel West, Ph.D. (Arkansas)	1958-62
Lecturer Blanche Wilhelm, M.A. (Columbia)	1961-62

### SUGGESTED CURRICULUM IN ENGLISH

The following curriculum leads to the Bachelor of Arts degree with a major in English in the College of Liberal Arts and Sciences.

<i>General Degree Requirements</i> (See page 10.)	71
<i>College of Liberal Arts and Sciences Requirements</i> (See page 11.)	37
<i>Requirements in the Department of English</i>	48
English 205 and one additional 200-level course	6
English 300, 302, 309, 316, 317, 390	23
One 400-level course in each of the "types." These three courses should be selected so as to fall into three different literary periods. See "Types" and "Periods" below.	12
English electives to fulfill the required total of 48 hours	7
<i>Duplication of Requirements</i>	-6
The 200-level English courses listed above also satisfy 6 hours of General Degree Requirements. These hours are deducted here to avoid counting them twice in the total.	
<i>Electives</i>	42
<i>Total</i>	192

The curriculum leading to the Bachelor of Science in Education degree with a major in English in the College of Education includes the following *Requirements in the Department of English*:

All of the courses listed above under this heading	41
English 485	4
English electives to complete 48 hours	3

Other requirements for the degree are given in the College of Education bulletin. (See page ii of this bulletin.)

The 400-level courses in types and periods are classified as follows:

#### TYPES

Poetry: 421, 422, 423, 470, 473
Drama: 461, 463, 464, 468, 471, 472
Fiction: 454, 455, 456, 457, 458, 459

## PERIODS

The Medieval: 404, 470

The Renaissance: 412, 460, 471, 472

The 17th-18th Centuries: 413, 414, 441, 454, 461, 473

The 19th Century: 415, 416, 417, 421, 443, 455, 458

The 20th Century: 422, 423, 456, 457, 459, 463, 464

It is required that the major have at least one year of a foreign language, preferably French or German.

Recommended electives are 301; 485; extra courses in types and periods; courses in criticism, linguistics, professional writing; and certain courses in philosophy. Membership in the English Club is expected.

The student should consult the department chairman as soon as he knows that he will major in English, and should thereafter have his advance registration approved by the chairman each quarter. Deviations from the generally prescribed major requirements should not be made without prior approval.

The English minor is twenty-five hours, prescribed as follows: from sophomore work, 6 hours; 300; 309; 302 and 316, or 316 and 317; 390. Deviations from this minor should have the approval of the chairman of the Department of English.

*COURSE DESCRIPTIONS*

- 101-3. 102-3, 103-3. COMPOSITION. Expository writing, with emphasis upon the sentence, organization, and the research paper. Prerequisite: 101 to 102, 102 to 103.
- 105-3 to 6. ENGLISH AS A FOREIGN LANGUAGE. Open to foreign students only. Maximum of 3 hours to be earned per quarter; graduate students receive no credit.
- 205-3. INTRODUCTION TO POETRY. Emphasis on technique, type, and period.
- 206-3. INTRODUCTION TO DRAMA. The form, artistry, and ideas of various plays from most of the notable literary periods. Approximately twenty plays read.
- 209-3. INTRODUCTION TO WORLD LITERATURE. A reading of masterpieces of European literature to the Renaissance.
- 211-3. INTRODUCTION TO FICTION. An examination of the novel; designed to acquaint the student with the important aspects of artistic excellence in this form.
- 212-3. INTRODUCTION TO MODERN LITERATURE. Principal forms, ideas, and writers of the literature of America and England in the twentieth century. Especially recommended to majors in other fields than English.
- 300-4. PRINCIPLES OF ENGLISH GRAMMAR. Required of majors and minors in English. Majors and minors other than in English should take 391. Credit not allowed for both courses.

- 301-3. INTRODUCTION TO SEMANTICS. The nature of language, the emotional and intellectual content; breaking down linguistic naivete, and developing a consciousness of the motives in the use of language.
- 302-4. ENGLISH LITERATURE TO 1550. Required of English majors.
- 309-4. A SURVEY OF AMERICAN LITERATURE TO 1860.
- 310-4. A SURVEY OF AMERICAN LITERATURE SINCE 1860.
- 312-3. FOLKLORE. A study of the types of folklore, and wide reading in the field. Students expected to collect and classify examples from local lore.
- 316-4. ENGLISH LITERATURE, 1550 to 1750. Required of majors.
- 317-4. ENGLISH LITERATURE AFTER 1750. Required of majors.
- 320-4. EARLY NINETEENTH CENTURY POETRY.
- 335-4. THE SHORT STORY.
- 356-4. THE NOVEL SINCE 1900. Novelists of various nations. Recommended for students not majoring in English.
- 362-4. THE DEVELOPMENT OF TRAGIC DRAMA FROM AESCHYLUS TO THE PRESENT TIME. Principal tragic dramas and the shifting conceptions of tragic form and matter in the various ages.
- 365-4. SHAKESPEARE.
- 390-3. ADVANCED COMPOSITION. Expository writing.
- 391-3. USAGE IN SPOKEN AND WRITTEN ENGLISH. The essentials of grammar and the "common decencies." Prerequisite to student teaching, except for English majors and minors, who take 300.
- 392-3. PROFESSIONAL WRITING I. Introductory course for undergraduates. Prerequisite to 492, but credit for the course does not constitute automatic admission to 492. Prerequisite: consent of instructor.
- 400-4. INTRODUCTION TO ENGLISH LINGUISTICS. An analysis of English structure, its phonemics, morphemics, and syntax. Recommended for those preparing to teach English grammar and needing an introduction to the structural approach.
- 403-4. THE HISTORY OF THE ENGLISH LANGUAGE. A survey of the development of the language from Indo-European to modern English with special emphasis on Middle and Early Modern English changes.
- 404-4. CONTEMPORARIES AND SUCCESSORS OF CHAUCER. Late fourteenth and early fifteenth century English literature, from *Sir Gawayne and the Grene-Knight* to the Scottish Chaucerians.
- 412-4. SIXTEENTH CENTURY NONDRAMATIC LITERATURE. Prerequisites: one or more survey courses up to and including the sixteenth century.
- 413-4. SEVENTEENTH CENTURY NONDRAMATIC ENGLISH LITERATURE.
- 414-4. EIGHTEENTH CENTURY NONDRAMATIC ENGLISH LITERATURE.
- 415-4. EARLY ROMANTICS. Major emphasis on general background and on Blake, Coleridge, and Wordsworth.
- 416-4. LATER ROMANTICS. Major emphasis on Byron, Shelley, and Keats; also the minor figures.
- 417-4. VICTORIAN LITERATURE. Ideas, forms, and personalities in English literature from 1830 to 1900. Prerequisite: 317.
- 421-4. VICTORIAN POETRY. Tennyson, Browning, Arnold, and other poets of England, 1830-1900. Prerequisite: 205, 317.
- 422-4. MODERN BRITISH POETRY.



- 423-4. MODERN AMERICAN POETRY. A study of the important poets, beginning with Robinson. Prerequisite: 309 or 310.
- 431-4. AMERICAN LITERATURE I, TO 1789.
- 432-4. AMERICAN LITERATURE II, TO 1865.
- 433-4. AMERICAN LITERATURE III, TO 1914.
- 438-4. INTELLECTUAL BACKGROUNDS OF AMERICAN LITERATURE. The relationship of basic ideas in America to American literature. Prerequisite: 309 or 310.
- 441-4. THE EIGHTEENTH CENTURY ESSAY. The informal essay and the literary periodicals—*The Spectator*, *Tatler*, *Guardian*, *Rambler*, *Idler*, and Goldsmith's *Citizen of the World* ("Chinese Letters").
- 443-4. VICTORIAN PROSE. The chief writers of nonfiction prose from the late romantics to 1900. Prerequisite: 317.
- 447-4. AMERICAN HUMOR AND SATIRE. A consideration of the writers and forms of nineteenth and twentieth century humor.
- 454-4. EIGHTEENTH CENTURY NOVEL. Defoe through Jane Austen.
- 455-4. VICTORIAN NOVEL. Major novelists and principal tendencies in English fiction, 1830-1900. Prerequisite: 211 or 317.
- 456-4. CONTEMPORARY CONTINENTAL FICTION.
- 457-4. CONTEMPORARY BRITISH FICTION. Outstanding figures, influences, and trends in the British novel and short story since 1914.
- 458-4. AMERICAN NOVEL. The novel in America from its beginnings to the early twentieth century. Prerequisite: 309 or 310.
- 459-4. CONTEMPORARY AMERICAN FICTION. Trends and techniques in the American novel and short story since 1914.
- 460-4. RENAISSANCE DRAMA. The evolution of the 'regular' drama from the mid 1550's to the closing of the theaters. Extensive reading of plays and familiarity with the contemporary theatrical background.
- 461-4. RESTORATION AND EIGHTEENTH CENTURY DRAMA. British drama after 1660; representative types of plays from Dryden to Sheridan.
- 463-4. MODERN BRITISH DRAMA.
- 464-4. MODERN CONTINENTAL DRAMA. The continental drama of Europe since 1870; representative plays of Scandinavia, Russia, Germany, France, Italy, Spain, and Portugal.
- 468-4. AMERICAN DRAMA. The rise of the theater in America, with readings of plays, chiefly modern. Prerequisite: 309 or 310.
- 470-4. CHAUCER.
- 471-4. SHAKESPEARE. The plays before 1600. Readings on the life of Shakespeare, the theater, and the acting company.
- 472-4. SHAKESPEARE. The plays of 1600 and later. Readings on the life of Shakespeare, the theater, and the acting company.
- 473-4. MILTON.
- 485-4. PROBLEMS IN THE TEACHING OF ENGLISH. Aims, methods, materials, tests, programs, and other aspects of English instruction in the high school.
- 486-2 to 8. WORKSHOP IN HIGH SCHOOL ENGLISH. Intensive workshop study in lectures, laboratory, conferences, to arrive at agreement on the teaching of English in high school. Curriculum, materials, methods, aims. Directed by competent authorities in the field.
- 487-2 to 8. WORKSHOP IN JUNIOR HIGH SCHOOL ENGLISH. Intensive workshop study in lectures, laboratory, conferences, to arrive at agree-



- ment on the teaching of English in junior high school. Curriculum, materials, methods, aims. Directed by competent authorities in the field.
- 492-4. PROFESSIONAL WRITING II. Prerequisites: 392 and/or consent of instructor.
- 493-4. PROFESSIONAL WRITING III. Prerequisites: 492 and consent of instructor.
- 495-4. HISTORY OF LITERARY CRITICISM. The ideas and techniques of criticism, from Aristotle to the end of the nineteenth century.
- 498-4. MODERN LITERARY CRITICISM. Recent critics and critical attitudes, and practice in writing criticism.
- 499-2 to 6. READINGS IN ENGLISH. For English majors only. Departmental approval required. No more than 4 hours may be taken in any one quarter.

Courses on the 500 level are for graduate students only.

- 500-2. MATERIALS AND METHODS OF RESEARCH IN ENGLISH. The principal tools of literary scholarship and the more important studies and journals. Practice in the preparation of selective bibliographies and scholarly reports.
- 501-4. OLD ENGLISH GRAMMAR. The development of the forms; the grammar; and readings. Credit allowed only if the student also takes 502. Prerequisite: 300 or 403.
- 502-4. BEOWULF. Reading of the poem and study of its form, language, and history. Prerequisite: 501.
- 503-4 or 8. STUDIES IN LINGUISTICS. In alternate years (a) Phonetics and Phonemics, (b) Morphemics and Syntax. Prerequisite: 400 or consent of instructor.
- 508-4 or 8. STUDIES IN CHAUCER. Problems in Chaucer, scholarship and criticism. Prerequisite: 470 or consent of instructor.
- 509-4 or 8. STUDIES IN MIDDLE ENGLISH. At the discretion of the instructor, (a) Readings chiefly in Early Middle English with attention to the grammar and phonology of the dialects, (b) A study of Middle English literature exclusive of Chaucer or of one of the more literary types, the scholarship and criticism.
- 511-4 or 8. STUDIES IN THE RENAISSANCE. Individual research problems involving the use of primary source materials in extensive microfilm and microcard collections, etc. Prerequisites: 302, or consent of instructor, and 316, or equivalent, or 412.
- 513-4 or 8. STUDIES IN SEVENTEENTH CENTURY LITERATURE.
- 514-4 or 8. STUDIES IN RESTORATION AND EIGHTEENTH CENTURY LITERATURE.
- 518-4 or 8. STUDIES IN THE VICTORIAN PERIOD.
- 519-4 or 8. STUDIES IN CONTEMPORARY BRITISH LITERATURE.
- 520-4 or 8. STUDIES IN ROMANTIC WRITERS. Prerequisite: 316 or 320; or 415 or 416.
- 524-4 or 8. STUDIES IN THE METAPHYSICAL POETS.
- 531-4 or 8. STUDIES IN THE AMERICAN COLONIAL PERIOD. Prerequisite: 431 or consent of the instructor.
- 532-4 or 8. STUDIES IN AMERICAN TRANSCENDENTALISM. Prerequisite: 432 or consent of the instructor.

- 534-4 or 8. STUDIES IN EARLY NINETEENTH CENTURY AMERICAN WRITERS. Prerequisite: 432 or consent of instructor.
- 536-4 or 8. STUDIES IN LATER NINETEENTH CENTURY AMERICAN WRITERS. Prerequisite: 433 or consent of instructor.
- 537-4 or 8. STUDIES IN TWENTIETH CENTURY AMERICAN WRITERS. Prerequisite: 423, 433, 459, or consent of instructor.
- 538-4 or 8. PROBLEMS IN AMERICAN LITERATURE. Study of a topic, concept, or idea as it appears in American writing. Prerequisites: at least two 400-level American literature courses.
- 543-4 or 8. STUDIES IN VICTORIAN NONFICTION PROSE.
- 555-4 or 8. STUDIES IN THE VICTORIAN NOVEL.
- 566-4 or 8. STUDIES IN SHAKESPEARE. Detailed study of a limited number of the major plays: historical and technical problems considered in the light of recent scholarship in the field. Prerequisites: 365, or equivalent, and one other course in drama of the Renaissance (or earlier).
- 580-4. TRADITIONAL THEMES. Persistent themes and legends in literature—King Arthur, Faust, Utopia, and the like.
- 585-2 to 8. TEACHING COLLEGE COMPOSITION. Objectives, methods, and materials for the course; observation; and practice under supervision.
- 586-4 or 8. TEACHING COLLEGE LITERATURE. Chief emphasis on freshman and sophomore literature; objectives; methods; materials; observation; and practice under supervision.
- 598-1 to 9. REVIEW OF ENGLISH AND AMERICAN LITERATURE.
- 599-2 to 9. THESIS.
- 600-1 to 48. DISSERTATION.

## FOREIGN LANGUAGES

Professor Albert William Bork, Doctor en Letras (National University of Mexico)	1958
Professor Boyd G. Carter, Ph.D. (Illinois)	1959
Professor J. Cary Davis, Ph.D. (Chicago)	1930
Professor Hellmut A. Hartwig, Ph.D. (Illinois)	1948
Professor Vera L. Peacock, Ph.D. (Cornell), Chairman	1930
Associate Professor Mary Eileen Barry, Ph.D. (Chicago)	1946
Associate Professor Madeleine M. Smith, Ph.D. (Yale)	1929
Assistant Professor Helmut Liedloff, Ph.D. (Phillips University, Marburg, Germany)	1959
Assistant Professor A. K. Neufeld, A.M. (Kansas)	1945
<hr/>	
Visiting Professor Yury Arbatsky, M.D. (Leipzig), Ph.D. (Prague)	1960-61
Visiting Professor Luis Baralt, Ph.D. (Havana)	1960-1962
Visiting Professor Mary K. Niddrie, Ph.D. (London)	1961-1962
Lecturer Basil C. Hedrick, M.A. (Florida)	1959
Lecturer J. A. LaFontaine, B.A. (Mexico City College)	1960

Lecturer Leo Noah Shechmeister, M.A. (Valparaiso)	1961-1962
Lecturer Nancy Ann Young, M.A. (Southern Illinois)	1961-1962

### SUGGESTED CURRICULA IN A LANGUAGE

The following curriculum leads to the Bachelor of Arts degree with a major in a language in the College of Liberal Arts and Sciences.

<i>General Degree Requirements</i> (See page 10.)	71
<i>College of Liberal Arts and Sciences Requirements</i> (See page 11. Omit 9 hours of foreign language.)	28
<i>Requirements in the Department of Foreign Languages</i>	42-51
A minimum of 42 hours in a language, exclusive of 101, 102, 103 (A 48-hour major is also available.)	42
Prerequisites to 201	0-9
101, 102, 103; or 102, 103, and one year of high school work in the language; or two years of high school work in the language	
<i>Related Requirements for the Major</i>	6
At least one English course and one history course, both numbered above 299	
<i>Electives</i>	36-45
<i>Total</i>	192

The curriculum leading to the Bachelor of Science in Education degree with a major in a language in the College of Education includes the following *Requirements for the Major*:

A minimum of 36 hours in a language, exclusive of 103. (A 48-hour major is also available.)	36
A minimum of one English course and one history course, each numbered 300 or above.	6

Other requirements for the degree are given in the College of Education bulletin. (See page ii of this bulletin.)

A minor consists of twenty-four hours of the language, exclusive of 101, 102, and 103.

Students taking work in any 101, 102, and 103 language series should note that 101 and 102 will not be counted as electives toward graduation unless 103 is also completed.

Reference is made here to two scholarships made available to students of this University by the Benjamin Franklin School, located in Lima, Peru. These scholarships pay tuition and fees for nine months at San Marcos University; room and board in the Benjamin Franklin School; opportunity to earn spending money during free time; and assistance in learning

Spanish as a foreign language. Applicants will need to finance their own round trip transportation and participate in the English program of student teaching in the Benjamin Franklin School. Interested applicants should consult Professor J. Cary Davis, Department of Foreign Languages.

## *COURSE DESCRIPTIONS*

### FOREIGN LANGUAGES

- 140-2. **LATIN AND GREEK ELEMENT IN ENGLISH I.** Presentation in English contexts of Greek and Latin roots basic in modern technical and scientific vocabulary. No knowledge of the ancient languages required.
- 240-2. **LATIN AND GREEK ELEMENT IN ENGLISH II.** Similar to 140 but more advanced and introducing medical terms.
- 380-2. **BASIC FRENCH AND ITALIAN TERMS OF HOME ECONOMICS.** A study of the pronunciation and use of French and Italian terms applicable to home economics.
- 381-2. **BASIC SPANISH AND GERMAN TERMS OF HOME ECONOMICS.** A study of the pronunciation and use of Spanish and German terms applicable to home economics.
- 435-4 to 8. **WORKSHOP IN ELEMENTARY SCHOOL FOREIGN LANGUAGE INSTRUCTION.** Designed to assist elementary school teachers in integrating foreign languages into their teaching program as well as to encourage high school teachers to introduce or supervise foreign languages at the elementary school level. To count as education or foreign languages. Prerequisite: basic language credit.
- 445-2 to 8. **SOUTH AMERICAN STUDY TOUR.** Study tour of various South American countries. Tour preceded by required reading, lectures, and examination. Lectures by professors of universities in countries visited on topics of special interest in each country. Study of political, economic, social, historical, artistic, and geographic characteristics of these countries. Credit may be earned in foreign languages, or in a combination of departments, as determined by consultation with department chairmen and the Latin American Institute. Final week on campus for completion of papers and reports. Prerequisite: advanced standing in major department.

### FRENCH

- 101-3, 102-3, 103-3. **ELEMENTARY COURSE.** 101 open to students who have had no previous work in French. Prerequisite for 102: 101 or one year of high school French.
- 101c-1, 102c-1, 103c-1. **FRENCH CONVERSATION.** Courses in conversation and oral drill taken with 101, 102, 103 by students who wish additional oral training: elected only by students enrolled in 101, 102, 103.
- 161-0. **FRENCH FOR GRADUATE STUDENTS.** Intensive study of grammar and vocabulary. Designed for graduate students desiring a reading knowledge of French.
- 201-3, 202-3, 203-3. **INTERMEDIATE COMPOSITION AND READING.** Grammar; composition, oral practice; rapid reading of modern authors. Prerequisite: 103 or two years of high school French.



- 220-2 to 6. FRENCH CONVERSATION. Conversation based largely on topics of current interest chosen from French newspapers and reviews.
- 301-3. THE FRENCH NOVEL OF THE EIGHTEENTH AND NINETEENTH CENTURIES. Lectures, collateral reading, and reports.
- 302-3. SEVENTEENTH AND EIGHTEENTH CENTURY DRAMA. Intensive study of Corneille, Racine, Molière, Marivaux, and Beaumarchais. Outside reading of minor dramatists.
- 303-3. FRENCH LYRIC POETRY. French versification; Romantic, Parnassian, and Symbolist schools; contemporary poets.
- 304-3. FRENCH CONTEMPORARY NOVEL. Study of the novel from 1889 to the present, with emphasis on the symbolistic, regional, psychological, and sociological novels. Detailed study of Proust or Gide.
- 305-3. FRENCH CONTEMPORARY DRAMA. Study of French drama from Dumas fils to the present, with emphasis on the *pièce à thèse*, the *théâtre libre*, symbolistic drama, and the drama of modern social problems.
- 311-4, 312-4, 313-4. SURVEY OF FRENCH LITERATURE. A study of the important currents of French literature from the beginning to the present time. One hour each week devoted to French composition. This series should follow immediately after 203.
- 340-2. FRENCH LITERATURE OF THE SIXTEENTH CENTURY. Rabelais, Montaigne, the memoir writers, Marot, the Pléiade, and d'Aubigny.
- 351-4. ADVANCED COMPOSITION. Rapid grammar review, study of idiomatic construction; weekly themes. Course conducted in French.
- 352-5. FRENCH CONVERSATION AND PHONETICS. A thorough study of the phonetic alphabet and the formation of French sounds. Course conducted in French.
- 353-4. ADVANCED COMPOSITION AND CONVERSATION. Oral and written composition of a practical nature for advanced students; intensive study of idiomatic expressions and current usage.
- 440-2. FRENCH POETRY OF THE RENAISSANCE. Development of French poetry from 1550 to 1600.

Courses on the 500 level are for graduate students only.

- 500-2. SEMINAR IN CONTEMPORARY FRENCH LITERATURE. Intensive study of the "Roman fleuve" as exemplified in the works of Duhamel, Martin du Gard, and Romains.
- 501-2 to 6. SEMINAR ON A SELECTED FRENCH AUTHOR. Intensive study of one author—his life, his work, and his place in the literary and cultural developments of civilization. A. Balzac, B. Baudelaire, C. Molière, D. Montaigne, E. Proust.
- 509-4. FRENCH LITERATURE FROM 1800 to 1850. Romanticism in French literature and its relation to the general European Romantic movement.
- 510-4. FRENCH LITERATURE FROM 1850 TO 1900.
- 511-3. TWENTIETH-CENTURY FRENCH DRAMA. French drama from 1900 to the present.
- 520-4. GRADUATE COMPOSITION AND DICTION. Composition based on study of contemporary French authors; individual work in pronunciation and diction determined by entrance tests.
- 599-2 to 9. THESIS.



## GERMAN

- 101-3, 102-3, 103-3. **ELEMENTARY COURSE.** 101 open to students who have had no previous work in German. Prerequisite for 102: 101 or one year of high school German.
- 101c-1, 102c-1, 103c-1. **GERMAN CONVERSATION.** Courses in conversation and oral drill taken with 101, 102, 103, by students who wish additional oral training: elected only by students enrolled in 101, 102, 103.
- 161-0. **GERMAN FOR GRADUATE STUDENTS.** Intensive study of grammar and vocabulary. Designed for graduate students desiring a reading knowledge of German.
- 201-3, 202-3, 203-3. **INTERMEDIATE COURSE.** Grammar review and expansion; reading in modern prose; conversation and composition. Two periods a week devoted to literature; and one to grammar and composition. Prerequisite: 103 or two years of high school German.
- 220-2 to 6. **ADVANCED GERMAN CONVERSATION.** Conversation based on topics of current interest. Extensive use of German newspapers, periodicals, and records. Prerequisite: consent of instructor.
- 251-4. **SCIENTIFIC GERMAN.** A study of vocabulary and sentence construction as found in German scientific writings. Prerequisite: 202 or equivalent.
- 301-4, 302-4. **SURVEY OF GERMAN LITERATURE TO 1800.** The historical development of German literature; lectures; reading of representative authors.
- 303-4. **GERMAN "NOVELLE" IN THE NINETEENTH CENTURY.** A study of representative work from 1800 to 1900, with emphasis on the literary movements of that time.
- 304-5. **ADVANCED COMPOSITION AND CONVERSATION.** Based on the history of German civilization. Required for prospective teachers of German.
- 311-4, 312-4. **INTRODUCTION TO GERMAN CLASSICAL LITERATURE.** Lessing, Goethe, Schiller. Reading and discussion of representative works.
- 313-4. **GERMAN DRAMA IN THE NINETEENTH CENTURY.** Kleist, Grillparzer, Hebbel. Reading and discussion of representative works.
- 401-2. **GOETHE'S FAUST, PART I.** The Faust legend and early Faust books and plays; the genesis of Goethe's Faust; reading of Part I. Lectures, reports.
- 402-2. **GOETHE'S FAUST, PART II.** Reading of Part II; study of symbolisms, such as Part II's blending of paganism with Christianity, ancient Greek culture with Germanic culture, Helen's Classicism with Faust's Romanticism. Lectures, reports.
- 403-3. **GERMAN BALLADS AND LYRICS.** A selective study of the foremost examples of German balladry and lyric poetry, ranging from the poetry of Klopstock and Bürger to that of Rilke and Werfel. Lectures, recitations.
- 411-3. **MIDDLE HIGH GERMAN I.** Grammar and selective readings in such national epic poems of the Middle High German Period as the Nibelungen Lied and Gudrun. Lectures, reports.
- 412-3. **MIDDLE HIGH GERMAN II.** The courtly epic poetry of such representative authors as Wolfram von Eschenbach, Gottfried van Strass-

burg, Hartmann von Aue, and the lyric poetry of Walther von der Vogelweide. Lectures, reports.

Courses on the 500 level are for graduate students only.

- 500-2. SEMINAR IN CONTEMPORARY GERMAN LITERATURE. Intensive study of the works of representative German authors, with special reference to the correlation existing between literary expression and social, economic, and political conditions since 1900. Lectures, outside readings, reports.
- 501-2. SEMINAR ON A SELECTED GERMAN AUTHOR. Intensive study of one author—his life, his work, and his place in the literary and cultural development of civilization. Lectures, outside readings, reports.
- 511-3 to 9. THESIS OR RESEARCH IN GERMAN LITERATURE. For students who are writing a thesis or making an advanced graduate study of some phase of German literature. Lectures, compilation of bibliographies, other research techniques, papers. 2 to 4 hours each quarter (maximum of 9 hours).
- 591-2 to 6. SEMINAR ON KANT. A selective study of the works of Immanuel Kant, with special emphasis on the influence exerted by Kantian philosophy on subsequent German literature. Course counted on a major in philosophy, subject to the consent of the Department of Philosophy. Lectures, outside readings, reports. 2 hours each quarter.

#### GREEK

- 101-4, 102-4, 103-4. ELEMENTARY COURSE. Grammar emphasized in the first quarter, and reading of an actual text begun in the second. The text selected, usually the New Testament.
- 201-4, 202-4, 203-4. INTERMEDIATE COURSE. Grammar review and composition. Readings from Plato. Prerequisite: 103.
- 301-4. INTRODUCTION TO GREEK HISTORY. Reading and discussion of selections from the histories of Herodotus and Thucydides.
- 302-4. PLATO. Reading and discussion of the *Republic*.
- 303-4. ARISTOTLE. Reading and discussion of the *Ethics*.
- 311-4, 312-4. INTRODUCTION TO HOMER. Reading and interpretation of selections from the *Iliad* and the *Odyssey*.
- 313-4. INTRODUCTION TO GREEK TRAGEDY. Reading of at least two plays from the works of Aeschylus, Sophocles, and Euripides.
- 320-3. SURVEY OF GREEK LITERATURE. Discussion of Greek literary works and their influence on later literature. No knowledge of Greek required.
- 330-3. CLASSICAL MYTHOLOGY. Study of the classical myths and their literary value. No knowledge of Greek or Latin required.

#### LATIN

- 101-3, 102-3, 103-3. ELEMENTARY COURSE. 101 open to students who have had no previous work in Latin. Prerequisite for 102: 101 or one year of high school Latin.
- 201-4. INTERMEDIATE COMPOSITION. Useful for teachers; a convenient review for students. Prerequisite: 103 or two years of high school Latin.
- 202-4. CICERO'S ESSAYS. Prerequisite: 103 or two years high school Latin.

- 203-4. LIVY. Prerequisite: 103 or two years of high school Latin.
- 301-4. CICERO'S LETTERS. Emphasis laid upon the history of the times and the personality of Cicero.
- 302-4. VERGIL'S ECLOGUES AND GEORGICS. Vergil's spirit and contribution to Rome considered.
- 303-4. TACITUS. The Agricola and Germania.
- 304-2. PRIVATE LIFE OF THE ROMANS. Comprising a personal study of the average family; housing, food, and clothing; marriage, education, amusements, slaves, and freedom; means of livelihood; death and burial. Open to all students whether they have had Latin or not.
- 311-4. PHORMIO OF TERENCE. Prerequisite: 203 or equivalent.
- 312-4. HORACE'S ODES AND EPODES. Prerequisite: 203 or equivalent.
- 313-4. LETTERS OF PLINY. Prerequisite: 203 or equivalent.
- 320-3. LATIN LITERATURE IN TRANSLATION. Discussion of Latin literary works and their influence on later literature. No knowledge of Latin required.
- 326-4. OVID'S METAMORPHOSES.
- 335-4. VERGIL'S AENEID.
- 342-4. ADVANCED COMPOSITION. A careful study based on classic prose-writers.

## PORTUGUESE

- 100-5. INTRODUCTORY COURSE. Especially for Spanish majors and minors. Prerequisite: Spanish 203 or consent of instructor.  
All five hours will count toward a Spanish major of forty-two hours or more. Three hours will count toward a Spanish minor, or a major of less than forty-two hours.

## ROMANCE PHILOLOGY

- 410-4. ROMANCE PHILOLOGY I. A survey of the phonology, morphology, and syntax changes in Romance languages in general; special attention to developments in French and Spanish for majors in these fields. This course may be counted toward either a French or Spanish major.

Courses on the 500 level are for graduate students only.

- 514-4. ROMANCE PHILOLOGY II. Studies in syntax of Old French and Old Spanish, with special problems in the field of the student's major interest.
- 515-4. READINGS IN ROMANCE. Selected readings in the literature of Old French and Old Spanish, with emphasis upon the student's major field. Prerequisite: 410 or equivalent.
- 516-4. ARTHURIAN ROMANCE. Intensive readings in the Arthurian Romances in the field of the student's major interest (French or Spanish) with reference to the genre as a whole. Prerequisite: 410 or equivalent.

## RUSSIAN

- 101-3, 102-3, 103-3. ELEMENTARY COURSE. Pronunciation; reading of elementary texts; oral practice; composition.
- 101c-1, 102c-1, 103c-1. RUSSIAN CONVERSATION. Additional practice in conversation and oral drill for students enrolled in 101, 102, 103.
- 201-3, 202-3, 203-3. INTERMEDIATE COURSE. Reading of classical and

- modern narrative prose; oral practice and sight reading; advanced composition. Prerequisite: 103.
- 220-2 to 6. RUSSIAN CONVERSATION. Advanced conversation based on topics of current interest. Prerequisite: 103.
- 251-4. SCIENTIFIC RUSSIAN. Study of vocabulary and sentence constructions as found in Russian readings on popular sciences. Prerequisite: 103.
- 301-4, 302-4. THE RUSSIAN NOVEL IN THE NINETEENTH CENTURY.
- 311-4, 312-4. INTRODUCTION TO RUSSIAN CLASSICAL LITERATURE. Short stories of Gogol, Pushkin, Turgenyev, Tolstoy, etc.
- 313-4. RUSSIAN DRAMA IN THE NINETEENTH CENTURY. Griboyedov, Gogol, Pushkin, and minor dramatists.
- 320-2. READINGS IN RUSSIAN LITERATURE. Selected readings in areas not covered in regular course work.
- 352-4. ADVANCED COMPOSITION AND CONVERSATION. Oral and written composition for advanced students; intensive study of idiomatic expressions and current usage.

## SPANISH

- 101-3, 102-3, 103-3. ELEMENTARY COURSE. 101 open to students who have had no previous work in Spanish. Prerequisite for 102: 101 or one year of high school Spanish.
- 101c-1, 102c-1, 103c-1. SPANISH CONVERSATION. Courses in conversation and oral drill for students who wish additional oral training; elected only by students enrolled in 101, 102, 103.
- 161-0. SPANISH FOR GRADUATE STUDENTS. Intensive study of grammar and vocabulary. Designed for graduate students desiring a reading knowledge of Spanish.
- 201-3, 202-3, 203-3. INTERMEDIATE COMPOSITION AND READING. Grammar review, composition, oral practice, rapid reading of modern authors. Prerequisite: 103 or two years of high school Spanish.
- 301-3. SPANISH NOVEL OF THE NINETEENTH AND TWENTIETH CENTURIES. Study of representative novels and authors from the Regionalists to the present time.
- 302-3. SPANISH DRAMA OF THE EIGHTEENTH AND NINETEENTH CENTURIES. Reading of selected plays of the chief dramatists from Moratin to the generation of 1898.
- 311-3, 312-3, 313-3. SURVEY OF SPANISH LITERATURE. A survey, continuing to the present day. Lectures and reading of representative authors. This series should follow immediately after 153. Offered alternately with 333, 334, 335.
- 315-3. ARTE Y CULTURA. Conducted in Spanish. Informal class discussion of reports of students on present day topics relating to the life and interests of Latin America and Spain; extensive use of films. Prerequisite: 220 or consent of instructor.
- 316-3. CIVILIZACION ESPANOLA. A study of the cultural patterns and heritage of the Spanish people from earliest times to the present. Prerequisite: 315 or consent of instructor.
- 320-2, 321-2, 322-2. ADVANCED CONVERSATION AND COMPOSITION. Required of majors and students preparing to teach. (May be taken concurrently with 311-312-313 or with 333-334-355.) Prerequisite: 202.



- 333-3, 334-3, 335-3. SURVEY OF SPANISH AMERICAN LITERATURE. A survey of Spanish literature in America from the conquest to modern times. Offered alternately with 311, 312, 313.
- 340-3. THE GOLDEN AGE. Extensive individual reading of the plays of Lope de Vega, Calderón, Tirso, Ruiz de Alarcón, and others, with class reports and intensive study of some one dramatist.
- 345-4. CERVANTES. Study of the life of the author and the Quijote with reference to style and source of materials. Comparative reports on the novelas and other works.
- 351-3. ADVANCED COMPOSITION. Daily themes based on Spanish models, with free composition once a week. Class discussions.
- 360-2 to 8. TRAVEL-STUDY COURSE IN MEXICO. Lectures and course work at Mexican universities, in conjunction with the Latin American Institute's Study Abroad Program. Native professors and lecturers in Mexico City and other points visited. Individual projects and reports. Prerequisite: advanced standing in Spanish.
- 415-3. SPANISH PHONETICS. Analysis of the sounds of Spanish and their manner of production; special drill in connected passages of prose and poetry.
- 478-4. SEMINAR IN LATIN AMERICAN THOUGHT. Investigation of research topics connected with Latin American thought during the nineteenth and twentieth centuries in the fields of government, social sciences, education, literature, and philosophy. Individual studies and reports. Prerequisite: consent of instructor.

Courses on the 500 level are for graduate students only.

- 500-2. SEMINAR IN LATIN-AMERICAN LITERATURE. Intensive study of the modern novel in Latin America as an expression of social and cultural movements. Outside readings and class discussions.
- 501-2. SEMINAR ON A SELECTED SPANISH AUTHOR. Intensive study of one author—his life, his works, and his relationships to the literary and social currents of his time.
- 505-3. THE PICARESQUE NOVEL. Class study of the Lazarillo, and collateral readings of other masterpieces of this genre.
- 506-3. THE RENAISSANCE. A study of the literature of the Renaissance in Spain, including the drama, the novel, the lyric poetry, and the histories of the Indies.
- 520-4. COMPOSITION AND GRAMMAR. Free composition, based upon analysis of the style of contemporary Spanish authors, with special reference to grammatical construction. Special projects in grammar.
- 525-3. THE SPANISH BALLADS. The *romance* studied as a part of the literature and folklore of Spain and the New World.
- 530-3. LATIN-AMERICAN POETRY. Study of the modern trends in the poetry of Latin America as a whole, with emphasis on its international aspect and its relation to other literary forms. Prerequisite: 333 or consent of instructor.
- 535-3. ENSAYISTAS MEXICANOS DEL SIGLO DIECINUEVE. Study and discussion of ideologies and conflict in thought as reflected in writings of Mexican essayists of the past century.
- 599-2 to 9. THESIS.



## GEOGRAPHY

University Professor Charles C. Colby, Ph.D. (Chicago)	1951-52; 1953-54; 1957-62
Professor Floyd F. Cunningham, Ph.D. (Clark)	1947
Professor Robert A. Harper, Ph.D. (Chicago), Chairman	1950
Professor Wilbur Zelinsky, Ph.D. (California)	1959
Associate Professor Flemin W. Cox, A.M. (Illinois), Emeritus (1945)	1929
Associate Professor Annemarie Krause, Ph.D. (Chicago)	1930
Associate Professor Marjorie Shank, A.M. (Clark)	1923
Assistant Professor Ronald M. Beveridge, Ph.D. (Illinois)	1956
Assistant Professor Theodore H. Schmutde, Ph.D. (Wisconsin)	1959
Assistant Professor Howard A. Stafford, Jr., Ph.D. (Iowa)	1959
Assistant Professor Frank H. Thomas, Ph.D. (Northwestern)	1959
Assistant Professor Joseph Velikonja, Ph.D. (Rome, Italy)	1959
Visiting Professor David L. Niddrie, M.Sc. (Natal)	1961-62
Visiting Lecturer David E. Christensen, Ph.D. (Chicago)	1961-62

A student may take his work in the field of geography in either the College of Liberal Arts and Sciences or the College of Education depending upon his objective:

1. In the College of Liberal Arts and Sciences geography majors prepare for careers in federal or local government research or planning. Today, more and more private businesses are utilizing trained geographers.

2. In the College of Education geography majors prepare to teach in the elementary or secondary schools, or with further preparation, in the junior colleges. Minors prepare to teach social science and earth and physical science in elementary or secondary schools.

Today a large number of geography majors take professional training beyond the bachelor's degree. Schools, colleges, and universities and government and business establishments, as well, are calling for persons with graduate training in geography.

*SUGGESTED CURRICULA IN GEOGRAPHY*

The following curriculum leads to the Bachelor of Arts degree with a major in geography in the College of Liberal Arts and Sciences.

DEPARTMENT OF GEOGRAPHY .....	47
<i>General Degree Requirements</i> (See page 10.) .....	71
<i>College of Liberal Arts and Sciences Requirements</i> (See page 11.) ....	37
<i>Requirements in the Department of Geography</i> .....	42
Geography 100, 101, 210, 250, 301, cartography .....	26
Geography electives to complete 42 hours .....	16
<i>Related Recommendations for the Major</i> .....	0
A background in statistical analysis is recommended.	
<i>Duplication of Requirements</i> .....	-5
Geography 100 satisfies 5 hours of General Degree Requirements as well as 5 hours of departmental requirements. These hours are deducted here to avoid counting them twice in the total.	
<i>Electives</i> .....	47
<i>Total</i> .....	<u>192</u>

The curriculum leading to the Bachelor of Science in Education degree with a major in geography in the College of Education includes the following *Requirements for the Major*:

Geography 100, 101, 210, 250, 301, cartography .....	26
Geography electives to complete 48 hours (only 42 hours if two 24-hour minors are presented) .....	22
One year of a foreign language .....	9

A background in statistical analysis is recommended. Other requirements for the degree are given in the College of Education bulletin. (See page ii of this bulletin.)

Geography 100, 101, 210, 250, 301, and cartography make up a three-stage core for training in geography. Geography 100 gives a general survey of the viewpoint of geography. The second stage consists of 101, 210, and 250. Each of these courses gives the "elements" of understanding of a particular aspect of geography that all geographers must know. The third stage is 301. In it the various elements of physical, economic, and cultural geography are tied together, and the methods used by geographers in working with the complex of man-land associations in a particular area are shown. Cartography is required, because this technique is considered essential to all geographic work.

It is recommended that majors complete the core courses before taking other geography courses. After completing the core, the major may choose any other geography courses in assembling the hours required for his major. However, his program should be approved by a departmental adviser.

Minors, too, are urged to take the core courses, for together these courses should offer the strongest basic preparation in geography.

Departmental undergraduate courses may be classified in the following areas of specialization:

Physical Geography: 310, 311, 324, 407, 431, 435, 436

Economic Geography: 404, 405, 406, 411, 470

Cultural Geography: 319, 444, 455

Regional Geography: 313, 314, 315, 316, 318, 321, 402, 413, 420

Geographic Techniques: 416, 417

Each of the courses in the economic, physical, and cultural specializations is a further development of the introductory material presented in the basic elements course of the core curriculum. Thus, for the major, 101 is prerequisite to all physical geography courses, 210 to all economic geography courses, 250 to all cultural geography courses. Regional courses, because they service students outside of the department, carry only 100 as a prerequisite. However, geography majors are urged to complete the core of courses before taking regional courses.

A broad background in other fields is of great importance to a geographer. Thus, it is recommended that geography majors hold their hours of geography to the minimum number required for the major and use their elective hours to take work in other departments. Students interested in physical geography should consider work in the departments of geology, botany, zoology, plant industries, forestry, and physics. Students interested in economic geography can profit from work in economics, agricultural industries, marketing, and transportation. Students specializing in cultural geography will find courses in sociology, anthropology, community development, history, and government particularly useful. Students interested in the geography of a particular area of the world are encouraged to take courses on the area in other departments. Programs of the Latin American Institute and the committees on Asian, Russian, and central European studies are particularly noted.

### *COURSE DESCRIPTIONS*

- 100-5. GEOGRAPHY OF MAN. A world regional survey in which significant regional differences are observed and analyzed. Basic factors of population distribution form the core of the course. Tracing of development of man's working connections with the land and its resources. Satisfies social studies requirement for the bachelor's degree in all colleges of the University.
- 101-5. INTRODUCTION TO PHYSICAL GEOGRAPHY. Study of the nature of the earth's landforms, climate, water resources, natural vegetation, and soils with particular emphasis on their areal differences and distribution. Their relationships to each other and their importance to man are also considered.

- 210-4. INTRODUCTION TO ECONOMIC GEOGRAPHY. Study of the economic production types or occupations such as herding, farming, fishing, lumbering, mining, manufacturing, and transportation. Prerequisite: 100.
- 211-5. ECONOMIC GEOGRAPHY FOR BUSINESS STUDENTS. Designed to show the relationship between physical environment and economic life of people. Emphasis on economic-geographic factors of world distribution of resources, methods of production and transportation of important commodities of industry and commerce. Open only to students majoring in the School of Business.
- 250-4. INTRODUCTION TO CULTURAL GEOGRAPHY. Designed to introduce the broad field of cultural geography. An overview of the geographic viewpoint in the study of the human occupancy of the earth is presented. Aspects of population, settlement, and political geography are treated, and a generalized survey of major world cultural areas is used to integrate course elements. Prerequisite: 100.
- 300-4. WORLD CULTURAL GEOGRAPHY. World survey for students in other departments. The factors of population distribution. This course may be used to fulfill the social science requirement for the bachelor's degree. Not open to those who have had 100.
- 301-3. INTRODUCTION TO GEOGRAPHIC METHODS. Designed to introduce the geographic methods of integrating physical, economic, and cultural elements in the study of areas. Focus on generalizations concerning selected areas of varying magnitude and character. Cartographic and quantitative techniques utilized. Prerequisites: 101, 210, 250.
- 310-4. METEOROLOGY. Study of weather, the factors and conditions influencing it, its importance to man. Emphasis placed upon agriculture, aviation, business, industry, and everyday understanding of weather. Most recent findings in weather science studies. Of value to persons interested in weather bureau service.
- 311-4. GEOGRAPHY OF SOILS. The nature, source, and origin of soil material; soil development and soil use. Geographic distribution and significance of soil as an element of the environment. Prerequisite: 100, 101, or consent of instructor.
- 313-3. GEOGRAPHY OF ILLINOIS. Acquaints the student with the regional concepts of our state, the distribution of climate, vegetation, soil, landforms, and mineral resources; interrelates agriculture, manufacturing, industry, and population distribution, interpreted within a regional framework. Prerequisite: 100.
- 314-4. GEOGRAPHY OF ANGLO-AMERICA. A systematic regional treatment of North America, north of Mexico. An analysis of the ways in which major environmental and cultural factors have interacted through time and space in this region and its major subregions. Prerequisite: 100 or consent of instructor.
- 315-4. GEOGRAPHY OF EUROPE. A study of regions, with stress on their description, interpretation, and utilization. Emphasis on interdependence of political units. Prerequisite: 100 or consent of instructor.
- 316-4. GEOGRAPHY OF SOUTH AMERICA. A study of the regions and resources of the South American countries as they relate to national and international problems. Prerequisite: 100 or permission of instructor.
- 318-4. GEOGRAPHY OF ASIA. Survey of the countries of Asia, except the



- Asiatic portion of the U.S.S.R., emphasizing the relationship between the problems of the population and the resource base. Prerequisite: 100 or consent of instructor.
- 319-4. HISTORICAL GEOGRAPHY OF THE UNITED STATES. Study of elements of the geographic environment that have been important in the discovery, exploration, settlement, and development of the United States. Prerequisite: 100 or consent of instructor.
- 321-2. GEOGRAPHY OF AUSTRALIA. A study of the only continent which lies far beyond the periphery of the land hemisphere; its climatic and economic conditions; its vital place in the economic and political life of the Pacific. Prerequisite: 100 or consent of instructor.
- 324-4. RESTORATION AND CONSERVATION OF NATURAL RESOURCES. Survey of major resources of United States with stress on problems of conservation and restoration. Emphasis on water, mineral, forest, grass, soil, wildlife, scenic, and recreational resources. Field trips. Prerequisite: 100 or consent of instructor.
- 341-4. TEACHING OF GEOGRAPHY IN THE ELEMENTARY SCHOOL. Presentation and evaluation of methods of teaching geography in the elementary grades. Emphasis upon geographic literature, illustrative materials, and teaching devices suitable to particular age levels. Prerequisite: 100.
- 342-4. TEACHING OF GEOGRAPHY IN THE JUNIOR AND SENIOR HIGH SCHOOLS. Presentation and evaluation of methods of teaching geography in the junior and senior high schools. Emphasis upon geographic literature, illustrative materials, and teaching devices suitable to particular age levels. Prerequisite: 100.
- 402-4. THE SOVIET UNION. A study of the U.S.S.R. based on both a systematic and a regional approach. Appraisal of the natural-resource base of the U.S.S.R. as well as an estimate of her industrial and agricultural strength. Prerequisite: 100 or consent of instructor.
- 404-4. GEOGRAPHY OF AGRICULTURE. A functional study of the bases, interrelationships, and geographic distribution of agricultural production. Prerequisites: 100, 101, 210, or consent of instructor.
- 405-4. GEOGRAPHY OF MANUFACTURING. A functional study of the bases, interrelationships, and geographic distribution of manufacturing industries. Prerequisites: 100, 101, 210, or consent of instructor.
- 406-4. GEOGRAPHY OF TRANSPORTATION. A functional study of transportation networks emphasizing geographic theory and transportation factors, application of geographic techniques and methods, a brief survey of world transportation patterns, and an examination of major modes of transportation within the United States. Prerequisite: 100 and 210, or consent of instructor.
- 407-4. REGIONAL CLIMATOLOGY. Principles of climatology; physical bases for the differentiation of climatic types; description and interpretation of climatic regions. Prerequisite: 100 or consent of instructor.
- 411-4. URBAN GEOGRAPHY. The urban population: environment, development, and distribution; geographic factors related to the origin, structure, and functions of urban centers. Prerequisites: 100, 101, 210, or consent of instructor.
- 413-3 to 4. GEOGRAPHY OF THE CARIBBEAN LANDS. A regional approach

to the study of the lands bordering the Caribbean. Appraisal of the natural-resource base of the various countries. Prerequisite: 100.

- 416-4. CARTOGRAPHY. Map-making and graphics: compilation, design, and reproduction. Particular attention to cartographic representation of quantitative data. Laboratory fee.
- 417-3. AIR PHOTO INTERPRETATION. Techniques in the use of air photos as source material for research in the physical and social sciences. Laboratory. Prerequisite: 312 or consent of instructor.
- 420-4. GEOGRAPHY OF AFRICA. A regional study of the continent. Patterns of climate, soils, minerals, vegetation, and relative location to be woven together with the agricultural, economic, and industrial features into the regional framework of Africa. Prerequisite: 100 or consent of instructor.
- 430-4. PHYSIOGRAPHIC PROVINCES OF NORTH AMERICA. (Same as Geology 430.) Designed to give the students an appreciation of the evolution of land forms in the physiographic provinces of North America; to explain the surface features in a landscape; and to interpret the human drama related thereto. Prerequisites: 100, 101, 210, and advanced standing.
- 431-4. GEOMORPHOLOGY. (Same as Geology 431.) A study of landforms, relating topographic features to the underlying rocks and structure and to processes of erosion, deposition, and earth movements. Prerequisite: 100 or Geology 220.
- 435-4. GEOGRAPHY OF LANDFORMS. Aims at developing concepts of objective landform description. Using this approach, the world distribution of landforms is examined with special emphasis on the landforms of the United States. A short research paper is normally required. Prerequisite: 101.
- 436-3. PLANT GEOGRAPHY. A world survey of natural areas of vegetation. Evolution of floras and present distribution. Prerequisites: Botany 101, 202, 203, or consent of instructor.
- 440-2 to 8. READINGS FOR MAJORS. Supervised readings for geography majors. Prerequisite: advanced standing and consent of chairman.
- 444-4. POLITICAL GEOGRAPHY. An examination of principles of political geography followed by an analysis of the world pattern of political organization by regions. Prerequisite: at least three courses in geography and completion of university social science requirement.
- 455-4. GEOGRAPHY OF POPULATION. Study of the geographic significance of population numbers, characteristics, and change throughout the world and the relationships between population and economic resources. Emphasis on assessing possible causes and effects of population distribution. Study of data sources and techniques of measurement and mapping. Prerequisites: 13 hours of geography including Geography 100 and 210 or consent of instructor.
- 470-4. URBAN PLANNING. (Same as Government 470.) An interdepartmental course in the basic problems of planning in the urban community. The course includes the administrative and physical principles involved in the planning of urban land use. Emphasis is upon research techniques, design principles, and governmental instrumentalities in the planning process. Prerequisite: consent of instructor.
- 500-4. GEOGRAPHIC TECHNIQUES I. Field experience in the techniques of

- observation, mapping, interview, and analysis as applied in geography.
- 501-4. GEOGRAPHIC TECHNIQUES II. Introduction to and appraisal of library resources and bibliographical aids. Preparation and organization of professional reports and their evaluation. Individual projects.
- 505-4. ADVANCED RESEARCH TECHNIQUES. Concern is centered on the application of quantitative techniques to specific geographic research problems. Exploration of new applications and new techniques is encouraged. Prerequisites: 500 and Mathematics 410 or equivalent.
- 511-4. PHILOSOPHY OF GEOGRAPHY. The nature of geography. Current trends in the field, present-day geographers, and schools of thought. Geography's place among all disciplines.
- 520-2 to 8. SEMINAR IN PHYSICAL GEOGRAPHY.
- 521-2 to 8. SEMINAR IN ECONOMIC GEOGRAPHY.
- 522-2 to 12. SEMINAR IN REGIONAL GEOGRAPHY.
- 523-4. SEMINAR IN CARTOGRAPHY.
- 524-2 to 8. SEMINAR IN CULTURAL GEOGRAPHY.
- 530-2 to 10. INDEPENDENT STUDIES IN GEOGRAPHY.
- 599-3 to 9. THESIS.

## GEOLOGY

Professor Fred Donald Bloss, Ph.D. (Chicago)	1957
Associate Professor Stanley E. Harris, Jr., Ph.D. (Iowa), Chairman	1949
Associate Professor David Nicol, Ph.D. (Stanford)	1958
Assistant Professor Dewey Harold Amos, Ph.D. (Illinois)	1955
Assistant Professor Frank James Bell, M.S. (Nebraska)	1957

### SUGGESTED CURRICULUM IN GEOLOGY

The following curriculum leads to the Bachelor of Arts degree with a major in geology in the College of Liberal Arts and Sciences.

<i>General Degree Requirements</i> (See page 10.)	71
<i>College of Liberal Arts and Sciences Requirements</i> (See page 11.)	37
<i>Requirements in the Department of Geology</i>	50
Geology 220, 221, 302, 310, 405, 425, 431	30
Geology 311, 312, 315, 426, 427 (any 3)	12
Geology electives to complete 50 hours	8
<i>Related Requirements for the Major</i>	35
Chemistry 111, 112, 113	15
Mathematics 111, 112, 113	15
Physics	5
The foreign language must be German, Russian, or French.	0
<i>Duplications of Requirements</i>	-12
The Related Requirements for the Major also satisfy 12 hours	

of General Degree Requirements. To avoid counting these hours twice in the total, they are deducted here.

<i>Electives</i> .....	11
<i>Total</i> .....	<u>192</u>

It is recommended that students majoring in geology should minor in chemistry, mathematics, physics, or zoology. A minor in some other area should be approved by the department.

An understanding of geology requires a knowledge of the basic sciences. Thus a year's sequence of chemistry and mathematics and at least one term of physics and biology are considered a minimum; additional work in one or more of these fields will be necessary to support specialties such as mineralogy, petrology, economic geology, geophysics, and paleontology. A summer field course in geology should be taken between the junior and senior years. Preparations for a professional career usually require graduate work.

A minor in geology consists of 24 hours determined by consultation with the department's major adviser.

### COURSE DESCRIPTIONS

- 100-4. PRINCIPLES OF GEOLOGY. A study of earth materials, geologic processes, and earth history. Stress upon the common rocks and minerals, erosional and depositional processes, volcanism, and formation of mountains; development of life forms, and the changing face of the earth; application to understanding the landscape, the search for oil and mineral resources, engineering construction. Laboratory.
- 220-5. PHYSICAL GEOLOGY. A study of the principal minerals and rocks of the earth's crust, emphasizing origin and identification; the physical processes active in producing the surface features of the earth. Laboratory and field trips required.
- 221-5. HISTORICAL GEOLOGY. Presenting in chronological order the procession of physical and biotic changes through which the earth has passed. Includes the physical history and evolution of life forms as evidenced by fossil records. Laboratory. Prerequisite: 100 or permission of instructor, elementary course in zoology or botany recommended.
- 302-4. STRUCTURAL GEOLOGY. A study of the forces involved in the deformation of the earth's crust, with special emphasis on the recognition, interpretation, and illustration of the resultant geologic structures. Laboratory. Prerequisite: 220, 221.
- 310-4. CRYSTALLOGRAPHY. The study of morphological crystallography including crystal symmetry, Hermann-Mauguin symbolism for the crystal classes, and solution of problems by means of the stereographic projection. Prerequisite: Trigonometry.
- 311-4, 312-4. DETERMINATIVE MINERALOGY. The study of the non-silicate and silicate minerals including the influence of crystal chemistry upon



- their physical and chemical properties. Laboratory practice in chemical determination and sight identification. Prerequisites: 310, Chemistry 111, Corequisite: Chemistry 112.
- 315-4. PETROLOGY. A study of the characteristics and classification of rocks, their origin and geologic distribution. Laboratory. Prerequisite: 220.
- 320-4. ECONOMIC GEOLOGY. Study of the world's larger mining districts and the economics and political importance of their geological resources.
- 401-4. ADVANCED GENERAL GEOLOGY. Deals with certain broader problems of geology: earthquakes, volcanism, submarine canyons, coral islands, mountain building. Laboratory. Prerequisites: 220, 302.
- 405-3. MAP AND AIR PHOTOS. Interpretation and use of air photos in geologic mapping; interpretation and construction of geologic maps, such as areal, structure, isopach, paleogeologic. Laboratory. Prerequisites: 221, 302, 431.
- 410-4. STRATIGRAPHY AND SEDIMENTATION. The features of sedimentary rocks and their processes of origin and diagenesis; the classification of stratigraphic units, methods of correlation, and paleogeologic reconstruction. Laboratory. Prerequisites: 220, 221.
- 415-4. OPTICAL MINERALOGY. The optical properties of minerals and the use of the petrographic microscope for identification by the immersion method and by thin section. Laboratory. Prerequisites: 310.
- 416-4. X-RAY CRYSTALLOGRAPHY. Identification of unknown crystalline materials and determination of lattice parameters by X-ray techniques. Prerequisite: 310 or consent of instructor.
- 420-3, 421-3, 422-3. GEOLOGY OF PETROLEUM. A sequence of courses considering the geological occurrence of petroleum, including origin, migration, and accumulation; a survey of exploration methods and production problems and techniques. Laboratory study applies geological knowledge to the search for and production of petroleum. Laboratory. Prerequisites: 221, 302.
- 425-5, 426-4, 427-4. PALEONTOLOGY I, II, and III. 425 is a survey of the important invertebrate phyla and their fossil representatives; 426 the mollusca, arthropoda, brachiopoda, and echinodermata; 427 the protozoa, porifera, coelenterata, bryozoa, and other minor groups. Includes classification, evolution, paleoecology, and geographic and stratigraphic distribution. Laboratory. Prerequisites: 221, 425, Zoology 100.  
Courses to be taken in sequence.
- 430-4. PHYSIOGRAPHIC PROVINCES OF NORTH AMERICA. (Same as Geography 430.) Designed to give the student an intelligent appreciation of the evolution of land forms in the physiographic provinces of North America; to explain the surface features in a landscape; and to interpret the human drama related thereto. Prerequisite: 220 or Geography 100.
- 431-4. GEOMORPHOLOGY. A study of land forms, relating topographic features to the underlying rocks and structure and to processes of erosion, deposition, and earth movements. Prerequisite: 220 or Geography 100.
- 440-1 to 4. INDEPENDENT STUDY. Prerequisites: 220, 221, advanced standing.
- 450-9. FIELD GEOLOGY. A field mapping course including problems in stratigraphy, structure, paleontology, physiography, and economic geology. Requires a written geologic report. Consult departmental office for dates, cost, and equipment needed. Prerequisite: 302.

Courses on the 500 level are for graduate students only.

- 510-3, 511-3, 512-3. STRATIGRAPHY. (Paleozoic, Mesozoic, Cenozoic.) Character, chronologic sequence, correlation, time relations, facies analysis and comparison of rock and biostratigraphic units of selected regions throughout the world with emphasis on North America. Laboratory problems involving stratigraphic interpretation from maps and air photos, construction of stratigraphic sections, facies maps, and faunal analysis. Field trip and written report required. 2 lectures, 1 laboratory. Prerequisites: 302, 425, 426.
- 515-4, 516-4, 517-4. MINERAL DEPOSITS. (Principles, Metallics, Non-metallics.) Principles of mineral deposition and genesis, and the origins and geologic settings of the important mineral deposits of the world. Laboratory. Prerequisites: 302, 310.
- 520-4. IGNEOUS PETROLOGY. Physical chemistry, petrographic classification, and genetic relationships of the igneous rocks. Prerequisites: 310, 415, or equivalent.
- 521-4. METAMORPHIC PETROLOGY. Physical chemistry, petrographic classification, and genetic relationships of the metamorphic rocks. Prerequisites: 310, 415, or equivalent.
- 522-4. SEDIMENTARY PETROLOGY. Petrographic classification and origin of sedimentary rocks. Prerequisites: 310, 415.
- 528-3. INTRODUCTION TO MICROPALAEONTOLOGY. The study of Foraminifera and Ostracoda is emphasized, but a survey of microscopic fossil organisms and skeletal elements of megafossils is included. Laboratory work in techniques of collecting and preparation and methods of study of microfossils. Prerequisite: 426.
- 540-1 to 9. ADVANCED STUDIES.
- 541-1 to 9. RESEARCH.
- 599-3 to 9. THESIS.

## GOVERNMENT

Professor Orville Alexander, Ph.D. (Iowa), Chairman	1938
Professor Frank L. Klingberg, Ph.D. (Chicago)	1946
Professor Robert A. McGrath, Ph.D. (Iowa)	1949
Professor Ward M. Morton, Ph.D. (Texas)	1949
Professor Willis G. Swartz, Ph.D. (Iowa)	1930
Professor Max Wesley Turner, Ph.D. (Iowa)	1947
Associate Professor Earl Hanson, Ph.D. (Illinois)	1960
Associate Professor Irving Howards, Ph.D. (Wisconsin)	1957
Associate Professor Horace B. Jacobini, Ph.D. (Kansas)	1957
Associate Professor David T. Kenney, Ph.D. (Illinois)	1951
Associate Professor Randall H. Nelson, Ph.D. (Michigan)	1955
Associate Professor John S. Rendleman, J.D. (Illinois)	1951
Associate Professor Marian E. Ridgeway, Ph.D. (Illinois)	1952
Associate Professor M. M. Sappenfield, Ph.D. (Illinois)	1954

Associate Professor William O. Winter, Ph.D. (Michigan)	1950
Assistant Professor William Hardenbergh, Ph.D. (Illinois)	1960
Assistant Professor Egon Kamarasy, D.Pol. (Budapest)	1959
Assistant Professor Elmo M. Roberds, Ph.D. (Chicago)	1961
Instructor Jean M. Dannelson, M.A. (Southern Illinois)	1959
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Visiting Professor Clarence A. Berdahl, Ph.D. (Illinois)	1958-62
Visiting Professor Nobushigi Ukai, D.J. (Tokyo)	1960-61
Visiting Professor Gilbert G. Lentz, Ph.D. (Illinois)	1961-62
Lecturer David Frier, M.A. (Southern Illinois)	1957-62
Lecturer Manfred Landecker, M.A. (Johns Hopkins)	1959-62
Assistant Instructor Charles H. Winslow, B.A. (Indiana)	1961-62

An undergraduate major for a student in the College of Education consists of thirty-six hours, and forty-two hours for a student in the College of Liberal Arts and Sciences. Twenty-four hours are required for a minor in either college. A major or minor is recommended for persons planning to teach civics or government courses, and for those planning to qualify for the study of law or for public service. Students majoring in government are urged to take as much work as possible in other social science departments, with at least one minor in a related field. Students planning to take graduate work in government beyond the master's degree should acquire a reading knowledge of both French and German.

### SUGGESTED CURRICULA IN GOVERNMENT

The following curriculum leads to the Bachelor of Arts degree with a major in government in the College of Liberal Arts and Sciences.

<i>General Degree Requirements</i> (See page 10.) .....	71
<i>College of Liberal Arts and Sciences Requirements</i> (See page 11.) ....	37
<i>Requirements in the Department of Government</i> .....	42

Government electives to total at least 42 hours are required.

Three recommended sequences follow:

101, 231, 232, 305, 360, 370, 380, 390, 392, 420, 471,  
472, 495, 496 (43)

Specialization in International Affairs: 101, 231, 232,  
243, 363, 370, 371, 385, 390, 392, 453, 456, 457, 458,  
459, 460, 471, 472, 475, 480 (63)

Specilization in Public Administration: 101, 231, 232,  
305, 315, 340, 360, 410, 420, 432, 434, 435, 436, 438,  
440, 461, 462, 463, 464, 466, 467, 468, 469, 470, 495,  
496 (82)

<i>Electives</i> .....	42
<i>Total</i> .....	192

The curriculum leading to the Bachelor of Science in Education degree with a major in government includes 36 hours selected from the following

*Recommended Courses for the Major:*

Government 101, 231, 232, 243, 305, 315, 330, 360, 370, 371, 379, 380, 385, 390, 420, 466, 467, 472, 495, 496

Other requirements for the degree are given in the College of Education bulletin. (See page ii of this bulletin.)

### COURSE DESCRIPTIONS

- 101-5. PROBLEMS OF AMERICAN DEMOCRACY. A general survey of government including national and state constitutional principles as required by Illinois law. Meets the social science and American government requirements. When offered in extension this course carries only four hours credit.
- 231-5. AMERICAN NATIONAL GOVERNMENT. A survey covering the structure, functions, and principles of national government. Also meets social science and American government requirements. Prerequisite: 101.
- 232-5. STATE AND LOCAL GOVERNMENT. A survey of the structure and functions of American state and local government. Prerequisite: 101.
- 243-3. INTRODUCTION TO AMERICAN FOREIGN POLICY. An introductory course dealing with the significance of foreign policy to American citizens. Prerequisite: 101.
- 300-4. AMERICAN GOVERNMENT. An advanced course to satisfy the American government requirements of the College of Education. Deals with the structure and functions of national, state, and local government. Not open to those who have had 101 or 231.
- 305-5. DEVELOPMENT OF THE AMERICAN CONSTITUTION. The evolution of the United States constitutional system. Recommended for pre-law students. Prerequisite: 101 or 231.
- 315-3. ADMINISTRATION OF JUSTICE. The organization and work of the American judicial system. Recommended for prelaw students. Prerequisite: 101 or 232.
- 321-1 to 6. READINGS IN GOVERNMENT. Consent of instructor required.
- 330-2. ILLINOIS GOVERNMENT. The development and functioning of government in Illinois. Prerequisite: 101 or 231.
- 340-3. THE LEGISLATIVE PROCESS. A study of the principles, organization, and work of American legislative bodies. Prerequisite: 101 or 231.
- 360-5. PUBLIC ADMINISTRATION. Principles and problems of administration on the national, state, and local level. Prerequisite: 101 or 231.
- 361-3. PROBLEMS IN PUBLIC ADMINISTRATION AND POLICY FORMATION. A study of various problems in public administration and policy, primarily as they appear in actual case situations. This course is designed for those who do not intend to concentrate in public administration. Prerequisite: 360 or consent of instructor.



- 363-3. UNITED STATES-LATIN AMERICAN RELATIONS. A study of the governmental relations between the United States and the various nations of Latin America. Prerequisite: 231.
- 370-3. INTERNATIONAL RELATIONS. A study of world politics—the causes of international conflict and the conditions of peace. Prerequisite: 101.
- 371-4. PROBLEMS OF AMERICAN FOREIGN POLICY. An analysis of selected problems in the field of American foreign policy. Prerequisite: 231 or 243.
- 379-3. POLITICAL PARTIES II. A study of the historical development of American political parties. Prerequisite: 101 or 231.
- 380-3. POLITICAL PARTIES. The development and work of American political parties. Prerequisite: 101 or 231.
- 385-3. CONTEMPORARY POLITICAL "ISMS." An advanced survey of recent political systems: Socialism, Communism, Pluralism, Fascism, Nationalism. Prerequisite: 101 or 231.
- 390-5. COMPARATIVE GOVERNMENT. A survey of the principles and techniques of comparative government and their application to the political institutions of modern states. Prerequisite: 101.
- 392-3. COMPARATIVE GOVERNMENT (LATIN AMERICAN). A comparative study of the political systems of Latin American republics, with special attention given to Mexico and Argentina. Prerequisite: 101 or 231.
- 398-2. GOVERNMENT AND LAW. Techniques of law (classification, rights, and duties). Legal personality, public law and private law, criminal law, juristic acts. Property, possession and procedure. Prerequisite: 231.
- 406-4. THE AMERICAN CHIEF EXECUTIVE: PRESIDENT AND GOVERNOR. A study of the origin and background of the presidency and the governorship, qualifications, nomination and election, succession and removal, the organization of the executive branch, and the powers and functions of the president and governor. Prerequisites: 231 and 232.
- 410-5. LABOR AND POLITICS. A political history of the American labor movement from its early nineteenth-century origins to the present day. Attention is given to the political philosophy and practice of labor unions. Prerequisite: 231.
- 415-3. POLITICAL BEHAVIOR. An analysis of the nature of public opinion and methods of influencing political behavior. Major attention given to studying the basic psychological attitudes and behavior. Prerequisite: 231.
- 420-3. PRESSURE GROUPS AND POLITICS. An analysis of interest groups and their techniques of political propaganda. Prerequisite: 101 or 231.
- 432-3. GOVERNMENT AND NATURAL RESOURCES. A study of the administrative and policy problems in the development of multiple purpose conservation programs by the national government. Prerequisite: 231 or consent of instructor.
- 434-3. GOVERNMENT AND AGRICULTURE. A historical and contemporary survey of the role of agriculture in politics, the major and minor farm parties and pressure groups, the elements of the current "farm problem," and the influence of agriculture in public agencies and the formation of public policy. Prerequisite: 231.
- 435-4. GOVERNMENT AND BUSINESS. A historical study, with contemporary emphasis upon relations between government and economic institutions. Prerequisite: 231 or consent of instructor.
- 436-3. GOVERNMENT AND LABOR. (Same as Economics 436.) A study of

- labor relations and legislation considering both constitutional and economic aspects. Prerequisite: 101, Economics 205, or consent of instructor.
- 438-4. SOCIAL WELFARE LEGISLATION. The Social Security Act and other legislation of major significance for the welfare and maintenance of the family, the handicapped, children, and other special groups. Their relationship to the legal structure of federal, state, county, township, and municipal welfare facilities and institutions with indications of economic and social consequences. Prerequisite: 101 or consent of instructor.
- 440-5. PUBLIC PERSONNEL ADMINISTRATION. A survey of the methods and functions of modern public personnel administration. Prerequisite: 360.
- 441-4. PHILOSOPHY OF POLITICS. (Same as Philosophy 441.) Some of the central problems of modern political life, such as sovereignty, world government, authority and consent, the relations of economics and social studies to political theory. Prerequisite: Philosophy 140 or 340 or consent of instructor.
- 452-4. GOVERNMENTS AND POLITICS OF SUB-SAHARA AFRICA. A study of the governments and politics of the former and present British and French territories: Ghana, Nigeria, Kenya, Guinea, Congo, Senegal, etc. Prerequisite: 390 or consent of instructor.
- 453-3. SOVIET RUSSIA AND THE COMMUNIST STATES OF EASTERN EUROPE. An intensive study and research exercise in the government and politics of the Soviet Union. Prerequisite: 390 or consent of instructor.
- 454-8. DEVELOPMENT OF GERMAN DEMOCRACY. Offered co-operatively by Southern Illinois University and the University of Hamburg. Involves a summer's residence in Hamburg, Germany, and study under professors of the two co-operating universities. Prerequisite: consent of the American professor.
- 455-4. MAJOR GOVERNMENTS OF WESTERN AND CENTRAL EUROPE. A comparative study of the political systems of the major countries of western and central Europe. Prerequisite: 390 or consent of instructor.
- 456-4. GOVERNMENT OF THE BRITISH COMMONWEALTH AND EMPIRE. A survey of the governmental institutions and practices within the British Empire, with particular attention to the political systems of Australia, Canada, and South Africa. (The governments of India and Pakistan are treated in 460.) Prerequisite: 390 or consent of instructor.
- 457-4. GOVERNMENT AND POLITICS IN THE NEAR AND MIDDLE EAST. Iran, Iraq, Syria, Lebanon, Egypt, Jordan, Saudi Arabia, etc. Prerequisite: 390 or consent of instructor.
- 458-4. GOVERNMENT AND POLITICS OF SOUTHEAST ASIA. Burma, Thailand, Malaya, Indo-China, Indonesia, Philippines. Prerequisite: 390 or consent of instructor.
- 459-4. GOVERNMENT AND POLITICS OF THE FAR EAST. China, Japan, Korea, Formosa. Prerequisite: 390 or consent of instructor.
- 460-4. GOVERNMENT AND POLITICS OF SOUTH ASIA. India, Pakistan, Ceylon. Prerequisite: 390 or consent of instructor.
- 461-4. THEORY OF PUBLIC ADMINISTRATION. Analysis of various theoretical approaches to public administration with emphasis on recent American literature in this field. Prerequisite: 360 or consent of instructor.

- 462-3. ADMINISTRATIVE ORGANIZATION. A survey of the reorganization movement as a whole in the United States with emphasis on recent national, state, and local developments. Prerequisite: 360 or consent of instructor.
- 463-3. PROBLEMS OF EXECUTIVE MANAGEMENT. Principles of organization; techniques of conducting organization and procedural studies; work simplification; problems of the executive. Prerequisite: 360.
- 464-3. REGULATORY ADMINISTRATION. A study of the work of the major regulatory commissions of the national government. Prerequisite: 360 or consent of instructor.
- 466-3. STATE GOVERNMENT AND ADMINISTRATION. Leading problems of government and administration of American states. Prerequisite: 232.
- 467-3. MUNICIPAL GOVERNMENT AND ADMINISTRATION. Development and functioning of city government in the United States. Prerequisite: 232.
- 468-3. COUNTY GOVERNMENT IN THE UNITED STATES. An examination of the traditional rural county and township, the growing number of metropolitan counties, and the associated growth of special districts in the United States. Prerequisite: 232.
- 469-3. ADMINISTRATION OF STATE AND LOCAL FINANCE. An examination of the administrative problems connected with local and state revenues and expenditures in the United States. Prerequisite: 232.
- 470-4. URBAN PLANNING. (Same as Geography 470.) An interdepartmental course in the basic problems of planning in the urban community. The course includes the administrative and physical principles involved in the planning of urban land use. Emphasis is upon research techniques, design principles, and governmental instrumentalities in the planning process. Prerequisite: consent of instructor.
- 471-4. THE ORGANIZATION AND ADMINISTRATION OF AMERICAN FOREIGN POLICY. An advanced course. Prerequisite: 243 or 371.
- 472-4. INTERNATIONAL GOVERNMENT. Development and organization of international governmental and administrative systems, with emphasis on the United Nations. Prerequisite: 370.
- 475-4. INTERNATIONAL LAW. Rules and practices governing the nations in their relations in peace and war. Prerequisite: 370.
- 478-4. INTERNATIONAL POLITICS. A study of the interplay of political forces in the international community. Particular emphasis will be placed on war-time diplomacy, peace treaties, the alignments and conflicts of power in the post-war period. Prerequisite: 370 or consent of instructor.
- 480-4. THE PACIFIC AND THE FAR EAST. Political and strategic problems in this area. Prerequisite: 370 or History 368.
- 484-4. ANCIENT AND MEDIEVAL POLITICAL THEORIES. Outstanding political theories of the ancient and medieval periods, including theories of Aristotle, Plato, Cicero, St. Augustine, and Thomas Aquinas. Prerequisite: 6 hours of government.
- 485-4. MODERN POLITICAL THEORIES. Important political theories from the Renaissance to the end of the eighteenth century, including the theories of Machiavelli, Hobbes, Rousseau, Locke, and Burke. Prerequisite: 6 hours of government.
- 487-4. AMERICAN POLITICAL IDEAS. A historical study of the political



ideas of leading American statesmen and publicists, and their resulting influence upon our governmental system. Prerequisite: 305 or 385.

- 488-3. RECENT POLITICAL THEORY I. The outstanding Anglo-American liberal political theorists from John Stuart Mill to the present. Prerequisite: 305 or 390.
- 489-3. RECENT POLITICAL THEORY II. The outstanding "scientific" political theorists from Karl Marx to the present. Prerequisite: 385 or 390.
- 490-3. RECENT POLITICAL THEORY III. The outstanding idealistic and nationalistic political theorists from Hegel to the present. Prerequisite: 385 or 390.
- 495-4. CONSTITUTIONAL LAW I. Constitutional law of the United States with emphasis upon cases dealing with the framework of our federal system. Prerequisite: 231.
- 496-4. CONSTITUTIONAL LAW II. Constitutional law of the United States with emphasis upon cases dealing with the framework of American liberties. Prerequisite: 231.
- 497-4. ADMINISTRATIVE LAW. Law as it affects public officials in carrying out the rights, duties, and necessary functions of the public office. Prerequisite: 360.
- 498-4. JURISPRUDENCE. (Theories of Law.) Major schools in legal thinking. Positive law and natural law. Idea of justice and concept of natural rights. Prerequisite: 231.
- 499-2. RESEARCH METHODS. Practical training in research and writing techniques in the field of government. Bibliographical materials, foot-notes, use of law library facilities, and government documents. Required of all beginning graduate students.

Courses on the 500 level are for graduate students only.

- 501-526. SEMINARS. Preparation and presentation, for criticism, of assigned research papers. Hours of credit, 2 to 9 each, with no more than 4 in any one in any quarter.
501. SEMINAR IN CONTEMPORARY LEGISLATION. Prerequisite: 340 or consent of instructor.
502. SEMINAR IN GOVERNMENTAL PROBLEMS. Prerequisite: consent of instructor.
503. SEMINAR IN PRESSURE GROUPS. Prerequisite: 420 or consent of instructor.
505. SEMINAR IN POLITICAL PARTIES. Prerequisites: 379, 380, 420, or consent of instructor.
508. SEMINAR IN INTERNATIONAL RELATIONS. Prerequisites: 370, 472 or 475, or consent of instructor.
509. SEMINAR IN INTERNATIONAL ORGANIZATION. Prerequisite: 472 or consent of instructor.
510. SEMINAR IN STATE GOVERNMENT. Prerequisite: 466 or consent of instructor.
511. SEMINAR IN LOCAL GOVERNMENT. Prerequisite: 467 or consent of instructor.
512. SEMINAR IN PUBLIC ADMINISTRATION. Prerequisite: 360 or consent of instructor.
513. SEMINAR IN CONSTITUTIONAL LAW. Prerequisite: 395 or consent of instructor.



515. SEMINAR IN COMPARATIVE CONSTITUTIONS. Prerequisite: 390 or consent of instructor.
516. SEMINAR IN MUNICIPAL ADMINISTRATION. Prerequisite: 467 or consent of instructor.
517. SEMINAR IN PROBLEMS IN POLITICAL THEORY. Prerequisite: consent of instructor.
520. SEMINAR IN AMERICAN FOREIGN POLICY. Prerequisite: 471 or consent of instructor.
- 521-1 to 12. READINGS IN GOVERNMENT. Supervised readings in selected subjects. Not more than 6 hours may apply toward the master's degree. Prerequisite: consent of instructor.
525. SEMINAR IN INTERNATIONAL LAW. Prerequisite: 475 or consent of instructor.
526. SEMINAR IN COUNTY GOVERNMENT. Prerequisite: 468 or consent of instructor.
- 530-4 to 12. INTERNSHIP IN PUBLIC AFFAIRS. Field work in the office of a governmental agency; city, county, state, national, or international. Under certain circumstances it might be in the office of a political party organization or in that of some organized pressure group. The type of internship and the place and organization in which it is taken must be mutually satisfactory to the student and the department. A paper in which the student correlates his academic knowledge with his practical experience is required. Prerequisite: consent of department.
- 595-2 to 4. INDIVIDUAL RESEARCH. Selection, investigation, and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Prerequisite: 499 or consent of instructor.
- 598A-1, 598B-1, 598C-1. TEACHING GOVERNMENT. A seminar course devoted to the general and specific problems of teaching government on the college level. To be required of all graduate assistants who are given teaching assignments, and strongly recommended for other graduate students who contemplate teaching on the college level. Open to staff members.
- 599-2 to 9. THESIS. Prerequisite: 499 or consent of instructor.
- 600-1 to 48. DISSERTATION.

## HEALTH SCIENCE

Students in the College of Liberal Arts and Sciences may major in health science. This program is interdepartmental. Professor Willard M. Gersbacher of the Department of Zoology is the co-ordinator for this program.

### *SUGGESTED CURRICULUM IN HEALTH SCIENCE*

The following curriculum leads to the Bachelor of Arts degree with a major in health science in the College of Liberal Arts and Sciences.

<i>General Degree Requirements</i> (See page 10.) .....	71
<i>College of Liberal Arts and Sciences Requirements</i> (See page 11.) ....	37
<i>Requirements for the Major</i> .....	115
Chemistry 111, 112, 305	14
Government 101, 232, 360, 440	18
Health Education 300, 325, 355, 356	15
Mathematics 111, 112, 220	14
Microbiology 301	5
Physiology 209 or 315	5
Psychology 201, 305, 307, 432	16
Sociology 101, 335, 336	13
Zoology 100, 102, 103	15
<i>Duplication of Requirements</i> .....	-31
The courses listed above also satisfy 35 hours of general-degree and college requirements. These hours are deducted here to avoid counting them twice in the total.	
<i>Electives</i> .....	0
<i>Total</i> .....	192

Recommended electives for specialization in sanitation: Agricultural Industries 303; Animal Industries 231; Anthropology 110 or 207; Applied Science 101; Physics 101, 102 or 206, 207, 208; Microbiology 422, 423; Zoology 306 or 316, 310, 406; Government 466.

Recommended electives for specialization in public health laboratory: Botany 101; Chemistry 235, 306, 451, 452; Government 466; Microbiology 403, 422, 423, 425; Physiology 317, 433; Zoology 306 or 316.

## HISTORY

University Professor E. G. Lentz, M.A. (Illinois), Emeritus (1950)	1914
Research Professor C. Harvey Gardiner, Ph.D. (Michigan)	1957
Professor Harold E. Briggs, Ph.D. (Iowa)	1945
Associate Professor Harry Ammon, Ph.D. (Virginia), Acting Chairman	1950
Associate Professor George L. Cherry, Ph.D. (Northwestern)	1947
Associate Professor Ping-Chia Kuo, Ph.D. (Harvard)	1959
Associate Professor William A. Pitkin, Ph.D. (Texas)	1945
Associate Professor John I. Wright, A.M. (Chicago)	1925
Assistant Professor Charles J. Pardee, A.M. (Chicago), Emeritus (1951)	1929

Assistant Professor Guenther Rothenberg, Ph.D. (Illinois)	1958
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Lecturer Lee B. Kennett, M.A. (Mississippi)	1961-62
Lecturer Carl L. Schweinfurth, M.A. (Florida)	1959-62
Lecturer Ralph A. Stone, Ph.D. (Illinois)	1960-61
Lecturer Lonnie Royce Shelby, M.A. (Vanderbilt)	1961-62
Lecturer Mary Lou Taylor, M.A. (Washington University)	1961-62

Students who intend to make history their major field should confer with the representative of the department at the time of registration. Forty-two hours are required for a major in history in the College of Liberal Arts and Sciences. Thirty-six hours are required for a major in the College of Education. For a major in history, at least half of the work in history must be on the 300 and 400 levels, and care should be taken to distribute the work in the fields of American and European history. Twenty-four hours are required for a minor in history, and must include 101, 102, 103, 201, and 202. Students wishing to use a history minor in the College of Education should take twelve hours each in the foreign and American fields.

One year of work in a foreign language is required of history majors.

Two quarters of history 101, 102, 103 will meet the general education requirement except in the College of Education. Five hours of United States history are required for graduation in the College of Education. History 201 or 202 will meet this requirement.

### SUGGESTED CURRICULUM IN HISTORY

The following curriculum leads to the Bachelor of Arts degree with a major in history in the College of Liberal Arts and Sciences.

<i>General Degree Requirements</i> (See page 10.)	71
<i>College of Liberal Arts and Sciences Requirements</i> (See page 11.)	37
<i>Requirements in the Department of History</i>	42
History 101, 102, 103, 201, 202, 452	22
History electives to complete 42 hours	20
<i>Duplication of Requirements</i>	-5
Five hours of general degree requirements are satisfied by history courses required for the major. These hours are deducted here to avoid counting them twice in the total.	
<i>Electives</i>	62
<i>Total</i>	192

*COURSE DESCRIPTIONS*

- 101-3, 102-3, 103-3. *SURVEY OF WESTERN CIVILIZATION*. Courses designed primarily for freshmen, as a survey of the development and evolution of civilization; the foundation for further courses in the field of history. One term devoted to each of the periods: ancient, medieval, and modern.
- 201-5. *THE UNITED STATES TO 1865*. Courses 201 and 202 designed to provide a general survey of the political, social, and economic development of the United States. Course 201 includes national and state constitutional principles as required by Illinois law. Prerequisite: sophomore standing.
- 202-5. *THE UNITED STATES SINCE 1865*. A continuation of 201. Either 201 or 202 to count toward graduation requirements in the College of Education. Prerequisite: sophomore standing.
- 301-3, 302-3. *HISTORY OF WARFARE. (TO 1815), (SINCE 1815)*. These courses survey the main developments in the art of war from the Renaissance to the present and analyze the reciprocal relationship between the military establishment and the society of which it is a part.
- 304-3. *THE ANCIENT NEAR EAST*. Political, social, and religious history from the earliest times to the 4th Century B.C. Prerequisite: freshman survey.
- 305-3. *HISTORY OF GREECE*. Political, social, economic, and cultural development from the Aegean period to the Roman conquest.
- 306-3. *HISTORY OF ROME*. Political, social, and economic developments from the Etruscan period to the fall of the empire.
- 308-3. *HISTORY OF ILLINOIS*. The history of the state from 1818 to the present. Recommended for history majors and those who expect to teach in elementary schools.
- 311-3. *MEDIEVAL HISTORY*. Europe from the fall of Rome to the establishment of national monarchies.
- 312-3. *CENTRAL EUROPE IN THE 19TH CENTURY*. An analysis of the nationalist movements in Central Europe leading to the unification of Germany and Italy and the disintegrating tendencies in the Austro-Hungarian monarchy.
- 322-4, 323-4, 324-4. *ENGLISH HISTORY*. An introductory study of the institutional and cultural development of the English people from the earliest times to the present day. 322: Celtic Britain to 1603; 323: 1603-1815; 324: since 1815.
- 330-3. *THE REVOLUTION AND THE CONSTITUTION*. A study of the conflicting forces which produced the American Revolution, led to the creation of the federal union and shaped the early republic.
- 352-3. *COLONIAL LATIN AMERICA*. With a preliminary view of the major Indian cultures and the era of discovery and exploration, this survey emphasizes the political, economic, social, and cultural aspects of Latin-American life through the wars of independence.



- 353-3. INDEPENDENT LATIN AMERICA. A survey of historical patterns and problems in the national life of twenty American countries, from independence to the present.
- 354-3. LATIN AMERICA IN WORLD AFFAIRS. A survey of the international role of Latin America with emphasis on the economic, diplomatic, and military record from the Treaty of Tordesillas to membership in the United Nations.
- 365-4. HISTORY OF CHINESE CIVILIZATION. A study of the march of Chinese civilization from prehistoric times to the present, stressing social structure, government institutions, and intellectual movements.
- 367-3. INTRODUCTION TO FAR EASTERN CIVILIZATION. (Oriental Civilization I). A broad survey of Far Eastern history and culture up to the 19th century, using an interdisciplinary approach and stimulating a basic appreciation of the heritage, institutions, and problems of East Asia.
- 368-3. THE FAR EAST AND MODERN IMPERIALISM. Discussion of Far Eastern international relations against the background of modern imperialism, 1800-1914. Special attention given to American Far East policy and the role of Russia as an Asiatic power.
- 369-3. THE CONTEMPORARY FAR EAST. Rise of Communist China; problems of postwar Japan; issues of the cold war, underdeveloped economies, and political instability of new nations; study of great leaders of new Asia and their concepts of political and social change.
- 372-3. THE HISTORY OF RUSSIA TO 1905. A survey from earliest times to the Revolution of 1905. Social, economic, and political conditions under the Czars.
- 373-3. HISTORY OF RUSSIA SINCE 1905. A continuation of 372 surveying the last years of the Russian Empire, the Russian Revolution, and the U.S.S.R.
- 400-3 to 6. TEACHERS' WORKSHOP IN CURRENT HISTORY. A series of lectures, readings, discussions, and projects designed to aid the teacher in understanding and interpreting some of the major problems of present-day society.
- 401-3. THE OLD SOUTH. An intensive study of the social, economic, political, and cultural development of the "Old South" to the Civil War, to bring out the distinctive culture and problems of the section. Prerequisite: 201.
- 402-3. THE NEW SOUTH. The Civil War, political and economic reconstruction, and problems of the "New South." Prerequisite: 202 or 401.
- 405-3. CIVIL WAR AND RECONSTRUCTION. Emphasis upon the clash of national and sectional interests; economic, political, and military aspects of the conflict; course and consequences of reconstruction.
- 410-2 to 5. SPECIAL READINGS IN HISTORY. Supervised readings for students with sufficient background. Registration by special permission only. Offered on demand.
- 411-3, 412-3, 413-3. SOCIAL AND INTELLECTUAL HISTORY OF THE UNITED STATES. (1607-1830, 1830-1900, 1900 to the present.) The development of American society and a study of various types of economic, social, and political thought that have influenced it.
- 415-3. THE AGE OF THE RENAISSANCE. A treatment of the Italian Renaissance and its relationship to the political, economic, social, and cultural changes in the countries of northern and western Europe.

- 416-3. THE AGE OF THE REFORMATION. A study of the reform movement which divided the Christian Church into Protestantism and Catholicism, with a treatment of the Counter Reformation.
- 417-3. THE BRITISH COMMONWEALTH OF NATIONS. The evolution and present status of the Commonwealth of Nations and its self-governing and dependent units with an emphasis on the impact of the social, economic, and political ideas upon the pattern of control and development during each stage of growth.
- 418-3. ENGLISH CONSTITUTIONAL HISTORY. The evolution and functioning of the English legislative, administrative, and judicial systems with an emphasis on the ideas and principles that determined growth during each age.
- 419-3. ENGLISH CULTURE IN THE AGE OF AMERICAN COLONIZATION. An analysis of the English social, economic, political, and religious institutions and ideas which provided the foundation for the growth of American civilization.
- 420-3. THE FRENCH REVOLUTION. A sketch of the passing of feudalism in France, the background and development of the revolutionary movement, and the Napoleonic period.
- 425-3. AMERICAN COLONIAL HISTORY. Founding of the American colonies, both French and English, and the development of social, political, economic, and cultural institutions through the Revolutionary period.
- 435-3, 436-3, 437-3. RECENT UNITED STATES HISTORY. A sequence covering the major problems and trends from the Civil War to the present. Courses may be taken separately. Periods covered: 435, 1865-1898; 436, 1898-1928; 437, 1928-present.
- 440-3. AMERICAN DIPLOMACY TO 1898. A study of the important treaty relations of the United States, and a general consideration of American foreign policies.
- 441-3. AMERICAN DIPLOMACY SINCE 1898. A continuation of 440.
- 442-3, 443-3, 444-3. HISTORY OF THE WEST. A series of three courses providing an intensive study of the Colonial, Trans-Alleghany and Trans-Mississippi frontiers and showing the influences of the West in the various periods in United States history. Prerequisites: 201, 202.
- 449-3. DEVELOPMENT OF AFRO-ASIAN NATIONALISM. The reaction of the non-Western world to the impact of colonial control, industrialization, and modernization. Detailed study of the rise of national movements, the winning of independence, and the relation of Afro-Asian nationalism to the Communist World.
- 450-3. EUROPE SINCE 1914. Brief review of causes and results of World War I. Emphasis upon the League of Nations, war debts, disarmament, causes of World War II, Korean conflict, and United Nations.
- 451-3. HISTORIOGRAPHY. Development of history as a written subject, including works and philosophy of the various outstanding historians in ancient, medieval, and modern periods.
- 452-3. HISTORICAL RESEARCH AND THESIS WRITING. The rules of historical research studied and applied to a definite topic.
- 454-3. BIOGRAPHY IN AMERICAN HISTORY. Outstanding leaders and their contributions to the history of the United States. Attention to historical

- writers who specialize in biography. Prerequisite: a course in United States history.
- 455-3. HISTORY OF INNER-ASIAN RELATIONS. History of tribes, migrations, wars, and power politics in Central Asia and outlying areas of China, from Han times to the latest developments among national minorities astride the Sino-Soviet frontier.
- 470-3. ARGENTINA, BRAZIL, AND CHILE. A narrative and comparative study of the independent era of the history of the three leading states of South America.
- 471-3. MEXICO IN THE NINETEENTH CENTURY. Significant aspects of Mexican life from independence to the decline of the Diaz Era.
- 472-3. MEXICO IN THE TWENTIETH CENTURY. An analysis of the political, economic, diplomatic, social, and cultural forces in modern Mexican life.
- 473-3. THE CARIBBEAN AREA IN THE TWENTIETH CENTURY. An inquiry into the changing role of the political, economic, strategic, and cultural nature of this Mediterranean of the New World.
- 480-3. ROME: THE LATE REPUBLIC. The framework of the course is political, covering the years from 133 B.C. to A.D. 14. Attention is given also to Roman literature and culture, and to a broad view of the early empire (including Palestine) in the years immediately preceding the Christian Era.
- 481-3. ROME: THE EARLY EMPIRE. The civilization of the first two centuries of the Roman Empire. Against a background of general political history, attention is directed to the philosophical schools, pagan religions, and other factors affecting the rise and extension of Christianity.
- 485-3. GREEK CIVILIZATION. Development of the unique features of Greek thought (historical, religious, scientific, philosophical), art, literature, architecture, etc.
- 490-3. HISTORY IN THE SECONDARY SCHOOL. A comprehensive methods course for prospective teachers: history, government and civics, current events, economics, sociology, and geography; curriculum revision; grading of materials; classroom methods; teacher preparation; professional publications. Attention to the unified social science course.
- Courses on the 500 level are for graduate students only.
- 500-3 to 9. HISTORY SEMINAR. Research methods applied to the various history fields.
- 510-2 to 5. READINGS IN HISTORY. Registration by special permission only.
- 515-3. CURRENT UNITED STATES HISTORY AND PROBLEMS. A content and research course dealing with contemporary American affairs. Consists of textbook assignments, outside readings. Prerequisite: proper background.
- 516-5. STUDIES IN CONTEMPORARY EUROPE. A content and research course in European civilization since 1914 which stresses the rise of totalitarianism and the democratic crisis.
- 517-3. CONSTITUTIONAL HISTORY OF THE UNITED STATES AND PROBLEMS. A content and research course involving origin and development of the American Constitution, from English background, through the convention, to the present.

- 518-3. ENGLAND IN THE AGE OF THE "GLORIOUS REVOLUTION." An analysis of the ideas and forces that converted the English government into a liberal state with an emphasis on the concepts and principles later applied in the establishment of the American Constitution.
- 519-5. THE AGE OF JEFFERSON. Rise and development of Jeffersonian Democracy, 1790-1824, with emphasis upon social, economic, and political programs of Republicans and Federalists; the clash of mercantile and agrarian interests.
- 520-3. THE AGE OF CONSTANTINE. A study of fourth-century Rome. Particular attention is given to religious policy. Such problems as the religious persecution preceding Constantine, his conversion to Christianity, the reaction following his death, the final establishment of Christianity as the official religion of the Empire.
- 553-3. NEW VIEWPOINTS IN AMERICAN HISTORY. New interpretations and recent developments in the field of American history. Prerequisites: 201, 202.
- 590-1 to 6. INDIVIDUAL RESEARCH. The investigation of a research topic in history under the supervision of a member of the graduate staff in the particular field. By special arrangement.
- 599-3 to 9. THESIS.

## INTER-AMERICAN STUDIES

On the undergraduate level, a major in inter-American studies leads to the Bachelor of Arts degree in the College of Liberal Arts and Sciences. This program is interdepartmental in nature under the direction of the Latin American Institute. No undergraduate minor is offered.

This course of studies is designed to meet the need for increasing concern with Latin America and the growing interest in the field. It is planned to provide students with a wide general background in the history, geography, economics, languages, and literature of Hispanic America. Special emphasis is placed upon achievement of sufficient knowledge of the Spanish language to make it an effective means of communication. This level of linguistic skill is essential to open the doors of cultural understanding and appreciation of Latin America to non-native speakers. Equal proficiency in Portuguese for those who wish to specialize in Brazilian studies will be sought.

The major in inter-American studies prepares the student to participate intelligently and effectively in business or government activities in Latin America or relating to Latin America or assists students to choose a field of specialization for research and teaching.

At the undergraduate level the curriculum is necessarily somewhat strictly prescribed. Although some choice may be allowed and certain variances permitted, requirements generally will include the following:



<i>General Degree Requirements.</i> (See page 10.) .....	71
<i>College of Liberal Arts and Sciences Requirements</i> (See page 11.) ....	37
<i>Requirements for the Major in Inter-American Studies</i> .....	133
Anthropology 110 or 300 or 400, 307, 421, 422	14
Economics 205, 206, 315, 328	17
Foreign Languages	36
Spanish 201, 202, 203, 220-4, 311, 312, 313, 333	28
Spanish 315 or 351 or 415	3
Portuguese 100	5
Geography 100, 316, 413	13
Government 363, 370, 371, 392, 471 or 472 or 475	17
History 201, 202, 352, 353, 354	19
Philosophy 120, 121, 170, 441	11
<i>Duplication of Requirements</i> .....	-52
Certain courses listed under Requirements for the Major also satisfy all of the College of Liberal Arts and Sciences Requirements and 15 hours of General Degree Requirements. These hours are deducted here to avoid counting them twice in the total.	
<i>Electives</i> .....	3
<i>Total</i> .....	192

Students coming to Southern without any foreign language will be required to take the sequence 101, 102, 103, 101c, 102c, and 103c in Spanish as prerequisites to the specified courses in the language. If their special interests demand, they should expect also to take such additional courses as desired in psychology, sociology, economics, or business administration. These courses are described under the departmental entries in this bulletin and in the School of Business bulletin.

For further details, refer to the University Institute's bulletin. (See page ii of this bulletin.)

## MATHEMATICS

Professor Amos Black, Ph.D. (Cornell)	1948
Professor John W. Hamblen, Ph.D. (Purdue)	1961
Professor Carl E. Langenhop, Ph.D. (Iowa State)	1961
Professor Wilbur C. McDaniel, Ph.D. (Wisconsin)	1939
Professor Abraham M. Mark, Ph.D. (Cornell)	1950
Professor John M. H. Olmsted, Ph.D. (Princeton), Chairman	1960

Associate Professor F. González Asenjo, Ph.D. (La Plata)	1961
Associate Professor Elbert Fulkerson, M.A. (Illinois)	1932
Associate Professor Leslie D. Gates, Jr., Ph.D. (Iowa State)	1961
Associate Professor Dilla Hall, Ph.D. (St. Louis)	1924
Associate Professor Marian Moore, Ph.D. (Purdue)	1955
Associate Professor Louis D. Rodabaugh, Ph.D. (Ohio State)	1947
Associate Professor Thomas H. Starks, Ph.D. (Virginia Polytechnic Institute)	1961
Associate Professor Joseph C. Wilson, Ph.D. (Louisiana State)	1957
Assistant Professor James R. Boen, Ph.D. (Illinois)	1959
Assistant Professor Morton Roy Kenner, Ph.D. (Columbia)	1951
Assistant Professor Harold H. Lerch, Ed.D. (Illinois)	1960
Assistant Professor Paul E. Long, Ph.D. (Oklahoma State)	1961
Assistant Professor Michael Skalsky, D.N.Sc. (Göttingen)	1957
Assistant Professor Alice K. Wright, M.A. (Illinois), Emerita (1958)	1925
Instructor Imogene C. Beckemeyer, M.A. (Southern Illinois)	1950
Instructor John Samuel Brown, M.S. (Illinois)	1957
Instructor Joseph H. Crenshaw, M.S. (Illinois)	1958
Instructor Allan Jones, M.A. (Southern Illinois)	1958
Instructor James L. Slechticky, M.S. (Washington)	1958
Instructor Larry L. Wimp, M.A. (Missouri)	1954
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Lecturer Shirley Anne Bassler, M.S. (Southern Illinois)	1960-61
Lecturer Zamir Bavel, M.A. (Southern Illinois)	1955-62
Assistant Instructor Elsa Ford, B.A. (Lawrence)	1955-62

Students who take mathematics to satisfy part of the general requirement for a bachelor's degree may choose among several courses, depending upon their competence in mathematics and their interests. Mathematics 111 is recommended for students who have good competence in the material normally included in one and one-half years of high school algebra and one year of plane geometry. Students who demonstrate superior competence in the topics of high school mathematics may be allowed to start their university mathematics in courses 112 or 113. Students who do not have satisfactory competence in high school algebra and plane geometry should take 106. Special sections of 106 are designed for students who are planning to take 111. Only one of the 106 courses will be counted for credit and no credit will be given if 106 is taken after 111. Students who take 111 after 106 receive eight hours credit for the two courses.

Students in the College of Liberal Arts and Sciences or the College of Education may take majors or minors in mathematics.

### SUGGESTED CURRICULA IN MATHEMATICS

The following curriculum leads to the Bachelor of Arts degree with a major in mathematics in the College of Liberal Arts and Sciences.

<i>General Degree Requirements</i> (See page 10.) .....	71
<i>College of Liberal Arts and Sciences Requirements</i> (See page 11.) ...	37
<i>Requirements in the Department of Mathematics</i> .....	42
Mathematics 111, 112, 113, 251, 252, 253 (a student need not take any of these in which he can demonstrate competence.)	27
Mathematics electives numbered 300 or above to com- plete at least 42 hours. (Recommended are 305, 306, 320, 330, 421, 422, 452, 453, 454.)	15
<i>Related Requirements for the Major</i> .....	5
Physics 206 or 211	
<i>Duplication of Requirements</i> .....	-12
The mathematics and physics required for the major also satisfy 12 hours of General Degree Requirements. To avoid counting these hours twice in the total, they are subtracted here.	
<i>Electives</i> .....	49
<i>Total</i> .....	<u>192</u>

Majors who are working to receive a teaching certificate are required to take 311, 320, either 321 or 313, 335, and 336.

Department of Mathematics minor requirements: 111, 112, 113, 251, or demonstrated competence; and at least five hours in mathematics courses beyond 251. Students who are working for a teaching certificate in mathematics will need eleven hours beyond 251, including Mathematics 320.

The curriculum leading to the Bachelor of Science in Education degree with a major in mathematics includes the following *Requirements for the Major*:

Mathematics 111, 112, 113, 251, 252, 253. (A student need not take any of these in which he can demonstrate competence.)	27
Mathematics 311, 320, 321 or 313, 335, 336	15
Physics 206 or 211	5
A reading knowledge of a foreign language	9

Department of Mathematics minor requirements: 111, 112, 113, 251, or demonstrated competence; and at least eleven hours in mathematics courses beyond 251, including 320.

*COURSE DESCRIPTIONS*

- 100-0. **ELEMENTARY MATHEMATICS.** Remedial and review work in elementary mathematics, including arithmetic and beginning algebra.
- 106-4. **GENERAL MATHEMATICS I.** Designed particularly for students who take mathematics to satisfy a graduation requirement. Does not count toward a major or minor in mathematics. Regular sections, designated in class schedules as 106a, include a careful study of the real number system in order to provide a better understanding of arithmetic and elementary algebra. Sections designated as 106c cover a regular course in intermediate algebra. Prerequisite: two semesters of high school mathematics and satisfactory score on placement test, or Mathematics 100.
- 107-4. **GENERAL MATHEMATICS II.** Continuation of 106. Does not count on a major or minor in mathematics. Topics from algebra and geometry. Prerequisite: 106.
- 111-5, 112-5. **ELEMENTARY ANALYSIS I, II.** Beginning sequence for mathematics majors and minors, pre-engineering students, etc. Students who have especially good high school training in algebra and trigonometry and who have exceptional scores on placement test may take 112 or 113 as a first course. Includes topics selected from the following: sets, logic, study of real number system, college algebra, trigonometry. Prerequisite: three semesters of high school algebra and satisfactory score on placement test, or 106.
- 113-5. **CALCULUS AND ANALYTIC GEOMETRY I.** Introduction to differentiation and antidifferentiation of algebraic functions, with related topics from analytic geometry. Prerequisite: 112 or demonstrated competence.
- 210-4. **THE TEACHING OF ELEMENTARY MATHEMATICS.** A professional treatment of the subject matter of arithmetic methods and a study of trends and current literature on the teaching of arithmetic. For elementary education majors only. Prerequisite: 106.
- 220-4. **ELEMENTARY STATISTICS.** A basic introduction to the simpler problems of statistical inference. Descriptive statistics, probability distributions, estimation of parameters and tests of significance, regression and correlation. Does not count toward a major or minor in mathematics. Prerequisite: 106 or 111, or consent of instructor.
- 251-4, 252-4, 253-4. **CALCULUS AND ANALYTIC GEOMETRY II, III, IV.** Continuation of differential and integral calculus introduced in 113, with applications. Includes transcendental functions, differentials, polar coordinates, solid analytic geometry, partial differentiation, multiple integrals, and infinite series. Prerequisite: 113.
- 305-3, 306-3. **DIFFERENTIAL EQUATIONS I, II.** Classical methods of solving ordinary differential equations including Laplace transform techniques. Prerequisite: 253.
- 311-3. **THE TEACHING OF SECONDARY MATHEMATICS.** A study of the nature and objectives of the secondary mathematics curriculum. Particular attention is given to the means of introducing new ideas into the high school program. For students preparing to be certified teachers of



- secondary mathematics. Does not count toward a mathematics major in the College of Liberal Arts and Sciences. Prerequisite: 320.
- 313-4. **SOLID ANALYTIC GEOMETRY.** An algebraic study of equations of the first and second degree in three variables, with applications to geometry. Systems of planes; equations of lines in symmetric and parametric form. Spheres, cylinders, surfaces of revolution. Matrix algebra; real orthogonal and symmetric matrices. Coordinate transformations; orthogonal similarity. Quadratic forms and quadric surfaces; invariants; principal axes and planes. Prerequisite: 253 or consent of department.
- 320-3, 330-3. **FUNDAMENTAL CONCEPTS OF ALGEBRA I, II.** Introduction to abstract algebraic structures, including groups, rings, and fields. Attention is given to classical theory of numbers and polynomials. Prerequisite: 251.
- 335-3, 336-3. **CONCEPTS OF GEOMETRY I, II.** An elementary introduction to various geometric systems to acquaint the student with the interrelationship between geometries of current interest. Topics include axiom systems, introduction to synthetic projective and analytic projective, projective definition of co-ordinate systems, affine geometry, Euclidean geometry, and non-Euclidean geometry. Prerequisite: 252 or consent of instructor.
- 395-2 to 8. **READINGS IN MATHEMATICS.** Supervised reading in selected subjects. Prerequisite: twelve hours of 300 or 400 level mathematics, "B" average in mathematics, and consent of chairman of department.
- 400-3. **HISTORY OF MATHEMATICS.** An introduction to the development of major mathematical concepts. Particular attention is given to the evolution of the abstract concept of space, to the evolution of abstract algebra, to the evolution of the function concept, and to the changes in the concept of rigor in the development of mathematics from 600 B.C. to the present time. Prerequisite: 320 or consent of instructor.
- 410-4, 411-4, 412-4. **STATISTICAL ANALYSIS I, II, III.** An introduction to the principles and techniques of statistical inference. Elements of probability theory. Population, sample and sampling distributions. Estimation and testing hypotheses on means and variances. Analysis of variance and covariance. Nonparametric methods. Topics in experimental design. For students in fields using statistical methods. Will not normally be counted on a mathematics major. Prerequisite: 111.
- 415-2 to 4. **NON-EUCLIDEAN GEOMETRY.** An introduction to hyperbolic and elliptic plane geometry and trigonometry. Emphasis given to the nature and significance of geometry and the historical background of non-Euclidean geometry. Occasionally offered as part of the special graduate minor for secondary school teachers. Prerequisite: 252 or consent of instructor.
- 421-3, 422-3. **LINEAR ALGEBRA I, II.** Linear algebra, including the theory of determinants and systems of linear equations; vector spaces, linear independence, bases, dimension; linear transformations, change of base, similarity; quadratic and Hermitian forms; orthogonal and unitary transformations; triangular and diagonal form; eigenvalues and eigenvectors; normal matrices; nilpotent and idempotent matrices, the spectral theorem. Prerequisite: 253.
- 425-3. **THEORY OF NUMBERS.** Topics in elementary number theory, in-

- cluding properties of integers and prime numbers, divisibility, Diophantine equations, and congruence of numbers. Prerequisite: 320.
- 430-4. PROJECTIVE GEOMETRY. Introduction to the fundamental concepts of projective geometry. Topics usually include the study of conics, polar systems of conics, homogeneous coordinates, cross-ratio, harmonic sets, duality, projectivities, and involutions. Prerequisite: 252 or consent of instructor.
- 433-3. THEORY OF POINT SETS. General properties of sets; topology of plane sets; closed sets and open sets in metric spaces, homeomorphisms and continuous mappings, connectedness. Prerequisite: 253 and six credits in courses numbered 300 or higher, or consent of instructor.
- 440-2 to 4. MODERN ALGEBRA FOR TEACHERS. An introduction to algebra as a logical system, including groups, rings, and fields. Offered as part of the special graduate minor for secondary school teachers. Prerequisite: consent of instructor.
- 442-3. SURVEY OF GEOMETRY. A survey of geometry, including projective geometry, topology, etc. Offered as part of the special graduate minor for secondary school teachers. Prerequisite: consent of instructor.
- 443-4. ANALYTIC METHODS IN GEOMETRY. An investigation into the use of analytical methods in geometry, with particular attention to Cartesian plane and solid geometry. Synthetic and analytic methods contrasted. Prerequisite: consent of chairman.
- 449-3 to 4. TEACHING MODERN ALGEBRA. Topics in modern algebra and their implications for the secondary school mathematics program. Prerequisite: consent of department.
- 452-3, 453-3, 454-3. ADVANCED CALCULUS. The fundamental concepts of analysis: limits, continuity, differentiation, and integration. Major topics include partial differentiation, vector, analysis, Riemann-Stieltjes integrals, multiple integrals, infinite series, improper integrals, uniform convergence, Fourier series, and line and surface integrals. Prerequisite: 253.
- 455-4. PROGRAMMING FOR DIGITAL COMPUTERS. An intensive course in digital computer programming. Topic includes computer organization and characteristics, machine language coding, flow charts, sub-routines, symbolic coding, and compiler systems. Equipment of the University's Data Processing and Computing Center used for applications. Prerequisite: consent of instructor.
- 460-4. MODERN GEOMETRY. Advanced topics in Euclidean geometry by the synthetic method. Topics including the nine-point circle, Simson line, theorems of Ceva and Menelaus, coaxal circles, harmonic section, poles and polars, similitude, and inversion. Prerequisite: 20 hours of college mathematics.
- 475-3. NUMERICAL METHODS. An introduction to approximation methods including finite differences and interpolation; numerical differentiation and integration; curve fitting, numerical solution of algebraic, transcendental and differential equations. Prerequisites: 305, or 253 and consent of instructor.
- 480-3, 481-3, 482-3. PROBABILITY AND STATISTICS. An introduction to probability theory and the mathematical methods used in obtaining procedures for various problems of statistical inference. Topics include the

algebra of probabilities, discrete and continuous distributions, limit theorems, sampling distributions, principles of statistical estimation, and testing hypotheses. Prerequisite: 253.

Courses on the 500 level are for graduate students only.

- 501-3, 502-3, 503-3. REAL VARIABLES. A basic course in mathematical analysis. The real number system; fundamental theorems in limits and continuity; open, closed, compact, and connected sets in Euclidean and metric spaces; the Riemann and the Riemann-Stieltjes integrals and functions of bounded variation; infinite series; uniform continuity; uniform convergence of series and improper integrals; arcs and curves; implicit function theorem; multiple integrals. The third quarter presents the general theory of measure and integration from an abstract point of view. Additive classes of sets, Borel sets, measurability, measure and outer measure; integrable functions, convergence theorems; absolute continuity and the Radon-Nikodym theorem; Fubini's theorem. Prerequisite: 454.
- 510-4. FOUNDATIONS OF MATHEMATICS. A critical survey of the logical basis of mathematical systems. Deductive processes, mathematical proof theory, axiomatics, nature of model systems, principles of theory construction, views concerning the nature of mathematics. Prerequisites: 253, and consent of instructor.
- 520-4, 521-4. MODERN ALGEBRA I, II. Intended to display some of the richness of algebra when mathematical systems other than the traditional one based upon the real numbers are considered. Abstract theory of groups, rings, and fields, with particular attention to examples from permutation groups, matrices, vector spaces, and polynomial and other function spaces; rational numbers and fields, complex numbers, unique factorization, algebraic number fields. Prerequisites: 320 and 330.
- 530-3 to 6. POINT SET TOPOLOGY. Topological spaces; denseness, category; open, closed sets, Borel sets; separation axioms; subspaces; continuity; lattice of topologies; countability axioms; connectedness, compactness, local properties; regularity to complete normality; Hilbert space, metrizable spaces; extension theorems; well-ordering; product spaces. Prerequisite: 433 or 502.
- 535-4. ALGEBRAIC PLANE CURVES. Prerequisite: 253.
- 536-3. DIFFERENTIAL GEOMETRY. Curvature, torsion, the Frenet formulas, and intrinsic equations of curves in three dimensional Euclidean space; applications to kinematics. Curves on a surface; first and second fundamental forms; normal sections and Meusnier's theorem; mean and total curvature. Prerequisite: 454.
- 540-4. GROUPS AND LINEAR TRANSFORMATIONS. A study of groups with their connection with the movements of regular plane figures, matrices, vectors, determinants with their interpretation and use in analytic geometry, and ruler and compass constructions. Prerequisite: 440 or its equivalent.
- 541-2 to 4. SETS AND PROBABILITY. The elements of probability, with some applications to social sciences. Offered as part of the special graduate minor for secondary school teachers. Prerequisite: consent of instructor.

- 542-2 to 4. **ELEMENTARY FUNCTIONS FROM AN ADVANCED STAND-POINT.** Analysis of properties of algebraic, trigonometric, exponential, and logarithmic functions, using contemporary notion of function. Prerequisite: consent of department chairman.
- 544-3. **FUNDAMENTAL CONCEPTS OF CALCULUS.** A careful study of the basic concepts of calculus. Offered as part of the special graduate minor for secondary school teachers. Prerequisite: consent of instructor.
- 550-1 to 10. **SEMINAR.** Supervised study and preparation of reports on assigned topics. Reports presented for class discussion. 550A—Seminar in Algebra; 550B—Seminar in Geometry; 550C—Seminar in Analysis; 550D—Seminar in Probability and Statistics; 550E—Seminar in Mathematics Education. Prerequisite: consent of instructor.
- 555-3, 556-3. **COMPLEX VARIABLES.** A thorough treatment of classical analytic function theory including the Cauchy-Riemann equations, conformal mapping, Riemann mapping theorem, Cauchy-Goursat theorem, calculus of residues, analytic continuation, entire functions, gamma and beta functions, Bessel's and Legendre's equations, elliptic integrals. Prerequisite: 454.
- 595-1 to 10. **SPECIAL PROJECT.** An individual project, including a written report. 595A in Algebra; 595B in Geometry; 595C in Analysis; 595D in Probability and Statistics; 595E in Mathematics Education.
- 599-5 to 9. **THESIS.**

## MICROBIOLOGY

Professor Carl C. Lindegren, Ph.D.

(California Institute of Technology), Chairman 1947

Professor Maurice Ogur, Ph.D. (Columbia) 1953

Associate Professor Isaac L. Shechmeister, Ph.D. (California) 1957

Assistant Professor Dan O. McClary, Ph.D. (Washington University) 1951

Lecturer Shizu Washio, Ph.D. (Tokyo) 1960-61

### SUGGESTED CURRICULUM IN MICROBIOLOGY

The following curriculum leads to the Bachelor of Arts degree with a major in microbiology in the College of Liberal Arts and Sciences.

<i>General Degree Requirements</i> (See page 10.) .....	71
<i>College of Liberal Arts and Sciences Requirements</i> (See page 11.) ....	37
<i>Requirements in the Department of Microbiology</i> .....	46
Microbiology 100, 201, 403, 425, 426, 441, 451	30
Microbiology electives to complete 46 hours	16
<i>Related Requirements for the Major</i> .....	63
Botany 101	5
Chemistry 111, 112, 113, 305, 306	23



Mathematics 111, 112, 113	15
Physics 206, 207, 208	15
Zoology 100	5
<i>Duplications of Requirements</i> .....	-32
The Related Requirements for the Major satisfy 17 hours of General Degree Requirements. They also satisfy 23 or 15 hours of College of Liberal Arts and Sciences Requirements if the student selects chemistry, mathematics, or physics for his minor. To avoid counting these hours twice in the total, they are deducted here.	
<i>Electives</i> .....	7
<i>Total</i> .....	<u>192</u>

A minor in microbiology will consist of a minimum of 24 hours. Required courses are 100 and 201 and are to be supplemented by those chosen from 403, 425-426, 441, 451.

Prospective majors are urged to consult with the departmental adviser for help in planning a curriculum.

### COURSE DESCRIPTIONS

- 100-5. PRINCIPLES OF MICROBIOLOGY. Introduction to the fundamental aspects of biology, drawing for examples upon microbial forms. Consideration of morphology; principles of classification; growth and reproduction; heredity; ecology; effects of physical and chemical agents; organisms essential, beneficial and harmful to man; host-parasite interaction; principles of immunology and epidemiology. 3 hours lecture, 4 hours laboratory.
- 201-5. GENERAL MICROBIOLOGY. Continuation of Microbiology 100. A more advanced consideration of morphology, heredity, and metabolism of microorganisms and their influence on man's environment; mechanisms of infection and immunity. 3 hours lecture. 4 hours laboratory. Prerequisite: Microbiology 100 or consent of the instructor.
- 301-5. GENERAL MICROBIOLOGY FOR ADVANCED STUDENTS. Primarily a course for advanced students in other biological and physical sciences. An advanced treatment of cytology, theories and techniques of staining, physiology, enrichment cultures, and classification of microorganisms and their agricultural, industrial, and medical relationships. Not open to students who have had microbiology 100 or 201. 3 hours lecture. 4 hours laboratory. Prerequisite: one term botany or zoology and organic chemistry.
- 350-1 to 3. READINGS IN MICROBIOLOGY. For qualified undergraduates.
- 355-5. PLANT PATHOLOGY. (Same as Botany 355.) A study of plant diseases caused by fungi, bacteria, and viruses. Special attention to diseases of Southern Illinois plants. Laboratory and field trips. Prerequisite: approval of instructor.
- 401-2. SEMINAR. Prerequisites: 100 and 201, or 301.

- 403-5. **MEDICAL BACTERIOLOGY.** A general survey of the mechanisms of infection, epidemiology, and immunity and the specific application of these principles to the symptomatology, diagnosis, treatment, and control of the more common bacterial infections of man. 3 hours lecture and 4 hours laboratory. Prerequisite: 201 or 301 or equivalent.
- 422-5. **MICROBIOLOGY OF FOODS.** The relationships of microorganisms to the preparation and preservation of foods with consideration of the laws governing sanitation, chemical preservatives, and fair dealing of the food producer. 3 hours lecture, 4 hours laboratory. Prerequisite: 201 or 301.
- 423-5. **INDUSTRIAL FERMENTATION.** The application of the chemical activities of microorganisms to the industrial production of beverages, foods, antibiotics, and various commercial chemicals. 3 hours lecture, 4 hours laboratory. Prerequisites: 201 or 301 and organic chemistry.
- 424A-2 to 3. **SOIL MICROBIOLOGY.** (Same as Plant Industries 424A.) Numbers, characteristics, and biochemical activities of soil microorganisms, with particular consideration of their role in the transformations of organic matter, nitrogen, and minerals as related to soil fertility and management. Lectures. Prerequisite: Botany 101.
- 424B-2. **SOIL MICROBIOLOGY LABORATORY.** (Same as Plant Industries 424B.) Experiments designed to determine numbers, and to study the characteristics and biochemical activities of the soil microflora as related to fertility. Prerequisites: 100 or 301, 424A.
- 425-3. **BIOCHEMISTRY AND PHYSIOLOGY OF MICROORGANISMS.** The chemical basis of physiological functions in microbial cells with emphasis on the pathways of metabolism common to all living things. 3 hours lecture. Prerequisites: 201 and organic chemistry.
- 426-2. **BIOCHEMISTRY AND PHYSIOLOGY OF MICROORGANISMS.** 4 hours laboratory. Prerequisite or corequisite: 425.
- 441-5. **VIROLOGY.** Properties, cultivation, and titration of viruses and rickettsiae; cellular infection, multiplication, and liberation of virus; immunological reactions and serological identification; haemagglutination and interference phenomena. 4 hours lecture, 4 hours laboratory. Prerequisite: 403.
- 451-5. **IMMUNOLOGY.** Natural and acquired immunity; antigens, antibodies, and antigen-antibody reactions; hypersensitivity; practical use of immunity and hypersensitivity. 4 hours lecture, 4 hours laboratory. Prerequisite: 403.

Courses on the 500 level are for graduate students only.

- 500-2 to 6. **SEMINAR.**
- 501-2. **GENETICS OF MICROORGANISMS.** The general principles of genetic analysis with accent on tetrad analysis of yeast. 2 hours lecture.
- 503-2. **CYTOLOGY OF MICROORGANISMS.** Problems involved in the behavior of chromosomes at meiosis with special consideration of genetical data. 2 hours lecture.
- 504-5. **METHODS OF MICROBIOLOGICAL RESEARCH.** The recognition and plan of attack upon unsolved problems in microbiology. 3 hours lecture.
- 506-2. **BIBLIOGRAPHICAL METHODS IN MICROBIOLOGY.** Methods of communication of information in microbiology. 1 hour lecture, 2 hours laboratory.

511, 512, 513-3 to 15. RESEARCH.

525-3. BIOCHEMISTRY AND PHYSIOLOGY OF MICROORGANISMS. A continuation of 425.

526-2. BIOCHEMISTRY AND PHYSIOLOGY OF MICROORGANISMS. A continuation of 426. 4 hours laboratory. Prerequisite or corequisite: 525.

528-1 to 10. READINGS IN MICROBIOLOGY. Supervised readings for qualified graduate students.

550-4. MICROBIOLOGY FOR HIGH SCHOOL TEACHERS. Principles of microbiology with emphasis on the relation of the microbial world to plants and animals. Information regarding materials and methods applicable to high school biology courses. 2 lectures and 2 laboratory periods or field trips per week.

551-2. INTERMEDIATE MICROBIOLOGY FOR HIGH SCHOOL TEACHERS. Continuation of 550, emphasis on recent developments in microbial genetics, medical and industrial microbiology. 2 lectures and one demonstration period per week.

552-1. SEMINAR IN BIOLOGICAL SCIENCES. Discussion of topics in biology of particular interest to high school biology teachers.

599-3 to 9. THESIS.

600-3 to 48. THE DISSERTATION FOR DOCTORAL CANDIDATES. Hours and credit to be arranged.

## PHILOSOPHY

Professor George E. Axtelle, D.Ed. (California)	1959
Professor Baker Brownell, A.M. (Harvard), Emeritus (1954)	1952
Professor William J. McKeefery, Ph.D. (Columbia)	1961
Professor Willis Moore, Ph.D. (California), Chairman	1955
Professor George K. Plochmann, Ph.D. (Chicago)	1949
Professor Charles D. Tenney, Ph.D. (Oregon)	1931
Associate Professor James A. Diefenbeck, Ph.D. (Harvard)	1950
Associate Professor William Henry Harris, Ph.D. (Boston)	1956
Assistant Professor George T. McClure, Ph.D. (Ohio State)	1958
<hr/>	
Visiting Professor Luis A. Baralt, Ph.D. (Havana)	1961-62
Visiting Professor Henry N. Wieman, Ph.D. (Harvard)	1956-62

The four hour requirement in either philosophy or psychology in the College of Liberal Arts and Sciences may be satisfied by taking any two of the elementary 100-level courses or any single 200- or 300-level course. Prerequisites apply only where specifically stated.

The courses 100, 120, 121, 140, 160, and 170 present an introduction to philosophic ideas, problems, and vocabulary. They may be taken without regard to whether the student plans to major or minor in philosophy.

The minor consists of twenty-four hours, of which four may be in 100-level courses. The department urges that minors include in their program the history of philosophy sequence 381, 382, and 383.

### SUGGESTED CURRICULUM IN PHILOSOPHY

The following curriculum leads to the Bachelor of Arts degree with a major in philosophy in the College of Liberal Arts and Sciences.

<i>General Degree Requirements</i> (See page 10.) .....	71
<i>College of Liberal Arts and Sciences Requirements</i> (See page 11.) ....	37
<i>Requirements in the Department of Philosophy</i> .....	42
Philosophy 381, 382, 383 .....	12
Philosophy electives, numbered 200 or above, and selected in conference with the chairman of the department, to complete 42 hours. ....	30
<i>Duplication of Requirements</i> .....	-4
The departmental requirements satisfy 4 hours of College of Liberal Arts and Sciences Requirements. These hours are deducted here to avoid counting them twice in the total.	
<i>Electives</i> .....	46
<i>Total</i> .....	<u>192</u>

### COURSE DESCRIPTIONS

- 100-2. SCIENCE AND THE NATURE OF THE WORLD. Introduction to scientific knowledge and its relation to philosophy. Topics drawn from many sciences presented without assuming any prior acquaintance with the sciences: infinity, cause, necessity, nature and the machine, perception, etc.
- 120-2. PRACTICAL LOGIC I. Introduction to accurate thinking, and the proper use of the resources of language, covering such topics as signs and symbols, definition, metaphor, fallacies, propaganda analysis, implication, and syllogism.
- 121-2. PRACTICAL LOGIC II. Popular but inadequate ways of gathering and summing up information in contrast with the more reliable procedures of common sense and science.
- 140-2. IDEAS OF GOOD AND EVIL. Elementary exploration of human purposes in terms of the good, faith and knowledge, human destiny and progress, freedom, democracy.
- 160-2. THE MEANING OF ART. Significance of the arts, developed by considering selected works from architecture, painting, literature, and music.
- 170-3. VALUES IN THE MODERN WORLD. A critical examination of basic moral, religious, aesthetic, and intellectual values of western civilization as these are expressed in selected works of art, music, literature, and



- philosophy. Attention will be given to alternative value systems and other forces which challenge these values today.
- 200-4. TYPES OF PHILOSOPHY. Study of realism, idealism, and materialism.
- 300-4. ELEMENTARY METAPHYSICS. Presentation of answers to the most general problems of existence. An attempt to unify all scientific approaches to reality through the laying down of common principles.
- 301-4. PHILOSOPHY OF RELIGION. An analysis of problems in the psychology, metaphysics, and social effects of religion. Among topics discussed are the nature of mystical experience, the existence of God, and problems of suffering, prayer, and immortality.
- 302-4. WORLD RELIGIONS. An historical and comparative study of the principal religions of the world. Particular attention is given to such non-Christian faiths as Hinduism, Buddhism, and Islam.
- 303-4. ORIENTAL PHILOSOPHY. An examination of the historical backgrounds and contemporary expressions of the great traditions in Indian, Chinese, and Japanese thought. The Vedanta and Zen Buddhism will receive particular attention.
- 305-4. PHILOSOPHY OF SCIENCE. A nontechnical discussion of philosophic problems as they emerge from the various sciences, with readings from works addressed to the lay public.
- 320-4. GENERAL LOGIC. Terms, propositions, and reasoning. Logic as an instrument for the solution of problems in natural and social sciences.
- 340-4. ELEMENTARY ETHICS AND POLITICS. Problems of right and wrong for the individual and society.
- 355-4. PHILOSOPHY OF EDUCATION. Survey of theories of education and their relationships to educational policies and practices, as elucidated by the great teachers. Satisfies the education requirement, Education 355.
- 360-4. PHILOSOPHY OF ART. The significance of art as a human activity, its nature and standards as seen in the problems of criticism, and the relation of art to other forms of knowledge.
- 381-4. GREEK AND EARLY CHRISTIAN PHILOSOPHY. Presocratics, Plato, Aristotle, and the early Christians.
- 382-4. MEDIEVAL AND EARLY MODERN PHILOSOPHY. Problems of medieval philosophy and their restatement in the seventeenth and eighteenth centuries. Aquinas, Descartes, Locke, and others.
- 383-4. RECENT PHILOSOPHY. Kant, Hegel, and such figures as Schopenhauer, Mill, and Bergson.
- 386-4. AMERICAN PHILOSOPHY. A survey of American philosophic thought from colonial days to the present, with emphasis on such recent thinkers as Peirce, James, Royce, Dewey, and Santayana.
- 406-4. PHILOSOPHY OF BIOLOGY. Leading concepts of biological sciences: species, evolution, life, organism and part, etc. Abstract ideas of biology are related, wherever possible, to specific experiments recorded in scientific literature. Prerequisites: 300 or 320, and three laboratory or field courses in the biological sciences or consent of instructor.
- 415-3. LOGIC OF THE SOCIAL SCIENCES. Logical and epistemological examination of social studies as types of knowledge. Basic problems in philosophy of science with major emphasis upon social science: relationship of theory to fact, nature of induction, nature of causal law, testability, influence of value judgments, etc. Intended for students with considerable maturity in a social science or in philosophy.

- 420-4. **ADVANCED LOGIC.** A careful study of symbolic and discursive systems of logic: Aristotle, Spinoza, Boole, Whitehead, and Johnson. Prerequisites: 320 and consent of instructor.
- 422-3. **MATHEMATICAL LOGIC I.** Matrix and set theory axiomatic development of the propositional calculus. Many-valued logics, modal logics; related problems. Prerequisites: 6 hours of philosophy, including 320, or 6 hours of mathematics courses 300 or higher, or consent of instructor.
- 423-3. **MATHEMATICAL LOGIC II.** The predicate calculus and related problems. Prerequisite: 422, or consent of instructor.
- 424-3. **LOGIC OF THE EXACT SCIENCES.** Critical study of the technical and philosophic problems associated with formal logic and its uses as a tool for model construction, for formalizations, reconstructions, and as an image of rational thought. Prerequisites: 422 and 423, or consent of instructor.
- 441-4. **PHILOSOPHY OF POLITICS.** Some of the central problems of modern political life, such as sovereignty, world government, authority and consent, the relations of economics and social studies to political theory. Prerequisite: 140 or 340 or consent of instructor.
- 443-4. **PHILOSOPHY OF HISTORY.** Classical and contemporary reflections on the nature of history and historical knowledge as the basis for dealing with the humanities. Prerequisite: consent of instructor.
- 460-4. **ADVANCED PHILOSOPHY OF ART.** The definition of art, its relations to science, culture, and morals; the various types of art defined. Familiarity with at least one of the fine arts is assumed. Prerequisites: 160 or 360, and six courses in music, painting, sculpture, literature, or drama.
- 477-4. **LATIN AMERICAN PHILOSOPHY.** A survey of philosophic thought in Latin America from colonial times, through nineteenth century positivism and the reactions against it, up to present trends. Reading of original texts in English translations. Discussions and reports. Prerequisite: consent of instructor.
- 478-4. **SEMINAR IN LATIN AMERICAN THOUGHT.** Investigation of research topics connected with Latin American thought during the nineteenth and twentieth centuries in the fields of government, social sciences, education, literature, and philosophy. Individual studies and reports. Prerequisite: consent of instructor.
- 490-2 to 12. **SPECIAL PROBLEMS.** Hours and credits to be arranged. Courses for qualified seniors and graduates who need to pursue certain topics further than regularly titled courses permit. Special topics announced from time to time. Students are invited to suggest topics for individual study and papers or for group study. Consent of instructor in all cases required.

Courses on the 500 level are for graduate students only.

- 500-2 to 4. **SEMINAR IN METAPHYSICS.** Study of recent writers and current problems in metaphysics with the intent of familiarizing the student with the traditional problems of the area.
- 501-2 to 4. **SEMINAR IN THE PHILOSOPHY OF RELIGION.** Analysis of a selected problem in philosophical theology or the psychology of religion, or of the work of a particular thinker. Recent seminars have been on Paul Tillich and Henry Nelson Wieman.

- 530-2 to 4. SEMINAR IN THEORY OF KNOWLEDGE. Examination of a contemporary writer or problem in epistemology. Special emphasis is given to the problem of the reliability and structure of scientific knowledge.
- 551-4, 552-4, 553-4. PHILOSOPHIC PROBLEMS OF CONTEMPORARY CIVILIZATION. An examination of the crisis in contemporary civilization. The reconstruction of ideas and values involved and an analysis of crucial problems in terms of this intellectual reconstruction.
- 581-2 to 4. SEMINAR IN PLATO. A thorough study of several of the dialogues. Lectures on the system of Plato as a whole, discussions and reports on the readings.
- 582-2 to 4. SEMINAR IN ARISTOTLE. The philosophic ideas of Aristotle. Intensive reading of several texts, illustrating widely varied portions of his thought.
- 586-2 to 4. SEMINAR IN SPINOZA. Analysis of the *Improvement of the Understanding* and the *Ethics*. Lectures relating Spinoza to the medieval tradition and to his contemporaries. Discussions and reports.
- 588-2 to 4. SEMINAR IN KANT. The three great *Critiques* in their relation to the development of Kant's total philosophy. Intensive study of one of the *Critiques*.
- 589-2 to 12. GENERAL GRADUATE SEMINAR.
- 590-2 to 12. GENERAL GRADUATE SEMINAR. Courses designed for students having special interests in the history of philosophy and the original systematic development of philosophic ideas. Subjects, meetings, and procedures to be arranged at the first meeting of each course. Prerequisite: consent of instructor. Hours to be arranged.
- 591-1 to 5. READINGS IN PHILOSOPHY. Supervised readings for qualified students. Consent of instructor required.
- 599-2 to 9. THESIS.

## PHYSICS AND ASTRONOMY

Professor Martin Joseph Arvin, Ph.D. (Illinois)	1949
Professor Charles J. Brasefield, Ph.D. (Princeton), Chairman	1954
Professor Richard Elvis Watson, Ph.D. (Illinois)	1940-42; 1958
Professor Otis B. Young, Ph.D. (Illinois)	1929
Associate Professor George A. Russell, Ph.D. (Illinois)	1960
Assistant Professor Jason J. Collins, M.S. (Southern Illinois)	1955
Assistant Professor John A. Eisele, Ph.D. (Ohio State)	1959
Assistant Professor Richard L. Linster, Ph.D. (Illinois)	1960
Assistant Professor Charlotte Zimmerschied, M.A. (Minnesota)	1927
Instructor Robert C. Etherton, M.S. (Southern Illinois)	1955
Instructor James L. Harbison, M.S. (Illinois)	1957
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Lecturer Robert S. Revak, M.A. (Southern Illinois)	1960-62

Undergraduate courses in physics may be taken as a major by students in the College of Liberal Arts and Sciences and in the College of Education.

### SUGGESTED CURRICULUM IN PHYSICS

The following curriculum leads to the Bachelor of Arts degree with a major in physics in the College of Liberal Arts and Sciences.

<i>General Degree Requirements</i> (See page 10.) .....	71
<i>College of Liberal Arts and Sciences Requirements</i> (See page 11.) ....	37
<i>Requirements in the Department of Physics and Astronomy</i> .....	53
Physics 211, 212, 213, (or 206, 207, 208 with consent of the department); 301, 302, 305, 306, 413	38
Physics 304, 310, 405, 414, 450 (any 3)	15
<i>Related Requirements for the Major</i> .....	48
Chemistry 111, 112, 113 (Recommended)	15
Mathematics 111, 112, 113, 251, 252, 253, 305, 306	33
The foreign language should be German or Russian	0
<i>Duplications of Requirements</i> .....	-36
The Related Requirements for the Major satisfy 12 hours of General Degree Requirements and 24 hours of College of Lib- eral Arts and Sciences Requirements. To avoid counting these hours twice in the total, they are deducted here.	
<i>Electives</i> .....	19
<i>Total</i> .....	<u>192</u>

The curriculum leading to the Bachelor of Science in Education degree with a major in physics in the College of Education includes the following *Requirements for the Major*:

Physics 211, 212, 213, (or 206, 207, 208 with consent of the department); 301, 302, 305, 306, 413	38
Physics 304, 310, 405, 414, 450 (any 2)	10
Chemistry 111, 112, 113 (Recommended)	15
Mathematics 111, 112, 113, 251, 252, 253, 305, 306	33
Recommended elective for a major in physics: mechanical drawing or machine shop.	

Suggested courses for a minor in physics for a student who is taking calculus: 211, 212, 213 and two of the following: 304, 305, 306, 310, 413.

Suggested courses for a minor in physics for a student who does not plan to take calculus: 206, 207, 208 and two of the following: 310, 312, 325.



*COURSE DESCRIPTIONS*

## PHYSICS COURSES

- 101-4, 102-4. SURVEY COURSE IN PHYSICS. Mechanics, light, and sound covered in 101; heat and electricity in 102. For students whose chief interests are not in the physical sciences (101 and 102 are not credited toward a major or minor in physics). Pre-engineers and physics majors should take 211, 212, and 213. Other science majors, including pre-medical students, may take 206, 207, and 208.
- 206-5. COLLEGE PHYSICS (MECHANICS AND SOUND). The general physics course covered in 206, 207, and 208 is designed to meet pre-medical requirements in physics and the needs of all students majoring in one of the sciences, except physics. Prerequisite: Mathematics 112.
- 207-5. COLLEGE PHYSICS (ELECTRICITY AND MAGNETISM). A continuation of 206. Prerequisite: 206.
- 208-5. COLLEGE PHYSICS (HEAT AND LIGHT). A continuation of 206. Prerequisite: 206.
- 211-5. UNIVERSITY PHYSICS (MECHANICS AND SOUND). Physics 211, 212, and 213 together constitute a thorough course in basic physics for physics majors and pre-engineers. Prerequisite: Mathematics 251 (or concurrent enrollment).
- 212-5. UNIVERSITY PHYSICS (ELECTRICITY AND MAGNETISM). A continuation of 211. Prerequisite: 211 and Mathematics 252 (or concurrent enrollment in Mathematics 252).
- 213-5. UNIVERSITY PHYSICS (HEAT AND LIGHT). A continuation of 211. Prerequisite: 211 and Mathematics 252 (or concurrent enrollment in Mathematics 252).
- 301-4, 302-4. MECHANICS I, II. Intermediate theoretical mechanics, using vector analysis: kinematics, particle dynamics, rigid body mechanics, oscillations, wave motion, and advanced principles. Prerequisites: 206 or 211; Mathematics 305, or concurrent enrollment, or consent of instructor.
- 304-3. THERMODYNAMICS. Survey of laws of classical thermodynamics. Their constituents in application to some simple thermodynamic systems; phase equilibrium and theory of phase transitions. Prerequisites: 208 or 213, Mathematics 253.
- 305-5, 306-5. INTRODUCTION TO ELECTRIC THEORY I, II. Vector treatment of the theory, with laboratory: electrostatics in vacuo and in matter, steady currents, magnetism, alternating currents, complex number analysis of a-c circuits, electromagnetic radiation. Prerequisites: 207 or 212; Mathematics 305, or concurrent enrollment, or consent of instructor.
- 308-5. SOUND. Theory of vibrations and sources of sound, transmission, reception, and measurement of sound energy. Prerequisite: 206 or 211 and Mathematics 251.
- 310-5. LIGHT. A study of light propagation and optical instruments; interference, diffraction and polarization of light. Prerequisite: 208 or 213.
- 312-5. RADIO. A study of radio receivers and transmitters. Prerequisite: 207 or 212.
- 313-4. PRINCIPLES OF MODERN PHYSICS I. General survey of modern

- physics including relativity theory, quantum theory, atomic structure and spectra, and wave mechanics. Prerequisites: 302, 306, Mathematics 306, or consent of instructor.
- 316-5. HISTORY OF PHYSICS. A study of the development of physical concepts and theories, and of contemporary physical research. Designed particularly for students planning to teach.
- 325-5. ATMOSPHERIC PHYSICS. A study of the fundamental physical processes in the atmosphere; the important role of water vapor; thermodynamic processes; radiation equilibrium; the general equations of motion; the growth of cyclic circulations; optical and electrical phenomena. Prerequisite: 208 or 213, or consent of instructor.
- 326-3. GEOPHYSICS. A survey of some of the principal applications of physics in the development of the earth-sciences; explanations of the origin of the earth; investigation and explanation of the shape and gross structure of the earth; determination of the age of the earth and some its constituents. Prerequisite: 206 or 211, or consent of instructor.
- 327-3. ATMOSPHERIC ELECTRICITY AND GEOMAGNETISM. A description of the more important phenomena of atmospheric electricity and geomagnetism, how these are measured and present theories regarding the origin of the basic phenomena in these fields. Prerequisite: 207 or 212, or consent of instructor.
- 402-5. CONTEMPORARY PHYSICS. A survey course in atomic and nuclear physics. Offered principally for high school teachers who wish a refresher course covering recent developments in physics. Prerequisites: 206, 207, 208; or 211, 212, 213; or consent of instructor.
- 405-5. ELECTRONICS. The physics of vacuum tubes and semiconductor devices. Elementary theory and application of vacuum tubes as circuit elements in power supplies, oscillators, amplifiers and shaping circuits. Prerequisites: 305, 306; Mathematics 306 or consent of instructor.
- 410-5. PHYSICAL OPTICS. A theoretical and experimental study of light as electromagnetic energy; its production, detection, and measurement. Prerequisites: Mathematics 253 and three advanced physics courses.
- 413-4. PRINCIPLES OF MODERN PHYSICS II. A continuation of 313 in which the techniques of wave mechanics and perturbation theory are developed; applications include the harmonic oscillator, particle in a box, rigid rotator, the hydrogen atom and molecule, multi-electron atoms. Prerequisite: 313 or consent of instructor.
- 414-5. RECENT DEVELOPMENTS. A continuation of 413, including nuclear physics and elementary particle physics. Prerequisite: 413.
- 420-2 to 5. SPECIAL PROJECTS I. Each student is assigned a definite investigative topic. Adapted to advanced undergraduate students. Prerequisites: 301, 302, 305, 306.
- 421-2 to 5. SPECIAL PROJECTS II. A continuation of 420. Credit in 420 and 421 not to exceed nine hours. Prerequisite: 420.
- 425-5. ELECTRICAL PHENOMENA IN GASES. Excitation and ionization of gas atoms; diffusion of ions; space charge; glow and arc discharges. Prerequisites: 305, 306.
- 430-2. PHYSICAL LITERATURE. A study of source materials in the field of physics. Also library search on special subjects. Prerequisite: integral calculus, three advanced physics courses, and one year of German.

- 450-5. INTRODUCTION TO SOLID STATE PHYSICS. A study of the fundamentals of Solid State Physics including classification of solids, interatomic and intermolecular forces, lattice energies, specific heats, lattice dynamics, free electron theory of metals, lattice defects, color centers, luminescence, magnetic materials, radiation damage, transport in ionic crystals, Fermi-Dirac statistics, Fermi distribution, and semi-conductors. Prerequisites: 304, 305, 306, 413.

Courses on the 500 level are for graduate students only.

- 501-5, 502-5, 503-5. METHODS OF THEORETICAL PHYSICS I, II, III. A three-quarter sequence covering classical theoretical physics; devoted about equally to advanced dynamics and electrostatics including radiation theory. Prerequisites: 301, 302, 305, 306; Mathematics 305, 306; concurrent enrollment in Physics 511 or consent of instructor.
- 507-5. ADVANCED ELECTRICAL THEORY I. Advanced study of the theory of electrostatics, dielectrics, conductors, non-ohmic circuits elements, chemical, thermal, and photoelectric effects, and conduction in gases. Prerequisites: 305, 306, Mathematics 305, 306.
- 508-5. ADVANCED ELECTRICAL THEORY II. Prerequisite: 507.
- 511-4, 512-4, 513-4. MATHEMATICAL METHODS OF PHYSICS I, II, III. Vector analysis and curvilinear coordinate systems, partial differential equations of classical physics, expansions in orthogonal functions, boundary value problems, introduction to complex analysis, contour integration, linear transformations and matrices, eigenvalue problems, integral equations and transforms, Schrodinger's equation and elementary quantum mechanics. Prerequisites for 511: 413, Mathematics 306. Prerequisites for 512 and 513: 511 and Mathematics 452, 453, and 454 (or consent of instructor).
- 520-2 to 5. SPECIAL PROJECTS. Each student assigned a definite investigative topic requiring considerable resourcefulness and initiative. Prerequisite or corequisite: 501.
- 521-2 to 5. ADVANCED RESEARCH. A continuation of 520. Prerequisite: 520.
- 590-1 to 9. RESEARCH IN PHYSICS (THESIS). 1-5 hours each term. The total in this group not to exceed 9 hours. Prerequisite or corequisite: 501.

#### ASTRONOMY COURSES

- 201-4, 202-4. INTRODUCTION TO ASTRONOMY. These two terms together constitute a single complete course. Four recitations a week, together with frequent evening observations with and without telescope.
- 301-4, 302-4. ASTRONOMY. A more advanced course, similar to 201 and 202, for senior college students.

#### PHYSIOLOGY

- |                                                              |      |
|--------------------------------------------------------------|------|
| Professor H. M. Kaplan, Ph.D. (Harvard), Chairman            | 1949 |
| Associate Professor Frank J. Finamore, Ph.D. (Florida State) | 1955 |
| Associate Professor George Hiram Gass, Ph.D. (Ohio State)    | 1959 |

Associate Professor Joseph P. Miranti, M.D. (Loyola, Louisiana)	1961
Visiting Professor Forrest D. McCrea, Ph.D. (Wisconsin)	1960-61
Adjunct Professor Eli L. Borkon, Ph.D., M.D. (Chicago)	1954

### SUGGESTED CURRICULUM IN PHYSIOLOGY

The following curriculum leads to the Bachelor of Arts degree with a major in physiology in the College of Liberal Arts and Sciences.

<i>General Degree Requirements</i> (See page 10.)	71
<i>College of Liberal Arts and Sciences Requirements</i> (See page 11.)	37
<i>Requirements in the Department of Physiology</i>	42
Physiology electives selected in consultation with the chairman of the department to total at least 42 hours.	
<i>Related Requirements for the Major</i>	0-30
A background of basic courses in chemistry, mathematics, and physics is required. Elementary courses in either botany or zoology are recommended.	
<i>Electives</i>	12-42
<i>Total</i>	192

A minor in physiology requires a minimum of 24 hours.

### COURSE DESCRIPTIONS

- 209-5. INTRODUCTION TO PHYSIOLOGY. A survey of the functions of the human body. Designed for students in various fields desiring a basic but comprehensive knowledge of human physiology. Physiology majors should not take this course. Three hours lecture and four hours laboratory per week.
- 300-4. HUMAN ANATOMY. Lectures, demonstrations, and periodic observation of the prosected body. Lectures confined to bones, joints, muscles, and nerves. Primarily for majors in physical education. Four hours lecture per week.  
One section called 300N is reserved chiefly for nursing students. All bodily systems are reviewed. A three-hour laboratory is substituted for one of the lectures.
- 315, 316, 317-5. ADVANCED COLLEGE PHYSIOLOGY. The lectures emphasize mammalian and human physiology whereas the laboratory involves function throughout the vertebrate classes. (Course 315, blood, circulation, and respiration; Course 316, digestion, excretion, endocrines; Course 317, muscle, nervous system, sense organs.) These courses are necessary for majors and for students requiring a strong background knowledge particularly of mammalian function. Three hours lecture and four hours laboratory per week.



- 401-2 to 6. SEMINAR. Open to graduates and undergraduates with adequate training in physiology, physics, and chemistry.
- 410-5, 411-5, 412-5. ADVANCED ANATOMY. Dissection of the human body. Primarily for majors in physiology and other biological sciences. Not a premedical course. 2 hours lecture, 6 hours laboratory.
- 414-4. PHYSIOLOGY OF SPEECH. The anatomy and physiology of the vocal apparatus. Primarily for majors in speech correction. 3 hours lecture, 2 hours laboratory.
- 415-4, 416-4. EXPERIMENTAL ANIMAL SURGERY I, II. Preparation of animals for surgery, anesthesia, instruments, care of animal quarters, selected exercises. 416 may be elected independently of 415. 2 hours lecture, 4 hours laboratory.
- 417-3. PRINCIPLES OF PHARMACOLOGY. Action of drugs and other chemical substances upon the living organism. Physiological and biochemical events resulting from the action of drugs. Pharmacodynamics, chemotherapy, toxicology, and therapeutics. Prerequisites: basic courses in chemistry and biological sciences. 2 hours lecture, 2 hours laboratory.
- 418-3. PRINCIPLES OF PHARMACOLOGY. Continuation of 417. 2 hours lecture. 2 hours laboratory. May be elected independently of 417.
- 420-3. PHYSIOLOGY OF EXERCISE. The effects of activity upon the human organism. 3 hours lecture and demonstrations.
- 421-1 to 6. READINGS IN CURRENT PHYSIOLOGICAL LITERATURE. Supervised reading in current topics. Open only by permission.
- 430-4, 431-4, 432-4. GENERAL (CELLULAR) PHYSIOLOGY. The nature and mechanism of the living cell. Chemical and physical aspects of vital activity. Recommended for students interested in biochemistry and biophysics. 3 hours lecture, 2 hours laboratory.
- 433-4. COMPARATIVE PHYSIOLOGY. Fundamental physiological processes and the manner in which they vary in various groups of animals. Recommended for majors in physiology and for students in other biological sciences. 3 hours lecture, 2 hours laboratory.
- 440-3. ELECTRON MICROSCOPY. Basic experience with the operation of the electron microscope. Specimen preparation. Prerequisites: advanced background in any natural or physical science. 2 hours lecture, 2 hours laboratory.
- 450-4 to 16. SPECIAL PROBLEMS IN PHYSIOLOGY. Selected problems in various aspects of physiology. 8 hours laboratory. Open only by permission.
- 455-2. PHYSIOLOGICAL PROBLEMS IN REHABILITATION. Designed specifically for the Rehabilitation Counseling Program. Problems of the handicapped. Not for physiology majors. 2 hours lecture.
- 460-4, 461-4, 462-4. MAMMALIAN PHYSIOLOGY. For graduate students who need a knowledge of human or mammalian function. Identical with 315, 316, 317. Both series run concurrently.
- 470B-3. RESEARCH FOR BIOLOGY TEACHERS. Laboratory experience in research methods for teachers of biology and general science.

Courses on the 500 level are for graduate students only.

- 500-1 to 6. ADVANCED SEMINAR. One meeting per week. 1 credit per quarter. Formal presentation of research and/or current literature in physiology. Required of all majors each quarter in residence.

- 519-3. EXPERIMENTAL PHARMACOLOGY. Exercises to familiarize the student with advanced physiological investigation. Prerequisites: strong background in chemistry and the biological sciences. 1 hour discussion, 4 hours laboratory.
- 520A-4, 520B-4, 520C-4. PHYSIOLOGICAL TECHNIQS. (1) Analysis of protoplasmic components of tissue extracts under a variety of physiological conditions using chemical procedures. (2) Gas analysis and metabolic methods in physiology. (3) Biophysics. Instrumentation for the recording of the physiologic activity of living tissues and organs. Use of channel recorders. Prerequisite: undergraduate major in any of the biological or physical sciences. Offered as three consecutive courses. 2 hours lecture, 4 hours laboratory.
- 530A-4, 530B-4. ADVANCED CELLULAR PHYSIOLOGY. A detailed consideration given to basic physiological processes such as permeability, active transport, metabolic cycles, energy transformations, and bioelectric potentials. Selected projects undertaken by the students in the laboratory. Prerequisite: 430 or equivalent. 2 hours lecture, 4 hours laboratory.
- 540A-4, 540B-4. ADVANCED COMPARATIVE PHYSIOLOGY. A comparative study of the physiological systems in animals. Subjects such as nitrogen metabolism, carbohydrate metabolism, and water balance of organisms will be given. 2 hours lecture, 4 hours laboratory. Prerequisites: 430 or 433 or equivalent, and organic chemistry.
- 550-3. RADIATION BIOLOGY. Theory and specific applications of isotopes in physiology are emphasized, and opportunity given to learn how to handle radioactive materials in the laboratory. 2 hours lecture, 2 hours laboratory. Prerequisite: 430 or equivalent, general physics, biochemistry or equivalent.
- 599-3 to 9. THESIS.

## PSYCHOLOGY

Research Professor Noble H. Kelley, Ph.D. (Iowa)	1951
Professor Mortimer H. Appley, Ph.D. (Michigan), Chairman	1960
Professor Alfred Lit, Ph.D. (Columbia)	1961
Professor William C. Westberg, Ph.D. (Pennsylvania State)	1952
Associate Professor Sheldon Alexander, Ph.D. (Rochester)	1960
Associate Professor Jack W. Graham, Ph.D. (Purdue)	1951
Associate Professor John G. Martire, Ph.D. (Michigan)	1956
Associate Professor Guy A. Renzaglia, Ph.D. (Minnesota)	1955
Associate Professor Donald J. Shoemaker, Ph.D. (Ohio State)	1960
Associate Professor Leonard J. West, Ph.D. (Columbia)	1957
Associate Professor Forrest B. Tyler, Ph.D. (Ohio State)	1952
Assistant Professor Neil A. Carrier, Ph.D. (Michigan)	1957
Assistant Professor Ernest J. Doleys, Jr., Ph.D. (Missouri)	1959
Assistant Professor William Gerler, Ph.D. (Illinois)	1960

Assistant Professor Peter Hemingway, Ph.D. (Michigan State)	1960
Assistant Professor James McHose, Ph.D. (Iowa)	1961
Assistant Professor Janet Rafferty, Ph.D. (Ohio State)	1955
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Adjunct Professor Robert Carl Steck, M.D. (Illinois)	1956
Lecturer Richard H. Bahwell, M.A. (Missouri)	1961-62
Lecturer Ralph R. Roberts, Jr., M.A. (Missouri)	1961-62
Lecturer William Wagman, M.A. (Columbia)	1960-62

### SUGGESTED CURRICULUM IN PSYCHOLOGY

The following curricula leads to the Bachelor of Arts degree with a major in psychology in the College of Liberal Arts and Sciences.

<i>General Degree Requirements</i> (See page 10.) .....	71
<i>College of Liberal Arts and Sciences Requirements</i> (See page 11.) ...	37
<i>Requirements in the Department of Psychology</i> .....	44
Psychology 201, 211, 212	12
Eight courses selected from one of the following two groups: 32	
Group 1, For Students Planning Graduate Study	
Psychology 311, 409	8
Psychology 312, 313, 314 (any one)	4
Psychology 301, 303, 304, 305, 307, 320, 322 (any 2)	8
Psychology 404, 407, 408, 421, 431, 440, 451, 461, 471 (any 2)	8
One additional course selected from those listed above.	4
Group 2, For Students Planning No Graduate Study	
At least three 400-level courses selected from those listed in group 1, above, and including 409 as one alternative.	12
Additional courses selected from group 1.	20
<i>Related Requirements for the Major</i> .....	5
Physiology 209 or 317	
<i>Duplication of Requirements</i> .....	-4
To avoid counting Psychology 201 twice in the total, 4 hours are subtracted here.	
<i>Electives</i> .....	39
<i>Total</i> .....	192

Courses 323, 406, 420, 432, 433, and 465 may not be used to satisfy

the major requirements, but are acceptable for the minor, which requires 24 hours.

For further information and advisement, consult the Department of Psychology.

### *COURSE DESCRIPTIONS*

- 201-4. **INTRODUCTORY PSYCHOLOGY.** Introduction to the problems and methods of the science of behavior.
- 211-4, 212-4. **PRINCIPLES AND METHODS OF PSYCHOLOGY I, II.** An introduction to the experimental methods utilized in the study of behavior. Laboratory work emphasizes the application of these methods to the study of sensory and perceptual phenomena (211), and to the study of response characteristics (212). Lecture and laboratory. To be taken in sequence. Prerequisite: 201.
- 301-4. **CHILD PSYCHOLOGY.** A study of the biological and psychological development of the child from birth through puberty, and of relevant research methods and results. Prerequisite: 201.
- 303-4. **ADOLESCENT PSYCHOLOGY.** Examines the physical and psychological development of the adolescent, and the relevance of childhood development to adolescent problems. Prerequisite: 201.
- 304-4. **PSYCHOLOGY OF MATURITY AND OLD AGE.** A consideration of psychological factors in later maturity and old age and their concomitant problems, both individual and societal. Prerequisite: 201.
- 305-4. **PSYCHOLOGY OF PERSONALITY.** A study of the inferred patterns underlying an individual's unique reactions to his environment. Investigates the motivations, development, and methods of changing these patterns, and how personality processes are studied. Prerequisite: 201.
- 307-4. **SOCIAL PSYCHOLOGY.** Introduction to the study of the individual's interaction with his social environment. Considers problems of social learning, communication, social influence processes and group behavior. Prerequisite: 201.
- 311-4. **EXPERIMENTAL PSYCHOLOGY: LEARNING.** Investigates the processes governing behavioral change. Experimental studies of conditioning, memory, and forgetting will be emphasized. Laboratory work will include the design and conduct of experiments with humans and animals. Lecture and laboratory. Prerequisite: 212.
- 312-4. **EXPERIMENTAL PSYCHOLOGY: PERCEPTION.** Investigates the variables influencing an organism's stimulation by his environment. The structure and operation of the sense organs as well as complex perceptual phenomena will be examined in lectures and laboratory. Prerequisite: 212.
- 313-4. **EXPERIMENTAL PSYCHOLOGY: MOTIVATION.** An examination of both biological and social variables influencing the activation, direction, and maintenance of behavior. Laboratory work will examine the effects of motivation upon behavior. Lecture and laboratory. Prerequisite: 212.
- 314-4. **EXPERIMENTAL PSYCHOLOGY: COMPARATIVE AND PHYSIOLOGICAL.** An examination of the physiological and phylogenetic vari-



- ables affecting behavior. The laboratory will involve work with different types of organisms, emphasizing physiological concomitants of behavior. Lecture and laboratory. Prerequisite: 212.
- 320-4. INDUSTRIAL PSYCHOLOGY. A study of the use of psychological methods in the analysis of human factors problems in business and industry. Prerequisite: 201.
- 322-4. PERSONNEL PSYCHOLOGY. A study of the use of psychological methods in the selection, placement, and evaluation of personnel in business and industry. Prerequisite: 201.
- 323-4. PSYCHOLOGY OF EMPLOYEE RELATIONS. Job satisfaction and morale, psychological aspects of labor relations, interviewing methods, human relations training. Lecture and laboratory. Prerequisite: 201.

Courses at the 400 and 500 level are listed according to areas. The second two digits indicate the content area:

- 00-19 General and Experimental
- 20-29 Measurement, Methodology, and Research Design
- 30-39 Personality, Counseling, and Psychotherapy
- 40-49 Tests and Assessment Procedures
- 50-59 Child and Developmental
- 60-69 Social
- 70-79 Personnel and Industrial
- 90-99 Independent Projects, Seminars, Practica, and Research

- 401-4, 402-4, 403-4. PROSEMINAR IN GENERAL PSYCHOLOGY I, II, III. Basic conceptual and methodological problems in the study of behavior. I. History and systems of psychology, philosophy of science, scientific methodology, behavior theory. II. Acquisition of behavior, sensory and perceptual processes, motivation and emotion. III. Personality and individual differences, new conceptual and methodological developments and trends. To be taken in sequence. Prerequisite: consent of instructor. Open to graduate students in other departments by arrangement with department chairman.
- 404-4. THEORIES OF PERCEPTION. An examination of the different theories concerned with an organism's sensory contact with his environment. Physiological, social, and organizational theories of perception will be considered. Prerequisite: 212 or consent of instructor.
- 406-4. LEARNING PROCESSES. Processes by which individual behavior is changed, using procedures developed in the learning laboratory. Introduction to major concepts and data of learning.
- 407-4. THEORIES OF LEARNING. A consideration of the major contemporary learning theories and their relation to experimental data. Prerequisite: 212 or consent of instructor.
- 408-4. THEORIES OF MOTIVATION. An examination of instinct theories, biological drives, emotions, social motives, and psychodynamic theories as they contribute to a comprehensive psychology of motivation. Prerequisite: 212 or consent of instructor.
- 409-4. HISTORY AND SYSTEMS. Study of the important antecedents of contemporary scientific psychology. Considers issues, conceptual developments, and research advances, and presents the major schools and systems. Prerequisite: 20 hours in psychology or consent of instructor.

- 420-4. SCIENTIFIC METHODOLOGY IN PSYCHOLOGY. Scientific methodology as an approach to investigation and classification of problems involved in understanding the psychological nature of man. Prerequisite: consent of instructor.
- 424-4. PSYCHOLOGICAL TESTS AND MEASUREMENTS. Principles of psychological measurement, including errors of measurement, techniques for estimating reliability and validity, techniques of test construction, and problems in assessment and prediction. The laboratory will include the use of selected instruments. Lecture and laboratory. Prerequisite: 8 hours of psychology.
- 424-2. PSYCHOPHYSICAL METHODS. Survey of the major psychophysical methods and their applications. Lecture and laboratory.
- 431-4. PSYCHOPATHOLOGY. Classification, description, etiology and treatment of the disorders of personality organization and behavioral integration. Observations in a state mental hospital setting. Prerequisite: 305 or consent of instructor.
- 432-4. MENTAL HYGIENE. An integration of psychological knowledge and principles concerning factors and conditions affecting the individual which tend to facilitate or to deter mental health. Prerequisite: 305 or consent of instructor.
- 433-2 to 6. PERSONALITY AND MENTAL HEALTH. Seminar on the basic factors in psychological development and their implications for mental health and psychopathology. Prerequisite: consent of instructor.
- 438-4. PSYCHOLOGICAL CONSIDERATIONS IN TREATMENT. For advanced undergraduates and graduate students entering allied professions in which they will be directly concerned with corrective or remedial service. Basic psychological principles and considerations relevant to planning and conducting such treatment; potentialities and limitations of individual and group treatment; environmental manipulation. Prerequisite: recommendation of student's major department.
- 440-4. THEORIES OF PERSONALITY. A review and critical evaluation of major personality theories and their supporting evidence. Prerequisite: 305 or consent of instructor.
- 451-4. ADVANCED CHILD PSYCHOLOGY. An examination of the concepts, methods, and problems of human development with consideration of both its psychobiological and psychosocial aspects. Prerequisite: 301 or 303 or consent of instructor.
- 461-4. ADVANCED SOCIAL PSYCHOLOGY. Examines current areas of interest in the study of social behavior: language behavior, communication, social influence, attitude change, interpersonal perception, etc. Emphasis is on the individual in the social context. Prerequisite: 307 or consent of instructor.
- 465-4. GROUP DYNAMICS AND INDIVIDUAL BEHAVIOR. Examination of research and theory in the area of small group interaction. Examines such topics as group structure and function, group problem-solving, leadership, etc. Prerequisite: 307 or consent of instructor.
- 471-4. ADVANCED INDUSTRIAL AND PERSONNEL PSYCHOLOGY. An advanced course presenting selected topics in the field of industrial, engineering and personnel psychology. Prerequisite: 320 or 322 or consent of instructor.
- 490-1 to 16. INDEPENDENT PROJECTS. Independent readings and projects

in psychology. Prerequisite: consent of instructor and chairman of department.

Courses on the 500 level are for graduate students only.

- 509-4. INSTRUMENTATION IN BEHAVIORAL SCIENCE. Study of methods of research instrumentation. Techniques of stimulation and of physiological and psychological response recording. Lecture and laboratory. Prerequisite: consent of instructor.
- 512-4. SENSORY PROCESSES. A study of the structure and function of the sense organs. Emphasis will be placed on the psychological data which describe the function of these organs. Prerequisite: consent of instructor.
- 514-4. PHYSIOLOGICAL PSYCHOLOGY. Study of neural and endocrine mechanisms underlying behavioral processes. Lecture and laboratory. Prerequisite: consent of instructor.
- 520-4, 521-4, 522-4. RESEARCH DESIGN AND INFERENCE I, II, III. 520 an introduction to psychological measurement: types of scales, introduction to scaling and psychophysical methods, reliability, sources of error, and methods of estimation. 521 a continuation of 520 with emphasis on validity and multiple measures and inference. 522 an application of standard methods to the design, analysis and interpretation of psychological experiments. To be taken in sequence.
- 523-2. RESEARCH SEMINAR. Major methods of obtaining data, use of computational and laboratory equipment, planning of research projects. Every student is expected to submit a detailed research prospectus for group criticism. Prerequisite: 522.
- 524-4. ADVANCED RESEARCH METHODOLOGY. Theory and application of complex experimental designs and multivariate procedures. Prerequisite: 522.
- 525-4. MENTAL TEST THEORY. Derivation of the basic psychometric equations, effects of test length and group heterogeneity on test parameters, criteria of parallel tests, weighing and differential prediction. Prerequisite: 524.
- 530-4. PERSONALITY THEORY AND DYNAMICS. Intensive treatment and critical analysis of several representative approaches to personality. Consideration also of important personality concepts common to most theoretical approaches. Prerequisite: consent of instructor.
- 531-4. ADVANCED PSYCHOPATHOLOGY. Consideration of special topics, including psychological theories of the nature and etiology of human pathology, assessment of pathology, and institutional care and treatment. Includes extensive field experience in a mental hospital setting. Prerequisite: 530, 541, 542, and consent of instructor.
- 532-2. EXPERIMENTAL APPROACHES TO PERSONALITY. Presentation of conceptual formulations and research data from representative experimental approaches to personality. Critical evaluation of methodological approaches to personality study. Prerequisite: 530 or consent of instructor.
- 536-4. FUNDAMENTALS OF COUNSELING. Introduction to the common assumptions, dimensions, and communicative skills underlying psychological counseling. Observation utilized to supplement didactic discussion. Lecture and demonstration. Prerequisite: consent of instructor.
- 537-4. COUNSELING AND PSYCHOTHERAPY. Systematic presentation of



- major approaches to counseling and psychotherapy. Consideration of salient aspects of the therapeutic situation and of the process and nature of changes during psychotherapy. Critical evaluation of both theory and practice. Consideration of research findings and problems. Prerequisite: 530 and consent of instructor.
- 538-2. GROUP PSYCHOTHERAPY. Presentation of major approaches to group psychotherapy. Prerequisite: 537 and consent of instructor.
- 541-2 to 4, 542-2. PSYCHODIAGNOSTICS I AND II. Introduction to clinical psychology with attention to the function and clinical use of individual intelligence tests. Theories of intelligence and related research. 541: age scales with emphasis on infant and child testing. 542: point scales and tests of deterioration with emphasis on child and adult testing. Lecture and practicum. Prerequisite: 520 and consent of instructor.
- 543-4, 544-2. PSYCHODIAGNOSTICS III AND IV. Basic theory and assumptions underlying projective methods. Use of projective techniques as measures of personality and as tools for clinical diagnosis and research. 543: thematic projective techniques. 544: Rorschach and Bender-Gestalt. Lecture and practicum. Prerequisite: 542 or consent of instructor.
- 545-2. PSYCHODIAGNOSTICS V. Nature and theory of questionnaires for personality assessment and psychodiagnosis. Consideration of their use in clinical research. Lecture and practicum. Prerequisite: consent of instructor.
- 546-3 to 4. PSYCHODIAGNOSTICS FOR SPECIAL POPULATIONS. (Same as Special Education 573.) Tests used in diagnostics and measurement of special populations such as retarded, blind, deaf, brain injured, and the like. Lecture and laboratory. Prerequisite: consent of instructor.
- 547-2. ASSESSMENT PROCEDURES IN COUNSELING. Use and integration of psychological test data, vocational, socio-economic, and educational information in assessment and counseling. Prerequisite: 421 or consent of instructor.
- 552-4. EXPERIMENTAL CHILD PSYCHOLOGY. Consideration of relationship of methodology to child theory, typical methodological procedures and problems specific to children, and representative research topics. Prerequisite: 451 or consent of instructor.
- 554-2. DEVELOPMENTAL THEORY. Systematic study and critical evaluation of representative theories of child behavior. Prerequisite: 451 or consent of instructor.
- 556-2. PSYCHOLOGICAL TREATMENT OF THE CHILD. Investigation of personality and behavior problems. Etiological factors and methods of treatment. Prerequisite: 451 or consent of instructor.
- 561-4. SOCIAL INFLUENCE PROCESSES. Critical review of theoretical and empirical developments in the study of influence processes, attitude change, etc. Social and intrapersonal determinants are examined. Prerequisite: 461 or consent of instructor.
- 562-4. OBSERVATIONAL TECHNIQUES AND CONTENT ANALYSIS. Examination and evaluation of research methods and measurement techniques utilized in social psychology. Prerequisite: 461 or consent of instructor.
- 564-4. COMMUNICATION AND GROUP BEHAVIOR. Emphasis in this course is on language behavior and the psychological study of the com-



- munication process. Examines theories, methods and research in these areas. Prerequisite: 461 or consent of instructor.
- 571-4, 572-4. INDUSTRIAL PSYCHOLOGY I, II. 571 covers motivation and morale, job satisfaction, leadership, communication, industrial relations, market research. 572 covers job analysis, employee evaluation, selection and training, human engineering, accidents. Prerequisite: 520 or equivalent.
- 573-2. SELECTION AND PLACEMENT. Proficiency measurement, selection and validation of test batteries, use of the interview and personal history data in selection, quota, and classification problems, administration of a selection program. Prerequisite: 524 or consent of instructor.
- 574-2. PSYCHOLOGY OF INDUSTRIAL RELATIONS. Analysis of psychological factors involved in industrial organization, employer-employee relations, and union-management relations. Prerequisite: 571 or consent of instructor.
- 576-2 to 4. HUMAN ENGINEERING. Analysis of man-machine systems, human factors in the design of display and control systems, limitations and capabilities of the human operator. Prerequisite: consent of instructor.
- 590-1 to 16. READINGS IN PSYCHOLOGY. Readings in selected topics in psychology under staff supervision. Prerequisite: consent of department.
- 591-1 to 36. RESEARCH IN PSYCHOLOGY. Research under staff supervision in selected areas of psychology. Prerequisite: consent of the department.
- 593-1 to 18. PRACTICUM IN PSYCHOLOGY. Practicum experience in a professional setting is offered under staff supervision in the following areas: E. Clinical Psychology, F. Counseling Psychology, H. Industrial Psychology, J. Child Psychology, K. School-Community Mental Health Psychology, L. Teaching of Psychology, M. Rehabilitation, N. Rehabilitation Counseling.
- 595-1 to 40. ADVANCED SEMINAR. Seminars for advanced students in the following areas of psychology: A. Clinical Psychology, B. Counseling Psychology, C. School-Community Mental Health Psychology, D. Industrial Psychology, E. Personality, F. Child Psychology, G. Social Psychology, H. General-Experimental Psychology, J. Teaching of Psychology, K. Rehabilitation Counseling, L. Measurement in Psychology.
- 598-2. ETHICAL AND PROFESSIONAL PROBLEMS IN PSYCHOLOGY. Problems in the professional practice of psychology and in teaching and research. Professional ethics, relations to other professions and the public, organization and structure of the field, current trends. Prerequisite: major in psychology or consent of instructor.
- 599-1 to 9. THESIS.
- 600-1 to 45. DISSERTATION.

## RELIGION

The educated citizen will have some knowledge of the cultural traditions contributing to our Western civilization. A great part of our

heritage is directly related to the treasure of knowledge and practices of our religious traditions. Through the religious foundations, credit courses in religion provide an opportunity for every student to enjoy a fuller educational experience.

Students may present a minor in religion to satisfy the minor requirement for a degree in the College of Liberal Arts and Sciences. This minor consists of thirty quarter-hours: fifteen hours earned in courses selected from the following list (Group A) offered by the academic departments of the college; and (Group B) fifteen hours earned in courses offered by the various religious foundations. In the second group of fifteen hours, courses must be taken in at least two foundations.

Group A courses include English 209, 362, 438, 473; History 416, 481; Philosophy 301, 302, 340, 382; Psychology 305, 307; Sociology 102, 333, 340, 351, 450. Descriptions for these courses may be found under the various departments.

Description of courses offered by the religious foundations and the list of required courses for the minor in Religion may be secured from the foundations or from the College of Liberal Arts and Sciences.

## RUSSIAN AND CENTRAL EUROPEAN STUDIES

A minor in area studies with specialization in Russian studies or in Central European studies is offered especially for those students who also work for a minor or a major in foreign languages: Russian for Russian studies; German, Russian, or French for Central European studies.

For both minor programs a minimum of 24 hours must be earned in the chosen field, at least 12 of them in principal courses, the rest by electives. Not more than three courses offered by one department will be counted toward fulfillment of the requirements. In exceptional cases an elective course may be substituted after consultation with the adviser for the program.

Principal courses for the *Russian studies* consist of Economics 460, Geography 402, Government 453, History 372, 373. Electives are Anthropology 309, Geography 315, 444, Economics 418, 481, Government 455, History 312, 450.

Principal courses for the *Central European studies* consist of Economics 418, Geography 315, Government 391, 455, History 450, 312. The electives are Anthropology 308, 400, Geography 402, 444, Government 370, 453, Economics 460, 481, History 373, 372. One reading course or one in-

dependent-studies course can be used in fulfillment of the requirements. Each student's program, however, should be approved by the student adviser.

Dr. Joseph Velikonja, Department of Geography, is administrator and student adviser for the program.

## SOCIOLOGY

Professor Paul J. Campisi, Ph.D. (Chicago), Chairman	1959
Professor Joseph K. Johnson, Ph.D. (Washington)	1947
Professor Herman R. Lantz, Ph.D. (Ohio State)	1951
Professor Peter Andreas Munch, Ph.D. (Oslo)	1957
Professor Charles R. Snyder, Ph.D. (Yale)	1960
Professor William J. Tudor, Ph.D. (Iowa State)	1948
Associate Professor Melvin S. Brooks, Ph.D. (Wisconsin)	1956
Associate Professor A. J. Shafter, Ph.D. (Iowa)	1957
Associate Professor James D. Turner, Ph.D. (Indiana University)	1958
Assistant Professor L. Keith Miller, Ph.D. (Illinois)	1961
Assistant Professor Louis Petroff, Ph.D. (Southern California)	1940
Assistant Professor Douglas Lloyd Rennie, Ph.D. (Yale)	1956
Assistant Professor Eloise C. Snyder, Ph.D. (Pennsylvania State)	1956
<hr/>	
Visiting Professor Stuart A. Queen, Ph.D. (Chicago)	1960-61
Visiting Professor Raymond E. Wakeley, Ph.D. (Cornell)	1961-62
Lecturer Herschel Aeltine, M.A. (Chicago)	1961
Lecturer Thomas R. Gwinup, M.A. (Indiana State College)	1960-61
Lecturer Margaret Mullikin, M.A. (Wichita)	1960-62

## APPLIED SOCIOLOGY

Research Professor Richard W. Poston, B.A. (Montana)	1953
Assistant Professor Richard C. Franklin, D.Ed. (Columbia)	1956
Assistant Professor George M. Stabler, Ph.D. (Michigan State)	1960
Assistant Professor Ronald Vander Wiel, M.S.W. (Washington University)	1957
Instructor Robert C. Child, M.A. (Southern Illinois)	1956

The Department of Sociology offers major and minor programs for students in both the College of Liberal Arts and Sciences and the College of Education.

### SUGGESTED CURRICULA IN SOCIOLOGY

The following curriculum leads to the Bachelor of Arts degree with a major in sociology in the College of Liberal Arts and Sciences.

<i>General Degree Requirements</i> (See page 10.) .....	71
<i>College of Liberal Arts and Sciences Requirements</i> (See page 11.) ....	37
<i>Requirements in the Department of Sociology</i> .....	42
Sociology 101, 321, 400, 407, 412, 451 .....	23
Sociology electives in courses whose second digit is not eight, to complete 42 hours .....	19
<i>Related Requirements for the Major</i> .....	12
A minimum of 4 hours in each of the following areas: psychol- ogy, social anthropology, and statistics .....	
<i>Duplication of Requirements</i> .....	-9
The major requirements in psychology and sociology also satisfy 4 hours of College of Liberal Arts and Sciences Requirements and 5 hours of General Degree Requirements. These hours are deducted here to avoid counting them twice in the total.	
<i>Electives</i> .....	39
<i>Total</i> .....	192

The following curriculum in the College of Liberal Arts and Sciences leads to the Bachelor of Arts degree with a major in sociology and specialization in social work.

<i>General Degree Requirements</i> (See page 10.) .....	71
<i>College of Liberal Arts and Sciences Requirements</i> (See page 11.) ....	37
<i>Requirements in the Department of Sociology</i> .....	42
Sociology 101, 321, 380, 383, 400, 412, 481, 482 .....	30
Sociology electives to complete 42 hours .....	12
<i>Related Requirements for the Major</i> .....	24
A minimum of 4 hours in each of these areas: econom- ics, psychology, social anthropology, and statistics. ....	16
A minimum of 8 hours in the area of American national, state, and local government. ....	8
<i>Duplication of Requirements</i> .....	-18
The major requirements in economics, government, psychology, and sociology also satisfy 14 hours of General Degree Require- ments. These hours are deducted here so that they will not be counted twice in the total.	



<i>Electives</i> .....	36
<i>Total</i> .....	<u>192</u>

### COURSE DESCRIPTIONS

Courses in sociology are listed according to numerical order. However, the second digit in the course number indicates its field as follows:

- 00-09 General Sociology
- 10-19 Methodology and Research Techniques
- 20-29 Social Psychology
- 30-39 Social Organization and Structure
- 40-49 Family
- 50-59 Sociology of Knowledge
- 60-69 Personal Disorganization
- 70-79 Special Fields
- 80-89 Applied Fields

- 101-5. **INTRODUCTORY SOCIOLOGY.** Scientific study of human society and the various means by which individuals and groups adjust to each other and to their physical and social environment.
- 102-5. **SOCIAL PROBLEMS.** An analysis of selected contemporary social problems in their social and cultural setting such as crimes, suicide, mental illness, the vices, family disorganization, with emphasis upon their extent and significance.
- 184-4. **DATING, COURTSHIP, AND MARRIAGE.** The problem of dating, courtship, and marriage in modern American society. Recommended for the single freshman student without social science background. Can not be used to fulfill general education requirements.
- 241-4. **MARRIAGE AND PARENTHOOD.** The social psychology of dating, courtship, and family relations; evaluation of research findings; problems of applying scientific principles to changing overt behavior. Prerequisite: 101.
- 305-4. **SOCIAL INSTITUTIONS.** Concepts of institutions; origins, development, and variability of institutions; institutional lag and change. Prerequisite: 101.
- 306-4. **SOCIAL CONTROL.** The means and principles of social controls; social institutions as factors in control; techniques of directing social action. Prerequisite: 101.
- 320-4. **RACE AND MINORITY GROUP RELATIONS.** Racial and cultural contacts and conflicts, causes of prejudice; status and participation of minority groups; national and international aspects of minority problems. Prerequisite: 101.
- 321-4. **SOCIALIZATION OF THE INDIVIDUAL.** The process of socialization in infancy, childhood, and adolescence; development of habits, attitudes, sentiments; emergence of the self; integration of the individual and society. Prerequisite: 101.
- 322-3. **PROPAGANDA AND PUBLIC OPINION.** Techniques and charac-

- teristics of propaganda; methods of measuring public opinion. Prerequisite: 101.
- 332-4. **SOCIAL ORGANIZATION.** An examination of the determinants of social organization; intensive analysis of institutional configurations, social stratification, and systems of social control; review of significant writing. Prerequisite: 101.
- 333-4. **COMMUNITY ORGANIZATION.** Factors involved in community organization; types, aims, and objectives; community diagnosis; individual case study of specific community. Prerequisite: 101.
- 335-4. **URBAN SOCIOLOGY.** The rise, development, structure, culture, planning and problems in early and modern cities. Prerequisite: 101.
- 336-4. **SOCIOLOGY OF RURAL LIFE.** The structure, functioning, and change of rural social life; study of informal groups, neighborhoods, and communities; social class and value orientation. Prerequisite: 101.
- 338-4. **INDUSTRIAL SOCIOLOGY.** Social organization and processes within the formal and informal structure of the industrial unit; research and experimental materials concerning social determinants of morale, status and role of the worker. Prerequisite: 101.
- 340-4. **THE FAMILY.** The family in historic and contemporary society; evolution of the modern family; changes in family functions, structures, and roles. Prerequisite: 101.
- 351-4. **SOCIOLOGY OF RELIGION.** Function of religious institutions in society and their relationship to other major social institutions; role in social control and group solidarity. Prerequisite: 101.
- 371-4. **POPULATION AND MIGRATION.** Quality and quantity of population, problems of growth, composition, distribution, differential fertility, international and internal migration, and control of numbers and quality. Prerequisite: 101 or equivalent in economics, geography or government.
- 372-4. **CRIMINOLOGY.** The nature of crime; criminal statistics; causal factors; theories and procedures in prevention and treatment. Prerequisite: 101.
- 373-4. **JUVENILE DELINQUENCY.** Nature of juvenile delinquency; factors contributing to delinquent behavior; treatment and prevention. Prerequisite: 101.
- 374-3. **SOCIOLOGY OF EDUCATION.** Methods, principles, and data of sociology applied to the school situation; relation of the school to other institutions and groups; may be counted either as sociology or education. Prerequisite: 101.
- 380-4. **INTRODUCTION TO SOCIAL WORK.** The historical development, philosophy, and theory forming the basis for the professional practice of social work; processes developed and the specialities within each of them; personal and educational requirements for the career opportunities available. Prerequisite: 101.
- 383-4. **INTRODUCTION TO INTERVIEWING.** Theory and practice of interviewing as a means of gaining information, and of understanding and imparting the same. Focus is on the interview as a tool in social work, but principles are generally applicable. Prerequisite: 101 or Psychology 201.

- 389-3. **TECHNIQUES OF GROUP LEADERSHIP.** Application of leadership principles; kinds of leadership; effective techniques of group control; factors in experimental group situations. Prerequisite: 101.
- 400-2. **CURRENT SOCIOLOGY.** Students read, report on, and evaluate content of leading sociological journals. Prerequisite: 8 hours of sociology.
- 406-3. **SOCIAL CHANGE.** Processes of social change in the modern world; culture lag and conflict of norms; individual and social problems arising from conflicting systems of social values and cultural norms. Prerequisite: 8 hours of sociology.
- 407-4. **INTEGRATED SOCIOLOGY.** Designed for senior students with a sociology major. Integration of sociological concepts and principles: society and culture, the human group, social norms and patterns, status and role, organization, structure, and function, social change. Prerequisite: 15 hours of sociology.
- 412-4. **SOCIOLOGICAL RESEARCH.** Introduction to methods of sociological research. Relations between theory and research design. Application of scientific methods to social data. Prerequisite: 12 hours of sociology or consent of instructor.
- 415-3. **LOGIC OF THE SOCIAL SCIENCES.** Logical and epistemological examination of social studies as types of knowledge. Basic problems in philosophy of science generally, with major emphasis upon social science: relationship of theory to fact, nature of induction, nature of causal law, testability, and influence of value-judgments. Prerequisite: 15 hours of sociology or consent of instructor. (Same as Philosophy 415.)
- 424-4. **COLLECTIVE BEHAVIOR.** The behavior of people in large groups; collective interstimulation and emotions; crowds, audiences, and publics; mass stimuli and mass response. Prerequisite: 321 or 322, or consent of instructor.
- 426-4. **SOCIAL FACTORS IN BEHAVIOR AND PERSONALITY.** How group situations and values affect behavior and shape personality; development of concepts, role-concepts, attitudes, values; theories of motivation; self-concepts; conflicting social values in relation to individual motivation. Prerequisite: 321 or Psychology 305, or consent of instructor.
- 427-4. **PERSONALITY AND SOCIAL ADJUSTMENT.** Basic mechanisms of adjustive behavior; concepts and criteria of personal integration and social adjustment; varieties of adjustive and non-adjustive behavior; theories of personal organization and disorganization; selected problems. Prerequisite: 321 or Psychology 305, or consent of instructor.
- 435-4. **SOCIAL STRATIFICATION.** A comparative study of social class systems, with emphasis on the American systems. Relationships of class position to behavior in areas such as family, religion, politics. Prerequisite: 101.
- 445-3. **SOCIOLOGY OF INFANCY AND CHILDHOOD.** Influences of primary groups; origins of self- and role-concepts; relationships between early and later development; cross-cultural and inter-class comparisons. Prerequisite: 340 and 426.
- 449-4. **SOCIOLOGY OF AGING.** The social implications of an aging population; social adjustments to the aging process; personal adjustments to the roles and statuses of later maturity; a consideration of retirement and

- public assistance programs for older people. Prerequisite: 101 or consent.
- 450-4. SOCIAL THOUGHT I: BEFORE 1800. Ancient background of Western social thought; development of modern social thought. Prerequisite: general background in history.
- 451-4. SOCIAL THOUGHT II: THE SOCIOLOGICAL MOVEMENT. Rise and development of scientific social thought in Western society. Prerequisite: background in nineteenth-century history or literature.
- 452-4. SOCIAL THOUGHT III: TWENTIETH CENTURY. A survey of important trends in contemporary social thought.
- 453-4. SOCIAL MOVEMENTS. A sociological study of modern social movements; social and cultural backgrounds, forms of expression and organization; social structure of social movements, their role and function in modern society. Prerequisite: 8 hours of sociology.
- 471-4. PRINCIPLES OF DEMOGRAPHY. Techniques in analyzing and evaluating data on human population; composition, birth and death rates, life tables, migration data, estimates of future trend. Practical uses of demographic techniques. Prerequisite: 371, 412.
- 472-4. TREATMENT AND PREVENTION OF CRIME. Principles of penology; history of punishment and prisons; criminal law, police function, criminal courts; the prison community; the juvenile court and related movements. Prerequisite: 372.
- 480-2. HISTORY AND LEGAL ASPECTS OF REHABILITATION. A survey of historical and legal developments in rehabilitation agencies, with particular emphasis on current theories and trends. Open only to students in the Rehabilitation Institute.
- 481-4. PROCESSES IN SOCIAL WORK. Theory, rationale, and practice of casework, group work, social welfare organization, and the roles of supervision, administration, and research in relation to each. Case material study and discussion with field observation and practice. Prerequisite: 380 or consent of instructor.
- 482-3. SOCIAL WORK IN SELECTED AGENCIES. Study of representative literature on casework in family, psychiatric, medical, school, military, child welfare, and correctional settings, and others. Case material study and discussion with field observation and practice. Prerequisite: 481.
- 484-3. SURVEY COURSE IN MARRIAGE COUNSELING. Survey and analysis of the field of marriage counseling; assessment of current practices and techniques in terms of contemporary sociological theory. Prerequisites: 241 and consent of instructor.
- 486-1 to 5. INDEPENDENT STUDY IN COMMUNITY DEVELOPMENT. Supervised individual study of the literature in community development. Prerequisite: consent of Community Development Institute director.
- 487-4. COMMUNITY DEVELOPMENT I. The concepts of community development and analysis of the social-psychological forces and processes involved in citizen study, planning and action directed toward the fuller development of communities in a democratic society. Laboratory period for field trips. Prerequisite: 4 hours of sociology or equivalent.
- 488-3. COMMUNITY DEVELOPMENT II. Principles and procedures applicable to solving social problems in the context of a community development program. Laboratory period for field trips. Prerequisite: 487.



Courses on the 500 level are for graduate students only.

- 501-4. HISTORY OF EUROPEAN SOCIOLOGY. The development of sociology as a science of society, from synthetic philosophy (St. Simon, Comte, H. Spencer) to analytic sociology (Durkheim, Tonnies, M. Weber, and others). Prerequisite: 451 or consent of instructor.
- 502-4. SEMINAR IN EUROPEAN SOCIOLOGICAL THEORY: 1800-1910. The theoretical systems of selected European sociologists studied from the original writings. Prerequisite: 15 hours of sociology or consent of instructor.
- 503-4. SEMINAR IN EUROPEAN SOCIOLOGICAL THEORY: 1910 TO PRESENT. A continuation of 502. Prerequisite: 15 hours of sociology or consent of instructor.
- 504-4. SEMINAR IN AMERICAN SOCIOLOGY I: FOUNDATIONS. A detailed study of the writings of outstanding American sociologists. Prerequisite: 15 hours of sociology or consent of instructor.
- 505-4. SEMINAR IN AMERICAN SOCIOLOGY II: THE SECOND GENERATION. A continuation of 504. Prerequisite: 15 hours of sociology or consent of instructor.
- 506-4. SEMINAR IN CONTEMPORARY SOCIOLOGICAL THEORY. An analysis of recent sociological theories, including a survey of current approaches to the construction and application of systematic theoretical models. Special attention will be given to "structural-functional" analysis and to the theoretical adequacy of selected theory-oriented empirical research areas. Prerequisite: 15 hours of sociology or consent of instructor.
- 511-4. METHODOLOGICAL FOUNDATIONS OF THE SOCIAL SCIENCES. Social science methodology; the nature of social facts and phenomena, the formation of concepts, the application of logic in the social sciences. Prerequisites: 407 and Philosophy 420 or consent of instructor.
- 513-3. RESEARCH TECHNIQUES I. Scientific research methods and techniques applied to the study of social phenomena. Discussion of the scope and purpose of social research; evaluating and interpreting social data. Prerequisite: 412 or consent of instructor.
- 514-3. RESEARCH TECHNIQUES II. A continuation of 513.
- 516-4. SEMINAR IN METHODOLOGY. Supervised research, with practical application of research principles. Prerequisites: 511, 513, 514.
- 521-4. SEMINAR IN SOCIAL PSYCHOLOGY. Survey of theoretical systems; progress toward integrated body of behavioral theory. Prerequisite: 426.
- 533-4. ECOLOGY OF HUMAN COMMUNITIES. Spatial and temporal organization of population and institutions with special reference to the organization of rural and metropolitan communities. Emphasis on basic research methods and current sources of data in respect to type, structure, and growth of the communities. Prerequisite: 15 hours of sociology or consent of instructor.
- 534-4. SEMINAR IN INTER-GROUP RELATIONS. Cross-cultural study of inter-ethnic and inter-faith relations, with special attention to conflict, accommodation, acculturation and assimilation. Prerequisite: 15 hours of sociology or consent of instructor.
- 537-4. SOCIOLOGY OF LAW. An analysis of the role of law in society. Spe-

- cial emphases will be given to the relationships between law and social organization, social control, social value systems and social change; consideration will be given to research in the field. Prerequisite: 15 hours of sociology or consent of instructor.
- 538-4. SEMINAR IN INDUSTRIAL SOCIOLOGY. Selected aspects of Industrial Organization and related problems including such topics as: functional and dysfunctional deviations from ideal bureaucracy, promotion policies, labor relations, job aptitudes, job satisfactions, and public relations. Prerequisite: 15 hours of sociology or consent of instructor.
- 539-4. SOCIOLOGY OF BUREAUCRACY. Analysis of the structural characteristics and conditions for the emergence of bureaucratic and quasi-bureaucratic forms of organization. Attention will be given to such problems as the bases of authority, stabilizing mechanisms, systems of formal and informal relations, rationality and paradox in bureaucratic organization. The impact of bureaucratic organization upon character structure and its role in the formation of classes and elites will also be considered. Prerequisite: 15 hours of sociology or consent of instructor.
- 542-4. SEMINAR ON THE FAMILY. The family as a field of sociological study. Assessment of significant historical and contemporary writing. Prerequisite: 15 hours of sociology including 340, or consent of instructor.
- 543-4. SEMINAR IN FAMILY VARIABILITY. An analysis of the structure, organization, and function of the family in several contemporary and primitive societies. Prerequisite: 15 hours of sociology including 340, or consent of instructor.
- 544-4. SEMINAR IN FAMILY RESEARCH. A detailed analysis of significant research in the field of the family. Special attention to be given to methods employed as they relate to the specific problems investigated. Prerequisite: 15 hours of sociology including 340, or consent of instructor.
- 545-4. THE FAMILY AND SOCIAL CHANGE. The significant social factors responsible for changes in the family from ancient times to present. Analysis of representative writings from several periods. Prerequisite: 15 hours of sociology including 340, or consent of instructor.
- 553-4. SEMINAR ON SOCIAL MOVEMENTS. The student will be expected to make a sociological study of a particular social movement or a comparative study of a particular aspect of the sociology of social movements. Prerequisite: 453 or consent of instructor.
- 561-4. ALCOHOL AND SOCIETY. Analysis of the determinants of ranges of variation in drinking patterns, normal or pathological, viewed cross-culturally and in the context of complex society. Special consideration will be given to the following: the ecology of drinking and alcoholism, drinking patterns and social structure, drinking centered subcultures and institutions, as well as to the genesis and patterning of deviant drinking (alcoholism), responsive movements and systems of control.
- 562-4. DEVIANCE AND DISORGANIZATION. Concepts and approaches in the sociological study of deviant behavior and social disorganization. The strategic significance of the investigation of phenomena such as suicide, crime, and alcoholism for theories of deviance and disorganization. Prerequisite: 15 hours of sociology or consent of instructor.

- 563-4. RESEARCH PROBLEMS IN DEVIANCE AND DISORGANIZATION. For advanced students who are concerned to develop viable research projects in the areas of social disorganization and deviant behavior. Students will be expected to formulate and present original research prospectuses for critical evaluation. Consideration will be given to questions of theoretical relevance, research design, and appropriate techniques. Prerequisite: 15 hours of sociology or consent of instructor.
- 572-3. SEMINAR IN CRIMINOLOGY. Critical study of important research through book reviews and theoretical analyses. Prerequisite: 372 or consent of instructor.
- 573-3. SEMINAR ON THE SOCIOLOGY OF WAR. Critical analysis of the hypothesis that modern war is part and product of an inherently understandable process or integration of processes. This approach will be contrasted with the moralistic approach.
- 580-3. SUPERVISED EXPERIENCE IN REHABILITATION COUNSELING. Supervised counseling experience in social work or welfare agencies. Open only to students in the Rehabilitation Institute. Prerequisites: 480, 481, 482.
- 581-3 to 9. FIELD WORK IN REHABILITATION. Supervised field work in social work or welfare agencies. Block or concurrent placement. Open only to students in the Rehabilitation Institute.
- 585-1 to 3. SEMINAR IN REHABILITATION COUNSELING. A continuing survey of recent developments and trends in the organizational structure, functions, and team interaction of specialists devoted to rehabilitation of the handicapped. Selected problems of the role of the rehabilitation counselor in multiple settings. Prerequisite: consent of instructor. Maximum credit of 6 hours.
- 586-3. THE CHANGE AGENT IN PLANNED CHANGE. (Same as Secondary Education 586.) An intensive diagnosis of the dynamics involved in planned change in a social system—using actual situations for study—and the consultant's relationship to this process. Prerequisite: Sociology 333 or consent of instructor.
- 591-2 to 6. INDIVIDUAL RESEARCH. Supervised research projects. Open only to graduate students with a major in sociology. Prerequisite: consent of instructor and chairman of department. Credit according to achievement.
- 596-2 to 6. READINGS IN SOCIOLOGY. Supervised readings in selected subjects. Prerequisite: consent of instructor and chairman of department.
- 599-2 to 9. THESIS. Before a thesis can be submitted, the candidate must have passed a special examination in French, German, or statistics. Before the thesis can be submitted in final form, the candidate must have passed a comprehensive examination.

## ZOOLOGY

Professor Harvey I. Fisher, Ph.D. (California), Chairman	1955
Professor Charles L. Foote, Ph.D. (Iowa)	1947
Professor Willard M. Gersbacher, Ph.D. (Illinois)	1929-30; 1936

Professor W. D. Klimstra, Ph.D. (Iowa State)	1949
Professor William M. Lewis, Ph.D. (Iowa State)	1949
Associate Professor Richard E. Blackwelder, Ph.D. (Stanford)	1958
Associate Professor John C. Downey, Ph.D. (California)	1956
Associate Professor Edwin C. Galbreath, Ph.D. (Kansas)	1957
Associate Professor Hilda A. Stein, M.S. (Illinois)	1925
Assistant Professor John W. Crenshaw, Jr., Ph.D. (Florida)	1960
Assistant Professor George Garoian, Ph.D. (Illinois)	1956
Assistant Professor Howard J. Stains, Ph.D. (Kansas)	1955
Instructor Vernon W. Cole, M.S. (Michigan State)	1956
—————	
Visiting Professor Richard R. Kudo, D.Ag.Sc. (Tokyo)	1958-62
Lecturer Everett Dale Wilson, M.S. (Indiana State)	1960-61

### SUGGESTED CURRICULA IN ZOOLOGY

The following curriculum leads to the Bachelor of Arts degree with a major in zoology in the College of Liberal Arts and Sciences.

<i>General Degree Requirements</i> (See page 10.) .....	71
<i>College of Liberal Arts and Sciences Requirements</i> (See page 11.) ...	37
<i>Requirements in the Department of Zoology</i> .....	48
Zoology 100, 102, 103, 202, 300, 382A, 382B, 382C, 401	32
Zoology 303, 306, 335, 408, 461, 465 (any one) Teachers in in-service training may substitute 402 or 403.	4
Zoology electives to complete 48 hours	12
<i>Related Requirements for the Major</i> .....	48
Six quarters of a language (preferably French, German, or Russian) are recommended.	18
Three quarters are required in each of two of the fol- lowing areas: botany, chemistry, physics.	30
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Courses listed above also satisfy 26 hours of general-degree and college requirements. These hours are deducted here to avoid counting them twice in the total.	
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<i>Total</i> .....	<u>192</u>

Recommendations for majors in zoology include organic chemistry; three quarters of physics; three quarters of botany; two quarters of mathematics; one quarter of physiology; and one quarter of microbiology.

A minimum of twenty-four hours of zoology is required for a minor,



including Zoology 100, 102, 103 and at least nine additional hours. At least one course above the 100 level must have a laboratory.

Zoology majors or minors who expect to enter such professions as teaching, fish and wildlife management, dentistry, medicine, veterinary medicine, or allied fields should consult with the department concerning their programs.

### COURSE DESCRIPTIONS

- 100-5. PRINCIPLES OF ANIMAL BIOLOGY. Introduction to the major principles of biology, including classification, organization of matter into cells, tissues, organs, and organ systems, heredity, ecology, distribution, organic evolution, economic biology, and conservation. Laboratory work designed to illustrate the above principles. Course satisfies general education requirement in biological sciences.
- 102-5. GENERAL INVERTEBRATE ZOOLOGY. Studies of representatives of the various kinds of invertebrate animals. Relationships, structure, and natural history are emphasized. Prerequisite: 100.
- 103-5. GENERAL VERTEBRATE ZOOLOGY. Studies of representatives of the various kinds of vertebrate animals, with special emphasis on the amphibian type. Evolutionary development, structure, and natural history are emphasized. Prerequisite: 100.
- 202-5. COMPARATIVE ANATOMY OF THE VERTEBRATES. Comparative studies of the organ systems of vertebrate animals, with emphasis on the phylogeny and evolution of these organs. Prerequisites: 102, 103.
- 300-5. VERTEBRATE EMBRYOLOGY. Development of the individual with the frog, chick, and pig as types. Prerequisite: 202.
- 303-4. GENERAL ORNITHOLOGY. Classification and recognition of birds and the study of their songs, nests, migratory habits, and other behavior. Prerequisite: 100 or consent of instructor.
- 306-4. ENTOMOLOGY. Principles of the structure, classification, and life histories of insects. Prerequisite: 102.
- 310-5. ANIMAL ECOLOGY. Habitats, relations, formations, and associations of animals. Cost of field trips may be \$10-\$25 per student. Prerequisites: 102, 103.
- 312-3. CONSERVATION OF BIOLOGICAL RESOURCES. A consideration of the preservation, restoration, and management of renewable resources. Prerequisite: one course in botany or zoology.
- 313-3. EVOLUTION. Principles and processes of the evolution of living things, including man. Prerequisite: one year of biology.
- 314-4. HEREDITY AND EUGENICS. Principles of heredity in relation to animals, including man. (Credit may not be used toward a major). Prerequisite: Zoology 100 or Botany 101.
- 316-4. INSECT PESTS AND THEIR CONTROL. Principal injurious insects and their allies; chemical and biological methods of control. (Credit may not be used toward a major in zoology.) Prerequisite: 100.
- 320-5. VERTEBRATE HISTOLOGY. Microscopic structure of organs and tissues with emphasis on the mammal. Prerequisite: 202.

- 321-5. HISTOLOGICAL TECHNIQUE IN ZOOLOGY. Methods of preparing material for microscopic study. Prerequisite: one year of biological sciences or consent of instructor.
- 322-2 to 5. PROBLEMS IN ZOOLOGY. Research on zoological problems. Prerequisite: 4.25 grade-point average, senior standing, and approval of the department. (Credit may not be used toward a minor in zoology.)
- 335-5. FIELD ZOOLOGY. Taxonomy, natural history, and distribution of local animals. Cost of field trips may be \$10-\$25 per student. Prerequisites: 102, 103.
- 350-4. ECONOMIC ZOOLOGY. Animals in relation to public welfare. (Credit may not be used toward a major or minor in zoology).
- 380-4. HISTORY OF BIOLOGY. Biological sciences from the early Greek philosophers to the present time. Prerequisite: one year of biological sciences.
- 382A, B, C-1/2. ZOOLOGY SEMINAR FOR SENIORS. Required each term of seniors majoring in zoology. Prerequisite: one year of biological sciences.
- 401-5. GENETICS. Principles of inheritance, including genetic mechanisms, mutation, and selection. Prerequisites: 12 hours of biological science and consent of instructor.
- 402-4. NATURAL HISTORY OF INVERTEBRATE ANIMALS. Observation, identification, and life histories. Designed for teachers. Not for students specializing in invertebrate zoology. Prerequisite: one year of zoology.
- 403-4. NATURAL HISTORY OF VERTEBRATE ANIMALS. Observation, identification, and life histories. Designed for teachers. Not for students specializing in vertebrate zoology. Prerequisite: one year of zoology.
- 404-4 to 8. ZOOLOGY FIELD STUDIES. An extended trip of four to eight weeks to study animals in various environments. Arrangements made spring term. Costs per individual will be approximately \$25 per week. (4 hours may be used for undergraduate credit and 4 hours for graduate credit.) Prerequisite: approval of department.
- 405-4. ADVANCED INVERTEBRATE ZOOLOGY. Anatomy and natural history of representative types, with an introduction to the taxonomy of the various phyla. Prerequisite: one year of zoology.
- 406-4. PROTOZOOLOGY. Taxonomy, cytology, reproduction, and physiology of unicellular animals. Laboratory methods of culturing and studying. Prerequisite: one year of zoology.
- 407-5. PARASITOLOGY. Principles, collection, identification, morphology, life histories, and control measures. Prerequisite: one year of zoology.
- 408-4. HERPETOLOGY. Taxonomic groups, identification, and natural history of amphibians and reptiles. Prerequisite: one year of zoology.
- 410-4. VERTEBRATE PALEONTOLOGY. History of vertebrate animals in terms of their morphological change, geological succession, and ecological relationships. Prerequisite: one year of zoology.
- 412-4. ADVANCED ENTOMOLOGY. Morphology, physiology, systematics, and distribution of insects. Prerequisite: one basic course in entomology.
- 441-4. ADVANCED VERTEBRATE EMBRYOLOGY. Principles of development and organization of vertebrate animals during embryogenesis, with emphasis on mammalian forms. Prerequisite: 300.
- 459-4. GAME BIRDS. Natural history and management. Prerequisite: one year of zoology.

- 461-4. MAMMALOLOGY. Taxonomic groups, identification, and natural history of mammals. Prerequisite: one year of zoology.
- 463-4. GAME MANAGEMENT. General survey of management principles and techniques. Prerequisites: one year of biological science and consent of instructor.
- 464-4. GAME MAMMALS. Natural history and management. Prerequisite: one year of zoology.
- 465-4. ICHTHYOLOGY. Taxonomic groups, identification, and natural history of fishes. Prerequisite: one year of zoology.
- 466-4. FISH MANAGEMENT. Sampling, dynamics, and manipulation of fish populations, age and growth of fishes, and habitat improvement. Prerequisites: one year of biological science and consent of instructor.
- 470-4. METHODS IN BIOLOGY. (Same as Botany 470.) Methods, objectives, types of courses. Laboratory and field trips to Southern Illinois high schools. Prerequisite: major in zoology or botany.

Courses on the 500 level are for graduate students only.

- 501-4. ANIMAL BIOLOGY FOR HIGH SCHOOL TEACHERS OF BIOLOGY. Designed to add new interpretations and evaluations to the teacher's previous training in animal biology. Principles illustrated by laboratory and field work will be re-emphasized in the context of modern concepts of biology. Two lectures and two laboratory periods or field trips per week. Prerequisite: one year of biology.
- 502-2. RECENT DEVELOPMENTS IN BIOLOGICAL SCIENCES. A series of lectures based upon recent research, designed to acquaint the teacher with advances and changes in concepts. Prerequisite: one year of biological science.
- 510-4. BIO-ECOLOGY. Composition and development of biotic communities, and the relationships of plants and animals to their environment. Cost of field trips may be \$10-\$25 per student. Prerequisite: consent of instructor.
- 511-4. LIMNOLOGY. Principles exemplified by the lakes and streams of Southern Illinois. Cost of field trips may be \$10-\$25 per student. Prerequisite: consent of instructor.
- 512-3. ANIMAL GEOGRAPHY. Principles of the distribution of the animals of the world. Prerequisite: consent of instructor.
- 513-3. ADVANCED ORNITHOLOGY. Taxonomic groups, structure, and behavior of birds. Prerequisite: consent of instructor.
- 525-5. CYTOLOGY. (Same as Botany 525.) Microscopic study of protoplasm, including mitosis and meiosis; discussions of cytological behavior. Prerequisite: consent of instructor.
- 540-3. FACTORS IN ANIMAL REPRODUCTION. Genetic and physiological factors in determination, differentiation, and modification of sex in animals. Prerequisite: consent of instructor.
- 560-3. ADVANCED GAME MANAGEMENT. Principles of maintenance and improvement of game resources. Prerequisite: consent of instructor.
- 566-3. FISH CULTURE. Propagation of game, bait, and ornamental species, hatchery construction and operation, diagnosis and treatment of disease, and nutrition. Prerequisite: consent of instructor.

- 579-4. ANIMAL BEHAVIOR. The biological basis for the actions and responses of animals. Prerequisite: consent of instructor.
- 580-4. ADVANCED SYSTEMATICS. The implications of systematics, including the theory and dynamics of classification, speciation, population genetics, and evolution. Prerequisite: consent of instructor.
- 581-3. READINGS IN CURRENT ZOOLOGICAL LITERATURE. Library techniques, sources of literature, and current literature. Prerequisite: graduate status in a biological science.
- 582A, B, C-1/2. GRADUATE ZOOLOGY SEMINAR. Required of all graduate students. Credit may not be used by majors in zoology.
- 583A, B, C-1. THE TEACHING OF ZOOLOGY IN COLLEGE. Methods and practices, objectives, comparative courses. Designed as part of the apprenticeship program for preparation of college teachers. Prerequisite: graduate status in a biological science.
- 584A, B, C-1. PROTOZOOLOGY SEMINAR. Advanced discussions of trends and problems in protozoology. Prerequisite: 406 or consent of instructor.
- 596-3 to 12. SPECIAL RESEARCH IN ZOOLOGY. Investigations in zoology other than those for theses. Only 3 hours may be credited. Prerequisite: consent of instructor.
- 599-2 to 9. THESIS. Only 9 hours may be credited toward the master's degree. Prerequisite: consent of instructor.
- 600-3 to 12. DISSERTATION. Thirty-six hours must be credited toward the doctoral degree. Prerequisite: consent of instructor.





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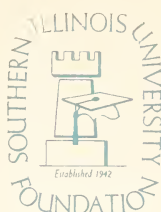
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