

1965

# 1965-1967 Southern Illinois University Bulletin (Undergraduate Catalog)

Southern Illinois University Carbondale

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\$1

*Undergraduate  
Catalog  
1965-1967*



**Southern Illinois  
University Bulletin**

## 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.*

*Undergraduate  
Catalog  
1965-1967*



# **Southern Illinois University Bulletin**

*SOUTHERN ILLINOIS UNIVERSITY BULLETIN*  
VOLUME 7, NUMBER 10 OCTOBER, 1965  
Second-class postage paid at Carbondale, Illinois. Published by Southern Illinois University, monthly except December.



## *This Issue.....*

of the *Southern Illinois University Bulletin* covers in detail questions concerning the undergraduate program and applies to both the Carbondale Campus and the Edwardsville Campus. It supersedes the special bulletins of the various educational units.

THE FOLLOWING issues of the *Southern Illinois University Bulletin* may be obtained free from Central Publications, Southern Illinois University, Carbondale, Illinois 62903.

Schedule of Classes. Please specify *quarter* (fall, winter, spring, or summer) and *campus* (Carbondale or Edwardsville).

Graduate Catalog.

Division of Technical and Adult Education.

Financial Assistance.

Undergraduate Catalog. The catalog will be available (by October, 1965) for examination in high school guidance offices and libraries throughout Illinois and in some other states. Copies will be furnished free to educational institutions upon request and to new students upon matriculation. The catalog may be purchased at the University Bookstore for \$1; mail orders should be sent to Central Publications and must include remittance payable to Southern Illinois University.

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# University Calendar



<i>FALL, 1965</i>	New Student Week	Sunday–Tuesday, September 19–21
	Quarter Begins	Wednesday, September 22
	Thanksgiving Vacation	Wednesday, 12 Noon–Monday, 8 A.M., November 24–29
	Quarter Ends	Saturday, December 18
<i>WINTER, 1966</i>	Quarter Begins	Monday, January 3
	Quarter Ends	Saturday, March 19
<i>SPRING, 1966</i>	Quarter Begins	Wednesday, March 23
	Memorial Day Holiday	Monday, May 30
	Quarter Ends	Wednesday, June 8
	Commencement (Edwardsville)	Thursday, June 9
	Commencement (Carbondale)	Friday, June 10
<i>SUMMER, 1966</i>	Quarter Begins	Monday, June 13
	Independence Day Holiday	Monday, July 4
	Quarter Ends	Saturday, August 27
	Commencement (Carbondale)	Saturday, August 27
	Commencement (Edwardsville)	Sunday, August 28
<i>FALL, 1966</i>	New Student Week	Sunday–Tuesday, September 18–20
	Quarter Begins	Wednesday, September 21
	Thanksgiving Vacation	Wednesday, 12 Noon–Monday, 8 A.M., November 23–28
	Quarter Ends	Saturday, December 17
<i>WINTER, 1967</i>	Quarter Begins	Monday, January 2
	Quarter Ends	Saturday, March 18
<i>SPRING, 1967</i>	Quarter Begins	Wednesday, March 22
	Memorial Day Holiday	Tuesday, May 30
	Quarter Ends	Wednesday, June 7
	Commencement (Carbondale)	Thursday, June 8
	Commencement (Edwardsville)	Friday, June 9

CLASSES BEGIN on the second day of the quarter, except that the evening classes (5:45 P.M. or later) on the Carbondale Campus begin on the first night of the quarter.



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Board of Trustees and  
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Officers of Instruction  
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BOARD OF TRUSTEES

*Term expires*

Kenneth L. Davis, <i>Chairman</i> , Harrisburg	1969
Melvin C. Lockard, <i>Secretary</i> , Mattoon	1971
Martin Van Brown, Carbondale	1967
Harold R. Fischer, Granite City	1969
F. Guy Hitt, Benton	1971
Arnold H. Maremont, Winnetka	1967
Lindell W. Sturgis, Metropolis	1971
Ray Page (Ex-officio), Springfield	
Louise Morehouse, <i>Recorder</i>	

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Robert A. McGrath, Registrar and Director of Admissions (*Carbondale*)  
John H. Schnabel, Registrar and Director of Admissions (*Edwardsville*)



# The University : 1

SOUTHERN ILLINOIS UNIVERSITY is a multi-purpose and diversified university that, since its establishment in 1869, has sought to meet the educational needs of the times for the people which it serves as a public institution. It is fully accredited by the North Central Association of Colleges and Secondary Schools.

Though the student population has increased manifold from its beginning, the formation of schools, colleges, divisions, and departments within the University enables the institution to concentrate on the special interests of its individual students. The University in total size now ranks twenty-first in the nation. It offers facilities and faculty to give general and professional training to students ranging from two-year programs leading to associate degrees to the doctoral degree level.

Because of the growing demand for educational opportunities in the Madison-St. Clair counties area, the University established the Alton Residence Center and the East St. Louis Residence Center in 1957, the former on the campus of what used to be Shurtleff College, the latter in a senior high school building.

During the year 1958-59, communities in Madison and St. Clair counties launched a drive that helped acquire a large central campus site on the outskirts of Edwardsville, Illinois, approximately twenty miles east of St. Louis, Missouri. From what was once farm land is now rising a complex of uniquely designed buildings which constitute the Edwardsville campus.

Thus, though Southern Illinois University is a single university, it has several campuses with the major designations being the Carbondale Campus, with its Vocational-Technical Institute and Little Grassy Lake installation, and the Edwardsville Campus, the latter including the East St. Louis Center, the Alton Center, and the Edwardsville campus itself.

## LOCATION

In all, Southern Illinois University has courses of study in operation at Carbondale; at Southern Acres (the Vocational-Technical Institute), ten miles east of Carbondale; at Little Grassy Lake, ten miles southeast of Carbondale, where recreation and outdoor education and other classes and workshops are held; and in the Madison-St. Clair counties area at East St. Louis, Alton, and Edwardsville.

## CARBONDALE CAMPUS

The city of Carbondale (population 18,000) is in southern Illinois, 100 miles southeast of St. Louis, Missouri, in Jackson County, whose western border is the eastern bank of the Mississippi River. The region immediately surround-

ing Carbondale is noted for its large peach and apple orchards. Within ten miles of the campus there are two state parks and four lakes. The largest of the lakes is Crab Orchard Lake, four miles east of Carbondale. It has a shoreline of 125 miles and is frequented by students for swimming, water skiing, motor boating, sail boating, fishing, picnicking, camping, and hunting. Within the confines of the Carbondale campus itself is the University's own Lake-on-the-Campus with facilities for swimming, boating, fishing, and picnicking. Immediately south of Carbondale begins some of the ruggedest, most picturesque terrain in the state of Illinois.

Sixty miles north of Carbondale is the population center of the United States, while sixty miles south is the colorful and historic confluence of the Ohio and Mississippi rivers, the two, forming the border of the southern tip of Little Egypt, the fourteen southernmost counties in Illinois.

The campus is undergoing extensive expansion. In addition to approximately seventy large permanent buildings and several hundred small temporary buildings, the following have recently been completed or are in varying stages of completion or planning: the arena (seating capacity of 11,000 under a 300-ft. diameter dome), general classroom buildings, communications building, School of Technology complex of buildings, the University Park Residence Halls group (nine four-story residence halls and a seventeen-story residence hall, with complete dining facilities in adjacent dining commons), a physical science building, and a forestry research building.

Southern Acres, in the former administration area of the Illinois Ordnance Plant, contains the educational facilities of the Division of Technical and Adult Education, some apartments for married students, and some residence halls for single students.

The Little Grassy Lake facility consists of nine square miles of land adjacent to Little Grassy Lake and approximately seventy permanent structures. Although the programs conducted at Little Grassy are primarily devoted to instruction and training in recreation and outdoor education, many units of the University utilize its facilities in various ways.

### EDWARDSVILLE CAMPUS

The general administrative offices for the Edwardsville Campus are located on the central campus, which is comprised of 2,600 acres of rolling farm land and wooded valleys along the bluffs flanking the Mississippi River southwest of Edwardsville, Illinois.

The master plan for the Edwardsville site provides facilities for a daily *commuting* student body of 18,000.

Present buildings finished or under construction in the first phase are the library, general classroom building, communications building, science building, administration building, and a university center building.

Initially parking space for 3,000 cars will be provided and ultimately space for 12,000 cars.

The facilities of the former Shurtleff College have been leased by the University for the operation of the Alton Center. Eight permanent buildings form the nucleus of this 40-acre campus. Nine additional buildings have been prepared on a temporary basis to meet the needs of current expansion.

The East St. Louis Center is located on Ohio Street at Ninth and Tenth. Laboratories, classrooms, libraries, and other facilities of a former senior high school have been redesigned and equipped to provide for a comprehensive undergraduate and graduate program at this campus. Several nearby residences have been leased for faculty offices.

## THE UNIVERSITY LIBRARIES

The university libraries contain some 800,000 volumes (including bound government documents, bound periodicals, and books) and 7,000 current periodicals, plus collections of textbooks, newspapers, maps, films, framed art works, and phonograph records. With the exception of volumes in the Rare Book Room, all books are arranged on open shelves available for browsing.

Recognizing the importance of good libraries in a college education, the University has given special attention to both quantity and quality of library development. Some 90,000 volumes were added to the library during the past year, placing Southern Illinois University fourteenth in growth among the nation's university libraries. The libraries are open long hours for the convenience of students, and comfortable chairs, individual study tables, and a quiet atmosphere encourages both study and recreational reading. Reference librarians throughout the campus libraries are available to assist students in locating materials. A handbook on library use is available free to all students and those desiring further instruction may enroll in a course on library research methods.

Morris Library in Carbondale houses four subject libraries (Education, Humanities, Science, and Social Studies), an Audio Visual Department, and a Textbook Rental Service. Microtext reading equipment is available in each subject library; hi-fidelity phonograph listening equipment is provided in the Humanities Library. A central card catalog of the entire collection is located on the first floor; books may be borrowed for home use from a central circulation desk on the first floor, using an automated charging system. An inexpensive photocopying service is available to students at the circulation desk.

Special libraries are also provided for the University Laboratory School, Carbondale; for the Vocational Technical Institute, near Carbondale; and for Little Grassy Lake Camp.

The newly constructed Elijah P. Lovejoy Library serves the Edwardsville Campus with four subject libraries (Education, Humanities, Science, and Social Science). An Audio Visual Department and a Textbook Service are also housed in Lovejoy Library. A central card catalog and central circulation service are provided on the main floor.

Selected collections of reference books and assigned readings are available in the Alton and East St. Louis centers.





# Admission, Advisement, and Registration

## 2

IN ORDER TO attend classes at Southern Illinois University, one must gain official admission to the University and must complete the registration process, which includes specialized testing, advisement, sectioning, and payment of fees.

### ADMISSION

Applications for admission to the University are accepted any time during the calendar year but should be initiated in ample time to permit the necessary work of processing to be completed.

#### *ADMISSION OF FRESHMAN STUDENTS*

To be eligible for admission, a person must be either a graduate of a recognized high school (graduates of non-recognized high schools may be admitted by the Director of Admissions by examination), or must have passed the General Educational Development Test. A person seeking admission through the latter procedure will be considered only after his high school class would have graduated.

In-state high school graduates who rank in the upper two-thirds of their graduating class will be permitted to enter any quarter, while those who rank in the lower one-third of their graduating class will be permitted to enter, on academic probation, for the summer, winter, or spring quarter only. Exceptions to this rule may be made for lower one-third students who desire to enter in the fall who show high scores on the University entrance examinations. Such admissions will be on an academic probation basis.

Out-of-state high school graduates who rank in the upper forty per cent of their graduating class will be permitted to enter any quarter, while those in the lower sixty per cent of their graduating class will be permitted to enter, on academic probation, during the summer quarter provided that they show high scores on the University entrance examinations.

Both in-state and out-of-state lower-ranking students who elect to enter during the summer quarter can qualify for fall quarter attendance by carrying a minimum academic load of eight quarter hours and completing them with at least a *C* average.

Students who rank in the upper quarter of their high school graduating class will be considered for admission after completion of the sixth semester. Upper quarter students who seek admission after the sixth semester must furnish University entrance examination scores prior to their first registration. All other students must furnish examination scores prior to their being admitted to the University.

All admissions granted students while in high school are subject to the

completion of high school work and maintenance of rank upon which the admission was made.

*A student entering the University as a Freshman is enrolled in General Studies (except one entering the Vocational-Technical Institute).*

### ADMISSION OF TRANSFER STUDENTS

Students applying as undergraduate transfer students with a 3.00 grade point average are eligible for unconditional admission in any quarter. Students who do not have a 3.00 grade point average and who are in good academic standing at the school of last attendance will be considered for admission for summer, winter, and spring. Students who do not have a 3.00 grade point average and who are not in good academic standing at the school of last attendance will be considered for admission for summer or spring provided there has been an interruption of schooling of at least one quarter's duration and there is tangible evidence to indicate that additional education can be successfully undertaken by the student.

Transfer students suspended for any reason other than academic failure must be cleared by the Student Affairs Division before admission will be granted by the Director of Admissions.

*Transfer students with fewer than 64 quarter hours will be enrolled in General Studies as will those transfer students with more than 64 quarter hours whose educational goals are not yet determined.*

### ADMISSION OF FOREIGN STUDENTS

Each foreign student must submit, in addition to the regular admission papers, a questionnaire for foreign students showing all previous schooling. The foreign student must also submit an official statement showing sufficient proficiency in English to do successful college work. Such a student should make adequate provision for his financial needs; the University does not assume responsibility for a student who arrives with inadequate financial resources.

### ADMISSION OF FORMER STUDENTS

A former student of Southern Illinois University not in attendance on a campus at the close of the quarter preceding application for admission must apply to the Admissions Office for re-entrance prior to registration.

A former student who is not in good standing must clear his status before the Admissions Office will prepare his registration permit. It is advisable for such a student to initiate re-entrance clearance early so that all inquiries may be answered and so that the applicant can find time to complete any requirements that may be imposed upon him.

### ADVISEMENT

After a student has been admitted to Southern Illinois University he should talk with an adviser about his educational plans and complete his registration for the quarter he expects to enter the University.

To insure that an undergraduate student is properly advised concern-

ing the choice of a course of study which will fulfill the requirements of the University and prepare him for his chosen career, academic advisement has been made the special responsibility of a selected group from the teaching faculty. During his first two years the student will receive prime advice from an adviser responsible to the executive officer for General Studies. If he chooses to declare a special field of interest then, his General Studies adviser will refer him to someone representing his special field of interest for secondary advice; but formal admission to a specific field will be deferred until the student completes 64 hours of General Studies credit. All students in General Studies must initiate transfer into their chosen unit before enrolling again, after completion of 96 hours of credit.

The student is expected in his second year to take the Sophomore Testing Program, and in the quarter he expects to graduate to take the Graduate Record Examination. Students will be notified of the times and places of the examinations.

After admission to some special field, he will receive prime advice from a representative of that field.

## REGISTRATION

At Southern Illinois University, a system of advance registration is in operation. The period of time from the third through the tenth week of each quarter is used for advisement and registration for the following quarter. For example, a student who plans to attend during the winter quarter may register between the third and tenth week, inclusive, of the fall quarter. A new student may also register on the opening day of each quarter. All students are urged to take advantage of the advance registration period.

Registration for any session of the University is contingent upon being eligible for registration. Thus, a registration including the payment of tuition and fees may be considered invalid if the student is declared to be ineligible to register due to scholastic reasons. The same situation may exist due to financial or disciplinary reasons if certified to the Registrar by the director of the Student Affairs Division.

Detailed information about the dates and procedures for advisement and registration appears in the Schedule of Classes, available from Central Publications.

## ACADEMIC LOAD

The normal class load for a student is 16 hours. A maximum is 18 hours.

A student with a 4.25 average or above for the preceding quarter may be allowed by the head of his academic unit to take as many as twenty-one hours. In no case may a student carry, or be credited with, more than twenty-one hours in any quarter. A student on probation may not take more than fourteen hours. To be a full-time student one must carry twelve or more hours per quarter.

A student may not register for more than eight quarter hours if he is employed full-time.

For Selective Service purposes an undergraduate student needs to



carry 12 quarter hours to be considered full-time. Eight hours are so considered on the graduate level unless the student has a university appointment which requires his course load to be reduced below that level.

### UNIT OF CREDIT

One quarter hour of credit represents the work done by a student in a lecture course attended one hour per week for one regular quarter, and, in case of laboratory and activity courses, the stated additional time. One quarter hour of credit is equivalent to two-thirds of a semester hour. Unless otherwise specified, one hour of credit means one quarter hour.

### CLASS STANDING

An undergraduate student is classified as a freshman, sophomore, junior, or senior, depending upon the number of hours he has successfully completed toward the degree. A freshman is a student who has completed fewer than 48 hours; a sophomore, from 48 through 95; a junior, from 96 through 143; and a senior, 144 or more.

### GRADING SYSTEM

Grades are expressed in letters as follows:

	GRADE POINTS (PER QUARTER HOUR)
A, Excellent .....	5
B, Good .....	4
C, Satisfactory (this is intended to be the average grade) .....	3
D, Poor, but passing .....	2
E, Failure; all work completed including final examination, but failed .....	1
W, Course not completed; includes incomplete records of all kinds (except "deferred" for graduate students) .....	0-5
The number of weeks the student has at- tended is indicated by a numeral; if he attended more than four weeks, this is to be followed by the grade he was making at the time of the withdrawal. For ex- ample: W8B.	
DEF or DF, Deferred grade; work not complete. Given only for graduate students engaged in individual type work such as research, readings, thesis.	
AU, Course taken on audit basis. No grade or credit hours earned.	

CR, Credit. No letter grade assigned.

A grade given at the end of a course is final and may not be raised by additional work.

Any student who withdraws from a class without following the pre-

scribed procedure will receive a grade of *WE* in the course regardless of when the withdrawal occurs. A withdrawal from a course is initiated with the student's academic adviser.

Courses from which the student has withdrawn after the first four weeks will be recorded as *W* and must carry a grade. (Withdrawals after the first six weeks of a sixteen-week extension course must carry grades.) Exceptions to this rule may be permitted for unusual circumstances, but only with written approval of the student's academic dean.

Any change of grade, as upon the completion of *W*, must be reported within a year after the close of the quarter in which the course was taken. A student who for some reason must miss the final examination may not take an examination before the one scheduled for the class. In this case, *W12*, along with the grade earned at the time, is recorded by the instructor. The final examination may be taken at a later date, within one year. A complete record of all changes in grades will appear on the official transcript.

A student may register for courses in an "audit" status. He receives no letter grade and no credit for such courses. An auditor's registration card must be marked accordingly. He pays the same fees as though he were registering for credit. He is expected to attend regularly and is to determine from the instructor the amount of work expected of him. If an auditing student does not attend regularly, the instructor may determine that the student should not have the audited course placed on his record card maintained in the Registrar's Office. A student registering for a course for credit may not later change to an audit status or vice versa except for fully justified reasons. Such a change will ordinarily require the student's academic dean's approval.

The official record of a student's academic work is maintained in the Registrar's Office.

### SCHOLASTIC PROBATION

To ensure that a student makes satisfactory progress toward his educational objective he is required to maintain both a 3.000 average on a quarter to quarter basis and a progressively improving grade point average as he accumulates specified numbers of hours to his record. Otherwise, he will be placed in categories other than Good Standing and may be required to discontinue attendance at the University for a period of time.

A student who is in Good Standing will be placed on Scholastic Warning at the end of a quarter in which he fails to make a 3.000 average provided he has calculated hours and an accumulative grade point average as follows:

Fewer than 96 calculated hours and less than a 3.000 average

96 but fewer than 144 calculated hours and less than a 3.100 average

144 or more calculated hours and less than 3.150 average

He is returned to Good Standing at the end of a quarter in which he makes a 3.000 or better average while on Scholastic Warning.

When a student on Scholastic Warning fails to make a 3.000 average for a quarter he is placed on Scholastic Probation and may be subject to suspension from the University for scholastic reasons at the end of a quarter

in which he fails to earn a 3.000 average while on Scholastic Probation.

A transfer student is subject to the above averages as applied to his academic record at this University and to his over-all academic record.

To ensure that a student is making progress toward the 3.000 average required for graduation he must maintain a progressively improving accumulative grade point average. At the end of each spring quarter a student who has accumulated the number of calculated hours listed below must also have obtained the corresponding accumulative grade point average:

<i>Quarter hours</i>	<i>Required average</i>
48–95.5	2.400
96–119.5	2.700
120–143.5	2.800
144–159.5	2.900
160–	2.950

Otherwise he will be suspended from the University for scholastic reasons. He may seek reinstatement after a minimum of two quarters interruption but must furnish tangible evidence that additional education can be successfully undertaken.

A transfer student is subject to the above accumulative grade point averages as applied to his academic record at this University and to his over-all academic record.

### *H O N O R S   D A Y*

In recognition of high scholarship, an Honors Day convocation is held each spring. A candidate for a bachelor's degree in June or August who has maintained a grade-point average of 4.25 or more for all of his work through the winter quarter of his senior year receives special honor. Each junior having a 4.25 grade-point average and each sophomore and freshman having a 4.50 grade-point average is also honored at the convocation. Except in the case of a graduating senior, a student must be attending full time to be eligible. A transfer student must have earned the average indicated for work at Southern Illinois University only, as well as for the total record. Graduating seniors are also recognized at commencement on the graduation program, and their diplomas designate honors granted on the basis of Highest Honors (4.90 or higher); High Honors (4.75–4.89); and Honors (4.50–4.74).

### *C R E D I T   F O R   M I L I T A R Y   E X P E R I E N C E*

Students who have served one year or more of active duty and who have received an honorable discharge may receive up to six hours of aerospace credit at Carbondale; service of six months to one year may result in three hours of freshman aerospace credit; less than six months of active service does not allow any college credit. Credit so obtained does not satisfy any of the General Studies requirements. No credit is allowed for military service on the Edwardsville Campus.

Credit will be accepted for USAF courses within the limitations enforced for extension and correspondence work. No credit is allowed for college-level G.E.D. tests. In evaluating credit possibilities based upon formal

service school training programs, the recommendations of the American Council on Education as set forth in the Guide to the Evaluation of Educational Experiences in the Armed Forces are followed.

In order to receive credit for military service a veteran must present a copy of his discharge or separation papers to the Registrar's Office.

## **EXTENSION AND CORRESPONDENCE**

A maximum of one-half of the number of hours required for the bachelor's degree, or ninety-six hours, may be taken by extension and correspondence courses combined. Of this total, not more than forty-eight hours may be taken in correspondence courses.

While Southern Illinois University does not maintain a correspondence division, courses taken by correspondence from institutions which are accredited by their appropriate regional accreditation association.





# General Studies

## 3

THE GENERAL STUDIES PROGRAM at Southern Illinois University has been structured to build in a relevance and continuity of subject matter. Progressive three-quarter sequences (three hours per quarter) have been designed. First-level or freshman courses are planned sequences, with the second quarter's work based upon the first and the third quarter's work based upon the second. Second-level courses are normally completed during the sophomore and junior years. Third-level courses are offered to juniors and seniors. The new courses are not self-contained isolated units. The result is that a sense of unity is given to the whole program.

### ACCELERATION AND PLACEMENT

There are three ways in which partial requirements of the General Studies program may be met without taking the courses specifically designed to meet those requirements. They are waivers, advanced-standing assignments, and proficiency examinations.

Depending upon their preparation in a particular subject, students may be placed in different sections of a particular course or in different sequences.

All students enrolled in the General Studies program are urged to consult their advisers at the earliest possible moment concerning the procedures for accelerating their courses of study.

### W A I V E R S

Each student is entitled to waive (i.e., omit entirely) the first-level sequence in the area (*A*, *B*, or *C* only) in which he will concentrate his work and to begin his work in that area at the second level. This is inadvisable, however, for some students; and the department or division involved may require the student to take first-level sequences. Of course the student who has not chosen a field of concentration cannot waive a first-level sequence.

### A D M I S S I O N   W I T H   A D V A N C E D S T A N D I N G

More commonly, advanced standing will be achieved on the basis of A.C.T. scores and the high school record, or through passing a special advanced-standing examination (not the proficiency exam). When a student qualifies for and requests advanced standing in a course he will not ordinarily be permitted to later enroll in that course for credit. For example, one who qualifies for advanced standing in GSD 114 will not take GSD 114 for credit.

A student who gains exemption from certain courses by advanced

standing may (1) take advanced work in that area if more work is required by the General Studies program, (2) discontinue any further work in that area if it is not required by the General Studies program, (3) take advanced work in that area to satisfy the requirements of a particular course of study, or (4) take additional courses in that area as electives.

Advanced standing for the General Studies program should not be confused with the High School Advanced Placement Program of the College Entrance Examination Board. Information on the Advanced Placement Program appears in Chapter 5.

PROFICIENCY EXAMINATIONS

The rules covering the General Studies proficiency examinations are similar to those governing other proficiency examinations at the University.

Upon passing a proficiency examination in a course with a credit of "passing," a student will be granted regular credit toward graduation or toward any other legitimate objective. His record will show the name of the course, the hours of credit granted, and a notation "credit granted by proficiency examination"; however, this credit will be neutral in the calculation of grade point average. If a student fails a proficiency examination, his record will show nothing, but the report will be appropriately filed.

Information concerning proficiency examinations may be secured from the Registrar's Office, Carbondale, or from the Office of Academic Advisement, Edwardsville.

OUTLINE OF GENERAL STUDIES REQUIREMENTS

<i>Area A: Man's Physical Environment &amp; Biological Inheritance</i> .....	24 hrs.
A first-level basic sequence	(GSA-1) 9 hrs.
A second-level continuation sequence	(GSA-2) 9 hrs.
Third-level advanced courses	(GSA-3) 6 hrs.
<i>Area B: Man's Social Inheritance &amp; Social Responsibilities</i> .....	24 hrs.
A first-level basic sequence	(GSB-1) 9 hrs.
A second-level continuation sequence	(GSB-2) 9 hrs.
Third-level advanced courses	(GSB-3) 6 hrs.
<i>Area C: Man's Insights &amp; Appreciations</i> .....	24 hrs.
A first-level basic sequence	(GSC-1) 9 hrs.
A second-level continuation sequence	(GSC-2) 9 hrs.
Third-level advanced courses	(GSC-3) 6 hrs.
<i>Area D: Organization &amp; Communication of Ideas</i> .....	18 hrs.
Required college composition and speech	(GSD-1) 9 hrs.
Either a foreign language sequence or a basic mathematics sequence	(GSD Math or FL) 9 hrs.
<i>Area E: Health &amp; Physical Development</i> .....	6 hrs.
First-level required physical education	(GSE PE) 3 hrs.
Second-level required health education	(GSE-2) 3 hrs.
<i>Total</i> .....	96 hrs.
If a first-level sequence is waived, the total is only 87 hours.	

## SPECIFIC REQUIREMENTS—CARBONDALE

FRESHMAN LEVEL .....		39-48 HOURS
GSA-1	101-9 (phys, chem, chem) lab is optional	9
GSB-1	101-9 (hist, hist, geog)	9
GSC-1	110-9 (western humanities); OR 103-3 (mus) or 101-3 (art), 102-3 (phil), 103-3 (lit)	9
GSD-1	101-6 (Eng comp), 103-3 (spch)	9
GSD Math or FL	108-9 (Math); OR 108-6, 110-3 (bus, econ, ag econ students only); OR 114-9 (col alg & trig); OR a 9-hour course in a foreign language	
GSE PE (men)	101a (swim) or 102; plus 2 hours excluding 101a, 102;	
(women)	OR 111a (swim) or 112 or 113d, plus 2 hours excluding 111a, 112, 113d; BUT each student who cannot pass a swimming test must take 101a or 111a, and not more than two hours in 101 and 103 or in 111 and 103 may apply toward the requirement.	3
FC	Attendance at freshman convocations for 3 quarters is required but is not part of the GS program.	
SOPHOMORE LEVEL .....		30 HOURS
GSA-2	201-9 (biol), or biol-6 and 200-3 (geol)	9
GSB-2	201-9 (anth, psyc, soc); OR 211-9 (econ, govt, econ-govt)	9
GSC-2	209-3 (modern lit) or 202-3 (poetry) or 203-3 (thea), and 200 (speech) or 204-3 (art) or 205-3 (des) or 206-3 (mus), and 207-3 (phil) or 208-3 (logic) or 201-3 (drama) or 210-3 (fiction); OR 211-9 (oriental humanities)	9
GSE-2	201-3 (health educ)	3
JUNIOR LEVEL .....		18 HOURS
GSA-3	Any two of the following, except not both 330 & 331: 301 (phil), 302 (psyc), 312, 313, 314, 315 (zool), 321 (geol), 330, 331 (geog), 340, 345 (bot), 358a,b (tech), 363a (phil)	6
GSB-3	Any two of the following: 300a, 300b, 300c <sup>1</sup> , 301, 302, 303, 304 (govt), 311, 312, 313 (econ), 314 (ag-econ), 320 (soc, summer abroad), 321 (soc), 323 (hist), 325 (soc), 331 (educ), 333 (hist), 341 (soc), 343 (geog), 369 (hist), 385, 390, 392 (govt)	6

<sup>1</sup> Except 300c may not be taken separately for General Studies credit.



GSC-3	Any two of the following: 301 (Eng), 305 (Fr), 307 (govt), 310, 311, 312 (phil), 313 (Eng), 318 (Eng, summer abroad), 320 (Grk), 321 (Eng), 330 (Grk), 331 (Ltn), 335 (Eng), 340, 341, 342 (art), 345 (Eng), 348 (p & p), 365 (Eng), 363a (phil), 381, 382, 383, 386, 387 (phil)	6
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## SPECIFIC REQUIREMENTS — EDWARDSVILLE

FRESHMAN LEVEL .....		39-48 HOURS
GSA-1	101-9 (phys, phys-chem, chem)	9
GSB-1	101-9 (geog, hist, hist)	9
GSC-1	151-3 (poetry), 152-3 (logic), 100-3 (mus) or 101-3 (art)	9
GSD-1	101-6 (Eng comp), 103-3 (spch)	9
GSD Math or FL	112-9 (math); OR 114-6 (col alg) 114c-3 (trig) or 114d-3 (stat); OR a 9-hour course in a foreign language	9
GSE PE (men)	101a (swim), 102, plus one hour excluding 101a, 102;	
(women)	OR 111a (swim), 112, plus one hour excluding 111a, 112; BUT a student who passes a swim test or for whom no swim facilities are provided must take 102 or 112 and 2 hours from 103, 104 or from 113, 114.	3
SOPHOMORE LEVEL .....		30 HOURS
GSA-2	201a-3 (biol), 201b-3 (biol), 201c-3 (biol), or 220-6 (earth science)	9
GSB-2	201-9 (anth, soc, psyc); OR 211-9 (econ, govt, govt-econ)	9
GSC-2	251-9 (lit-phil); OR 251a,b-6, and 203-3 (thea) or 200-3 (spch), or 255-3 (mus) or 251a,c-6 and 203-3 (thea) or 200-3 (spch), or 255-3 (mus)	9
GSE-2	201-3 (health educ)	3
JUNIOR LEVEL .....		18 HOURS
GSA-3	Any two of the following, except not both 330 & 331: 312 (conservation), 330, 331 (geog), 356 (astr), 358a,b, 361 (phys), 363a,b (phil,sci)	6
GSB-3	Any two of the following: 300a,b,c (hist), 311 (econ), 312 (econ), 331 (educ), 341 (soc), 345 (govt), 351a,b (geog-anth), 354 (econ-geog), 356 (econ), 359a,b (soc, govt), 382a,b (hist), 385 (govt)	6
GSC-3	Any two of the following: 335 (Eng lit), 351a,b,c (art), 354a,b (thea), 357a,b,c (mus), 360a,b (art, mus, lit), 363a,b (phil-sci)	6

# Degrees 4

SOUTHERN ILLINOIS UNIVERSITY grants the following undergraduate degrees.

Associate in Arts	Bachelor of Science
Associate in Business	Bachelor of Music
Associate in Technology	Bachelor of Music Education
Bachelor of Arts	

## FIELDS OF STUDY

Below are the fields of study in which Southern Illinois University grants bachelor's degrees to Carbondale Campus students (indicated by the letter *C* following the field) or Edwardsville Campus students (indicated by *E*) or both (no letter). A bachelor's degree normally requires four years of study.

Accounting		History	
Agriculture, General	C	Home Economics	C
Agricultural Industries	C	Industrial Education	C
American Studies	E	Industrial Sciences	C
Animal Industries	C	Industrial Technology	C
Anthropology	C	Inter-American Studies	C
Applied Science	C	Journalism	C
Art		Kindergarten-Primary	
Biological Sciences		Education	C
Botany		Language Arts	C
Business Teacher Education		Management	
Chemistry		Marketing	
Community Development	C	Mathematics	
Design	C	Microbiology	C
Economics		Music	
Elementary Education		Nursing	E
Engineering	C	Philosophy	
Engineering Technology	C	Photography	C
English		Physical Education for Men	
Foreign Languages		Physical Education for Women	
Forestry	C	Physics	
General Science	C	Physiology	C
Geography		Plant Industries	C
Geology	C	Printing Management	C
Government		Psychology	
Health and Physical Education	C	Public Administration and	
Health Education	C	Planning	E
Health Science	C	Radio-Television	C

Recreation and Outdoor Education		Special Education	
Secretarial Studies	C	(Physically Handicapped)	C
Small Business Management	C	Speech	
Social Studies	C	Speech Correction	
Sociology		Theater	
Special Education (Mentally Retarded)		Vocational Agriculture	C
		Zoology	

### GRADUATION

Every degree candidate *should* signify his intention to graduate by making application for graduation no later than the first week of his last quarter in attendance before the desired graduation date. Therefore, a person desiring to graduate in the June commencement should make application for graduation during the first week of the spring quarter. The application forms are available in the Registrar's Office.

Every candidate for a degree *must* file written application with the Registrar not less than five weeks before the date on which the degree is to be granted. At the time of application the student must pay his graduation fee and order his cap and gown through the University Store and register with the Placement Service. A student must have a 3.0 average before his application for a degree may be accepted.

In addition to the satisfying of all necessary academic requirements each candidate for a degree must make certain that he has no outstanding financial obligation with the University. Otherwise, his graduation clearance will be held up.

Students must attend Commencement exercises to receive their diplomas, unless in advance they obtain permission to be graduated *in absentia*.

### ASSOCIATE DEGREE

Each candidate for an associate degree must complete a minimum of 96 hours of credit in approved courses. Each student must maintain a *C* average. The degree granting unit for the associate degree is the Division of Technical and Adult Education. For additional information concerning this degree, refer to the Division of Technical and Adult Education bulletin.

### BACHELOR'S DEGREE

Every bachelor's degree candidate is expected to meet the University's general requirements and to follow the recommendations of his academic unit.

Each candidate for the degree must complete a minimum of 192 hours of credit in approved courses. At least 64 must be in senior (i.e., 300 or 400) college courses. 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 field of concentration. These averages are required for credit made at this University as well as for the total record. To receive

a bachelor's degree from Southern Illinois University a student must present either a total of three years work (144 hours) earned at Southern Illinois University or 48 senior college hours earned at the University, 16 of which may be earned in extension.

A student who receives his first bachelor's degree from Southern Illinois University and who desires a second bachelor's degree, must complete 45 hours in addition to those required for the first degree and must fulfill the requirements for the second degree. Of these 45 hours, a minimum of 15 must be taken in residence at the University, and a maximum of 15 may be acquired in extension and/or correspondence courses. At least 30 hours must be in senior college courses. If a student received his first bachelor's degree from another university, 48 hours are required to fulfill the residence requirement for the second bachelor's degree, two-thirds of which must be in senior college courses

The state of Illinois requires that American patriotism and the principles of representative government, as enunciated in the American Declaration of Independence, the Constitution of the United States of America, and the Constitution of the State of Illinois, and the proper use and display of the American flag shall be taught in all public schools and other educational institutions which are maintained in whole or in part by public funds, and that no student shall receive a certificate of graduation without passing a satisfactory examination upon such subjects. Government 210, 231, 300, History 330, and certain courses in General Studies Area B offer such instruction.

Students preparing to teach must satisfy the certification requirements of the state in which they plan to teach. Illinois requirements are described on page 35 of this bulletin. Certification information may also be obtained from the Registrar's Office. Most students who plan to teach in the public schools register in the College of Education or in the Education Division.

#### *BACHELOR OF ARTS DEGREE REQUIREMENTS, EDWARDSVILLE*

In addition to the University's general requirements for a bachelor's degree, a person working toward a Bachelor of Arts degree must have the following:

1. A reading knowledge of a foreign language, ordinarily requiring 9 hours of university study or its equivalent.
2. A course in either philosophy or psychology (or a General Studies equivalent in those fields).
3. An area of concentration of at least 42 hours and a secondary concentration of at least 24 hours. Some areas of concentration require more than the minimum number of hours.

#### *FRESHMAN CONVOCATIONS REQUIREMENT, CARBONDALE*

All students entering the Carbondale Campus as beginning freshmen must satisfactorily complete three quarters of Freshman Convocation during their first year, or in any case prior to graduation. Exceptions are (1) students



who transfer from other institutions and re-entering students who started collegiate work in the Vocational-Technical Institute or on the Edwardsville Campus, (2) students who are more than twenty-five years of age at the time of first registration at Southern Illinois University, (3) students who carry fewer than 12 hours each quarter during their first eight quarters, and (4) students enrolled in the Vocational-Technical Institute.

### ADVANCED DEGREES

For information concerning the master's degree or the Doctor of Philosophy degree, refer to the Graduate School catalog or direct inquiries to the Dean, Graduate School, Southern Illinois University, Carbondale, Illinois 62903.

# Special Programs for Credit

## 5

### HONORS PROGRAM

Plan "A" has been created for the benefit of superior students who are interested in the objectives of general education as well as their own fields of specialization. Plan "A" is available at Carbondale only. It consists of one 3-hour course per quarter. The courses, entitled Honors Seminar, are numbered as follows: Plan "A" 151-12, 251-12, 351-9, 391-9.

A student may have credit for one course for one quarter only, or he may stay with Plan "A" for all twelve quarters and accumulate a total of 42 hours of credit. If he does not do satisfactory work, he may be asked to withdraw from the plan at the end of a quarter.

It is hoped that these courses will aid the students in integrating and evaluating their other courses. It is to be hoped also that through these courses they will become acquainted with the broad concepts and the great issues that play important parts in our society. Some quarters will also be planned to give the students an intensive study of the entire culture of a century; for examples, the fifth century B.C., or the fourteenth century A.D.

Plan "A" House is open for study purposes for its students all day every day except Saturday and Sunday.

### INDIVIDUAL HONORS WORK

Individual Honors Work is distinguished from Plan "A" by its stress on research and independent study during the junior and senior years. Department chairmen or division heads may compile lists of students eligible, or through conferences they may encourage some students to do honors work.

If a Carbondale or Edwardsville student is accepted by his department or division for honors work, the chairman of that unit will appoint an adviser and two other staff members to form the student's committee. The student's committee shall approve his proposals for independent study and specific requirements in completing his course of study. He may then elect to take not fewer than 9 nor more than 21 hours toward his concentration in independent research and investigation. He will take a comprehensive examination, either oral or written, at the end of his junior year, and again at the end of his senior year if he elects to do a second year of honors work.

Grades may be deferred at the end of the first and second quarters but not from one school year to the next.

The Honors Work Program Committee (Carbondale) or the Honors Program and Superior Student Committee (Edwardsville) does not function directly in the student's course of study but offers its services in a standby capacity.

## PROFICIENCY EXAMINATIONS

The University recognizes the importance of providing adequate encouragement for academically talented students. Thus, such students are permitted to make application to demonstrate the mastery of certain courses through proficiency examinations. Applications are made at the Registrar's Office.

The following general rules govern the proficiency examinations for undergraduate credit.

1. Any student who feels qualified to take a proficiency examination is eligible to do so; students scoring in the top ten percent of A.C.T. are particularly encouraged to avail themselves of this opportunity.

2. Credit not to exceed 48 hours, including credit through the College Entrance Examination Board, Advanced Placement Program, may be earned through proficiency examinations. Credit will be nonresident.

3. Upon passing a proficiency examination in a course with a credit of "passing," a student will be granted regular credit toward graduation or toward any other legitimate objective. His record will show the name of the course, the hours of credit granted, and a notation "credit granted by proficiency examination"; however, this credit will be neutral in the calculation of grade point average. If a student fails a proficiency examination, his record will show nothing, but the report will be appropriately filed.

4. A student may not take a proficiency examination for the same course more than one time. Neither may he take a proficiency examination in a course in which he has previously received a grade.

5. No credit granted by proficiency examinations will be recorded until the student has earned at least 16 hours of credit of C grade or above in residence at Southern Illinois University.

6. A student applying to take a test for advanced standing only should initiate the request at an advisement office. No credit is recorded regardless of grade earned.

## ADVANCED PLACEMENT PROGRAM

A high school student who is qualified through registration in an advanced placement course in his high school or through other special educational experience may apply for advanced placement and college credit through the Advanced Placement Program of the College Entrance Examination Board, 475 Riverside Drive, New York, New York 10027. To receive credit, a person must earn the grade of 3, 4, or 5. Any interested high school student should write to the University's Admissions Office to learn the current listing of courses for which credit may be earned through this program.

Ordinarily, the maximum credit granted through advanced placement examinations is 16 hours. It is nonresident credit, does not carry a grade, and is not used in computing the student's average grade. Credit granted at another accredited college or university under this plan is transferable to this University up to a maximum of 16 hours. A student may appeal to his academic dean to be granted more than 16 hours.

# Student Services

6

SOUTHERN ILLINOIS UNIVERSITY is dedicated to helping each student make the most of the educational opportunities. In addition to the academic programs, the University provides several services to assist in creating the conditions and opportunities for reinforcing the intellectual, cultural, and artistic purposes of the institution.

The Vice-President for Student and Area Services is in charge of a variety of services to students.

## STUDENT AFFAIRS DIVISION

The Dean of Students heads the Student Affairs Division which includes the following specific units on each of the major campuses: Student General Affairs, Student Activities, and Student Counseling and Testing.

### *STUDENT GENERAL AFFAIRS*

This office is concerned with an integrated approach to student needs and problems in intellectual, social, spiritual, and physical areas. Students may learn about and be referred to specialized services throughout the University. It provides general information regarding Freshman Convocations, automobile registration, traffic and parking regulations, general rules and regulations including late leaves for women, military information, and Selective Service regulations. It also serves in an advisory capacity regarding special University resources for handicapped students.

### *STUDENT ACTIVITIES*

Southern Illinois University encourages a broad program of student activities with opportunities for all students to participate. A number of organizations augment the student's educational experiences by assisting him in learning how to plan and how to carry out responsibilities, how to work with others, how to make wise use of leisure time, and how to develop leadership. These organizations are varied so that each student may find some group or activity which is of special interest to him.

The Student Activities Center assists all campus groups and individuals in planning, conducting, and evaluating their activities and programs. Special emphasis is placed on giving students opportunities to learn how they can best contribute to the well-being of others and to learn the importance of worth-while interpersonal relationships.

The University Student Council with representatives from each campus is responsible for proposing recommendations on policies and for reviewing recommendations submitted by students and student groups which affect the student body as a whole. The council serves as an advisory body to



the administration of the University and as a representative voice of the student body to national organizations and the general public.

Students assist in planning a wide variety of programs for the campus community. The University Center Student Programming Board at Carbondale and the University Center Board Program Council at Edwardsville are the major planning groups for general campus programs, many of which are scheduled in the University Center. The University Center provides a variety of services, facilities, and recreational opportunities for students.

Some of the special events scheduled during the year are New Student Orientation, Parents' Day, Homecoming, Season of Holidays, Variety Show, and Spring Festival.

### *STUDENT COUNSELING AND TESTING*

The Student Counseling and Testing Center is staffed with professional counselors who are able to discuss freely any problem or plan that may concern the student, be it personal, academic, or vocational. Most of the students who seek help from the Counseling and Testing Center refer themselves. However, referrals are received from faculty and other agencies throughout the University. A student coming to the center for the first time is helped to understand the counseling process, and arrangements are made for a scheduled appointment. Students may also make appointments by telephone. Counseling is designed to help the student arrive at a realistic solution to his problem by providing a permissive setting in which he may express freely his thoughts and feelings and in turn gain insights for greater understanding.

The Student Counseling and Testing Center is approved by the Committee on Professional Practices of the American Personnel and Guidance Association. Services to the students are provided without charge. When special testing is needed to assist in counseling, it may be arranged through the center.

Close co-operation is maintained with the other functional areas of the Student Affairs Division, the Health Services Division, and the Student Special Services Division as well as related services throughout the University.

The Student Counseling and Testing Center on each campus has a file of selected pamphlets, monographs, and books cataloged to afford authentic information about vocational requirements, trends, and opportunities, including those in military service. A similar file is provided in the Education Library of Morris Library.

Southern Illinois University administers the tests for the American College Testing Program on both the Carbondale Campus and the Edwardsville Campus. In addition to the extensive individual testing completed in conjunction with counseling, the Student Counseling and Testing Center also administers testing programs for selection, placement, and research purposes.

An on-going program of research is carried out by the staff of the Counseling and Testing Center in areas of student attitudes, aptitude, achievement and background, the college environment, and related factors

to the total educational process. Staff members serve as consultants to aid other faculty members in the areas of educational and institutional research.

## STUDENT SPECIAL SERVICES DIVISION

The Executive Director of Student Special Services coordinates those student services which also have a definite relation to the business or financial program of the University: Student Housing, Student Work Program, Student Financial Assistance.

### STUDENT HOUSING

In the housing of students, the University is concerned with the establishment of a proper educational environment wherein the student might most readily achieve his scholastic goals. An attempt is made to develop and provide excellent food services, comfortable and attractive study and sleeping facilities, and adequate counseling and referral services. It is recognized that the living environment provides an opportunity to augment and supplement the formal tutorial process, and the University is experimenting with ways in which to fuse the living experiences and the classroom experiences of the student. Students are given the opportunity to accept the responsibility for self-government, and it is hoped that in so doing they shall be able to better learn the true functions of democratic institutions and will be more capable of assuming their role as citizens upon graduation.

Effective September 1, 1965, single undergraduate students not residing with their parents or guardians will be permitted to reside only in those accommodations which have been and which continue to be classified by the Administration as Accepted Living Centers. Any single undergraduate student who resides in accommodations not designated as Accepted Living Center shall be subject to disciplinary action. The qualifications necessary for a living unit to be classified as an Accepted Living Center shall encompass due consideration for safety, sanitation, health and recreation, supervision and the creation of an environment which is conducive to good study conditions, and in addition is limited to students of Southern Illinois University and available to all students of the University regardless of race, color, religion, or national origin.

#### UNIVERSITY HOUSING, *Carbondale Campus*

Applications for University Housing for students for any academic year may be filed after September 1 of the preceding year. Assignments of space and contracts for housing may be made on the basis of the date of original application for housing if the student has been admitted to the University.

Present nine-month rates for University Housing for a single student vary from \$795 to \$378 dependent on room and board in permanent residence halls to a room only in group housing. Women's cooperatives are \$186 per year. Family housing rates vary from \$95 to \$24 per month dependent on whether it is a one or two-bedroom apartment with utilities, a temporary unit, or trailer space with utilities.

The University is cognizant of the fact that the costs of board and room

constitute, most often, the major source of expenses in relation to the student's total education. Therefore, the rates charged by the University for the various housing units are established on the basis of current costs, and a sincere effort is made to maintain these costs at the lowest possible level. Nevertheless, all rates for University Housing are subject to change from time to time depending upon the prevailing cost structure and approval by the Board of Trustees.

#### UNIVERSITY HOUSING, *Edwardsville Campus*

The University has no on-campus housing for students on the Edwardsville Campus (with the exception of limited space for students enrolled in nursing).

#### OFF-CAMPUS HOUSING

In order for living accommodations to be classified as acceptable for student occupancy, such facilities must meet the minimal safety, sanitation, health, recreation, and supervisory standards as are outlined in the Off-Campus Housing Policies and Standards. The creation of an environment which is conducive to good study conditions shall always be of primary consideration.

If a single undergraduate student feels that unusual circumstances dictate that he should be granted an exception from these standards, he may petition the Housing Office for such a waiver. If a formal investigation indicates that an exception is justified, his petition may be approved by the Housing Office and he may then be permitted to live in such facilities. However, it shall be the student's responsibility to seek approval from the Housing Office.

The University vigorously encourages that all accommodations used by graduate students and married students shall meet these minimal standards. The Housing Office assists students in locating approved off-campus housing facilities. A trained staff is available to advise both single and married students who are seeking off-campus accommodations. Experience has indicated that attempting to obtain off-campus facilities by mail may not prove satisfactory. Thus, prospective students are urged to visit the campus and to personally seek assistance in locating desirable living accommodations.

Only a few off-campus housing facilities offer meals. Therefore, meals for those students residing off-campus must be obtained in cafeterias or restaurants on or off campus. Among the listings of off-campus facilities available in the Housing Office are those of organized houses which elect officers and carry on a program of group activities.

An off-campus room for nine months costs from \$216 to \$495 depending on size, distance from campus, number of roommates, number of privileges such as cooking, and other factors.

Students who wish to live away from their homes in approved off-campus facilities may obtain assistance and information concerning living facilities from the Housing Office at Carbondale or Edwardsville.

#### STUDENT WORK PROGRAM

The Student Work Program, operating on the Carbondale and Edwardsville



campuses, serves two major purposes: It provides financial assistance in the form of part-time employment; and it provides work experience which relates, if possible, to the student's academic program. Students employed on-campus are expected to participate in training programs. The kind of training and length of the programs are determined by the employing unit in co-operation with the Student Work Office.

The Student Work Office, which is the administrative office for the program, is a referral agency and cannot promise jobs to students. However, every effort is made to place capable, needy students in either on-campus or off-campus jobs.

Students employed on-campus are paid from \$1.00 to \$1.75 per hour, based upon off-campus experiences and the number of years of satisfactory service to the University. Employment by the University on a part-time basis provides financial assistance and work experience for some 2,000 students in the following job classifications:

1. Instructional research assistants assist in the instructional or laboratory work and in highly technical jobs.
2. Technical and supervisory workers are highly skilled, assume extra responsibility, and are able to work without close supervision.
3. Clerical workers work at semi-skilled and semi-technical jobs.
4. Service workers and maintenance workers work at semi-skilled and semi-technical jobs.
5. Special workers, such as students who have special skills and talents, work at jobs not included in the above classifications.
6. Extra workers perform jobs of short duration which are included in Classes 3 and 4.

The recommended maximum work load is 80 hours per month for students carrying 15 or more hours, 100 hours per month for those carrying 12 to 14 hours.

The Student Work Office sets the standards and reviews the qualifications of students to determine their eligibility to participate in the program. Therefore, it is the first office to be contacted by the students who desire part-time employment. High school seniors who have urgent financial problems should contact the Student Work Office in the spring before high school graduation. They should seriously consider enrolling in the University for the summer session in order to be in close contact with the Student Work Office for possible referral and placement. It is recommended that prospective students who expect to earn part of their expenses should have means of support for at least one quarter.

The Student Work Office also assists students in finding summer employment at resorts, in governmental agencies, in business and industry, on farms, and with canning and packing companies.

An application for student employment, or information about work possibilities, may be obtained by writing to the Student Work Office on the campus where work is desired.

## *STUDENT FINANCIAL ASSISTANCE*

The financial assistance program at Southern Illinois University has been organized so that it may function as an integral part of the total educa-



tional experience of the student. Insofar as possible, an attempt is made not only to assist needy and deserving students with their financial obligations through the program but to contribute to their general development and learning experience.

The program of financial assistance includes scholarships, awards, prizes, grants-in-aid, and student loan funds. As a part of the award program, the Board of Trustees of the University has established tuition awards known as Southern Illinois University Scholarship and Activity Awards. To apply for awards, entering freshmen are required to have ranked in the upper half of their graduating class and to have achieved a minimum comprehensive high school average of *C*; enrolled students are required to have a minimum average of *C* for all college work. For scholarships available to upperclassmen, a minimum average of *C* is required for all college work; for some scholarships higher averages are required.

The comparative limitations of such forms of assistance in terms of both number and amount available make it inadvisable for an undergraduate student to expect to meet all university expenses from such sources. The family, including parents, friends, and relatives, is the primary resource for a student's college costs. The student himself normally supplies one-third to one-half of his finances through work during the summer or during school, and through his savings. The University assists in making up the difference between college costs and the student's resources through scholarships, awards, and loans.

Students desiring to apply for financial assistance must be officially admitted and should request an application for financial assistance from the Student Financial Assistance Center on the campus of their choice. In general, students should apply for assistance between January 1 and March 15 prior to the September when assistance is needed.

## HEALTH SERVICES DIVISION

The University Physician heads the Health Services Division which provides services at all the major instructional centers of the University.

The primary purpose of the Health Service is to cultivate in students both physical and emotional health.

A physical examination, preferably performed by the family physician, is required of all students before attending classes in the University. A simplified form is furnished the student for this purpose; it should be mailed or brought in to the Health Service on completion. This becomes an important permanent part of the student's health record, to which is added information relative to the treatment of illnesses while the student is in school. From this record also, decisions may be made relative to special considerations for physical disabilities, a need for individualized physical-education courses, etc.

Detailed information about the service provided at each campus may be had through a brochure available at the Health Service on each campus. This includes information about the Student Medical Benefit Fund which helps to defray hospital costs.

## OTHER STUDENT SERVICES

### *COOPERATIVE CLINICAL SERVICE*

This is a coordinated center of services open to students as well as children, adolescents, and adults. Persons may report directly to the center or write the manager for an appointment. Services include psychodiagnostic assessments, speech and hearing evaluations, assistance with reading and study skills, personal counseling, marriage counseling, rehabilitation counseling, vocational counseling, speech and hearing therapy, and physical therapy. The cooperating agencies on the Carbondale Campus include Reading Center, Department of Guidance and Educational Psychology, Department of Psychology, Department of Special Education, Department of Speech Correction, Rehabilitation Institute, Department of Sociology, Student Counseling and Testing Center, and Health Service.

### *PLACEMENT SERVICE*

The Placement Service is maintained for the benefit of students, graduates, and others who have attended the University, and who desire to find employment in the teaching field, in the professions, or in business. It also serves employers by helping them locate personnel.

The facilities of the Placement Service are free to candidates seeking positions, as well as to employers. Each degree candidate is requested to register with the Placement Service during the fall quarter of the senior year. This co-operation will aid the record-keeping function as well as the placement function of the office. Credentials are sent to prospective employers at the request of either the candidate or the employer.

The Placement Service is a member of the National Institutional Teacher Placement Association, the Illinois Institutional Teacher Placement Association, the Midwest College Placement Association, and the Association of School and College Placement.

Inquiries should be addressed to the Director, Placement Service, Southern Illinois University, on the appropriate campus.

### *INTERNATIONAL STUDENT SERVICES*

This office assists students from other countries in obtaining and in solving problems related to their residence and study in this country. Special help is given in orientation, visa regulations, referral for special instruction in English, and financial problems. Arrangements are also made for students to speak before a variety of groups, to visit in American homes, and to take special trips to see items of interest.

### *BURSAR*

This office accepts payment of tuition, fees, and room charges. It also distributes checks for student employment. Limited check cashing services are provided to students. Students are encouraged to establish checking accounts in the local banks of the area to obtain the full services of a regular checking account.

## STUDENT REGULATIONS

### GENERAL

The Student Guidebook which is distributed to new students during New Student Week or which may be obtained from Central Publications contains information concerning the expectancies of students of Southern Illinois University. It is an aid to their understanding of the opportunities that are afforded them and a guide to responsibilities that ensue.

### AUTOMOBILES

Southern Illinois University has developed two campuses: a residential-type campus in Carbondale and a commuting campus in Edwardsville. In an effort to provide the best possible experiences in higher education for talented students regardless of financial needs, it has deemed that the use of unessential motor vehicles is not a necessary part of an education on a residential campus. Therefore, a student at the Carbondale Campus may not use, operate, or possess an automobile in the campus community unless he is a graduate student, married, a bona fide commuter, or a student with exceptional need.

Students attending the Edwardsville Campus may operate automobiles.

Students desiring information about motor vehicle regulations and registration procedures may inquire at the Student Affairs office on the appropriate campus.

## RESIDENCE REGULATIONS

Regulations defining the residence of students for purposes of registration in Southern Illinois University are as follows:

1. Evidence showing the residence of every applicant for admission to the University must be submitted to the Registrar at the time of application for admission, and resident or nonresident fees shall be assessed on the basis of evidence appearing in the Registrar's records.

2. In all cases where the records indicate that the student's home is outside the state of Illinois, the nonresident fee shall be assessed. A student who takes exception to the ruling may file a claim for a refund, but this must be submitted to the Registrar within 10 days of the opening date of the quarter for which the charge was made.

3. In the case of a student who is a minor, the residence of the parent, or if the student has no parent, the guardian of this person, shall govern unless there is proven to have been complete emancipation of the minor from his parents or guardian and he has established residence in the state of Illinois.

4. Any student, adult or minor, whose parents have established a bona fide residence in the state of Illinois will be regarded as a resident for registration purposes; except that an adult student who has established a residence on his own account outside of the state must conform to the terms set forth in regulation 6 to be classified as a resident.



5. A wife is classified as a resident for registration purposes if her husband is a bona fide resident of the state of Illinois preceding and at the time of her registration.

6. An adult student, whose parents are deceased or whose parents reside outside the state, to be considered a resident of Illinois for purposes of registration must be a bona fide resident of the state for three months preceding the beginning of any quarter for which he registers at the University and must present evidence that he is self-sustaining and not under parental control.

7. An adult alien who holds valid immigration papers and is in the United States under an immigrant-type visa may qualify as a resident of the state for purposes of registration in the University if he has lived within the state for at least a period of twelve months next preceding the beginning of any quarter for which he registers at the University, subject to the provisions of rules 4 and 6.

8. Several factors will be considered in the determination of each individual case. Among the factors to be considered will be (a) location of draft board registration, (b) voting address, if any, (c) the degree of self-support of the student, (d) location of summer or vacation employment.

9. All cases of appeal shall first be referred to the Legal Counsel of the University. An appeal from the Legal Counsel shall be in accordance with University statutes.

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Note: In the above regulations an adult student is considered to be a male at least 21 years of age or a female at least 18 years of age.





# Instructional Units 7

## CARBONDALE CAMPUS

### COLLEGE OF LIBERAL ARTS AND SCIENCES

HENRY DAN PIPER, *Dean*

*Anthropology; Botany; Chemistry; English; Foreign Languages;  
Geography; Geology; Government; History; Mathematics;  
Microbiology; Philosophy; Physics & Astronomy; Physiology;  
Psychology; Sociology; Zoology*

The College of Liberal Arts and Sciences serves the students of Southern Illinois University at Carbondale in many capacities. Its instructional staff provides (1) training in basic subject matter courses of General Studies; (2) opportunity for concentration in any of the areas listed on page 17; (3) electives not available in other instructional units of the University; (4) extension and adult education offered through the appropriate divisions; (5) graduate level instruction for students pursuing higher degrees than the baccalaureate; (6) preprofessional training needed for admission to such specialized schools as law, medicine, and dentistry.

The diversified offerings of the College of Liberal Arts and Sciences are designed to help the student achieve a balanced personality, an awareness of the cultures of the past, an appreciation of his fellow man, and a fundamental understanding of the ever-changing physical, social, and political environment in which he lives. A student in the college may prepare for teaching at the secondary level by including in his studies certain professional courses offered by the College of Education. The Bachelor of Arts or Bachelor of Science degree is granted to a student who fulfills requirements for graduation from the College of Liberal Arts and Sciences.

A candidate for a degree in the College of Liberal Arts and Sciences must have the following:

1. A reading knowledge of a foreign language. This may be satisfied by the General Studies foreign language requirement, or the equivalent.
2. Competency in English as demonstrated by examination, preferably at the beginning of the junior year.

The College of Liberal Arts and Sciences grants the Bachelor of Arts degree in the following areas. Suggested concentrations appear in the next chapter of this catalog.

Anthropology

Art <sup>1</sup>

Asian Studies <sup>2</sup>

<sup>1</sup> These are liberal arts concentrations, not professional concentrations.

<sup>2</sup> Only secondary concentrations are allowed in these fields.

Biological Sciences <sup>3</sup>	Government	Physics
Botany	Health Science <sup>3 4</sup>	Physiology
Central European Studies <sup>2</sup>	History	Psychology
Chemistry	Home Economics <sup>1</sup>	Religion <sup>2</sup>
Economics <sup>1</sup>	Inter-American Studies <sup>3 4</sup>	Russian Studies <sup>2</sup>
English	Mathematics	Sociology
Foreign Languages	Microbiology	Speech <sup>1</sup>
Geography	Music <sup>1</sup>	Theater <sup>1</sup>
Geology	Philosophy	Zoology

A student planning to take preprofessional courses in any of the following areas should, after completing General Studies, register in the College of Liberal Arts and Sciences. A course of study called preprofessional does not lead to a degree at Southern Illinois University: See page 105, 153, in the General Studies catalog.

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

## COLLEGE OF EDUCATION

ELMER CLARK, *Dean*

*Educational Administration & Supervision; Elementary Education; Educational Psychology and Guidance; Health Education; Higher Education; Instructional Materials; Physical Education for Men; Physical Education for Women; Recreational & Outdoor Education; Secondary Education; Special Education; Student Teaching; University School*

The College of Education is committed to giving professional training to teachers of all subjects taught in the public schools and to supervisors, administrators, and specialists. The preparation of teachers for all grades from kindergarten through high school is the special function of the college. In its graduate offerings, however, it broadens its efforts to include professional work for prospective college teachers and several specializations in school administration and supervision. For most undergraduate students preparing to teach in high schools, the subject-matter courses will be taken in the other colleges and schools of the University, and the professional preparation for teaching, including the student teaching, will be taken in the College of Education.

At Southern Illinois University a high school graduate looking for a

<sup>1</sup> These are liberal arts concentrations, not professional concentrations.

<sup>2</sup> Only secondary concentrations are allowed in these fields.

<sup>3</sup> Those who concentrate in these fields need no secondary concentrations.

<sup>4</sup> No secondary concentrations are allowed in these fields.

career in the educational world can prepare for high school, elementary, or kindergarten-primary teaching; for coaching; for positions in school administration; for guidance work; for teaching and supervising special education; and for other community services. He can prepare to teach in special fields such as art, music, home economics, industrial education, business, and agriculture. He can prepare to be a teacher of science, social studies, English, and mathematics. He can get a teaching specialization in specialized fields such as speech correction and general speech. He can dedicate himself, if he wishes, to the teaching of mentally handicapped children, the hard of hearing, or the partially sighted. Physical education as a field attracts many able men and women, as do such newer fields as recreation and outdoor education. The graduate may look for a career in health education or in school counseling. He may prepare to be a principal or a superintendent by going on with graduate work, or even to be a teacher of teachers in some college or university.

The College of Education grants the Bachelor of Science and the Bachelor of Music Education degrees.

Supervised student teaching is conducted in the University School and in co-operating public schools. The College of Education requires 12 to 16 hours of student teaching for the Bachelor of Science degree.

Students who wish to become principals or supervisors in the public schools take graduate work in the Department of Educational Administration and Supervision. The department's major emphasis is on graduate work, but it also participates in providing background for elementary and high school teachers.

#### TEACHING CERTIFICATES

Students preparing to teach in the public schools of Illinois should be informed that requirements for the Standard Elementary School Certificate are listed on page 71 under Elementary Education; those for the Standard High School Certificate and the Standard Junior College Certificate are listed on pages 118–119 under Secondary Education; those for the Standard Special Certificate are listed on page 120.

Students planning to teach on the early childhood and elementary levels register in the College of Education. Most students planning to teach on the high school level also register in this college. However, it is possible for a student to be registered in one of the other colleges or schools and meet the state requirements for a standard high school certificate by using as his electives certain prescribed courses in the College of Education. This is also true in the case of those seeking to qualify for a special certificate.

Students qualifying for teaching certificates in Illinois should also know that no certificate issued after July 1, 1953, will be renewed for the first time unless the person holding the certificate passes an examination to the satisfaction of the certificating authority upon the provisions and principles of the Constitution of the United States and of the state of Illinois. This requirement may be fulfilled by completing either Government 231 and 330 or one of the following: GSB 201b, 211b, 300a, Government 300, History 201–3, or 330.



*SCHOOL OF AGRICULTURE*WENDELL E. KEEPPER, *Dean**Agricultural Industries; Animal Industries; Forestry;  
Plant Industries*

The School of Agriculture provides opportunity for the students to prepare themselves professionally through concentrating on study of agricultural and forest production and of services and industries closely related thereto. Through teaching of formal courses; conducting research of significance to agriculture and forestry of the area; and providing consultation and service to the people of Southern Illinois in all phases of agriculture, forestry, and related occupations, the School of Agriculture strives to encourage better use of rural resources for the general welfare of all.

More than 85 per cent of Southern Illinois University's graduates in agriculture have entered such major employment areas as agricultural business, advanced professional training for research and teaching, agricultural education and government services. About 10 per cent have gone into farming. Most forestry graduates have taken governmental or industrial positions.

As pre-college preparation of high school students for study of agriculture and forestry, it is recommended that the following be included: four units of English, two to four units of mathematics (algebra, geometry, advanced mathematics); two to three units of science (biology, chemistry, physics); and two to three units of social studies. Remaining units might well include agriculture.

The School of Agriculture grants the Bachelor of Science degree in the following areas. Descriptions of the concentrations appear in chapter 8 of this catalog.

Agricultural Education	Animal Industries	Plant Industries
Agriculture, General	Production	Production
Agricultural Industries	Science	Science
Agricultural Economics	Forestry	
Agricultural Business	Forest Resource	
Agricultural Engineering	Management	
Services	Forest Recreation and	
	Park Management	

A student planning to take preprofessional courses in pre-veterinary science or pre-dairy technology should, after completing the General Studies courses, register in the School of Agriculture.

*SCHOOL OF BUSINESS*ROBERT E. HILL, *Dean**Accounting; Economics; Management; Marketing;  
Secretarial & Business Education*

The School of Business aims to prepare the student for successful performance in the business world. The courses of study develop not only a knowledge of the functioning of the economy, the operational methods of business,

and a familiarity with the sources of information and methods of collecting and interpreting data but also an understanding of, and a skill in, the art of human relations plus a high sense of integrity and responsibility.

Students can normally expect to earn the Bachelor of Science degree in four years. A student in the school may prepare for teaching at the secondary level by including in his studies certain professional courses offered by the College of Education.

### SCHOOL OF COMMUNICATIONS

C. HORTON TALLEY, *Dean*

*Journalism; Printing & Photography; Radio-Television;  
Speech; Speech Correction; Theater*

The School of Communications is set up to allow the students of the University to specialize in the study of the various mass communications media and to develop skills in the utilization of those media.

The School of Communications also is interested in research work in the various aspects of mass communications, and in making consulting and other services available to area schools, newspapers, radio and television stations.

### SCHOOL OF FINE ARTS

BURNETT H. SHRYOCK, *Dean*

*Art; Music; Design*

The School of Fine Arts serves as an instrument of the University for the direction of training and the stimulation of creative and professional work in the fine arts. It also serves students, enrolled in other academic units, who want an experience in the fine arts for either cultural or practical reasons. It offers undergraduate concentrations leading to the Bachelor of Arts or the Bachelor of Music degree.

The School of Fine Arts sponsors a number of special events each year. A Fine Arts Festival, which lasts several weeks, includes lectures by noted artists, musical ensembles, individual performances, dance recitals, dramatic presentations, and art exhibitions. A continuous planning of art exhibitions and an intensive series of public music performances are presented at no cost to students and faculty members. The Department of Music is an institutional member of the National Association of Schools of Music.

### SCHOOL OF HOME ECONOMICS

EILEEN E. QUIGLEY, *Dean*

*Clothing & Textiles; Food & Nutrition; Home & Family;  
Home Economics Education*

The major objectives of the School of Home Economics are to provide instruction, to stimulate research, to provide service work in home economics for other educational units desiring it, and to give to the people in the

area service which will help in improving the understandings and practices in their families and homes.

Students in the School of Home Economics may follow courses of study leading to the Bachelor of Science degree.

## SCHOOL OF TECHNOLOGY

JULIAN H. LAUCHNER, *Dean*

*Applied Science; Engineering; Engineering Technology;  
Industrial Education; Industrial Technology.*

The School of Technology seeks to attain through each graduate certain broad objectives. Its courses of study are designed to effect an educational philosophy in all areas of technology. The school is dedicated to the task of providing education, research, and consultative services. Motivated by the characteristics of Southern Illinois and its potential for industrial development, the school is developing courses of study to meet the present and anticipated technological needs of the area.

The courses of study in the School of Technology are designed to provide instruction, and to stimulate research in all areas of technology. These courses of study serve to eliminate the barriers and to bridge the gaps between scientists, engineers, and technologists—between theories and their applications—between the creative and practical aspects, in the basic areas of science, engineering, and industry.

Its course offerings provide:

- (1) Basic subject matter for development of the scientific and technological method and philosophy;
- (2) Preprofessional and professional training in the field of engineering;
- (3) Extension and adult education offered through the appropriate divisions of the University;
- (4) Graduate level instruction for students pursuing higher degrees.

High school students preparing for study in the School of Technology should have four units of English, two and one-half to four units of mathematics (algebra, geometry, trigonometry), two to three units of social studies, and two to three units of science (biology, chemistry, physics); physics is especially recommended. They should apply to the Admissions Office, Southern Illinois University, at the beginning of the last semester in high school.

## EDWARDSVILLE CAMPUS

### BUSINESS DIVISION

JOHN J. GLYNN, *Head*

*Accounting; Business Education; Economics;  
Management; Marketing*

The Business Division prepares men and women for positions of responsibility and leadership in the business world. It provides the student with a broad base of general education in addition to a liberal education in the various



disciplines of business, including accounting, economics, finance, management, marketing, business law, and statistics. Not only is the student given the opportunity to gain a knowledge of the operational phases of business, particularly through the use of case methods to simulate actual business conditions and problems, but also he is given an insight into the social responsibilities of business. The student is given an understanding of, and a skill in, the art of human relations and a high sense of integrity and responsibility. The student is prepared for a career in private business, in government, or in education as a teacher of business subjects.

A student who intends to concentrate in one of the disciplines of the Business Division should plan his course of study with a faculty adviser. Upon completion of 64 hours, the student should file a Declaration of Concentration form and immediately arrange a conference with his faculty adviser. A student is required to have a grade of *C* or higher in his area of concentration. (e.g., A concentration in economics would require a *C* grade or higher in each course of economics.)

The student must have at least 77 quarter hours (40%) in the Business Division and at least 77 quarter hours outside the division.

## EDUCATION DIVISION

H. DENE SOUTHWOOD, *Head*

*Education Administration; Elementary Education; Guidance; Health Education; Instructional Materials; Physical Education for Men; Physical Education for Women; Psychology; Secondary Education; Special Education; Student Teaching*

The Education Division, in keeping with the traditions of Southern Illinois University, stands committed to the development of effective professional educators. The Education Division offers a dynamic and expanding program dedicated to the development of professional educators to meet the needs of a variegated and changing community with ever broadening horizons. Teachers are prepared for all levels of learning and in the subject matter areas of the public school program.

For undergraduate students preparing to teach in the secondary school, the preparation for teaching, including student teaching, is taken in the Education Division, and the subject matter concentration is taken in other divisions. Courses of study for supervisors, administrators, and specialists, as well as basic and advanced courses in the fields of psychology and guidance, constitute an important part of the broad offerings of the division.

Students anticipating careers in education may prepare for secondary, elementary, and kindergarten teaching; for school administration and supervision; for health, recreation, and physical education; for guidance, psychology, and special education; for instructional materials; and for other community services. For secondary school teaching areas see page 121.

Supervised student teaching is conducted in the public schools of the broad and varied geographic area serviced by Southern Illinois University.

The Education Division grants the undergraduate Bachelor of Science degree.



#### CERTIFICATION

Students preparing to teach must register with the Education Division for advisement concerning certification requirements.

#### FINE ARTS DIVISION

ANDREW KOCHMAN, *Head*

*Art & Design; Music; Speech & Theater*

The objectives of the Fine Arts Division are to broaden and intensify experiences in the fine arts in the area served by the University; to impart to all University students an awareness of the cultural values of the arts through formal courses of instruction, exhibitions, concerts, and performances; to provide facilities for the creative and scholarly pursuit of the arts; and to offer specialized courses of study to serve the ends of liberal and professional education.

The faculty of music is an associate member of the National Association of the Schools of Music.

#### HUMANITIES DIVISION

GERALD J. T. RUNKLE, *Head*

*American Studies; Comparative Literature; English Language & Literature; Foreign Languages & Literature; Journalism; Philosophy; Professional Writing*

The Humanities Division provides instruction in the intellectual disciplines of English and other languages, of literature, and of ideas. The division is concerned with instruction in the reading, writing, and speaking of English and other languages, the development of an understanding and appreciation of literature, and the concomitant recognition of its civilizing values. The division guides advanced students in methods of studying and arriving at comparative evaluations regarding the works, men, and movements that make up literary and intellectual history. All students are encouraged to think and to write rationally, imaginatively, and responsibly as they learn to identify persistent human problems and their classic and current solutions.

#### SCIENCE AND TECHNOLOGY DIVISION

KERMIT G. CLEMANS, *Head*

*Applied Science; Biology; Botany; Chemistry; Mathematics; Physics & Astronomy; Physiology; Science & Technology; Zoology*

The Science and Technology Division contributes to the general education of all students by offering basic courses in mathematics and the natural sciences. The division provides a basic program in applied science and pre-engineering. For more advanced students the division seeks to develop an understanding of methods and disciplines that will help equip the student to make a living in areas embracing nature, technological, and industrial processes.

Candidates for the Bachelor of Arts degree with concentrations in any of the disciplines in the Science and Technology Division must meet the following requirements:

1. At least 48 hours of credit in one area of concentration with the grade of *C* or higher in each course in the area (Specific courses, to be included in a particular concentration, are listed in the course of study) ;
2. At least 9 hours of credit in the area of concentration in courses numbered above 299 must be earned at Southern Illinois University within the two years preceding the completion of requirements for the degree.

Upon the completion of 64 hours of college credit, each student in the division must file a tentative course outline with his division adviser.

If a candidate for the Bachelor of Science degree in education selects an area of concentration which is in the Science and Technology Division, then he must have at least 48 (or 36 if he also has two 27-hour concentrations in other areas) hours in that area with the grade of *C* or higher in each course.

A secondary concentration for a student in the Science and Technology Division must include at least 27 hours of credit with a grade of *C* or higher. Specific requirements, if any, are listed under the heading *Secondary Concentration* in the particular discipline.

To qualify for honors in an area of Science and Technology, one must complete at least 57 hours of credit or the equivalent in that area including successful completion of 9 hours of the corresponding honors program. For further information regarding the Honors program offered by the Science and Technology Division, refer to Individual Honors Work, in this catalog.

## SOCIAL SCIENCES DIVISION

ROBERT CAMPBELL, *Head*

*American Studies; Anthropology; Economics; Geography; Government; History; Psychology; Public Administration & Planning; Sociology*

The Social Sciences Division offers courses designed to enable the student to achieve an understanding and appreciation of civilization viewed in historical perspective, and to gain, through the various social sciences, an awareness of the society of which he is a part and of his role in it. His studies give him insights and understandings which enable him to live more constructively with others in his family, community, and nation and which provide him with a better understanding of social organizations, technologies, and the nature and variety of human beliefs and attitudes.

## DEPARTMENT OF NURSING

MARGARET T. SHAY, *Chairman*

The Department of Nursing was established by the Board of Trustees at Carbondale in 1953 as an autonomous unit in the University's educational structure. It was formally activated in 1956. The first program was considered supplementary and offered to registered nurses in the spring of 1956. The first class of students in the basic generic program was admitted in the fall of 1956. In the fall of 1963 the two programs were combined. In July,

1963, the Board of Trustees approved moving the nursing program to the East St. Louis Center of the Edwardsville Campus. At present all of the program may be taken at the East St. Louis Center; the first six quarters, which is preclinical and primarily liberal arts subjects, may be taken on the Carbondale Campus; the remainder must be taken at the East St. Louis Center.

The Department of Nursing has as its controlling ideal the education of students in a broad understanding of their cultural heritage; the appreciation of spiritual, aesthetic, and moral values in personal, civic, and professional living; the cultivation of critical and constructive thinking related to general as well as health needs of all individuals and to local, national, and international health problems. The course of study is (1) based on a broad foundation of liberal arts, (2) emphasizes the importance of prevention of illness as well as its curative requirements, (3) gives understanding of the physical, mental, emotional, and social aspects of health and illness and their interrelatedness, and (4) helps each student develop the ability and desire to give the best possible nursing care to society.

Applicants to the program may be either registered nurses, graduates of diploma or associate degree programs, or high school graduates who wish to become registered nurses and obtain the baccalaureate degree with a concentration in nursing.

There are no restrictions regarding age, marital status, race, color or creed to admission of applicants providing they meet all other requirements. Students are evaluated on the basis of mental and physical health, personality and character traits, academic achievement and progress toward professional maturity.

A registered nurse who wishes to enter the program must meet all requirements for admission to the University and in addition:

1. Be a graduate of a state-approved School of Nursing.
2. Be a registered nurse currently licensed to practice.
3. Show satisfactory placement on Graduate Nurse Examination.
4. Registered nurses who wish to enroll for clinical nursing subjects which include field work must make arrangements with the Department of Nursing three quarters before the date of registration for the course.

(Advanced credit may be allowed.)

Steps to take for Admission:

1. Obtain application forms from the University and proceed with all instructions therein.
2. Arrange for a personal interview with a faculty adviser in the Department of Nursing.
3. Early registration for classes according to the schedule which will be mailed the applicant is advisable.

During the last quarter of preclinical study students must purchase uniforms. The approximate cost is \$65 to \$75.

Students may live at home, in residence halls, or in approved off-campus housing.

Several hospitals, public health agencies, day care centers, nursery schools and other community institutions are used for clinical experience.



Students are expected to pay their own travel expenses to and from these facilities.

A limited number of scholarships, traineeships, grants and loans are available to student nurses from national, state and local resources. Secure Financial Assistance catalog for listing.

### *P R E P R O F E S S I O N A L   P R O G R A M S*

Preprofessional students may, subject to certain conditions, obtain a bachelor's degree after three years' work (144 quarter hours) at Southern Illinois University and one or more years' work in a professional school. During their three years of residence at Southern Illinois University 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 concentration requirements is possible by their taking certain courses at the professional school, but this is permitted only upon the prior approval of the appropriate divisional head. 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. Preprofessional training is offered in the areas of medical technology, medicine, dentistry, and veterinary science.

Students working toward the Bachelor of Science degree in Agriculture may attend the Edwardsville Campus their freshman year and transfer to the Carbondale Campus for the completion of the degree. In preparing for one of the agriculture professions, the student should follow closely the appropriate course of study as suggested in this catalog.

Students working toward a Bachelor of Science degree in home economics may attend the Edwardsville Campus their freshman and sophomore years and transfer to the Carbondale Campus for the completion of the degree. In preparing for this degree, the student should follow closely the appropriate course of study in this catalog.

### *A L L - U N I V E R S I T Y   U N I T S*

#### *A E R O S P A C E   S T U D I E S*

*LT. COL. JAMES VAN AUSDAL, Commander*

The Air Force Reserve Officers Training Corps Detachment at Southern Illinois University is a senior division ROTC unit administered by commissioned officers of the USAF who have been assigned by the Department of the Air Force with the approval of the University. These officers are appointed as members of the University's instructional staff. The senior officer is designated as Professor of Aerospace Studies and Detachment Commander. Airmen are assigned to assist in practical instruction and administration and to assist in the care of federal property. The University Corps



of Cadets consists of all students pursuing AF ROTC training. General Military Course cadets retain their civilian status until they become fully qualified members of the Professional Officer Course, at which time they are enlisted in a special Ineligible Air Force Reserve Status .

The AF ROTC course of study is offered in either the two or four-year program on the Carbondale campus and the two year program only on the Edwardsville campus. The four-year program is divided into the General Military Course (GMC), covering the Freshman and Sophomore years, followed by a four-week summer training unit and the Professional Officer Course (POC), covering the Junior and Senior years. The two-year program commences, after satisfactorily passing mental and physical tests and an evaluation process, with a six-week summer training unit between the Sophomore and Junior years and is followed by the POC, as in the four-year program. An additional facet and incentive of the four-year course is the Financial Assistance Program, a scholarship grant to several outstanding cadets entering the POC, covering tuition, books, fees, laboratory expenses, supplies and an increased retention pay above that of other POC cadets. The courses are designed to provide the fundamental training, both personal and professional, which will best equip a cadet to become an effective junior Air Force officer possessing a high growth potential and also to develop and stimulate a growing desire on his part to enter the Air Force flight training program. The GMC is designed with two additional objectives in mind: first, to interest the cadet in the possibility of continuing in the advanced AF ROTC and ultimately making the Air Force his career; and second, to provide him with *Space Age* citizenship training of long-range value to the Air Force whether he returns to civil life or becomes a member of the USAF. Emphasis is given throughout both courses, primarily in the POC, however, both in theory and practice, to outlining the leadership and managerial duties and responsibilities of squadron level officers, to improving oral and written expression, and to learning techniques of the problem-solving process.

In addition to the AF ROTC programs offered for academic credit at the Carbondale Campus, the Department of Aerospace Studies indorses or directly sponsors a number of extracurricular activities. The Arnold Air Society is open to selected cadets of all four years, and is a national professional fraternity. Membership in the Angel Flight, an auxiliary of the Arnold Air Society, is open to selected undergraduate women. Other activities open to cadets are the Honor Guard, the Band, and the Singing Squadron. Cadets may also compete for numerous trophies and awards available to members of the Cadet Corps.

The GMC for freshmen consists of two hours of classroom instruction during the spring quarter and one hour of Leadership Laboratory each week throughout the fall, winter and spring quarters. For sophomores the GMC consists of two hours of classroom instruction during the fall and winter quarters and one hour of Leadership Laboratory each week throughout the fall, winter, and spring quarters.

The POC consists of six quarters of prescribed academic work in addition to the four week summer training unit for four-year program students.

It is the same for two-year program students, except that the six-week summer training unit for these individuals precedes entry into the POC, and they do not attend the four-week camp prescribed for four year program cadets. The object of the POC is to qualify students for appointment as second lieutenants in the United States Air Force Reserve.

Selection of students for enrollment will be made by the Professor of Aerospace Studies as provided in Public Law 88-647, from qualified applicants as follows:

1. Conditions of Service. All POC students will be members of the Ineligible Air Force Reserve and will be placed under contract with the government. The contract will contain the following provisions:
  - a. The student agrees
    - (1) Unless sooner released for the convenience of the government, to complete the POC and to attend the summer training unit at the time specified by proper authority.
    - (2) To accept an appointment as second lieutenant, United States Air Force Reserve, if and when tendered.
  - b. The Department of the Air Force agrees to pay the student a retention fee at a monthly rate as announced by that department. The current rate is \$40 per month for a maximum period of 600 days. For Financial Assistance Program students the rate is \$50 per month.
2. Personal Qualifications
  - a. A student must have completed the GM course or its equivalent in previous service, or the six week field training, if a two-year program student.
    - (1) Students who have had previous training or service may receive credit toward entrance into the POC within the following limits.
      - (a) On the basis of previous honorable service in the Air Force, Army, Navy, Marine Corps, or Coast Guard, a cadet may request a waiver of the GM course, or any portion thereof, as a requirement for entrance into the POC.
  - b. In age, the student must not have reached his twenty-fifth birthday at the time of initial enrollment in the POC.
  - c. The physical standards prescribed for appointment to the United States Air Force Reserve in AFM 160-1 will apply. Due allowance will be made for physical defects that can be corrected.
  - d. Mental and educational requirements:
    - (1) A satisfactory score for the Air Force Officer Qualification Test will be required.
    - (2) The fact of enrollment in Southern Illinois University and academic *good standing* will be accepted in satisfaction of education requirements.
    - (3) At the time of acceptance, the applicant must have at least two academic years remaining to complete all prerequisites for graduation from the University; or, if he is a graduate

student, he must have a like period of time remaining to complete all work for an advanced degree. In addition, an applicant's academic standing must be in phase with his AF ROTC training.

3. In addition to the monetary emoluments listed above POC cadets receive:

- a. An officer-type uniform—cadets will be furnished a uniform on a commutation basis. The uniform remains in the cadet's possession during his two-year enrollment and becomes his property upon successful completion of the AF ROTC program.
- b. The pay of the first enlisted grade (\$120 per month) while at advanced summer training unit and travel pay to and from that unit at the rate of 6¢ per mile.

The POC will consist of three hours of instruction per week for a minimum total period of seventy-two weeks.

The program of the POC will consist of generalized courses designed to develop those attributes of character, personality, and leadership which are essential to an officer in the USAF, supplemented by practical training in leadership and exercise of command.

Advanced Air Force ROTC summer training units of four weeks' duration will be conducted annually at Air Force installations to be designated by the Department of the Air Force. The six week camps will be similarly conducted.

Students enrolled in the four-year course will be required to complete the summer training program prior to receiving their commission. They will normally attend camp immediately after completing the first-year of the POC.

Students enrolled in the AF ROTC courses at Southern Illinois University receive the following credits:

	HOURS
2 hours of credit for each academic quarter of the GM course .....	6
3 hours of credit for each academic quarter of the PO course .....	18*
Total hours of credit for the GM and PO courses .....	24

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\* Except A.S. 350, which is 4 hours of credit and not part of above total.

All credit received for the AF ROTC courses is allowable toward a bachelor's degree.

Air Force ROTC textbooks will be furnished on a loan basis to all AF ROTC students. They remain the property of the federal government and must be properly handled.

Uniforms are furnished by the University for the use of the GMC AF ROTC students. In case a uniform should become so worn or damaged as to be unfit for wear, the student may be held responsible to the extent determined by proper authority.

All cadets are required to wear the uniform on such days and occasions as directed by the Professor of Aerospace Studies.



#### AIR FORCE ROTC AWARDS

Awards are presented to outstanding cadets at the close of the school year. Details concerning such awards are published at appropriate times on the cadet bulletin board. The following awards will be presented to recipients at an Awards Ceremony, at Southern Illinois University, held in May of each academic year.

1. The Commander's Award. Awarded by the detachment to cadet commanders appointed during the school year. Awarded in recognition of leadership ability as demonstrated in command positions in the cadet corps.

2. The Trustees' Award, Senior Student. Awarded to the outstanding cadet in the senior year, based on standing in the University and in AF ROTC, and aptitude for general service.

3. The Trustees' Award, Junior Student. Awarded on the same basis as for senior cadet, except to a junior.

4. The Trustees' Award, Sophomore Student. Awarded on the same basis as for senior cadet, except to a sophomore.

5. The Trustees' Award, Freshman Student. Awarded on the same basis as for senior cadet, except to a freshman.

6. Air Force Association Medal, Outstanding senior cadet. Awarded to the senior cadet making the highest military grades of the year.

7. The Reserve Officers' Association Award, junior student. Awarded to the outstanding junior cadet, based on the University and AF ROTC grades for the current year and aptitude for general service.

8. The Air Force Times Award. Awarded to the senior cadet bringing constructive attention to the cadet corps.

9. Chicago Tribune Award, Junior Student. Awarded at the end of the first and third quarters of each school year to the outstanding junior cadet, based on the highest grade in the particular military course of the current quarter and aptitude for general service.

10. Chicago Tribune Award, Sophomore Student. Awarded on the same basis as junior cadet, except to a sophomore.

11. General Dynamics Award, Sophomore Student. Awarded to the outstanding sophomore student applying and selected for the POC in a category leading to pilot training.

12. American Legion Auxiliary Awards. National security awards, presented to AF ROTC cadets in recognition of continued outstanding service in the interest of the corps.

13. McDonnell Aviation Award. Awarded to the outstanding senior cadet who has been selected for pilot training.

14. Sons of American Revolution. Awarded to that General Military Course cadet with highest over-all academic standing and military aptitude.

#### *DIVISION OF UNIVERSITY EXTENSION*

RAYMOND H. DEY, *Dean*

The purpose of the Division of University Extension is to make university credit courses available to people who are not in residence. It calls upon



the various instructional agencies of the University for the personnel used to carry out its program.

Southern Illinois University is a member of the National University Extension Association and meets the standards of this association.

Scheduling off-campus college credit classes is a chief function of the Division of University Extension.

Instructors of extension courses are members of the regular university faculty, and the work offered meets all of the requirements of the American Association of Colleges for Teacher Education and the North Central Association of Colleges and Secondary Schools. Up to 96 hours earned in extension may be applied toward a bachelor's degree.

A maximum of one-half of the number of hours required for the bachelor's degree, or 96 hours, may be taken by extension and correspondence courses combined. Of this total, not more than 48 hours may be taken in correspondence courses.

While Southern Illinois University does not maintain a correspondence division, courses taken by correspondence from institutions which are members of the Association of American Universities are regularly accepted if the grade earned is *C* or above.

## DIVISION OF TECHNICAL AND ADULT EDUCATION

ERNEST J. SIMON, *Dean*

The Division of Technical and Adult Education serves adults and high school graduates interested in obtaining a college-level course of instruction of a shorter duration than the usual four-year college program, qualifying them for employment at the semi-professional and technical level in industry and business.

### VOCATIONAL-TECHNICAL INSTITUTE

The Vocational-Technical Institute on the Carbondale Campus and on the Edwardsville Campus provides for high school graduates one and two-year college-level terminal courses of study for training technicians. These courses of study are designed to prepare men and women to fill the positions in business and industry between the skilled worker and the engineer or professional man. (See Division of Technical and Adult Education bulletin.)

### ADULT EDUCATION

The Adult Education course of study consists of noncredit courses in various vocational, technical, and general education fields designed to provide a wide variety of educational opportunities for adults.

Most courses range in length from eight to twelve weeks, two or three hours weekly. Certain special courses are offered for sixteen to twenty-four weeks. These tailor-made courses are varied to meet the interests and needs of the adults served. (See Division of Technical and Adult Education bulletin.)

The adult education courses are taught by regular staff members obtained from every division and school of the University, as well as carefully selected specialists from the ranks of business, industry, and the professions.

### *COMMUNITY DEVELOPMENT INSTITUTE*

RICHARD C. FRANKLIN, *Director*

The Community Development Institute has been established for students seeking training in work with individuals and groups striving to develop a more satisfactory life within the community setting. The institute's purposes also include training of adults concerned with improving their community leadership, and co-operating with academic units of the University and other agencies in research undertakings to investigate community processes and social change. Research findings from these undertakings become invaluable to the communities in their development.

### *LABOR INSTITUTE*

JOHN M. McDERMOTT, *Director*

The function of the Labor Institute is to promote harmony and cooperation between labor and management by encouraging the training of students and others interested in labor and industrial relations and to provide advice on the technical aspects of labor and industrial relations to labor, to industry, and to the public.

### *LATIN AMERICAN INSTITUTE*

A. W. BORK, *Director*

In order to provide a special course of study for the student interested in Latin America, the Latin American Institute offers an undergraduate concentration in inter-American studies leading to the Bachelor of Arts degree in the College of Liberal Arts and Sciences.

### *SMALL BUSINESS INSTITUTE*

R. RALPH BEDWELL, *Director*

The primary objective of the Small Business Institute is to develop executives for small businesses, rather than to create specialists in a single field such as accounting, finance, sales, etc. Management of a smaller business requires more all-around "know-how." While concepts taught are those of modern big business, the applications are directed to small business operations.

Graduates from this four-year course of study receive the Bachelor of Science degree in small business management, granted by the School of Business.

*TRANSPORTATION INSTITUTE*

ALEXANDER R. MACMILLAN, *Director*

The Transportation Institute has been established to help meet the increasing need for specially educated men and women in the transportation industry. To this end, the institute, in co-operation with other agencies of the University, will arrange for special graduate, undergraduate, and adult education courses in transportation.

# Areas of Concentration

8

## ACCOUNTING

Accounting is the means by which the many transactions of business are analyzed, recorded, presented, and interpreted. The ability to analyze, present, and interpret is not acquired easily; it is one that takes thorough and serious study.

The accounting courses are designed to develop those abilities which lead to professional positions in cost accounting, auditing, income tax, financial statement analysis, and general financial accounting. The operation of a business and its financial condition are of interest to its owners, to its employees, to its creditors, to the various governmental bodies, and to the public.

Accounting courses cover four basic areas of study: theory, cost accounting, tax, and auditing. In addition to the four basic areas, special courses are offered in governmental accounting, accounting systems, and Certified Public Accountant problems. Although individuals trained in accounting might work in private industrial firms, public accounting firms, governmental agencies, or in college teaching, the four basic areas in accounting are needed as background. Those individuals desiring to engage in public accounting in Illinois should familiarize themselves with the Illinois laws and regulations covering the certification of public accountants. The regulations are published by the Committee on Accountancy, University of Illinois, Urbana, Illinois.

### CARBONDALE CAMPUS

BACHELOR OF SCIENCE DEGREE, *School of Business*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Accounting</i> .....	80
GSB 211-9, GSD 110-3 .....	(12)
Accounting 251-12, 331, 341, 351-8, 456 .....	32
Accounting 432, 442, 453 (choose at least two) .....	8
Accounting 355, 415, 458, 459, 461. Choose one unless three were chosen above .....	3-4
Economics 214, 215, 315 .....	10
Management 320, 340, 371, 372 or 373, 481 .....	20
Marketing .....	7
<i>Electives</i> .....	15-16
<i>Total</i> .....	192

### SECONDARY CONCENTRATION

Requirements for a 24-hour secondary concentration in accounting consist



of 251-12, 8 hours of accounting courses numbered 300 or above, and Management 170 or 340.

EDWARDSVILLE CAMPUS

BACHELOR OF SCIENCE DEGREE, *Business Division*

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Accounting</i> .....	87
GSB 211a, GSD 114-9 .....	(12)
Accounting 251-12, 331, 341, 351-18, 442, 453-8, 456 .....	44
Accounting 355, 432, 458, 461 (any one) .....	4
Economics 210, 315; 470 or GSB 311 .....	12, or (3) + 9
Management 170, 271, 320, 340, 371, 372 or 373 .....	25
Marketing 230 .....	5
<i>Electives</i> .....	18
<i>Total</i> .....	192

SECONDARY CONCENTRATION

Requirements for a 24-hour secondary concentration in accounting consist of 251-12, 8 hours of accounting courses numbered 300 or above, and Management 170 or 340.

AFRICAN STUDIES

Although a number of courses concerned with Africa are offered, they are insufficient in hours of credit to permit a secondary concentration. The African Studies Committee can give information about the courses available and can also supply advice and assist research on African subjects with its bibliographical and documentary materials. Address the chairman of the committee, Department of Anthropology, Southern Illinois University, Carbondale, Illinois 62903.

AGRICULTURE, GENERAL

General agriculture, intended for students seeking broad backgrounds in agriculture, is probably the best agricultural plan for students who have not chosen a professional area for emphasis.

Students gain basic preparation for many of the agricultural careers: general farming, agricultural services, agricultural extension, agricultural communications, agricultural business, agricultural industry, and agricultural production. Students who initially enroll in general agriculture may transfer to other agricultural areas of concentration or they may continue in general agriculture and select courses from various fields.

CARBONDALE CAMPUS

BACHELOR OF SCIENCE DEGREE, *School of Agriculture*

<i>General Studies Requirement</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in General Agriculture</i> .....	60

Agricultural Industries 114 or 350 or 354, and others .....	12
Animal Industries 105 or 125 or 231, 315, and others .....	12
Forestry or Agricultural Industries: agricultural engineering .....	3-5
Plant Industries 103, 264 or 309, and others .....	12
Electives in agriculture .....	20-24
<i>Electives</i> .....	36
<i>Total</i> .....	192

## AGRICULTURAL INDUSTRIES

In agricultural economics, courses are offered in the following fields: farm management, farm credit, agricultural prices, agricultural marketing, agricultural marketing, agricultural co-operatives, and farm policy. An agricultural business option is available.

Courses are offered in the four fields of agricultural engineering; rural electrification, farm power and machinery, farm structures, and soil and water engineering. A special course of study is available to train farm machinery specialists for positions requiring managerial ability for dealer services and sales work.

### CARBONDALE CAMPUS

BACHELOR OF SCIENCE DEGREE, *School of Agriculture*

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Agricultural Industries</i> .....	75-76

Three options are available:

AGRICULTURAL ECONOMICS .....	OPTION A		
AGRICULTURAL BUSINESS .....	OPTION B		
AGRICULTURAL ENGINEERING SERVICES .....	OPTION C		
GSB 314 .....	(3)	(3)	
Agricultural Industries 114, 350, 354, and others .....	24	24	
Agricultural Industries 114, 354, 214, 306, 373, and others .....	0	0	36
Animal Industries 105 or 231, 315 .....	8	8	8
Plant Industries 103 .....	4	4	4
Plant Industries 309 .....	0	0	4
Forestry or Plant Industries .....	4	4	0
Electives in agriculture .....	17	8	8
	57	45	60
Social Sciences and Business .....	19		
Social Sciences, Business, and Communications .....		31	
Business and Related Courses .....			15
<i>Electives</i> .....			29-30
Courses to complete a total of 192 hours .....	29	29	30
<i>Total</i> .....			192

AGRICULTURAL EDUCATION, VOCATIONAL  
CARBONDALE CAMPUS

In agricultural education, completion of a four-year course of study leads to certification as a teacher of vocational agriculture. Courses in both the School of Agriculture and the College of Education are included. A student may receive a Bachelor of Science Degree and take at least part of the additional courses at the graduate level to qualify to teach Smith Hughes Vocational Agriculture.

BACHELOR OF SCIENCE DEGREE, *School of Agriculture*

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Vocational Agricultural Education</i> .....	81
Agricultural Industries: agricultural economics courses .....	12
Agricultural Industries: agricultural engineering courses .....	12
Animal Industries .....	12
Plant Industries .....	12
English 391 or proficiency exam .....	(3) or 0
Forest 360 or Plant Industries 264 .....	4
Electives in technical agriculture .....	20
Social Sciences .....	9
<i>Professional Education Requirements</i> .....	33-35
Agricultural Industries 210, 309, 312-12 .....	19
Two of the following: Agricultural Industries 311, Educational Administration and Supervision 335, Guidance 422, Instructional Materials 417, Secondary Education 407, 440 ....	6-8
Guidance 305 .....	4
Secondary Education 310 .....	4
<i>Total</i> .....	201-203

AMERICAN STUDIES

EDWARDSVILLE CAMPUS

BACHELOR OF ARTS DEGREE, *Humanities Division*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in American Studies</i> .....	68
American Studies 398 .....	4
English 309-8 .....	8
Foreign Language (2 or 3 years in a language) .....	(9) + 9
GSB 300-9 .....	(6) + 3
Philosophy 381b,c, 386-4 .....	12
Approved courses in history, social sciences, literature, philosophy, fine arts, and other areas (At least two courses must be in speech or fine arts.) .....	32
<i>Electives</i> .....	28
<i>Total</i> .....	192

## ANIMAL INDUSTRIES

Instruction, research, demonstration, and consultation are provided in the fields of livestock, dairy, and poultry production, pre-veterinary science, and pre-dairy technology. Courses are offered in all phases of animal production, animal nutrition, and livestock management.

The student has opportunity to select courses in other areas of agriculture or related fields such as business, biology, or physical sciences, thus being able to include the agronomic, agricultural economic, and agricultural engineering phases of agriculture or business as related to animal production.

## CARBONDALE CAMPUS

BACHELOR OF SCIENCE DEGREE, *School of Agriculture*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Animal Industries</i> .....	69
(For an AGRICULTURAL SCIENCE option, required hours are in the second column.)	
Animal Industries 105, 125, 231 (any two) .....	8 8
Animal Industries 315, 332, 381-1 .....	9 9
Animal Industries electives .....	31-32 19-20
Agricultural Industries .....	3-4 3-4
Plant Industries 103 .....	4 4
Electives in School of Agriculture .....	4 4
Mathematics, physical sciences, and biological sciences .....	0 12
Science electives .....	8 8
<i>Electives</i> .....	27
<i>Total</i> .....	192

## ANTHROPOLOGY

## CARBONDALE CAMPUS

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

All the major divisions of anthropology are covered, viz. archaeology, ethnology, social anthropology, linguistics, and physical anthropology. Faculty members of the department have had field experience in North, South, and Central America, the Caribbean, Europe, Africa, and the Pacific. Faculty specialization in and field experience of northern Mexico are especially strong. Emphasis is also given to the anthropology of Southern Illinois with special attention to archaeological studies.

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Anthropology</i> .....	60
GSD FL .....	(9)
Anthropology 300, 303, 304, 9 hours from 305 and/or 306, 400, 401, 404, 405, 408, 409 .....	42
At least 3 hours in each of the following: geography, geology, philosophy, psychology, sociology, and zoology .....	18



<i>Secondary Concentration</i> .....	24
<i>Electives</i> .....	12
<i>Total</i> .....	192

Students 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 course of study under the supervision of his adviser.

#### SECONDARY CONCENTRATION

A secondary concentration in anthropology consists of 300, 304, 400, 409, and 10 hours in courses above 300. The student is advised to consult the chairman before selecting his electives.

#### EDWARDSVILLE CAMPUS

A secondary concentration in anthropology consists of 27 hours including 300-4, 400-4, 409-4, GSB 201a-3, GSB 351b-3, and English 400-4 may be counted as part of the concentration.

#### APPLIED SCIENCE

Science is concerned with discovering and describing the structure and processes of the natural world. Applied science may be thought of as science in the process of becoming technology; it is particularly concerned with the application of new science.

The applied scientist finds that the conventional theoretical formulations often do not completely explain the phenomena with which he must deal, that pure science has tended to pass on into new fields of study so quickly that many important fields are abandoned before they are adequately investigated. He must therefore be prepared to make himself responsible for original and fundamental investigations in the physical and mathematical principles that underlie his own work, while he still holds his place as the pre-eminent intellectual agent of progress in the practical world. The applied science course of study at Southern Illinois University is directed toward the application of science in fields such as materials science, information processing science, and nuclear science.

#### CARBONDALE CAMPUS

##### BACHELOR OF SCIENCE DEGREE, *School of Technology*

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Applied Science</i> .....	117
Applied Science 300-5, 450-5, 470-5 .....	15
Chemistry 111b,c .....	10
Engineering 222-3, 260-9, 300-9, 331-12, 412-3 .....	36
Mathematics 150a,b, 252a,b .....	19
Physics 211a,b,c .....	15
Technology 101a,b .....	6

Elective area, such as materials science, information processing science, or nuclear science .....	16
Total .....	204

## EDWARDSVILLE CAMPUS

Courses to complete the first two years of the Bachelor's degree and selected advanced applied science courses are available at Edwardsville.

### ART

Undergraduate offerings in art provide both introductory and specialized experiences. Courses are available for those desiring a concentration in art and for those interested in art as an avocation.

Two courses of study are offered leading toward the Bachelor of Arts degree in art. The Carbondale Campus requires 110 hours in art with the emphasis on a professional degree. The Edwardsville Campus requires 75 hours in art with the emphasis on a liberal arts degree.

The University asserts the right to withhold an example of the work of each student in each class. Such works become a part of a permanent collection from which exhibitions may be prepared.

## CARBONDALE CAMPUS

To augment the regular academic course of study and enrich the experiences for the students of art, the University brings to the campus such distinguished New York artists as Herman Cherry, painter; Sidney Geist, sculptor; John Grillo, painter; Edward Millman, painter; Edward Dugmore, painter; Roy Lichtenstein, painter; Walter Plate, painter; Ad Reinhardt, painter; and David Slivka, sculptor.

The distinguished weavers Ann Albers and Ronald Cruickshank have conducted lectures and workshops as has the well-known metalsmith, Richard Thomas.

A series of panels and lectures, often combining visiting speakers and members of the regular faculty, is presented each year. This series includes such eminent scholars as Art Historian, Dr. Richard Ettinghausen, Chief Curator of Near Eastern Art, Freer Gallerys (the Smithsonian Institute), Washington, D.C.; Dr. Harry Bober, Professor of Art History, New York University; Dr. Hugo Buchta, Warburg Institute, London, England; Dr. Horst Janson, Chairman of the Art History Department, New York University. Dr. Hoyt Sherman conducted demonstrations into the phenomenon of vision and the art critics Clement Greenberg and Hilton Kramer have also participated.

### BACHELOR OF ARTS DEGREE, *School of Fine Arts*

One concentrating in art should select one of the following fields of specialization by the end of his sophomore year: painting, prints, sculpture, crafts, art history, and art education. He must complete a minimum of 24 hours in art history, unless he specializes in art education.

*Studio*

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Art (Studio)</i> .....	111
Art 100-15, 200-12, and studio electives .....	51
Art 225-12, 345, 444, & electives in art history .....	24
Art crafts electives .....	8
Art: additional studio courses for specialization 1, 2, or 3 ....	28
1. 325a, 358-8, 401, 406—for specialization in painting	
2. 325a, 358-8, 401, 410, 416—for specialization in prints	
3. 325-a-8, 393-20—for specialization in sculpture	
<i>Total</i> .....	198

*Crafts*

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Art (Crafts)</i> .....	111
Art 100-15, 200-12, and studio electives .....	43
Art 225-12, 345, 444, & art history electives .....	24
Art: crafts courses for specialization 1, 2, or 3 .....	44
1. 302-8, 332-12, 430-12, 436-4, & electives—for specializa-	
tion in jewelry and metalsmithing	
2. 302, 426, & pottery electives to total 32 hours; 385-12	
or 420-12 or 12 hours in jewelry and metalsmithing—for	
specialization in pottery and ceramics	
3. 302-12, 332-8 (Prerequisite: 231-4), 385-12, & 440-12	
for specialization in weaving	
<i>Total</i> .....	198

*Art Education*

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Art (Education)</i> .....	108
GSB 331 .....	(3)
Art 100-15, 200-12, 225, 302, 306, 307, 308, 385, electives .....	63
Art, studio and art history .....	10
Guidance 305, 422 .....	7
Instructional Materials 417 .....	3
Secondary Education 310, 352-12, 440 .....	19
<i>Total</i> .....	195

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

Students interested in the Bachelor of Arts degree in art with a specialization in art history should consult the chairman.

A student in the College of Liberal Arts and Sciences who chooses one of the five specializations in art history, crafts, painting, prints, and sculpture should consult the adviser for the area. These specializations do not fulfill requirements for teaching art.



## SECONDARY CONCENTRATION

One desiring a secondary concentration in art should see the chairman.

*EDWARDSVILLE CAMPUS*

During the last quarter of his junior year, any art student may petition the art faculty to grant him the privilege of an exhibition of his work. Such an exhibit may be comprised of the work of an individual or may be composed of the works of several seniors. Participation is not required for graduation; permission to participate is extended in recognition of industry and ability.

BACHELOR OF ARTS DEGREE, *Fine Arts Division*

<i>General Studies Requirements</i> (See Chapter 3.) .....	93
<i>Requirements for Concentration in Art</i> .....	75
GSC 351-12, GSD FL .....	(15) + 6
Art 100-15, 201-8, 203-4, 310-4, 358-4, 393-4 .....	39
12 additional hours from one of the following: ceramics, prints, painting, sculpture, or art history .....	12
Art Electives .....	18
<i>Secondary Concentration Requirements</i> .....	24
<i>Total</i> .....	<u>192</u>

BACHELOR OF ARTS DEGREE *with Standard Secondary Certification*

For certification, the Bachelor of Arts candidate must elect GSB 331-3, 8 hours in Art education, and 8 hours of professional education courses, plus student teaching.

BACHELOR OF SCIENCE DEGREE, *Education Division*

For this degree, the following courses constitute a concentration in art: 100-15, 201-8, 203-8, 300-4, 310-8, 358-8, 365-4, GSC 351-12. Total: 67 hours.

## SECONDARY CONCENTRATION

A secondary concentration in art requires 100-15, 201-8 or 203-8, and 8 hours from the following: 300, 305, 310, 324, 345, 346, 347, 350, 358, 365, 369, GSC 101, 351.

## ASIAN STUDIES

SECONDARY CONCENTRATION, *Carbondale Campus*

A secondary concentration in Asian studies is offered within the College of Liberal Arts and Sciences. To qualify, one must present a minimum of 30 hours to be chosen from at least three areas from a list of offerings approved by the Committee on Asian Studies. Not more than 12 hours may be taken in any one area. The approved courses cover areas of instruction in agriculture, anthropology, art, economics, foreign language, geography, government, history, and philosophy.



## BIOLOGICAL SCIENCES

## CARBONDALE CAMPUS

The course of study is designed to give the student a broad, yet intensive education in the biological sciences preparatory for various professions, especially the teaching of biology at the secondary level. This work may be taken in either the College of Liberal Arts and Sciences or the College of Education. The science requirement for this concentration is the same in both colleges; consult Chapter 7 for differing college requirements.

The course of study consists of 72 hours (combined concentration and secondary concentration) of biological courses selected from General Studies Area A and the Departments of Botany, Microbiology, Physiology, and Zoology. In addition, work in chemistry and mathematics is required. Descriptions of the required and recommended courses may be found in the various departmental listings.

All students interested in this course of study should consult with the biological sciences adviser in life sciences for a course guide and detailed individual course planning.

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Biological Sciences</i> .....	75
Biological Science Seminar .....	0
Botany 300-3, 301-3, 313-3 .....	9
Botany 315-4 or Zoology 401-5 .....	4 or 5
Botany 341-3 or Zoology 310-5 .....	3 or 5
Chemistry 111-15 .....	15
Electives from Botany, Microbiology, Physiology, and Zoology .....	2 - 11
GSD 108-9, or 114-9 .....	(9)
GSA 201-9, 312-3 .....	(12)
GSA 301-4 and Botany 320-5 or Physiology 315-15 ....	9 or 15
Microbiology 301-5, 302-5 .....	10
Zoology 102-5, 103-5 .....	10
Zoology 402 or 403 .....	4
<i>Electives</i> .....	30
<i>Total</i> .....	192

BACHELOR OF SCIENCE DEGREE, *College of Education*

If the degree is to be in the College of Education, the student must satisfy all requirements of that college for the Bachelor of Science degree. The requirements for concentration are the same in both colleges.

## SECONDARY CONCENTRATION

A secondary concentration in biological sciences consists of a minimum of 36 hours and may be taken in either the College of Liberal Arts and Sciences or the College of Education. It must include GSA 201-9, 301-4,

312-3, Botany 300-3, 301-3, Microbiology 301-5, and Zoology 102-5, 103-5. Attention is called to the fact that Chemistry 111 a,b,c-15 is a necessary prerequisite to some of these biology courses.

Biology Electives (and general electives, as desirable) will normally be selected from the following:

GSA 313, 314, 315, 321.

Botany 400, 404, 405, 411, 412, 414, 449, 451, 470.

Microbiology 403, 441, 451-6

Physiology 430, 433

Zoology 202, 300, 303, 306, 321, 406, 407, 408, 410, 413, 414, 465.

Requirements for standard secondary teaching certificate (30 hours minimum):

Guidance 305-4 (prerequisite is GSB 201c)

Secondary Education 310-4 (prerequisite is Guidance 305)

Secondary Education 352-12-16

Botany 470-4

Two from the following are required:

Guidance 422a-4

Secondary Education 440-3

Education Administration 355-4

Instructional Materials 417-4

Secondary Education 407-4

## BIOLOGY

### EDWARDSVILLE CAMPUS

Anyone planning a concentration in biology should consult with either a botany or zoology representative.

#### BACHELOR OF ARTS DEGREE, *Science and Technology Division*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Biology</i>	69
GSA 201a,c, GSD FL-9	(15)
Botany 202, 311	10
Botany 225 or 320 or Physiology 209	5
Electives in Botany, Physiology, and Zoology	13
Chemistry 111-15	15
Physics (GSA 101a,b may be used for credit)	6
Zoology 102, 103, 310, and 401	20
<i>Secondary Concentration</i> (not botany or zoology)	27
<i>Electives</i>	9
Recommended: organic chemistry, one additional quarter of physics, and three of mathematics.	
<i>Total</i>	192

#### BACHELOR OF SCIENCE DEGREE, *Education Division*

For this degree, the requirements for concentration in biology are as listed above under the Bachelor of Arts degree. Also see Secondary Education.

SECONDARY CONCENTRATION

The minimum biology secondary concentration is 27 hours including GSA 201-9 and electives in botany, physiology, and zoology.

BOTANY

Anyone considering a concentration in botany should consult with botany faculty representatives.

CARBONDALE CAMPUS

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Botany</i>	43-73
GSA 201-9 (5 hours count toward the 48 hours in botany)	(9)
GSD FL-9	(9)
Botany courses selected in consultation with the chairman	43
Chemistry and mathematics: a background of basic courses	0-30
<i>Secondary Concentration</i>	24
<i>Electives</i>	8-38
<i>Total</i>	192

SECONDARY CONCENTRATION

A secondary concentration consists of a minimum of 24 hours in botany, including GSA 201-9 (which contributes only 5 hours) and excluding Botany 390 and 391.

EDWARDSVILLE CAMPUS

BACHELOR OF ARTS DEGREE, *Science and Technology Division*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Botany</i>	69
GSA 201-9, GSD FL-9 (German or Russian)	(18)
Botany 202, 203, 310, 311 and 320	25
Electives above 300 in botany	23
Chemistry 111-15	15
Physics (GSA 101a,b may be used for credit)	6
<i>Secondary Concentration</i> (not biology)	27
<i>Electives</i>	9
Recommended: organic chemistry, one additional quarter of physics, and three of mathematics.	
<i>Total</i>	192

BACHELOR OF SCIENCE DEGREE, *Education Division*

For this degree, the requirements for concentration in botany are as listed above under the Bachelor of Arts degree.

SECONDARY CONCENTRATION

The minimum secondary concentration in botany is 27 hours, including GSA 201c, 202, 310, and botany electives.

**BUSINESS TEACHER EDUCATION**

**CARBONDALE CAMPUS**

BACHELOR OF SCIENCE DEGREE, *College of Education*

*General Studies Requirements* (See Chapter 3.) ..... 96

The student will follow the General Studies requirements as established by Southern Illinois University. When choices are allowed, the student will make his own selections. Each student with a concentration in business teacher education will, however, include the following General Studies courses in his program: GSB 201c-3, GSB 211a-3, GSB 211b-3, GSB 211c-3, GSD 110-3.

*Requirements for Concentration in Business Teacher Education* ..... 54

- |  |    |
|--|----|
| Accounting 251a-4 .....  | 4  |
| Management 170-4, 371-4 .....  | 8  |
| Marketing 225-3 .....  | 3  |
| Secretarial and Business Education 201a-3 .....  | 3  |
| Preparation to teach in a minimum of four of the following Areas: .....                              | 36 |
| 1. Typewriting. <sup>1</sup> 201b,c-6, 241-1, 304-3  |    |
| 2. Shorthand and Transcription. <sup>1</sup> 221a,b,c-12, 324a,b-8                                   |    |
| 3. Bookkeeping or Record Keeping. <sup>1</sup> Accounting 251b,c-8                                   |    |
| 4. General (Basic) Business Subjects. Economics 214-3 or 215-3, Management 340-4, Marketing 325-4    |    |
| 5. Office Practice and Machines. Requirements for teaching in Area 1, 326-4, 341-4, Management 271-4 |    |
| 6. Business Law. Management 372-4, 373-4   |    |
| 7. Salesmanship and other Distributive Education Subjects. Marketing 325-4, 329-4, 337-4             |    |

*Professional Education* ..... 34-39

*General Studies Requirements* (See Chapter 3.) ..... 93

- |  |          |
|--|----------|
| Guidance 305-4 .....                   | 4        |
| Secondary Education 310-4 .....        | 4        |
| Secondary Education 352-12 or 16 ..... | 12 or 16 |
| Two of the following: .....            | 8        |
| Guidance 422a-4                        |          |
| Educational Administration 355-4       |          |
| Instructional Materials 417-4          |          |

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<sup>1</sup> Students who demonstrate by examination an initial competence in typewriting may be excused from as many as 9 hours of typewriting (201a,b,c). Those students starting with a proficiency in shorthand may be excused from as many as 16 hours of shorthand (221a,b,c, and 324a). Those who have had high school instruction in bookkeeping will start with Accounting 251a.



Two of the following: .....	6 or 7
Secretarial and Business Education 403-3, 404-3, 405-3, 406-4, 408-3.	
<i>Electives</i> (Number of hours to bring total to 192)	
<i>Total</i> .....	192

## SECONDARY CONCENTRATIONS

Secondary concentrations are offered in the following areas: (1) secretarial studies and office management, consisting of a minimum of 24 hours in business; (2) business-teacher education, consisting of a minimum of 30 hours in business.

Secondary concentrations are planned for each student individually by the student and his adviser. This procedure is necessary because students' backgrounds and needs vary greatly.

## EDWARDSVILLE CAMPUS

BACHELOR OF SCIENCE DEGREE, *Business Division*

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Secretarial Studies and Office Management</i> .....	87-111
GSB 211a,b,c; GSD 114a,b,d .....	(18)
Accounting 251-12 <sup>1</sup> .....	12
Economics 210, 315, 470 (or GSB 311) .....	9 + (3) 12
Business Education 201-9, <sup>1</sup> 241, 304, 327, 341, 407, 427, 428 .....	25-34
Business Education 221-12, <sup>1</sup> 324-8 or 8 hours of elec- tives in accounting, management, or marketing .....	8-20
Management 240, 271, 320, 340, 361, 371, 385 .....	28
Marketing 230 .....	5
<i>Electives</i> .....	0-18
<i>Total</i> <sup>1</sup> .....	192-198

BACHELOR OF SCIENCE DEGREE, *Education Division*

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Business-Teacher Education</i> .....	54
GSB 201c, 211-9, 331-3, GSD 114d .....	(18)
Accounting 251a .....	4
Management 170, 271, 371 .....	12
Marketing 230 .....	5
Business Education 201a,b, <sup>1</sup> 351, 407 .....	8-14
<i>At least four teaching areas selected from the following</i> .....	19-25

<sup>1</sup> Students who demonstrate by examination an initial competence in typewriting may be excused from as many as 9 hours of typewriting (201). Those students starting with a proficiency in shorthand may be excused from as many as 16 hours of shorthand (221 and 324a). Those who have had high school instruction in book-keeping will start with Accounting 251a.

If area 5 is chosen preparation to teach in a total of 5 areas is required.

- 1. Typewriting <sup>1</sup>: Business Education 201c, 241, 304.
- 2. Shorthand and Transcription <sup>1</sup>: Business Education 221–12, 324–8.
- 3. Bookkeeping or Record Keeping <sup>1</sup>: Accounting 251b,c.
- 4. General (Basic) Business Subjects: Economics 210, Management 340, Management or Marketing elective.
- 5. Office Practice and Machines: Requirements for teaching in Area 1, Business Education 327, 341, 427.
- 6. Business Law: Management 372, 373.
- 7. Distributive Education: Marketing 331, 333, 337.

<i>Professional Education Requirements</i> .....	34
Guidance 305–4; Education Administration 355–4; Secondary Education 315–4, 352–8; 8 hours from the following: Secondary Education 352–4; Business Education 405–4; Instructional Materials 417–4; Guidance 422–4. Two of the following: Business Education 403–3, 404–3, 405–4, 406–4, 408–3	
<i>Electives</i> (hours to total 192) .....	17
<i>Total</i> .....	192

SECONDARY CONCENTRATION

Secondary concentrations are offered in the following areas: (1) secretarial studies and office management consisting of a minimum of 24 hours in business; (2) business-teacher education consisting of a minimum of 30 hours in business.

Secondary concentrations are planned for each student individually by the student and his adviser. This procedure is necessary because students' backgrounds and needs vary greatly.

CHEMISTRY

CARBONDALE CAMPUS

BACHELOR OF ARTS DEGREE, A.C.S., *College of Liberal Arts and Sciences*

A 3.0 average in chemistry courses is required of all who start the second year of the concentration. A 3.25 average in chemistry courses, and/or consent of the chairman, is required before starting the third and fourth years.

The following courses meet requirements for certification by the American Chemical Society. A student should consult the Department of Chemistry for detailed recommendations covering his four years of study and for changes in A.C.S. requirements.

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Chemistry</i> (with A.C.S. certification) .....	107

<sup>1</sup> Students who demonstrate by examination an initial competence in typewriting may be excused from as many as 9 hours of typewriting (201). Those students starting with a proficiency in shorthand may be excused from as many as 16 hours of shorthand (221 and 324a). Those who have had high school instruction in bookkeeping will start with Accounting 251a.

GSD 114-9 + 126-9 .....	(9) + 9
Chemistry 111-10, 235, 341-15, 411, 432a, 433, 461-12, 444, 446, 461-12, 490 .....	67-69
Chemistry: two of the following, one must be a laboratory course: 412, 432b, 444, 464, 496 or 451-11 .....	7-11
Mathematics 150-10, 252-9 .....	19
Physics (one year) .....	15
<i>Secondary Concentration</i> (mathematics or physics) .....	9-10
<i>Total</i> .....	206-207

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Chemistry</i> .....	66
GSD 114-9 + 126-9 .....	(9) + 9
Chemistry 111-10, 235, 305-9 or 341-15, 460 or 461-12, and courses selected from 350, 411, 412, 432, 433, 444, 446, 447, 451-11, 464, 471 to complete a minimum of 42 hours in chemistry.	
Mathematics (according to prerequisites of chemistry courses)	
Physics (one year) .....	15
<i>Secondary Concentration</i> .....	10-28
<i>Electives</i> (depending on secondary concentration chosen) .....	0-15
<i>Total</i> .....	192

## SECONDARY CONCENTRATION

A minimum of 24 hours of chemistry is required, including 111-10 and at least one course from each of two of the following fields: analytical chemistry, biological chemistry, organic chemistry. Some acceptable secondary concentrations are 111-15, plus one of the following sequences: 101c (with GSA 101c), 235; or 235, 305-8; or 101c (with GSA 101c), 235, 350; or 101c (with GSA 101c), 230, 350; or 305-8, 350; or 235, 305-8; or 235, 305-8, 350. Another acceptable sequence is 111-10, 230, 305-8, 350.

## EDWARDSVILLE CAMPUS

BACHELOR OF ARTS DEGREE, *Science and Technology Division*

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Chemistry</i> .....	79-101
GSD FL (German or Russian recommended) .....	(9)
Chemistry 111-15, 235-5, 375-3 .....	23
Chemistry 305-10 or 341-15, 460-5 or 461-12 .....	15-27
Chemistry Electives .....	10-20
Mathematics 150-8, 252-8 .....	16
Physics 211-15 .....	15
<i>Secondary Concentration</i> .....	27



<i>Electives</i> (Math or Physics) .....	0-4
<i>Total</i> .....	193-219
<i>Total</i> (if secondary concentration is mathematics) .....	192-199

A student considering a concentration in chemistry is urged to consult with a representative of the chemistry faculty. In general, one who desires to work or enter graduate school in chemistry must take 341 and 461 and either 336 or 432a or b. One who desires training as a professional chemist as specified by the American Chemical Society must take 341, 411, 432, and 461 (in junior year) plus three advanced courses (one may be mathematics or physics), include 225 hours of lab after 341, and elect German.

#### BACHELOR OF SCIENCE DEGREE, *Education Division*

A 37-hour concentration for students who elect two secondary concentrations must include Chemistry 111-15, 235-5, 305-10, 375-2, and 460-5. Those who elect only one secondary concentration must add 11 hours including 375-1.

#### SECONDARY CONCENTRATION

A secondary concentration in chemistry requires 111-15 and at least 12 hours in courses chosen from 235, 366; 311; 240 or 305-10.

### COMMUNITY DEVELOPMENT

#### SECONDARY CONCENTRATION, *Carbondale Campus*

A secondary concentration in community development consists of 24 hours, including Sociology 333, 487a,b, plus 13 additional hours approved by the Community Development Institute. A student intending to concentrate in community development should consult the institute's director.

### COMPARATIVE LITERATURE

#### SECONDARY CONCENTRATION, *Edwardsville Campus*

The secondary concentration in comparative literature is 37 hours, prescribed as follows: 300-12; 310a,b,c; second year of foreign-language on the college level; and 4 hours of electives from 310c,d, philosophy 360 or advanced foreign language study.

### DESIGN

#### CARBONDALE CAMPUS

The purpose of these courses is to prepare students for careers of socially useful problem-solving relative to significant needs of contemporary society. The student learns ways to utilize mental and physical resources to develop and control man's living environment. This, therefore, deals with areas of visual communications and environmental planning. Traditional school stratifications are minimized. Boundary lines are continually crossed as the



student at the undergraduate level works with a variety of problem situations in co-operation with such disciplines as psychology, microbiology, sociology, education.

BACHELOR OF ARTS DEGREE, *School of Fine Arts*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Design</i> .....	119
GSD 108 or 114 .....	(9)
Design 100-15, 215-12, 275-12 .....	39
Design 200-6, 300-6, 400-6 .....	18
Design 366-15, 375-15, 390-2, 465F-15, 465G-15 .....	62
<i>Total</i> .....	<u>215</u>

Anyone transferring from another concentration or school will be placed at the proper stage in his course of study after a personal interview. He should be prepared to show examples of previous work.

## ECONOMICS

### CARBONDALE CAMPUS

The aim of the economics courses is to develop in the student such critical and analytical skills as underlie the ability to understand economic problems and institutions, both in their contemporary and historical setting.

Concentration in economics gives the student a basic understanding of the chief theoretical and institutional branches of the subject as well as the academic background necessary for many positions in industry and labor organizations, for work in the economic branches of government service, for college or university teaching, and for graduate study in economics and business.

BACHELOR OF SCIENCE DEGREE, *School of Business*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Economics</i> .....	73
GSB 211a-3, GSD 110-3 .....	(6)
Accounting 251-12 .....	12
Economics 214, 215, 310, 315, 330, 440, 441 .....	26
Economics 408, 416, 429, 432, 450a, 465, 470 (any two) .....	6
Economics 308; (317 or GSB 311); 411; 431, (481 or GSB 312) (any two) .....	6
Management 320, 340, 371, 481 .....	16
Marketing 225, 325 .....	7
<i>Electives</i> .....	<u>23</u>
<i>Total</i> .....	<u>192</u>

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Economics</i> .....	38

GSB 211a-3, GSD 110-3 .....	(6)
Economics courses required for Bachelor of Science degree, above .....	38
<i>Secondary Concentration</i> .....	24
<i>Electives</i> .....	34
<i>Total</i> .....	192

## SECONDARY CONCENTRATION

The following courses constitute a 28-hour secondary concentration in economics: GSB 211a, GSD 110, Economics 214, 215, and any four of the following: 310, 315, 330, 440, 441.

## EDWARDSVILLE CAMPUS

Courses in economics will help students understand the principles concerning the production and distribution of goods and services. Important but controversial issues, such as depression, inflation, labor unions and business monopoly, tariffs, and government spending, are discussed and analyzed.

Training in economics will prepare an individual for a position in private industry, government service, or teaching. Business and governmental agencies employ economists in management training programs, research, and administrative positions. Economics also provides an excellent background needed for the individual's understanding and evaluation of economic policy of government.

Students interested in economics, as a field of concentration, may pursue a somewhat specialized study in such fields as money and banking, industrial relations, finance, and international trade. The over-all sequence of courses, including those in related areas such as business, education, psychology, mathematics, and government, should be planned in co-operation with an adviser in the Business Division.

BACHELOR OF SCIENCE DEGREE, *Business Division*

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Economics</i> .....	74-82
GSB 211a-3, 311, or Economics 470, GSD 114d .....	3 + (9)
Accounting 251-12 .....	12
Economics 210, 308, 315, 440, 441 .....	21
Economics electives of five courses in consultation with adviser .....	15-20
Management 320, 340, 371 .....	13
Management 479 or 481; Economics 473 .....	8
Marketing 230 .....	5
<i>Electives</i> .....	31-23
<i>Total</i> .....	192

BACHELOR OF ARTS DEGREE, *Social Sciences Division*

For this degree the following courses constitute a concentration in Econom-

ics: GSB 211a, 311 or Economics 470, GSD 114d, Economics 210, 315, 440, 441, plus an additional 19 hours of electives in Economics to make a total of 45 hours in concentration of Economics. These electives will be chosen in consultation with an economics faculty adviser. Economics 308 and Accounting 250 (or 251a) are strongly recommended as basic tools courses.

BACHELOR OF SCIENCE DEGREE, *Education Division*

For this degree the following courses constitute a 48-hour concentration in Economics; GSB 211a, 311, GSD 114d, Economics 210, 315, 440, 441, Marketing 230, plus an additional 13 hours of electives in economics to meet the minimum of 48 hours. The electives will be chosen in consultation with an economics faculty adviser.

The following courses constitute a 36 hour concentration in Economics: GSB 211a, 311, GSD 114d, Economics 210, 315, 440, 441, plus an additional 10 hours of electives in economics to meet the minimum of 36 hours.

SECONDARY CONCENTRATION

Requirements for a secondary concentration in Economics are GSB 211a, 311, GSD 114d, Economics 210, 315, 440, 441 to meet the minimum of 26 hours. The course of study will be planned in consultation with an economics faculty adviser.

ELEMENTARY EDUCATION

Following are the requirements for the Bachelor of Science degree with concentration in elementary education and meeting the minimum requirements for a Standard Elementary School Certificate on either the early childhood level or the elementary level.

CARBONDALE CAMPUS

In addition to general university and College of Education requirements a student must (1) meet all requirements pertaining to prerequisites to student teaching and should study the section in this bulletin which lists such requirements; and (2) have at least 24 hours in each of these three fields: language arts, science, social science.

Everyone in elementary education or early childhood education should plan to have September Experience. September Experience consists of serving as a teacher aide in an elementary school in the student's own home town after the public schools open in the fall and before the University opens. Usually there is an opportunity for a full two weeks' experience in helping in the classroom. Students can sign up for September Experience during the spring quarter in the office of the Department of Elementary Education, which then makes the necessary arrangements.

REQUIREMENTS FOR EARLY CHILDHOOD EDUCATION AND ELEMENTARY EDUCATION

<i>Mathematics—13 hours</i>		<i>Physical and Biological</i>	
GSD 108-9 .....	9	<i>Science—24 hours</i>	
Mathematics 310-4 .....	4	GSA 101-9 .....	9



GSA 201-9, or 201-6 & 200-3 .....	9	and Supervision 355 <sup>2</sup> .....	4
GSA third level courses .....	6	Guidance 305-4 .....	4
<i>Social Science—27 hours</i>		Elementary Education courses	
GSB 101-9, 201-9 .....	18	for EARLY CHILDHOOD: 309	
American History (GSB 300b,c) .....	6	-3 (winter only), 316-4,	
GSB 211b-3 or Government		337-4, 350b-16 (student	
300-4 .....	3	teaching), plus electives .....	40
<i>Language Arts—24 hours</i>		ELEMENTARY: 314-4, 337-4,	
GSC 103-3 .....	3	351-16 (student teaching),	
GSC (any two) 201-3, 202-3,		plus electives .....	40
203-3, 209-3 or 210-3 .....	6	Recommended electives: Ele-	
GSC (any one) 313-3, 321-3,		mentary Education 100-3,	
335-3, 345-3, 365-3 .....	3	203-3, 413-4, 415-4, 442-4,	
GSD 101-6, 103-3 .....	9	Instructional Materials 417-4,	
English 391, or exemption .....	3	Guidance 422a.	
<i>Health and Physical Education—</i>		<i>Additional Competencies</i> (early	
<i>10 hours</i>		childhood only)	
GSE 101-1, 102-1, 103-1,		Secretarial and Business Edu-	
111-1, 112-1, or 113d-1 .....	1	cation 241-3 <sup>3</sup> .....	3
GSE 201-3 .....	3	Music 040-3 or pass piano	
PEW or PEM activity .....	2	performance test .....	3
PEW 319-4 or PEM 350-4 .....	4	<i>Area of Interest</i> (elementary only)	
<i>Fine Arts—12 hours</i>		Each student must obtain at	
GSC 100-3, 101-3 .....	6	least 12 hours, in addition to the	
Electives: Art 300, 408, Music		above requirements, in one of	
200, 300b <sup>1</sup> , 307, Industrial		the following areas: mathemat-	
Education 302, 303, Instruc-		ics, science, social science, lan-	
tional Materials 445 .....	6	guage arts (including foreign	
<i>Professional Courses—48 hours</i>		language), fine arts, health &	
Educational Administration		physical education, library sci-	
		ence.	

### EDWARDSVILLE CAMPUS

A student in this course of study must (1) meet all requirements pertaining to prerequisites to student teaching and should study the section in his bulletin which lists such requirements; (2) have at least 24 hours in each of these three fields: language arts, natural science, social science; and (3) satisfy the general requirements of the University and of the Education Division.

#### REQUIREMENTS BASED UPON, OR IN ADDITION TO, STATE MINIMUM REQUIREMENTS

<i>Mathematics—13 hours</i>		Mathematics 310 or Elementary	
GSD 112-9 .....	9	Education 415 .....	4

<sup>1</sup> Before taking 300b, one must either take 200 or pass a music competency examination, which will be scheduled by the Department of Music for the second Saturday of each quarter.

<sup>2</sup> If GSB 331 has been taken, this is not required.

<sup>3</sup> One who cannot pass a speed test of 25 net words per minute must take Secretarial and Business Education 102 before 241.



*Physical and Biological Science—*

24 hours

GSA 101-9 ..... 9

GSA 201-9 ..... 9

(211 substitutes for 201b, or  
201c) GSA 312, 330a,b, or  
358a,b ..... 6*Social Science—28 hours*

GSB 101-9 ..... 9

GSB 201-9 ..... 9

GSB 311, 351a,b, or 359a,b ..... 3

GSB 331 ..... 3

American History (GSB  
300a,b) ..... 6  
or

Government 210 ..... 4

*Language Arts—27 hours*

GSD 101-9 ..... 9

GSC 251-9 ..... 9

GSC 351-9, 354a,b, 357-9,  
363a,b ..... 6

English 391, or equivalent ..... 3

*Health and Physical Education—*

10 hours

GSE 201 ..... 3

Elect 3 hours of Physical  
Education Activity ..... 3

PEW 350 or PEM 350 ..... 4

*Fine Arts and Applied Arts—*

12 hours

GSC 100 ..... 3

GSC 101 ..... 3

Electives:

Art 300-9; Music 200, 300B, 307

Theater 310-3

*Early Childhood Education**Professional courses—44 hours*

Guidance 305 ..... 4

Elementary Education 316 ..... 4

Elementary Education 337 ..... 4

Educational Administration  
355 ..... 4

Student Teaching 350d, E ..12-16

Instructional Materials 417 ..... 4

*Recommended Electives:*

Elementary Education 203 ..... 3

Elementary Education 413 ..... 4

Elementary Education 415 ..... 4

Educational Administration  
437 ..... 4

Elementary Education 442 ..... 4

Special Education 428 ..... 4

Guidance 422a ..... 4

*Additional Competencies:*

Music 040 ..... 3

*Elementary Education**Professional courses —44 hours*

Guidance 305 ..... 4

Elementary Education 314 ..... 4

Elementary Education 337 ..... 4

Educational Administration  
355 ..... 4

Instructional Materials 417 ..... 4

Elementary Education 351D .... 8

*Recommended Electives:*

Elementary Education 203 ..... 3

Elementary Education 413 ..... 4

Elementary Education 415 ..... 4

Educational Administration  
437 ..... 4

Elementary Education 442 ..... 4

Special Education 428 ..... 4

Guidance 422a ..... 4

*Area of Interest—12 hours*

A student shall select an area in which he obtains at least 12 hours in the area in addition to the above requirements. These areas are: Mathematics, Science, Social Science, Language Arts (including Foreign Language), Fine and Applied Arts, Health and P.E., and Library Science.

## ENGINEERING

## CARBONDALE CAMPUS

The engineering courses are designed to produce a graduate who understands the basic sciences and knows how to apply them to a broad field of

engineering and scientific activity. This area of concentration includes research, development, creative design, and analytical engineering. The graduate may avail himself of the facts of basic science and engineering in the solution of problems, or he may pursue graduate study in many areas of science and technology.

Engineering entrance requirements are (1) character, attitude, and interest suitable to the responsibilities of the engineering profession, (2) intellectual ability and achievement indicated by satisfactory scholastic work prior to entering engineering school, and (3) completion of at least two years in an approved college or university with minimum of 9 hours in English and speech, 18 in mathematics (analytical geometry, calculus), 15 in physics (mechanics, heat, light, sound, electricity, and magnetism), and 10 in chemistry (general, inorganic).

Students pursuing the course in engineering should have a well-rounded general education in addition to the specific requirements indicated above; thus the committee on admissions suggests that applicants obtain as much exposure to courses in other fields of knowledge as possible. Students who have studied primarily in nonscientific fields are acceptable if they have acquainted themselves well with the contents of pre-engineering courses.

The rest of the college work should be chosen with the object of developing the intellectual talents of the individual, rather than as required preprofessional preparation. The college work should include courses in language and literature, history, and the social studies, or other subjects which may afford the foundation for cultural development. Unless that foundation is laid early, there is the danger that later demands of technical and professional training may lead to its neglect.

PRE-ENGINEERING *See the engineering entrance requirements above*

The pre-engineering course of study below is designed to provide a basic foundation for the professional engineering courses of study with specific emphasis upon the basic sciences, humanities, and social studies.

Entrance requirements and prerequisites to the requirements for the concentration in engineering may total as many as 35 hours in addition to the General Studies requirements. The student should make every effort to satisfy these requirements through advanced standing, proficiency examinations, and waivers. A department chairman may waive the prerequisites to certain advanced courses for students who plan to enter engineering.

<i>Requirements for Pre-Engineering</i> .....	104
General Studies .....	45
Chemistry 111b,c .....	10
Engineering 260-9 .....	9
Mathematics 150a,b, 252a,b .....	19
Physics 211-15 .....	15
Technology 101a,b .....	6

BACHELOR OF SCIENCE DEGREE, *School of Technology*

<i>Pre-Engineering</i> .....	104
<i>General Degree Requirements</i> (additional) .....	26

<i>Requirements for Concentration in Engineering</i> .....	74
Applied Science 300-5, 450-5, 470-5 .....	15
Engineering 222-3, 300-9, 311-9, 313-6, 331-12, 344-3, 361-4, 370-4, 412-6 .....	56
Elective .....	3
<i>Total</i> .....	204

### EDWARDSVILLE CAMPUS

Pre-engineering and selected engineering courses are available on the Edwardsville Campus.

### ENGINEERING TECHNOLOGY

#### CARBONDALE CAMPUS

Engineering Technology is a technical area of study designed to prepare students who can apply engineering principles and procedures to a variety of engineering activities. A concentration of courses in engineering technology may fulfill the educational requirements for professional work in many fields of technology. Students may concentrate their work in a number of areas such as machine design, electronics, hydraulics, heat power, soils and foundations, communications, construction, surveying, and air conditioning, etc.

#### BACHELOR OF SCIENCE DEGREE, *School of Technology*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Engineering Technology</i> .....	105
GSD 114-9 .....	(9)
Engineering 260-9, 300-6, 311-6 .....	21
Engineering Technology 304-9, 318-6, 361-4 .....	19
Mathematics 150a,b, 252a .....	15
Technology 101-9, 300-9 .....	18
Elective area such as machine design, electronics, hydraulics, heat power, soils and foundations, communications, construction, surveying, air conditioning, transportation, and photogrammetry .....	41
<i>Total</i> .....	201

### EDWARDSVILLE CAMPUS

Courses to complete the first two years of the bachelor's degree course of study and selected engineering technology courses are available on the Edwardsville Campus.

### ENGLISH

#### CARBONDALE CAMPUS

The student should consult the chairman as soon as he knows that he will



concentrate in English, and should thereafter have his advance registration approved by the chairman each quarter. Deviations from the generally prescribed requirements should not be made without prior approval. Membership in the English Club is expected.

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in English</i> .....	42
GSC 201 or 210, and 202, GSD FL (preferably French or German) .....	(15)
English 300, 302-12, 309a, 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 numbered above 299 to complete 42 hours in English .....	7
<i>Secondary Concentration</i> .....	24
<i>Electives</i> .....	21
Recommended electives are GSC 300 level English course; English 485; extra courses in types and periods; courses in criticism, linguistics, professional writing.	
<i>Total</i> .....	192

*Types*

Poetry: 404a,b; 412a,b,c; 420a,b; 421a,b,c,d; 473  
Drama: 460a,b,c,d; 464; 468; 471a,b  
Fiction: 412a,b,c; 441; 443; 431 b,c; 454a,b,c; 456; 458a,b; Prose 447, 495a,b

*Periods*

The Medieval: 404a,b  
The Renaissance: 412a; 460a,b; 471a,b  
The 17th-18th Centuries: 412b,c; 441; 454a; 460b,c; 473  
The 19th Century: 420a; 421a,b,c; 431b,c; 443; 447; 454b; 458a  
The 20th Century: 420b; 421d; 454c; 456; 458b; 460d; 464; 468; 495a,b

BACHELOR OF SCIENCE DEGREE, *College of Education*

<i>Requirements for Concentration in English</i> .....	42
All courses required above for the concentration .....	35
English 485 .....	4
English electives to complete 48 hours .....	3

SECONDARY CONCENTRATION

A secondary concentration is 25 hours, prescribed as follows: from sophomore work, 6 hours; 300; 309a; 302a,b or 302b,c; 390. Deviations should have approval of the chairman.



EDWARDSVILLE CAMPUS

BACHELOR OF ARTS DEGREE, *Humanities Division*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in English</i> .....	53
GSD FL .....	(9)
English 300, 302-12, 309-8, 365, 499-2 .....	30
English electives numbered above 299 (485, 486, 487 do not count.) .....	14
Foreign language courses to complete 2 years college level work in a language .....	9
<i>Secondary Concentration</i> .....	24-27
<i>Electives</i> .....	16-19
<i>Total</i> .....	192

BACHELOR OF SCIENCE DEGREE, *Education Division*

<i>Requirements for Concentration in English</i> .....	48
All courses required above for the concentration except a foreign language .....	44
English 485 .....	4
The grade of C or above is required in all English courses and General Studies Areas C and D.	

SECONDARY CONCENTRATION

A 24-hour secondary concentration in English consists of 300, 302-12, 309-8.

FOREIGN LANGUAGES

CARBONDALE CAMPUS

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Foreign Languages</i> .....	42
A minimum of 42 hours in one language in courses numbered above 200	
<i>Secondary Concentration</i> .....	24
<i>Electives</i> .....	30
<i>Total</i> .....	192

BACHELOR OF SCIENCE DEGREE, *College of Education*

<i>Requirements for Concentration in Foreign-Languages</i> .....	36
A minimum of 36 hours in one language in courses numbered above 200.	

SECONDARY CONCENTRATION

A secondary concentration consists of 24 hours in one language, in courses numbered above 200.

**EDWARDSVILLE CAMPUS****BACHELOR OF ARTS DEGREE, *Humanities Division***

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Foreign Languages</i> .....	48
A minimum of 42 hours beyond the 100-level courses, including the seminar in the field of concentration (French, Spanish, or German). .....	42
English and History (one course in each area above 299 related to the concentration) .....	6
<i>Secondary Concentration</i> .....	24-27
<i>Electives</i> .....	21-24
<i>Total</i> .....	192

**BACHELOR OF SCIENCE DEGREE, *Education Division***

For this degree, the Foreign Languages Concentration Requirements are 38 hours (exclusive of General Studies courses and elementary education concentration courses) in a language, plus one English and one history course numbered above 299.

**SECONDARY CONCENTRATION**

A secondary concentration consists of 24 hours (exclusive of General Studies) in a language.

**FORESTRY**

Forestry provides instruction, research, and public service in the disciplines of forest recreation and park management, forest production, and wood utilization. The department's four-year undergraduate course of study leads to a Bachelor of Science degree offering fundamental training to students planning forestry as a professional career.

During the forestry student's freshman and sophomore years at Southern Illinois University his studies are devoted primarily to basic sciences, such as mathematics, chemistry, botany, physics, and zoology; and other cultural-foundational courses, such as English, history, and economics. Most of the professional forestry courses are offered in the junior and seniors years. One spring quarter of practical field courses is required except for the utilization option. During this period students live in the field and pay living expenses involved. By completing his Field experience in the spring, the student is free during all school-year summer quarters to be employed by Federal or other forestry agencies or to accelerate in his academic work.

Available to the Department of Forestry for teaching and research are the following: The Crab Orchard Wildlife Refuge; the Shawnee National Forest; the Union County Tree Nursery and Forest; and the Kaskaskia Experimental Forest comprising several hundred thousand acres of forest land, all in the vicinity of the University. Also available for wood utilization teaching and research is a modern wood products plant located at the Vo-

cational-Technical Institute, east of Carbondale. The Southern Illinois University Experimental Forest and Giant City State Park provide additional facilities for teaching and research, especially during the Spring Camp.

In addition, thirty-four staff members of the U.S. Forest Service's Carbondale Forest Research Center are affiliated with the Department of Forestry and help to enrich the University's forestry program.

#### BACHELOR OF SCIENCE DEGREE, *School of Agriculture*

<i>General Studies Requirements</i> (See Chapter 3.) .....		96
<i>Requirements for Concentration in Forestry (For Forest Resource Management Option see A; for Forest Recreation and Park Management Option see B)</i> .....		97-100
	A	B
	61	50
Forestry A: 104, 221, 306, 320, 330, 331, 332, 340, 350, 363a,b, 365a,b, 369, 375, 465, 466, 470a,b B: 104, 221, 306, 331, 340, 350, 363a,b, 365a,b, 375, 450, 465, 470a, 471.		
Agriculture Industries A: no courses; B: 214 .....	0	2
Plant Industries A: 301; B: 264, 301, 304 .....	4	11
Electives in School of Agriculture .....	6-8	6-8
School of Technology A: Engineering Technology 263a; B: Engineering Technology 263a. ....	4	4
School of Business A: no courses; B: Management 385. ....	0	4
College of Liberal Arts and Sciences A: Chemistry 101b,c, Botany 320, 457, Zoology 463, Zoology and Botany electives. B: Chemistry 101b,c, Zoology 463, Zoology and Botany electives. ....	22	13
College of Education A: no courses; B: Recreation 365, 450. ....	0	8
<i>Electives</i> .....		8-11
<i>Total</i> .....		204

## GEOGRAPHY

In the field of geography, the student may work toward either a Bachelor of Science degree or a Bachelor of Arts degree depending upon his objective:

1. Bachelor of Science—for preparation to teach geography in the elementary or secondary schools, or (with further preparation) in the junior college; or as a part of preparation to teach either social science or physical science in the elementary or secondary schools.

2. Bachelor of Arts—for a thorough knowledge of geography, in preparation for civil service appointment as a geographer, or for demands of private organizations requiring the services of geographers, meteorologists, cartographers, or planners.



Today a large number of geography students 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.

GSB 101a, Geography 302, 304, 306, and 308 make up a three-stage core for training in geography. GSB 101a gives a general survey of the viewpoint of geography. The second stage consists of 302, 304, and 306. Each of these courses gives the "elements" of understanding of a particular aspect of geography that all geographers must know. The third stage is 308. 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. Geography 310 introduces the student to basic techniques used by geographers: maps and quantitative methods. Geography 490 offers the student an opportunity to work intimately with one of the staff members.

One concentrating in geography should complete the core courses before taking other geography courses. After completing the core, the student may choose any other geography courses in assembling the hours required for a concentration. However, his course of study should be approved by a geography adviser.

In physical, economic, and cultural geography there are two advanced sequences each. This is to enable the student wishing to specialize in one of these systematic fields to gain some degree of concentration. Thus, a student interested in one of these specific fields—say, physical geography—may take both sequences in advanced physical geography. A student not interested in such specialization will make his choices from the full range of systematic and regional sequences.

A broad background in other fields is of great importance to a geographer. Thus, it is recommended that geography students hold their hours of geography to the minimum number required and use their elective hours to take work in other areas. Students interested in physical geography should consider work in 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 disciplines. Courses of study of the Latin American Institute and the committees on Asian, Russian, and central European studies are particularly noted.

Quantitative methods have become an essential tool used by geographers. Thus, those with a concentration in geography are strongly urged to take work in statistics. Mathematics 220 or Economics 307 provide an introduction, while students interested in more complete preparation may take Mathematics 410a,b, and c.

Students working for a secondary concentration in geography or taking the Social Studies Field concentration in education must take Geography 302, 304, 306, and 308.



**CARBONDALE CAMPUS**BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Geography</i> .....	39
GSB 101a, GSD FL .....	(12)
Geography 302, 304, 306, 308, 310-6, 490-3 .....	24
Geography electives to complete 42 hours .....	15
<i>Secondary Concentration</i> .....	24
<i>Electives</i> <sup>1</sup> .....	33
<i>Total</i> .....	192

BACHELOR OF SCIENCE DEGREE, *College of Education*

<i>Requirements for Concentration in Geography</i> .....	45
GSB 101a (counts toward the concentration), GSD FL .....	(12)
Geography 302, 304, 306, 308, 310-7, 490-3 .....	24
Geography electives to complete 48 hours (Only 42 hours are required if two 24-hour concentrations are presented; only 36 hours are required if one other 48-hour concentration is presented.) <sup>1</sup> .....	21

## SECONDARY CONCENTRATION

Secondary Concentrations should include the core courses, for together these courses offer the strongest basic preparation in geography.

**EDWARDSVILLE CAMPUS**BACHELOR OF ARTS DEGREE, *Social Sciences Division*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Geography Concentration Requirements</i> .....	45
GSA 330, GSB 101a, GSD FL .....	(15)
<i>Secondary Concentration</i> .....	27
<i>Electives</i> .....	24
<i>Total</i> .....	192

*Areas of Specialization*

Cultural, Economic, Physical: 302, 304, 306, 308, 310a.

Planning: 302, 304, 306, 308, 310a, 470a,b,c, and 471.

Cartography: 302, 304, 306, 308, 310a,b, 416a,b, 417, and secondary concentration in mathematics.

The Bachelor of Arts degree cartography specialty may be earned by a Work-Study Plan which permits students to work part time at the St. Louis Aeronautical Chart and Information Center. The General Studies advisement office or the geography staff has complete information on this plan. General Studies courses GSB 101a and GSA 330 are required in the above specializations; one additional General Studies course in geography may be counted.

<sup>1</sup> A background in statistical analysis is recommended.

BACHELOR OF SCIENCE DEGREE, *Education Division*

In addition to the General Studies Requirements and the Education Division Requirements, a geography specialization must include the following courses, GSA 312, 330, GSB 101a, Geography 302, 304, 306, 310a and additional courses to complete 45 or 36 hours in geography (depending on whether the student has one or two secondary concentrations).

SECONDARY CONCENTRATION

A secondary concentration in geography consists of 27 hours and must include 302, 304, 306. Nine hours may be counted from the following: GSA 200, 312, 330, 331, GSB 101a, 351a, and 354.

GEOLOGY

CARBONDALE CAMPUS

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Geology</i> .....	75
GSD 114-9, FL-9 .....	(9) + 9
Chemistry 111-15 .....	15
Geology 220, 221, 302, 310, 405, 425a, 431 .....	30
Geology 311, 312, 315, 425b, 425c (any 3) .....	12
Geology electives to complete 50 hours .....	8
Mathematics 150a .....	5
Physics .....	5
<i>Secondary Concentration</i> .....	24
(Chemistry, mathematics, physics, biology or another area with consent of the chairman)	
<i>Total</i> .....	195

A summer field course in geology is required and should be taken between the junior and senior years. Additional work in chemistry, mathematics, physics, or biology may be necessary to support specialities.

Preparations for a professional career usually require graduate study.

SECONDARY CONCENTRATION

A secondary concentration consists of 24 hours, determined by consultation with the geology adviser.

GOVERNMENT

A concentration in government is recommended for persons planning to teach civics or government courses, and for those planning to qualify for the study of law or for the public service.

CARBONDALE CAMPUS

Government students should take as much work as possible in other social sciences, with at least one secondary concentration in a related field. Stu-

dents planning to take work in government beyond the master's degree should acquire a reading knowledge of both French and German.

It is recommended that government students meet the second-level requirement in GSB by taking 201-9. Such students should then begin their work in government with Government 231 and 232, which are basic courses and prerequisites for many advanced courses. They may, however, take GSB 211-9; in this case they are not permitted to take Government 231 but may take 232.

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Government</i> .....	42
GSD FL-9 .....	(9)
Government 231 (or GSB 211b,c), 232 .....	10
Government electives to total at least 42 hours, preferably according to one of three recommended sequences: .....	32
305, 360, 379, 380, 462, 471, 472, 495-8, GSB 303, 390, 392 .....	(44)
Specialization in International Affairs: 243, 371, 453, 456, 457, 458, 459, 460, 471, 472, 475, 480, GSB 303, 385, 390 .....	(55)
Specialization in Public Administration: 305, 315, 340, 360, 410, 420, 432, 434, 435, 436, 438, 440, 461, 462, 463, 464, 466, 467, 468, 469, 470, 495 .....	(77)
<i>Secondary Concentration</i> .....	24
<i>Electives</i> .....	39
<i>Total</i> .....	192

BACHELOR OF SCIENCE DEGREE, *College of Education*

Requirements for Concentration in Government include 36 hours selected from the following: Government 231, 232, 243, 305, 315, 330, 360, 371, 379, 380, 420, 466, 467, 472, 495, GSB 385, 390.

SECONDARY CONCENTRATION

A secondary concentration consists of 24 hours in government.

EDWARDSVILLE CAMPUS

BACHELOR OF ARTS DEGREE, *Social Sciences Division*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Government</i> .....	45
GSD FL-9 .....	(9)
A minimum of 45 hours including 210 and at least 3 hours in each of the six areas of specialization listed below.	
<i>Secondary Concentration</i> .....	27
<i>Electives</i> .....	24
<i>Total</i> .....	192



BACHELOR OF SCIENCE DEGREE, *Education Division*

For this degree, the Government Concentration Requirements include 45 or 36 hours ((including 210) in government depending on whether the student has one secondary concentration or two. At least 3 hours (but no more than 20 hours) should be taken in each of the areas of specialization listed below.

## AREAS OF SPECIALIZATION

American Government and Politics 232, 330, 340, 379, 380, 406, 415, 420, 435.

Comparative Government 390, 453, 456, 458.

International Relations 370, 371, 373, GSB 345.

Political Theory 484, 487, GSB 359a,b.

Public Administration 360, 361, 440, 461, 465, 470, 473.

Public Law 315, 495.

## SECONDARY CONCENTRATION

A secondary concentration is 27 hours and must include 210 and at least one course in three of the six areas of specialization listed above.

## HEALTH EDUCATION

## CARBONDALE CAMPUS

BACHELOR OF SCIENCE DEGREE, *College of Education*

*General Studies Requirements* (See Chapter 3.) ..... 87

*Requirements for Concentration in Health Education*

*48 hour Concentration, with One Secondary Concentration*

Health Education: 205, 300, 311 or 312, 313S, 334S, 350

or 460, 400, 471, 490 ..... 39

Microbiology 301 and GSA 301 ..... 9

*36 hour Concentration with Two Secondary Concentrations*

Health Education: 205, 300, 311 or 312, 313S or 334S, 350

or 460, 471, 490 ..... 27

Microbiology 301 and GSA 301 ..... 9

In addition, the student is urged to secure a total of 35 hours of natural science or, if preferred, to secure a secondary concentration in biology consisting of GSA 201a,b, 301; Botany 300, 301, 313, 449; Zoology 102, 103, and Microbiology 301. Secondary concentrations are suggested in related areas of physical education, home economics, and recreation.

*Secondary Concentration and electives* ..... 48-60

*Total* ..... 192

A course of study leading to certification is available to the health education student in elementary or secondary teaching specialties.

## SECONDARY CONCENTRATIONS

Required for health education: 205, 300, 311 or 312, 313S or 334S, 350

or 460, and 471. Additional courses may be taken in safety education, school health, community health, and home nursing.

Requirements for safety education: 302S, 313S, 323S, 334S, 443S, 475S, and Instructional Materials 417 or 445. Additional courses may be elected from the following: 415s, 480s, 481s, Industrial Education 465a,b, Psychology 302, 305, 320, and Guidance 305.

### EDWARDSVILLE CAMPUS

#### SECOND TEACHING FIELD

A second teaching field in health education is 27 hours, including 205, 300, 313S, 334S, 350 or 460, 471, Guidance 412 or Psychology 301. Additional courses may be taken in safety education, school health, and community health.

### HEALTH SCIENCE

#### CARBONDALE CAMPUS

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Health Science</i> .....	96
GSA 201-9, 301, GSB 201-9, 211-9 .....	(22) + 9
GSD 108-9, 123-9 or 126-9, GSE 201 .....	(12) + 9
Chemistry 111a,b, 305a .....	14
Government 232, 360, 440 .....	14
Health Education 300, 325, 355, 356 .....	15
Microbiology 301 .....	5
Psychology 305, 307, 432 .....	12
Sociology 335, 336 .....	8
Zoology 102, 103 .....	10
<i>Electives</i> .....	9
<i>Total</i> .....	192

Recommended electives for specialization in sanitation: Microbiology 422, 423; Agricultural Industries 303; Animal Industries 231; Government 466; Physics 206-15; Zoology 306 or 316, 310, 406.

Recommended electives for specialization in public health laboratory: Chemistry 235, 451a,b; Government 466; Microbiology 403, 422, 423, 425; Physiology 315c, 433; Zoology 306 or 316.

### HISTORY

Students who intend to concentrate in history should consult with a member of the history faculty at the time of registration.

#### CARBONDALE CAMPUS

Forty-eight hours are required in history. Students should be careful to elect approximately the same number of 400-level as of 300-level hours in history, and care should also be taken to distribute the work in the various

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

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in History</i>	36
GSB 101b,c, 300–9 (15 hours count toward the total of 48 hours in history), GSD FL	(21) + 3
History 452	3
History electives to complete 48 hours	30
<i>Secondary Concentration</i>	24
<i>Electives</i>	36
<i>Total</i>	192

SECONDARY CONCENTRATION

Thirty hours are required for a secondary concentration in history, and must include GSB 101b,c, 300. Students in the College of Education should take 12 hours each in the foreign and American fields, plus 6 elective hours of history irrespective of field. The exception to the 30 hour secondary concentration is the field course in Social Science, the members of which need not take more than 24 hours of history.

EDWARDSVILLE CAMPUS

BACHELOR OF ARTS DEGREE, *Social Sciences Division*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in History</i>	37
GSB 101b,c, GSB 300–9, GSD FL	(21) + 3
History 100, 452	6
History electives above 299 (Anthropology 304 may be counted) to complete 45 hours (including GSB 101b,c, GSB 300–9) distributed as evenly as possible among Ancient-Medieval-Asiatic, Modern European, and American History	24
Philosophy 200	4
<i>Secondary Concentration</i>	27
<i>Electives</i>	26
<i>Total</i>	192

BACHELOR OF SCIENCE DEGREE, *Education Division*

For this degree, the requirements for concentration in history are 48 hours or 36 hours depending on whether the student has one secondary concentration or two. Requirements for either concentration are 100, 452, GSB 101b,c, GSB 300–9, and Philosophy 200. The remaining portion of the concentration must be on the 300 and 400 levels, and care should be taken to distribute the work as evenly as possible among the three fields of Ancient-Medieval-Asiatic, Modern Europe, and American history. A year of work in a foreign language is required.



SECONDARY CONCENTRATION

Twenty-seven hours are required for a secondary concentration in history and must include 100, GSB 101b,c, GSB 300-9, Anthropology 304 may be counted for a history concentration.

HOME ECONOMICS

The School of Home Economics grants the Bachelor of Science degree in home economics. No secondary concentration is required. The following specializations are offered by the school and the departments indicated:

SPECIALIZATION	DEPARTMENT
Apparel Design	Clothing and Textiles
Clothing and Textiles Merchandising	Clothing and Textiles
Dietetics	Food and Nutrition
Foods in Business	Food and Nutrition
General Home Economics	Home and Family
Home Advisers	Home Economics Education
Institution Management	Food and Nutrition
Interior Design	Clothing and Textiles
Teaching Vocational Homemaking	Home Economics Education

The College of Liberal Arts and Sciences grants the Bachelor of Arts degree in home economics. A minimum of 42 hours in home economics is required. This is for the profession of homemaking rather than for any of the salary-earning professional careers in home economics. The specialization is offered by the Department of Home and Family.

THE HOME ECONOMICS HONORS PROGRAM

An Honors Program in the School of Home Economics provides for the planning of individualized programs for the student with high academic ability.

In selecting freshmen for participation in informal group discussions prior to formal honors study, percentile ranks on the University's entrance examinations, high school records, recommendations from the high school faculty, and the personal interview will be utilized.

For admission into the formal program, the student may apply independently to the Honors Council or may be encouraged by any member of the faculty to apply on the basis of his records and staff recommendations.

Consideration for his selection will include (1) recommendations of the faculty members, (2) cumulative grade point average (At the present time 4.25 is proposed. In addition, special consideration will be given to those with grade point averages of 4.0 to 4.25 who are highly recommended by faculty and are recognized as having high potential by the Honors Council.), (3) a personal interview for measuring other pertinent attributes, such as the student's purpose, intent, and vitality of interest, and (4) percentile ranks on the University's entrance examinations.

## CARBONDALE CAMPUS

BACHELOR OF SCIENCE DEGREE, *School of Home Economics**Apparel Design*

These courses offer preparation for designing of apparel or allied positions in the wholesale and retail fashion fields through training in textiles, creative design, draping, pattern making, and clothing construction.

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Home Economics</i> .....	87
GSB 201-9 .....	(9)
GSC 101, 102, 103, and a second-level sequence excluding 200 and 211 .....	(18)
Art 341 .....	4
Art history (any course) .....	3
Chemistry 101b,c .....	2
Clothing and Textiles 127, 131, 135, 231, 233, 300, 322, 323, 327, 329, 331, 334, 339, 360, 364, 371, 433, 434 .....	59
Food and Nutrition 312 .....	4
Home and Family 227, 237, 331, 341 .....	13
Home Economics Education 306 .....	2
<i>Electives</i> .....	9
Recommended: Art 100, 245, 385, and art history courses; Cloth- ing and Textiles 251, 395; Home and Family 324, 332; Home Economics Education 111; Journalism 260A, 393.	
<i>Total</i> .....	192

*Clothing and Textiles Merchandising*

These courses provide fundamental training for positions as salespeople, buyers, and department managers in department stores and other retail stores dealing with apparel and home furnishings. They include work in marketing, advertising, accounting, journalism, and merchandising, as well as clothing, textiles, and home furnishing. A period of field experience in the area of the student's special interest is provided.

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Home Economics</i> .....	91
GSB 201-9 .....	(9)
GSC 101, 102, 103, and a second-level sequence excluding 200 and 211 .....	(18)
Accounting 250 .....	4
Chemistry 101b,c .....	2
Clothing and Textiles 127, 131, 135, 231 or 331, 233, 300, 322, 323, 327, 329, 334-3, or 434-4, 339, 360, 364, 371 ....	48
Food and Nutrition .....	4
Home and Family 227, 237, 331, 341 .....	13
Home Economics Education 306 .....	2
Journalism 370-3 or Marketing 333-4 .....	3
Marketing 225, 325, 332, 337 .....	15

<i>Electives</i> .....	5
Recommended: Art 385; Clothing and Textiles 251; Home and Family 324, 332; Home Economics Education 111; Journalism 260A, 393	
<i>Total</i> .....	192

*Dietetics*

These courses give a strong scientific education to those interested in becoming dietitians in hospitals, college dormitories, industrial plants, health clinics, laboratories, or public health and welfare organizations. They meet the requirements of the American Dietetics Association.

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Home Economics</i> .....	106
GSA 201c, 301, 302, GSB 201-9, 211-9 .....	(18) + 10
GSB 311, and 303 or 312 or 314 .....	(6)
GSC 101, 102, 103, a second-level sequence (excluding 200 and 211), 386, 387 .....	(24)
GSD 108-9 .....	(9)
Accounting 250 .....	4
Chemistry 101b,c, 350 .....	6
Clothing and Textiles 251 .....	3
Food and Nutrition 105, 206, 320, 335, 340, 350, 351, 352a,b, 355, 356, 359 .....	45
Guidance 305 .....	4
Home and Family 227, 237, 331, 332, 341 .....	17
Home Economics Education 307 .....	3
Microbiology 301, 422 .....	10
Psychology 320 .....	4
<i>Total</i> .....	193

*Foods in Business*

These courses are for students who desire to enter the business field as home service representatives for utility companies, as demonstrators for manufacturers, or for other educational, experimental, and promotional work with household equipment and foods.

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Home Economics</i> .....	107
GSA 201c, 301, 302, GSB 201-9, 211-9, 311, 303 or 312 or 314, GSC 101, 102, 103, a second-level sequence (excluding 200 and 211), GSD 108-9 .....	(51) + 10
GSC 342 and 348, or 386 and 387 .....	(6)
Accounting 250 .....	4
Chemistry 101b,c, 350 .....	6
Clothing and Textiles 251, 323, 327 .....	8
Food and Nutrition 105, 206, 320, 321, 335, 352a, 356 .....	27
Home and Family 227, 237, 324, 331, 332, 341, 424 .....	23
Home Economics Education 111 .....	2



Journalism 393 .....	3
Marketing 225, 325, 333, 337 .....	15
Microbiology 301 .....	5
Radio-Television 161 .....	4
<i>Total</i> .....	194

### *General Home Economics*

These courses emphasize the personal development of the student and preparation to carry the responsibilities of homemaking and citizenship.

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Home Economics</i> .....	64
GSA 201c, GSB 201-9, GSD 108-9 .....	(21)
Chemistry 101b,c .....	2
Clothing and Textiles 127, 131, 135, 233, 323, 327 .....	18
Food and Nutrition 105, 206, 320, 321, 335 .....	19
Home and Family 227, 237, 324, 331, 332, 341, 345, 366 .....	25
<i>Electives</i> .....	32
Recommended electives: Clothing and Textiles 145, 331, 360; Health Education 310; Home Economics Education 111. For students interested in the Child Development-Family Relations area, these are suggested: Food and Nutrition 359; Guidance 412; Home and Family 456, 466; Psychology 301, 303, 305. For students interested in the Consumer Services area, these are suggested: Clothing and Textiles 322, 339; Food and Nutrition 356; Home Economics Education 370; Home and Family 424, 435; Journalism 331, 369, 370, 391, 393, 397; Radio-Television 161, 257.	

<i>Total</i> .....	192
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### *Home Advisers*

These courses prepare students for positions as home advisers, 4-H Club agents, and, with further training, extension specialists.

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Home Economics</i> .....	99
GSA 201c, GSB 201-9, 211-9, GSC 101, 102, 103, and a second-level sequence (excluding 200 and 211) .....	(30) + 9
Clothing and Textiles 127, 131, 135, 233, 323, 327, 360 .....	22
English 391 .....	3
Food and Nutrition 105, 206, 320, 321, 335 .....	19
Health Education 310 .....	4
Home Economics Education 111, 370, 371 .....	13
Home and Family 227, 237, 324, 331, 332, 341, 345 .....	22
Journalism 393 .....	3
Radio-Television 161 .....	4
<i>Electives</i> .....	6
<i>Total</i> .....	192

*Institution Management*

These courses prepare students to fill positions as food service managers for residence halls, hotels, tearooms, school lunchrooms, and industrial or commercial restaurants. They meet the requirements of the National Restaurant Association.

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Home Economics</i>	119
GSA 201c, 301, 302, GSB 201-9, 211-9, 311, 303 or 312 or 314, GSC 101, 102, 103, and a second-level sequence (excluding 200 and 211), 386, 387, GSD 108-9	(57) + 10
Accounting 251a,b	8
Chemistry 101b,c, 350	6
Clothing and Textiles 251, 327	6
Food and Nutrition 105, 206, 320, 335, 350, 351, 352a,b, 355, 356, 359, 371	47
Home and Family 227, 237, 331, 332, 341	17
Home Economics Education 307	3
Management 371, 385	8
Microbiology 301, 422	10
Psychology 320	4
<i>Total</i>	206

*Interior Design*

These courses prepare students for positions on interior decorating staffs of department stores, in consultant capacities in allied fields, and in establishing an interior decorating business. They meet the educational requirements for membership in the American Institute of Interior Designers.

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Home Economics</i>	94
GSB 201-9, GSC 101, 102, 103, and a second-level sequence (excluding 200 and 211), GSC 340 and 341 or 342 and GSD 108a	(36)
Art history (one course)	3
Chemistry 101b, 101c	2
Clothing and Textiles 131, 135, 231, 251-3 (or Industrial Education 112-4), 300, 331, 380, 381, 382, 390, 391-15, 394, 395-4	57
Design 100 sec. 3	10
Food and Nutrition 312	4
Home Economics Education 306	2
Home and Family 227, 237, 331, 341	13
Industrial Technology 304a	3
<i>Electives</i>	2

Recommended: Accounting 250; Art 385, 471, 473; Clothing and Textiles 322, 371, 431, 474; Design 250, 260, 390; Home and Family 324, 332; Home Economics Education 111; Journalism

260A, 331, 370, 393; Management 271, 371; Plant Industries 304; Industrial Technology 316a.

Total ..... 192

### *Teaching Vocational Homemaking*

These courses meet the needs of students desiring to teach home economics in school departments maintained according to the provisions of the federal vocational acts. A vocational Home Economics certificate requires a bachelor's degree in home economics from an institution and in a course of study approved for teacher training by the Vocational Division of the United States Office of Education and by the State Board for Vocational Education. Southern Illinois University is so approved for training teachers of home economics.

*General Studies Requirements* (See Chapter 3.) ..... 87

*Requirements for Concentration in Home Economics* ..... 114

GSA 201c, GSB 201-9, 211-9, 331, GSC 101, 102, 103, and a  
second-level sequence (excluding 200 and 211) ..... (33) + 9

Clothing and Textiles 127, 131, 135, 233, 323, 327, 360 ..... 22

English 391 ..... 3

Food and Nutrition 105, 206, 320, 321, 335 ..... 19

Guidance 305 ..... 4

Health Education 310 ..... 4

Home and Family 227, 237, 324, 331, 332, 341, 345 ..... 22

Home Economics Education 111, 309, 310 ..... 11

Secondary Education 310, 352B-12 ..... 16

Required elective (one) Secondary Education 440, 407, Edu-  
cational Administration and Supervision 355, Guidance  
422a, Instructional Materials 417 ..... 3-4

Total ..... 201

### BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

These courses are planned for the profession of homemaking rather than for any of the salary-earning professional careers in home economics. Electives should be selected for their contribution to the broad cultural background so desirable for homemakers. This plan allows time for specialization in a second field and includes the following *Requirements for the Concentration*:

GSA 201-9 ..... (9)

Clothing and Textiles 131, 135, 323, 327 ..... 11

Food and Nutrition 105, 206, 335 ..... 12

Home and Family 227, 237, 324, 331, 332, 341 ..... 19

### SECONDARY CONCENTRATION

A student desiring a secondary concentration in Home Economics must take 24 hours divided among the various areas; the division need not be equal unless the student plans to teach. In that case, too, she should take the spe-



cial methods course in Home Economics Education (309), do one term of supervised student teaching in home economics, and take Home and Family 332, Home Management Residence.

All students with secondary concentrations are encouraged to live in the Home Management House and take Home and Family 332.

Some selections should be made from the following courses in each of the designated areas:

Area 1—Clothing and Textiles 127, 131, 135, 233, 360.

Area 2—Foods and Nutrition 105, 206, 320, 335.

Area 3—Home and Family 227, 327, 331, 332.

Area 4—Clothing and Textiles 323, 327, Home and Family 324, 341.

## INDUSTRIAL EDUCATION

Our rapidly expanding technology in recent years has brought about a tremendous need for specialists who are prepared to work with people. These individuals serve as teachers, supervisors, directors, and consultants in the many areas representative of industry and technology.

Nearly every facet of our lives depends on the skillful use of knowledge in the research, development, manufacture, and maintenance of the industrial materials and machines which sustain us. Professionals in the area of industry are charged with the responsibilities of interpreting our technological society through insights, appreciation, and an understanding of the materials, processes, products, working conditions, and new developments in industrial production.

Educational specialists are prepared to work with all levels of school youth and adult programs relating to industry. Those who gain experience and continue graduate work receive special instruction at college and university levels to prepare them to educate others to serve in these professions.

### CARBONDALE CAMPUS

#### BACHELOR OF SCIENCE DEGREE, *School of Technology*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Industrial Education</i> .....	104
GSD 114-9 .....	(9)
Guidance 305 .....	4
Industrial Education 100-2, 380-9 <sup>1</sup> , 408-3, 491-3 .....	17
Industrial Technology 312a-3, 320a-4, 322a-3, 327a-3, 343a-3 .....	16
Secondary Education 310-4, 352-12 .....	16
Technology 101a,c, 300-9 .....	15
Elective area. A student has the opportunity to specialize for employment in manual arts therapy, industrial arts, trade and industries, or technical teaching in the public schools, private trade schools, or in technical institutes, colleges, and universities. ....	36
<i>Total</i> .....	200

<sup>1</sup> Related courses may be substituted in trades and industries and technical training.

## INDUSTRIAL TECHNOLOGY

The complexity of our industrial technology has created an increasing demand for the services of new types of professional workers known as industrial technologists. These are resourceful, creative men trained for proficiency and versatility in the techniques of industrial design and development, production and management, in various technical and liaison areas, and in technical distribution. The services of these men have become increasingly important because they have proven their capabilities and worth by serving effectively on the Technical-Industrial "team" with scientists, engineers, designers, managers, and craftsmen. In so doing, they fulfill an important liaison function, and one for which they are ideally suited by virtue of their technical training and their knowledge and understanding of human relations.

Federal statisticians report that in the present decade the demand for technologists, professional, and related worker groups will exceed that for all other occupational groups. To the industrial technologist, industry daily offers increasingly interesting and rewarding positions, with considerable potential for growth and advancement.

The student preparing himself for entrance into any of the numerous challenging areas of industrial technology must first acquire a comprehensive background of scientific, engineering, and business principles and applications, as well as specialization in at least one area. He must augment this background with a growing ability to utilize this knowledge effectively in making timely decisions and sound judgments. Because he will later be intimately involved with people in his work, the future technologist must acquire proficiency in personal relationships and acquire effective communication skills. He must also broaden his outlook enough to understand the socio-economic trends he observes, especially as they may presage changes in his work.

Industrial technology is a four-year concentration of courses leading to the Bachelor of Science degree and designed to prepare an individual for employment as a technologist in a variety of technological areas.

### CARBONDALE CAMPUS

#### BACHELOR OF SCIENCE DEGREE, *School of Technology*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Industrial Technology</i> .....	105
GSD 114-9 .....	(9)
Economics 215 .....	(3)
Applied Science 307 .....	5
Engineering Technology 361 .....	4
Industrial Technology 227-6, 235-6, 300-4, 305-3, 306-3, 312-3, 314-3, 318-3, 322-3, 327-3, 337-6, 343-3, 345-3, 465-4 .....	41
Management 380-4, 382-3 .....	7
Psychology 320 .....	4
Technology 101-9, 300-9 .....	18

The student may elect to specialize in areas such as design, distribution and sales, electronics, graphics, metals, plastics, manufacturing, personnel, production, safety, supervision, wood, and others. .... 26

*Total* ..... 201

## INSTRUCTIONAL MATERIALS

Courses in the utilization and administration of teaching materials are designed to train both audio-visual co-ordinators and librarians to become fully qualified instructional materials specialists who can administer all teaching materials.

### SECONDARY CONCENTRATION, *Carbondale*

Persons trained primarily as teachers may qualify for part-time professional service in a school library by completing 24 hours of work in approved courses which are 306, 308, 403, 405, 406, 417.

### SECONDARY CONCENTRATION, *Edwardsville*

The Education Division offers a second teaching field in library science to qualify persons trained primarily as teachers for part-time professional service in a school library.

The required courses are 306, 308, 403, 405, 406, and 417 or 420.  
Total: 24 hours.

## INTER-AMERICAN STUDIES

This course of studies, under the direction of the Latin American Institute, 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.

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 helps him to choose a field of specialization for research and teaching.

### CARBONDALE CAMPUS

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

*General Studies Requirements* (See Chapter 3.) ..... 96

*Requirements for Concentration in Inter-American Studies* ..... 79

GSB 303, 392, GSD FL ..... (15)



Anthropology 305a, 306a .....	6
Economics 419, 429 .....	8
Foreign Languages: Spanish 201-9, 220-6, 320-6, 333-9 .....	30
Foreign Languages: GSD 135-9, Portuguese <sup>1</sup> .....	9
Geography 467 .....	7
Government 363, 371 .....	6
History 352a,b, and 3 hours chosen from 352c, 471, 473 .....	9
Philosophy 340; 477 or 478 .....	8
<i>Electives</i> .....	8
<i>Total</i> .....	192

Students coming to Southern Illinois University without any foreign language must take GSD 140-9 and Spanish 140-3 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.

## JOURNALISM

Journalism courses are designed to give thorough professional training in both theory and practice in a number of fields of journalism. The areas include daily and weekly newspapers, advertising, periodicals, radio and television news, education, agricultural journalism, free lance writing, industrial publications, news agencies, public relations, and research. In addition to courses, professional conferences, field trips, aid to high school newspapers and yearbooks, and extension classes are offered.

### CARBONDALE CAMPUS

BACHELOR OF SCIENCE DEGREE, *School of Communications*

Journalism students must demonstrate a working knowledge of typewriting, based upon a minimum straight copy rate of thirty words per minute. This proficiency may be demonstrated during the first year either by examination or by enrollment in Secretarial and Business Education 201a for no academic credit.

Students must complete successfully the Undergraduate English Qualifying Examination prior to admission to journalism, or no later than the first quarter of their junior year. Students who complete English 390 with a grade of *C* or higher will be excused from the Undergraduate English Qualifying Examination. (See the calendar of events in the Schedule of Classes for dates of the examination.)

All students' course schedules must be approved by the chairman or his representative.

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Journalism</i> .....	48-51
Journalism 101, 102, 103, 201, 202, 399 .....	16
One of the five specializations below: .....	11-23
Advertising: 214, 370, 371, 372, 373, 374, 376 ....	23

<sup>1</sup> This course will take the place of or be in addition to GSD 140a,b,c.

Community Newspaper: 265B, 266B, 350, 351, 352, 442 .....	18
Magazine Journalism: 297, 303, 369, 397, 398, 442 .....	18
News and Editorial: 260a, 303, 330, 390, 391, 442 .....	9
Radio-Television Journalism: 303, 442, RT251, 310, 385 .....	
Journalism electives to complete 48 hours .....	9-21
Recommended journalism electives are 260a, 432, 433 for specialization in advertising; 214, 260a, 330, 370, 371 for community newspaper; 214, 260a, 370 for magazine journalism; 214, 370, 432 for news and editorial; 214, 260a, 370, for radio-television journalism.	
Secretarial and Business Education 201a or demonstrated proficiency in typewriting. ....	0-3
<i>Electives</i> .....	54-57
Recommended electives for radio-television journalism are Printing and Photography 341a, Radio-Television 261, 273, 274, 355, 361, 369, 373, 374, 393.	
<i>Total</i> .....	192

BACHELOR OF SCIENCE DEGREE, *College of Education*

*Requirements for Concentration in Journalism:*

Journalism 101, 102, 103, 201, 202, 303, 390, 421, 422 .....	28
Recommended electives are Journalism 214, 260a, 370, 391.	

SECONDARY CONCENTRATION (*Carbondale or Edwardsville*)

The 24-hour concentration in journalism consists of 103, 201, 202, 340, at Edwardsville, or 442 at Carbondale, English 300, 392, GSC 152, and an elective in journalism.

MANAGEMENT

Courses are offered in these areas of management: general, financial, and personnel management. Students who do not wish to specialize will select the first area. The latter two areas are more restrictive in their requirements. The objective is to provide a broad, general, liberal educational experience rather than a narrow professional training.

CARBONDALE CAMPUS

BACHELOR OF SCIENCE DEGREE, *School of Business*

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Management</i> .....	80
GSB 201-9, 211a,b, GSD 110 .....	(9) + 9
Accounting 251-12 .....	12
Economics 214, 215 .....	6

Management 320, 340, 361, 371, 380, 473, 479, 481 .....	31
Management: One of the specializations below .....	15-16
GENERAL: 327, 385, 421, 475 .....	16
FINANCIAL: 323, 327, 421, 475 .....	16
PERSONNEL: 382, 385, 480, 485 .....	15
Marketing 225, 325 .....	7
<i>Electives</i> .....	25
<i>Total</i> .....	192

## SECONDARY CONCENTRATIONS

A secondary concentration in management with specialization in finance includes 170, 320, 323, 340, 421, Accounting 250. Accounting 251c and Economics 215 are prerequisites to Management 320.

A secondary concentration in management with specialization in general management includes 170, 320, 340, 371, 380, 481, Accounting 250. (Accounting 251c and Economics 215 are prerequisites to Management 320.)

## EDWARDSVILLE CAMPUS

BACHELOR OF SCIENCE DEGREE, *Business Division*

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Management</i> .....	84-89
GSB 211a, GSD 114d .....	(6)
Accounting 251-12 .....	12
Economics 210, 310, 315, & 470 or GSB 311 ....13 + (3) or 16	
Management 170, 271, 320, 340, 361, 371, 372 or 373, 385 .....	32
One of the specializations below: .....	22-24
GENERAL: Management 327, 380, 421, 473, 479-4, Marketing 334 or 341 or 438 .....	24
FINANCIAL: Management 323, 327, 328, 421, 475, Marketing 334 or 341 or 438 .....	23
PERSONNEL: Management 380, 480, 481, 485, 382-3 or Economics 411-4, GSB 201c .....	22-23
Marketing 230 .....	5
<i>Electives</i> .....	21-16
<i>Total</i> .....	192

## SECONDARY CONCENTRATION

Requirements for a 24-hour secondary concentration in management with a specialization in finance include 170, 320, 323, 340, 421. Accounting 251c and Economics 210 are prerequisites to Management 320.

Requirements for a 24-hour secondary concentration in management with a specialization in general business include 170, 320, 340, 371; Marketing 230, Accounting 251c and Economics 210 are prerequisites to Management 320.



MARKETING

CARBONDALE CAMPUS

Marketing consists of the performance of business activities that direct the flow of goods and services from producers to consumers and business users. The list of courses, below, reflects the philosophy that students seeking careers in selling, advertising, transportation, retailing, wholesaling, purchasing, credits, marketing research, and related fields need a balanced program of liberal and professional education.

BACHELOR OF SCIENCE DEGREE, *School of Business*

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Marketing</i> .....	42
GSB 201-9, 211a,b, GSD 114d .....	(9) + 9
Accounting 251-12 .....	12
Economics 210, 315, & 470 or GSB 311 .....	9 + (3), or 12
Management 320, 340, 371 .....	13
Marketing 225, 325, 333, 341, 438, 490 .....	23
Marketing electives, chosen by the student .....	19
<i>Electives</i> .....	17
<i>Total</i> .....	192

SECONDARY CONCENTRATION

A secondary concentration in marketing includes 225, 325, 333, 337, and courses depending upon specialization: 339 or 401, 341, & Accounting 250 for general marketing, 339, 438, & 463 for sales and advertising, 329, 401, & 336 for retailing, 336, 339, 341, & 349 for industrial marketing.

EDWARDSVILLE CAMPUS

Marketing, which includes all activities concerned with determining and satisfying consumer desires, is rapidly becoming a major function in the business process. Marketing knowledge and techniques provide the tools for developing and distributing goods and services in the dynamic economy of today and the future.

Courses are offered in areas such as sales, advertising, marketing management, transportation, retailing, wholesaling, and market research. Senior-level or graduate courses are offered to prepare the student for specialized positions in marketing management.

BACHELOR OF SCIENCE DEGREE, *Business Division*

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Marketing</i> .....	83-89
GSB 211a, GSD 114d .....	(6)
Accounting 251-12 .....	12
Economics 210, 315, & 470 or GSB 311 .....	9 + (3), or 12
Management 170, 320, 340, 361, 371, 373 .....	24

Marketing 230 .....	5
Marketing 331, 335, 338, 339, 349 (any three) .....	11-12
Marketing 333, 334, 336, 337, 341 (any three) .....	11-12
Marketing 438-4 or 463-3, 444, 490 .....	11-12
<i>Electives</i> .....	22-16
<i>Total</i> .....	192

#### SECONDARY CONCENTRATION

A 24-hour concentration in marketing includes 230, 444, 490, and one of the four following options: 338, 341, & Accounting 251a for general marketing; 333, 337, & 438 or 463 for sales and advertising; 331, 334, & 338 for retailing; or 336, 339, & 341 for industrial marketing.

### MATHEMATICS

#### CARBONDALE CAMPUS

Students intending to concentrate in mathematics must plan schedules of mathematics courses numbered above 299 with a mathematics adviser.

#### BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Mathematics</i> .....	48
GSD 114-9 or advanced standing .....	9
GSD FL (French, German, or Russian recommended) .....	(9)
Mathematics 150-10, 252-9 (A student may by-pass any of these in which he can demonstrate competence.) .....	19
Mathematics electives numbered above 299, excluding 311 and 410-16, but including three of the following nine sequences: 305-6; 320-6; 335-6; 421-6; 452-6; 458-6; 475-6; 480-7; 480-4, 483. At least one of the three sequences must be on the 400 level; either 320-6 or 421-6 must be included.	24
Mathematics grade must be at least C in courses numbered 150 or above.	
Physics 211a .....	5
<i>Secondary Concentration</i> .....	24
<i>Electives</i> (Physics 211b,c recommended) .....	24
<i>Total</i> .....	192

#### BACHELOR OF SCIENCE DEGREE, *College of Education*

#### *Requirements for Concentration in Mathematics*

GSD 114-9 or advanced standing .....	(9)
GSD FL (French, German, or Russian recommended) .....	9
Mathematics 150-10, 252-9 (or by-pass) .....	19
Mathematics electives numbered above 299, excluding 410-16 and 456-6 but including 311 and three of the following nine sequences: 305-6; 320-6; 335-6; 421-6; 452-6; 458-6;	

475-6; 480-7; 480-4, 483. At least one of the three sequences must be on the 400 level; either 320-6 or 421-6 must be included. The recommended sequences are 320-6; 335-6; 458-6 ..... 24

Mathematics grade must be at least C in courses numbered 150 or above.

Physics 211a ..... 5

Other requirements are listed under Secondary Education. Mathematics 311 may be substituted for Secondary Education 315.

#### SECONDARY CONCENTRATION

A secondary concentration in mathematics must include Mathematics 252a and at least 12 hours of courses numbered above 252a other than 410. At least a C is required in all mathematics courses numbered 150 and above. 311 does not count toward a Bachelor of Arts degree in secondary concentration.

#### EDWARDSVILLE CAMPUS

Anyone considering a concentration in mathematics is urged to consult with a representative of the mathematics faculty.

#### BACHELOR OF ARTS DEGREE, *Science and Technology Division*

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Mathematics</i> .....	55-65
GSD FL (French, German, or Russian recommended) ....	(9)
Mathematics through 252b .....	16-26
Mathematics 300-4, 320-6 .....	10
Mathematics 452-6 or 480-7 or two geometry courses above 299 .....	6-8
Mathematics (additional courses above 299 to total 24 hours; total in mathematics 48) .....	6-16
Recommended for prospective secondary teachers: 311	(3)
Physics 211-15 .....	15
<i>Secondary Concentration</i> .....	27
<i>Electives</i> .....	13-25
<i>Total</i> .....	192

#### BACHELOR OF SCIENCE DEGREE, *Education Division*

For this degree, a student with one secondary concentration has the Mathematics Concentration Requirements listed above, including 311 but exclusive of Physics 211b,c, and totaling 48 hours or its equivalent. A student with two secondary concentrations must have 36 hours in approved mathematics courses, including 300, 311, 320a. Physics 211a is required. French, German, or Russian is recommended for the language requirement.

#### SECONDARY CONCENTRATION

A secondary concentration in mathematics consists of 27 hours and includes



courses through 150b and at least 9 hours selected from courses above 250. Courses numbering 300 and 320 are recommended for prospective teachers.

## MICROBIOLOGY

### CARBONDALE CAMPUS

Microbiology is a study of micro-organisms. It includes forms, classification, growth and reproduction, heredity, ecology, and effects on man. Such a program prepares one for graduate and eventually research work in governmental or private settings. Some of the specializations available include soil bacteriology, virology, immunology, serology, fermentation, and the testing and production of biological products.

#### BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Microbiology</i> .....	87
GSA 201-9, 5 hours microbiology credit, GSD 114-9, & FL ..	9
Microbiology 301, 302, 403, 425, 426, 441, 451 .....	32
Microbiology electives to complete 48 hours .....	11
Physics 206-15 .....	75
<i>Secondary Concentration</i> .....	28
Chemistry 111-15, 235-5, 305-8 .....	28
<i>Electives</i> .....	10
<i>Total</i> .....	192

#### SECONDARY CONCENTRATION

A secondary concentration in microbiology consists of 24 hours, to include 301, 302, and other courses determined by the student in consultation with his microbiology adviser.

## MUSIC

### CARBONDALE CAMPUS

During each academic year, a series of distinguished musicians join the faculty and students for a period of workshops, seminars, and performances. The roster for the past few years has included the following: Carl Weinrich, organist; Ernest and Lory Wallfisch, viola and piano duo; Willi Apel, Louis Cuyler, and Nicholas Slonimsky, musicologists; Joseph Szigeti, violinist; Robert Goldsand, pianist; and Reginald Kell, Clarinetist; and Nadia Boulanger.

In addition, artists from related fields have included Katherine Dunham, dancer; Edith Lutyens Bel Geddes, costume supervisor; and Max Kaplan, musicologist-sociologist.

#### GENERAL REQUIREMENTS

The requirements for entrance and for graduation as set forth in this bulletin are in accordance with the published regulations of the National Association of Schools of Music, of which the Department of Music is a member.

Each resident music student must maintain a satisfactory membership in either the university band, orchestra, or chorus every quarter he is enrolled at Southern Illinois University, with the exception of the student teaching quarter.

It is required that all students with a concentration in music reserve the ten o'clock hour on Mondays for music convocations and studio recitals.

Bachelor of Music degree students with a concentration in applied music must present a half-recital in their junior year and a full recital in their senior year. Those with a concentration in music education must present a half-recital in their senior year.

A minimum of ten recitals per quarter must be attended by each student concentrating in music; five recitals per quarter for those with a secondary concentration in music. A deficiency in recital attendance for any one year will result in the student's being given a grade of incomplete in his applied music.

Each candidate for the Bachelor of Music degree must pass the proficiency examination in secondary piano. A student with inadequate preparation in piano must elect class piano each quarter his freshman and sophomore years. If he fails to meet the basic piano requirements at the end of the sophomore year, he must continue in class piano without credit until he passes the test. One concentrating in music education must also pass a proficiency test in voice or elect class voice until he can pass the proficiency test. It is the responsibility of each student, with the assistance of his adviser and instructors, to meet these minimum requirements.

#### BACHELOR OF MUSIC DEGREE, *School of Fine Arts*

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Music</i> .....	114-120
GSC 357-9 .....	(6) + 3
Music (Theory) 105a,b,c; 205a,b,c; 326a,b,c; 441a,b,c .....	33
Music (Applied) 12 quarters of ensemble .....	12
Piano proficiency .....	0-6
One of the specializations listed below <sup>1</sup> .....	66
APPLIED MUSIC	
Major instrument or voice, 12 quarters <sup>2</sup> .....	48
Additional theory courses .....	6
Electives in music .....	12
MUSIC THEORY-COMPOSITION	
Major instrument or voice, 12 quarters .....	36
Advanced theory-composition courses .....	12
Electives in music .....	18
MUSIC HISTORY-LITERATURE	

<sup>1</sup> Before the end of his sophomore year the student should choose an area of specialization. This choice is subject to approval by the faculty adviser and the chairman.

<sup>2</sup> For students combining this specialization with the prescribed courses for state certification in education, the applied major will be elected for 2 hours per quarter, totaling 24 hours.

Major instrument or voice, 12 quarters .....	24
Advanced and related courses in music history and literature .....	18
Electives in music theory .....	12
Additional electives in music .....	12
<i>Total</i> .....	204-210

### Music Education

The following requirements may be satisfied in twelve quarters; they meet the requirements for the State Special Teaching Certificate.

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Music</i> .....	85-92
GSC 357-9 .....	(6) + 3
Music (theory) 105a,b,c, 205a,b,c, 326a,b,c or 441a,b,c .....	27
Music (education) 300A, 305I or V; 309a, 318a,b .....	12
(Three hours of above counted in Professional Education below)	
Music (applied) 11 quarters of major ensemble and 11 quarters of major instrument or voice .....	33
Piano proficiency or class .....	0-6
Voice proficiency or class .....	0-1
Music: class woodwinds, brass, and strings .....	6
(2 hours except in major area and one hour of percussion—required of instrumental or combination majors only)	
Music electives to increase specialization in instrumental music (strings, winds, keyboard, brass or percussion) and vocal music (choral, opera, music theater, elementary education) .....	4
<i>Professional Education Requirements</i> <sup>1</sup> .....	27
English 391 or proficiency examination .....	(3)
Guidance 305 .....	4
Secondary Education 310 .....	4
Education Elective .....	4
Music (Education Methods) 451 .....	3
Secondary Education 352 .....	12
Before a student is approved for student teaching, he must satisfy the course of study and proficiency prerequisites as established by the department of music.	
<i>Total</i> .....	199-206

### BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

These courses are for students who wish to specialize in music as part of their general cultural education. They may also be taken as background

<sup>1</sup> As a prerequisite to teaching in the public schools, an individual must pass a test on State Constitution and History. This requirement may be satisfied by successfully completing either GSB 211b or Government 300.



training by those who may plan to pursue advanced studies in such fields as music criticism and aesthetics.

Required courses are 105-12, 205-9, GSC 357-9, applied music courses totaling 12 hours, and electives in music to complete a total of 60 hours.

SECONDARY CONCENTRATION

To complete the secondary concentration in music, the student must satisfy the following requirements: Music 105-12 (4,4,4) Music Theory; GSC 357-9 (3,3,3) Music History and Literature; Music 140-6 (2,2,2), and 240-6 (2,2,2) Private Applied; Music electives 9 hours.

The student must attend a minimum of five campus recitals or concerts per quarter for a total of fifteen events.

Total ..... 42

EDWARDSVILLE CAMPUS

During the academic year, distinguished musicians join the faculty and students for a period of workshops, seminars, and performances. The list of musicians who have appeared includes Sigurd Rashcer, saxophone; Leonard Smith, cornet; Sidney Foster, piano; the Ritter-Allen Duo (violin-piano); Reginald Kell, clarinet; John Barrows, French horn; Vincent Abato, clarinet-saxophone; and Paul Price, percussion.

The Faculty of Music is an Associate Member of the National Association of Schools of Music. The degrees, Bachelor of Music, with concentration in performance, and in Music Education, and the Bachelor of Arts Degree with a concentration in Music are offered.

Detailed requirements in music are stated in a handbook provided by the music faculty.

BACHELOR OF ARTS DEGREE, *Fine Arts Division*

These courses are for students who wish to specialize in music as part of their general cultural education. They may also be taken as background training by those who may plan to pursue advanced studies in music.

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Music</i>	51
GSC 255, 357-9, GSD FL	(18) + 3
Music 105-12, 205-9	21
Music performance major (2 hours per quarter)	12
Music major ensemble	6
Music electives	9
<i>Secondary Concentration</i>	24-27
<i>Electives</i>	27-30
<i>Total</i>	192

BACHELOR OF MUSIC DEGREE, *Fine Arts Division*

*Music Performance*

<i>General Studies Requirements</i> (See Chapter 3.)	87
<i>Requirements for Concentration in Music</i>	111
Music 105-12, 205-9, 309a, 312a, 318a, 326a, 442a	36

Music, private applied (major instrument) .....	48
Music, major ensemble (1 hour per quarter) .....	12
Music, class piano or secondary instrument/voice .....	6
Music, electives .....	9
<i>Total</i> .....	198

Students with a concentration in music performance include one year each of French and German. Students in performance specialization other than voice and those with probable future specializations in music theory-composition, music history-literature, or church music, should consult with their adviser as to the sequence to be followed in languages.

Music Education

One year of French or German is recommended for the student with a choral emphasis in music education.

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Music</i> .....	81-90
Music 105-12, 205-9, 309a-3, 318a,b-6, 326a-3 .....	33
Music, private applied (major instrument) .....	24
Music, major ensemble (1 hour per quarter) .....	12
Music, class piano and/or secondary instrument/voice ....	12-21
<i>Professional Education Requirements</i> .....	28-29
GSB 331 .....	(3)
Music 301-9 .....	9
Guidance 305 .....	4
Elementary Education 351E and Secondary Education 352D	12
Before a student is approved for student teaching, he must satisfy the course of study and proficiency prerequisites as established by the Music faculty.	
Elective education courses to be selected with adviser .....	4
<i>Total</i> .....	196-206

SECONDARY CONCENTRATION

A secondary concentration in music includes 105-12, 2 hours of credit per quarter for three quarters in performance major, 6 hours in a major ensemble, GSC 100, 255. Total: 30 hours.

NURSING

Learning experiences in Nursing are approached from the problem solving point of view. Comprehensive health plans and care emerge from applications of knowledge and skill gained from the natural, biological and social sciences and communications courses. The student develops proficiency in the nurse's role as a teacher, working with patients, families, health teams and other individuals and groups interested in health. Emphasis is placed on the need for responsible leadership in nursing. The student is introduced to the health team concept, first as a member, later as a leader in the nurse

team and then as a participant in the interprofessional health planning for care and rehabilitation of individuals in society.

### EDWARDSVILLE CAMPUS

BACHELOR OF SCIENCE DEGREE, *Department of Nursing*

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Nursing</i> .....	105
Biological Science 311-5 .....	5
Chemistry 240-4 .....	4
Health Education 355-4 .....	4
Nursing 101-3, 210-2 or F&N 103-4, 301-8, 302-8, 303-3, 325-8, 355-4, 363-23, 375-8, 381-3, 382-6, 384-2 .....	78-80
Philosophy 302-4 .....	4
Physiology 209-4, 300-4 .....	8
Sociology 301-4, 340-4 .....	8
<i>Total</i> .....	192-195

### PHILOSOPHY

#### CARBONDALE CAMPUS

General Studies courses in philosophy are available at each level for use in partial satisfaction of the requirements in Area C. The prospective philosophy student is advised to elect at least one such course at each of the first two levels.

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Philosophy</i> .....	39
GSC 381, 382, 383, GSD FL .....	(15) + 3
Philosophy 300, 320, 481a, GSC 386, 387 (Any two) .....	6
Philosophy electives to complete 45 hours, 3 of which may be selected from philosophy courses in the first two levels of General Studies .....	30
<i>Secondary Concentration</i> .....	24
<i>Electives</i> .....	24
<i>Total</i> .....	192

#### SECONDARY CONCENTRATION

A secondary concentration in philosophy requires 24 hours, 6 of which may be selected from philosophy courses offered at the first two levels of General Studies and 12 of which should be selected from the courses listed above for the Bachelor of Arts degree.

### EDWARDSVILLE CAMPUS

BACHELOR OF ARTS DEGREE, *Humanities Division*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Philosophy</i> .....	42



Foreign Languages (equivalent of 2 years) .....	(9) + 9
Philosophy 381-12 and 490 .....	14-16
attendance at clinics, workshops, conventions, and conferences; reading of	
Philosophy electives, including at least one course in each	
of these categories: epistemology and value theory.	
GSA (or C) 363-6 and three hours of GSC 360-6 may	
be counted among these electives .....	26-28
<i>Secondary Concentration</i> .....	24-27
<i>Electives</i> .....	18-21
<i>Total</i> .....	192

#### SECONDARY CONCENTRATION

A secondary concentration consists of 24 hours (exclusive of General Studies), including Philosophy 381-12.

### PHOTOGRAPHY

#### CARBONDALE CAMPUS

These courses give thorough professional training in both theory and practice of photography. Students purchase supplies for most photography courses.

#### BACHELOR OF SCIENCE DEGREE, *School of Communications*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Photography</i> .....	62-64
Art 100-12 .....	10
Printing and Photography 260-12, 303-4, 309a-4, 341-10,	
345-6, 360a-3, 391, 392-3, & additional courses de-	
pending upon specialization: .....	50-52
309b, & 360b or 360c or 364 for general photography	
309b,c for commercial and illustrative photography	
360b,c, & 364 for publications photography	
<i>Electives</i> .....	34-36
<i>Total</i> .....	192

### PHYSICAL EDUCATION

These courses are intended to qualify young people for positions as teachers, coaches, or specialists in public and private elementary or secondary schools, colleges, and universities as well as other social agencies which promote physical activity programs. They have been designed to meet the requirements of state departments of education and other agencies which have adopted professional standards.

Complete and integrated experience in teaching physical education and assisting in coaching under qualified supervisors is provided in the cooperating schools of the area. Added experiences are gained through member-

ship in the Physical Education Club; membership in professional associations; participation on intramural teams; assisting in service class testing; professional journals; and working with recreational and school groups in teaching techniques of various activities.

CARBONDALE CAMPUS — MEN  
BACHELOR OF SCIENCE DEGREE, College of Education

<i>General Studies Requirements</i> (See Chapter 3.)	93
<i>Requirements for Concentration in Physical Education</i>	52
GSA 301	(3)
Physical Education for Men 100–18, 101, 303, 305, 341, 350, 354, 370, 376, 420, and two sport theory courses	48
Physiology 300	4
<i>Professional Requirements</i> (See page 119, item 4.)	20
<i>Secondary Concentration</i>	24
<i>Electives</i>	4
Recommended are Health Education 460, and Recreation and Outdoor Education 365.	
<i>Total</i>	192

SECONDARY CONCENTRATION

A secondary concentration is 40 hours and must include 100–18, 303, 305, 350, 354, 370, 376, Physiology 300, and GSA 301.

CARBONDALE CAMPUS — WOMEN  
BACHELOR OF SCIENCE DEGREE, College of Education

<i>General Studies Requirements</i> (See Chapter 3.)	93
<i>Requirements for Concentration in Physical Education</i>	57
Physical Education for Women 113, 114, 211, 212, 222, 224, 228, 242, 244, 303, 304–10, 308, 350, 351, 352, 353, 354, 355	49
Health Education 334, 460	8
<i>Secondary Concentration</i> (Required for Standard Certificate; not required for Standard Special Certificate)	24
<i>Professional Education Courses</i> (See page 119, item 4.)	29
<i>Electives</i>	(13)
GSE 114a,b,d,e,i,m, PEW 317 (3 hours); GSE 113e, PEW 311, 374, 376 (2 hours).	
<i>Total</i>	203

Anyone who transfers from another university and wants to concentrate in physical education for women at the Carbondale Campus must complete a minimum of 15 hours in physical education senior college courses at Southern Illinois University.

SECONDARY CONCENTRATION

A secondary concentration requires 40 hours, selected in consultation with the chairman.

**EDWARDSVILLE CAMPUS — MEN****BACHELOR OF SCIENCE DEGREE, Education Division**

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Professional Education Requirements</i> (See page 121.) .....	32
<i>Requirements for Concentration in Physical Education</i> .....	48
Physical Education (theory) 303, 305, 341, 350, 354, 370, 381, and 420 .....	30
Physical Education for Men (skill) 100a-j, and two hours from any of 100k-o .....	12
Health Education 334S .....	4
Electives .....	2
<i>Second Teaching Field</i> .....	27
<i>Total</i> .....	194

**SECOND TEACHING FIELD, 30 HOURS**

Physical Education (theory) 341, 350, 354, 370, 381, (skill) 100a,b,c,d,e,f,  
Health Education 334S, and 2 hours of electives.

**EDWARDSVILLE CAMPUS — WOMEN****BACHELOR OF SCIENCE DEGREE, Education Division**

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Professional Education Requirements</i> (See page 121.) .....	32
<i>Requirements for Concentration in Physical Education</i> .....	49
Physical Education (theory) 303, 305, 321-6, 341, 350, 354, 323-1, 370 .....	29
Physical Education for Women (skill) 100a-m and 3 hours from any 100n-y .....	16
Health Education 334S .....	4
<i>Second Teaching Field</i> .....	27
<i>Total</i> .....	195

**SECOND TEACHING FIELD, 30 HOURS**

Physical Education (theory) 341; 350; 354; 321a,b; 323-1, (skill) 100a,b,  
d,e,f,g,h,i,j,k,l,t,u, and Health Education 334S.

**PHYSICS**

A student considering a concentration in physics is urged to consult with  
a representative of the physics faculty.

**CARBONDALE CAMPUS****BACHELOR OF ARTS DEGREE, College of Liberal Arts and Sciences**

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Physics</i> .....	89
GSD 114-9 & FL .....	(9) + 9
Chemistry 111-10 .....	10



Mathematics 150-10, 252-9, 305-6 .....	25
Physics 211-15 (or 206-15 with consent of the department); 301-8, 305-10, 413-8 .....	41
Physics 304, 310, 405, 414, 450 (any three) .....	13
<i>Secondary Concentration</i> .....	24
<i>Total</i> .....	212
<i>Total</i> (if the secondary concentration is mathematics) .....	192

BACHELOR OF SCIENCE DEGREE, *College of Education*

The Bachelor of Arts degree, above, differs in two respects: No foreign language is required herein, and only two of 304, 310, 405, 414, 450 are required.

SECONDARY CONCENTRATION

A student taking calculus should take: 211 and two of the following: 305a, 310, 413a. A student not taking calculus should take: 206, 300, 310, 312.

EDWARDSVILLE CAMPUS

BACHELOR OF ARTS DEGREE, *Science and Technology Division*

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Physics</i> .....	72-98
GSD FL (German or Russian recommended) .....	(9)
Physics 211-15, 300, 301-8 .....	28
Physics electives, including 4 hours lab, to complete 48 hours .....	20
Mathematics, 9 hours beyond 252b .....	9-35
Chemistry 111-15 .....	15
<i>Secondary Concentration</i> .....	(27)
<i>Electives</i> .....	7-33
<i>Total</i> .....	192

BACHELOR OF SCIENCE DEGREE, *Education Division*

For this degree, the Physics Concentration Requirements are as listed above, under Bachelor of Arts degree, except that 6 hours in the history and philosophy of science may be counted toward the physics electives.

A physics concentration for a student with two secondary concentrations must include Physics 211-15, 300, 301-8, 8 additional hours in physics courses above 299, Chemistry 111-15, Mathematics 252-8. German or Russian is recommended as the foreign language.

SECONDARY CONCENTRATION

Includes Physics 211-15, 300, and electives to total 27 hours.

PHYSIOLOGY

CARBONDALE CAMPUS

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
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<i>Requirements for Concentration in Physiology</i> .....	42-72
GSD FL .....	(9)
Physiology electives selected in consultation with the chair- man to total at least 42 hours .....	42
A background of basic courses in chemistry, mathematics, and physics is required. Courses in botany and zoology are recommended. ....	0-30
<i>Secondary Concentration</i> .....	24
<i>Electives</i> .....	0-21
<i>Total</i> .....	192

#### SECONDARY CONCENTRATION

A secondary concentration in physiology requires a minimum of 24 hours.

#### EDWARDSVILLE CAMPUS

Persons who wish to take work in Physiology may do so with either a Zoology or Biology concentration.

A secondary concentration in physiology requires 24 hours.

#### PLANT INDUSTRIES

#### CARBONDALE CAMPUS

Instruction, research, demonstration, and consultation, both basic and applied, are provided in the areas of production and utilization of fruits, vegetables, grain and forage crops, and ornamentals, and in the field of soils and soil management.

Courses are offered in all phases of intensive and extensive crop production, soil science, soil and water conservation, fertilizers and plant nutrition, weed control, and related subjects.

The student has ample opportunity to select courses in other areas within the School of Agriculture or related fields outside of Agriculture, such as business, and the biological and physical sciences; this enables him to include in his training not only the *how* but the *why* in crop production and utilization.

#### BACHELOR OF SCIENCE DEGREE, School of Agriculture

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Plant Industries</i> .....	60
(For an AGRICULTURAL SCIENCE option, hours required are in the second column.)	
Plant Industries 103, 264, 309, and others .....	36 36
Agricultural Industries, Animal Industries, Forestry (work in two departments) .....	7 7
Electives in Agriculture .....	17 5
Mathematics, physical sciences, and biological sciences .....	0 12
<i>Electives</i> .....	36
<i>Total</i> .....	192

## PRINTING MANAGEMENT

## CARBONDALE CAMPUS

The printing management course of study is designed to prepare students to enter the printing field as supervisors, cost estimators, and salesmen.

BACHELOR OF SCIENCE DEGREE, *School of Communications*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Printing Management</i> .....	86
GSB 211-9, GSD 108-9 .....	(18)
Accounting 250, 415 .....	8
Economics 214, 215, 310 .....	6
Management 340, 371, 385 .....	12
Marketing 225 .....	3
Printing and Photography 217, 265a, 271a,b, 302, 308a,b, 312, 314, 365, 366, 379a,b,c, 381a,b, 384 .....	57
<i>Electives</i> .....	6
<i>Total</i> .....	192

## PROFESSIONAL WRITING

## EDWARDSVILLE CAMPUS

BACHELOR OF ARTS DEGREE, *Humanities Division*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Professional Writing Concentration Requirements</i> .....	72
English 300-4, 390-3, 392-3, 492-4 .....	14
Journalism 101-3, 201-3, 202-3, 340-3 .....	12
Intermediate Foreign Language .....	9
Philosophy 240-4, 342-4, 360-4, 484a-4, 484b, or 484c .....	8
Approved electives in economics, English (at least 7 hours), government, history, journalism (no more than 12 hours), sociology, and speech .....	29
<i>Secondary Concentration</i> .....	0
<i>Electives</i> .....	24
<i>Total</i> .....	192

## PSYCHOLOGY

Undergraduate courses in psychology introduce the student to the methods and findings of the scientific study of human behavior. He is given an opportunity to learn what research has shown about how we perceive, learn, and think; how individuals differ from one another; how the personality develops from infancy to maturity; and how interpersonal factors affect human relations in the home, on the job, and in the community.

The undergraduate concentration in psychology is primarily aimed at



providing broad general education rather than specialized professional training in psychology; to become a professional psychologist the student must usually complete from two to four years of postgraduate study.

CARBONDALE CAMPUS

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Psychology</i> .....	40
GSA 301, GSB 201c, GSD FL .....	(16)
Psychology 211-8 .....	8
Psychology electives including either Group One or Group Two and excluding 323, 420, 432, and 465 .....	32
<i>Group One, For Students Planning Graduate Study:</i> 311; any one of 312, 313, 314; any two of 301, 303, 304, 305, 307, 320, 322; any two of 404, 406, 407, 408, 409, 421, 431, 440, 451, 461, 471; and any two additional courses previously listed.	
<i>Group Two, For Students Planning No Graduate Study:</i> any eight of the courses listed in Group One, including at least three 400-level courses	
<i>Secondary Concentration</i> .....	24
<i>Electives</i> .....	32
<i>Total</i> .....	192

SECONDARY CONCENTRATION

Courses 323, 420, 432, 465, and courses listed above are acceptable for the secondary concentration, which requires 24 hours.

EDWARDSVILLE CAMPUS

BACHELOR OF ARTS DEGREE, *Social Sciences Division*

For this degree, a concentration requires a minimum of 44 hours in psychology. A year of foreign language or the General Studies foreign language requirement is required. Required courses are: GSB 201c, Psychology 211a, 211b, 311, and 314 or Physiology 209. Students planning graduate study should take 312 or 313; and two of 301, 303, 304, 305, 307, 320, 322; any two of 404, 406, 407, 408, 409, 421, 431, 440, 451, 461, 471. Additional courses to complete the concentration can be selected through consultation with the adviser.

Students not planning to pursue graduate work must complete 44 hours, satisfy the foreign language requirement and include within the concentration GSB 201c, 211a, 211b, 311, and either 314 or Physiology 209. In planning the concentration consultation should be held with the adviser.

BACHELOR OF SCIENCE DEGREE, *Education Division*

For this degree, a concentration in psychology requires a minimum of 48 hours in psychology and related courses. This course of study is designed for the student who intends to teach, pursue graduate studies in guidance, school psychology, or in psychology with an educational orientation. If one

plans to teach at the secondary level a second teaching field is recommended. This should be planned in consultation with the Education Division psychology adviser.

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Psychology</i> .....	48
GSB 201c, GSB 331, and GSD first level Math or FL .....	(15)
Guidance 305 .....	4
Psychology 211a, 211b, 311, and Physiology 209 .....	16
Psychology 301, 303, 305, 307 (any three) .....	12
Psychology 440, 407, 409 .....	8
Two courses selected from the following: Psychology 312, 313, 314, 320, 404, 406, 408, 431, 437, 440, 451, 461, 465, Special Education 409, 410, 412, 414 .....	8
<i>Professional Education Requirements</i> .....	(32) 28
Guidance 305 (required by major also) .....	(4)
Educational Administration 355 .....	4
Secondary Education 315 .....	4
Student Teaching 352d .....	8-16
Electives: Guidance 422, 426, Psychology 432 or others with adviser's approval	
<i>Secondary Concentration</i> (should be planned as second teaching field) ..	29
<i>Total</i> .....	192

A secondary concentration in psychology consists of 27 hours and includes GSB 201c, 211a, and 305. For further information and advisement, the psychology adviser should be consulted.

## PUBLIC ADMINISTRATION AND PLANNING

### EDWARDSVILLE CAMPUS

Public Administration and Planning is an interdisciplinary concentration which focuses around the problems of public administration in today's society and emphasizes the basic skills and general educational background needed in preparation for a career in public administration and urban and/or regional planning. Numerous opportunities for graduate training exist in all these fields for which this course of study offers adequate preparation. This concentration offers an excellent medium within the Liberal Arts tradition to get an organized view and understanding of some of the major problems confronting contemporary society.

The combination of hours selected depends on the interest and, to some degree, the previous training of the student. In some cases, selected courses in disciplines other than those suggested may be substituted for the hours recommended. Students should consult with the designated adviser in planning their courses of study.

Course problems upon which students may be working in connection with several of the required courses will wherever feasible be related to research projects being carried on by the Public Administration and Metropolitan Affairs Program.

BACHELOR OF ARTS DEGREE, *Social Sciences Division*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Public Administration and Planning</i> .....	73
Government courses at least 17 hours or Geography courses to yield at least 18 hours. If Geography is chosen as the area for the minimum course hour requirement at least 38 hours will be required in Government. If the minimum hours are selected in Government at least 38 hours will be required in the Geography area. The 470 sequence may be offered for either Government or Geography credit but not both .....	56 or 55
Geography: 304-4, 306-4, 310a,b-6, 472-4, and 470-14 ..	18 or 32
Government: 232-4, 360-4, 361-3, 465-3, 473-3, and/or 470-14 .....	17 or 31
Economics: 330-4, and 431-3 .....	7
<i>Electives</i> .....	23
<i>Total</i> .....	192

## RADIO-TELEVISION

## CARBONDALE CAMPUS

BACHELOR OF SCIENCE DEGREE, *School of Communications*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Radio-Television</i> .....	48
Radio-Television 251, 252, 273, 274, 351, 352, 373/374 (8-12), 393, and electives to total 48 hours	
<i>Secondary Concentration in a Related Area</i> .....	24
<i>Electives</i> .....	24
<i>Total</i> .....	192

Each student with a concentration in Radio-Television must by the end of his sophomore year:

1. Either (a) successfully pass an English Qualifying Examination, or (b) in lieu of such an Examination, achieve a grade of B in both GSD 101 and 102, or (c) a grade of C in English 391, or (d) if the student has a secondary concentration in English, a grade of C in English 390.
2. Either (a) demonstrate proficiency in typing at 30 words per minute by passing a test administered by the Department of Secretarial and Business Education, or (b) pass Secretarial and Business Education 201-A with a grade of B.

## RECREATION AND OUTDOOR EDUCATION

## CARBONDALE CAMPUS

Each student is expected to choose courses which will give him a broad



background in recreational activities and skills. These courses may be selected from such areas as music and dance, arts and crafts, drama, sports and games, and nature and conservation. He must complete at least 12 hours of field experience in two areas of his interest, have 34 hours of professional recreation courses, and work closely with the department chairman in choosing related courses in other departments of the University.

Graduates are qualified for employment as public recreation administrators, as directors of recreation in youth serving and semi-public organizations, as supervisors of recreational programs for the ill, handicapped, and the retarded, as specialists in camping and outdoor education.

BACHELOR OF SCIENCE DEGREE, *College of Education*

*General Studies Requirements* (See Chapter 3.) ..... 96

It is recommended that one specializing in recreation for the ill, handicapped, and retarded take GSC 100, 101, 102, 203, 204, and 207.

*Requirements for Concentration in Recreation and Outdoor Education* ..... 80-95

Recreation and Outdoor Education 100, 201, 202, 220,  
230, 301, 302, 310, 315 ..... 34

GSC 300 ..... 9

English 391 (See Student Teaching Prerequisites) ..... 3

Guidance 305 ..... 4

Health Education 334s ..... 4

Music 307 ..... 4

One of the three groups of courses listed below: ..... 22-37

PARKS AND OUTDOOR RECREATION ..... 22

Recreation and Outdoor Education 305,  
311-6 ..... 10

Accounting 250 ..... 4

Management 170 ..... 4

Mathematics 220 ..... 4

COMMUNITY AND AGENCY RECREATION ..... 37

Recreation and Outdoor Education 305-4,  
311-4, 312-4, 313-4, 360-4, 365-4 ..... 24

Accounting 250 ..... 4

Government 232 ..... 5

Management 170 ..... 4

RECREATION FOR THE ILL, HANDICAPPED, & RETARDED ..... 24

Recreation and Outdoor Education 311-4,  
314-12 ..... 16

Mathematics 220 ..... 4

Psychology 305 ..... 4

Students concentrating in recreation are encouraged to obtain the following certificates: American Red Cross First Aid certificate, American Red Cross Life Saving and Water certificate, American Camping Association Campcraft certificate. Other certificates in the activity and instructional areas are also available.

## SECONDARY CONCENTRATION

The minimum concentration must include 12 hours of course work (201, 202, 301) and 12 hours of field work (311, 312, 313, 314). In addition, each student should demonstrate proficiency in water safety skills before graduation.

## 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. The maximum credit in religion courses accepted toward the bachelor's degree is 15 hours.

### SECONDARY CONCENTRATION, *Carbondale*

This secondary concentration consists of 30 hours: 15 hours earned in courses selected from the following list (Group A) offered by the College of Liberal Arts and Sciences; and (Group B) 15 hours earned in courses offered by the various religious foundations. In the second group, courses must be taken in at least two foundations.

Group A courses include GSB 201b, GSC 310, 345, 382, 383, English 438, 473, History 304, 415b, Philosophy 301, 340, Psychology 305, 307, Sociology 333, 340, 351, 450.

The list of Group B courses is found in Chapter 9 under "Religion."

## RUSSIAN AND CENTRAL EUROPEAN STUDIES

### SECONDARY CONCENTRATION, *Carbondale*

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

For either specialization 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 in any one subject area will be counted toward fulfillment of the requirements. In exceptional cases an elective course may be substituted after consultation with the adviser for the course of study.

Principal courses for the *Russian studies* consist of Economics 460, Geography 464, Government 453, History 372. Electives are GSB 312, Anthropology 305b, 306b, Economics 418, 481, Geography 462, Government 455, History 312, 430.

Principal courses for the *Central European studies* consist of GSB 390, Economics 418, Geography 462, Government 455, History 312, 430. The electives are GSB 312, Anthropology 306b, Economics 460, 481, Geography

464, Government 453, History 372. One reading course or one independent-studies course can be used in fulfillment of the requirements. Each student's list of courses, however, should be approved by the adviser.

## SECONDARY EDUCATION

One who is preparing to teach in junior high school, high school, or junior college does not concentrate in secondary education but must concentrate in any of the areas listed below.

### CARBONDALE CAMPUS

The Department of Secondary Education concerns itself with the sequences of professional education courses that lead to certification for teaching in the junior high school, the high school, and the junior college. In addition, it advises students concerning areas of academic concentrations.

A student in the College of Education who is preparing to teach in junior high school or high school may select areas of concentration in any of the following:

Agricultural Education	Foreign Languages	Mathematics
Art Education	Geography	Music Education
Biological Sciences	Government	Physical Science
Business Education	Health Education	Physics
Botany <sup>1</sup>	History	Social Studies
Chemistry	Home Economics	Speech
Economics	Industrial Education	Theater <sup>2</sup>
English	Journalism	Zoology
English Language Arts		

With the consent of an academic adviser, a secondary concentration may be selected from the following:

Biological Sciences	Health Education	Physical Education
Botany <sup>1</sup>	History	Physics
Business Education	Home Economics Education	Physiology
Chemistry	Industrial Education	Psychology
Driver Education	Instructional Materials	Sociology
Economics	Journalism	Speech
English	Mathematics	Theater
Foreign Languages	Microbiology	Zoology <sup>1</sup>
Geography	Music	
Government	Philosophy	

### STANDARD HIGH SCHOOL CERTIFICATE

A student may enter the Secondary Education program of the College of Education by transfer (1) from the General Studies program (provided he has attained 64 quarter hours), (2) from other academic units, or (3)

<sup>1</sup> A student with a concentration in botany or zoology should have a secondary concentration in the other in order to meet certification standards for teaching biology at the high school level.

<sup>2</sup> In choosing this concentration, the number of hours required is 36; a second concentration of 36 hours must also be chosen; a secondary concentration of 27 hours is also required.



from other institutions. In each case, he is subject to the following requirements.

1. He must meet the requirements related to the state and federal constitutions.

2. There is no general requirement in foreign language in the Department of Secondary Education except in those situations where the student must meet a foreign language requirement as part of his major academic concentration.

3. He must complete one area of concentration of at least 48 hours and a second concentration in a separate area with a sufficient number of hours to meet the teaching requirements for that area. Or he may substitute one area of concentration of 36 hours and two minor areas with a sufficient number of hours to meet the teaching requirements for each. (Certain broad areas including biological sciences, English language arts, physical education, physical sciences, and social studies have special certification requirements. Students electing to work in these areas should adhere closely to the course of study presented through the designated academic adviser.)

4. He must, if working for certification at the secondary level, complete the following sequence of professional education courses, for 29–35 hours.

Guidance 305, Educational Psychology ..... 4

Secondary Education 310–4, History and Principles of Secondary Education; 315–3, High School Methods or Special Methods; 352–12 to 16 Student Teaching ..... 19–23

Select two courses from the following: ..... 6–8

Agricultural Industries 311–3, Adult Education in Agriculture

Art 308–3, Curriculum and Administration

Educational Administration and Supervision 355–4, Philosophy of Education

Guidance 422a–4, Educational Measurements and Statistics

Home Economics Education 310–4, Adult Education and Evaluation

Industrial Education 408–3, Teaching Aids in Technological Education

Instructional Materials 417–4, Audio Visual Methods

Secondary Education 407–4, The Junior High School

Secondary Education 440–3, Teaching Reading in High School

5. He must satisfy the Student Teaching Prerequisites on page 135 of this catalog. Anyone who wishes to qualify for the Standard Special Certificate for grades K through 12 should consult page 120 of this catalog.

A student in an academic unit other than the College of Education who desires to obtain a Standard High School Certificate should follow the teacher preparation program as described in this bulletin.

#### STANDARD JUNIOR COLLEGE CERTIFICATE

#### MASTER OF SCIENCE DEGREE, *College of Education*

One who holds a valid teaching certificate at the high school level may qualify for the Standard Junior College Certificate by satisfying the following requirements.

<i>Professional Education Requirements</i> .....	20
Educational Administration and Supervision 500-4, Higher Education 521g-2, 565-4, Secondary Education 597-3, 598-3	16
One of the following: Educational Administration and Supervision 460-4, Higher Education 511-4, 576-4, 578-4, Secondary Education 508-4 .....	4
<i>Graduate Credit in Area of Undergraduate Concentration</i> .....	28
<i>Total</i> .....	48

One who holds no valid teaching certificate at the high school level may qualify for the Standard Junior College Certificate by satisfying the following requirements. His undergraduate work must satisfy state requirements for 63 hours of General Education.

<i>Professional Education Requirements</i> .....	20
(Courses in parentheses are not for graduate credit and are not totaled.)	
Educational Administration and Supervision 500-4, 554-4, Guidance (305-4), Higher Education 565-4, Secondary Education (315-3), (352-8) .....	(15) + 12
Two of the following: Educational Administration and Supervision 460-4, Guidance 442-4, Instructional Materials 417-4, Secondary Education 508-4 .....	8
<i>Graduate Credit in Area of Undergraduate Specialization</i> .....	28
<i>Total Hours of Graduate Credit</i> .....	48

#### STANDARD SPECIAL CERTIFICATE

The Standard Special Certificate is valid for four years for teaching the special subject or subjects named on the certificate in grades kindergarten through 14. This certificate may be issued to one who has a bachelor's degree and presents certified evidence of having earned credit as follows:

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Professional Education</i> (Requirements) .....	29-35
Guidance 305 (Educational Psychology)	4
Secondary Education 315 or Special Methods	3
Educational Administration and Supervision 355	4
Secondary Education 352 and Elementary Education 351	12-16
Two of the following courses:	6-8
Agricultural Industries 311-3	
Art 308-3	
Guidance 422-4	
Home Economics Education 310-4	
Industrial Education 408-3	
Instructional Materials 417-4	
Secondary Education 310-4, 407-4, 440-3	
<i>Area of Specialization</i> .....	48

<i>Electives</i> .....	19
<i>Total</i> .....	192

### EDWARDSVILLE CAMPUS

It is assumed that all candidates for the Bachelor of Science degree have made a commitment to professional education. Secondary education concerns itself with courses in professional education, the teaching fields, and general education. Students should apply for acceptance to the teacher education program no later than the sixth quarter.

#### BACHELOR OF SCIENCE DEGREE, *Education Division*

<i>General Studies Requirements</i> (See Chapter 3.) .....	87-96
A student in the Education Division must complete all general education bachelor's degree requirements as listed in this catalog.	
The following must be included:	
GSB 201c-3 General Psychology	
GSB 331-3 The American Educational System	
History 201a-4 History of the United States, or	
Government 210-4 American Government	
<i>Professional Education</i> .....	32
Guidance 305, Educational Psychology (Prerequisite GSB 201c-3) .....	4
Educational Administration 355, Philosophy of Education ....	4
Secondary Education 315, High School Methods (Prerequisite Guidance 305) .....	4
Secondary Education 352D, Secondary Student Teaching (Prerequisite Secondary Education 315) .....	8-12
Elementary Education 351D, Elementary Student Teaching * .....	4
Electives with Secondary Education Approval .....	12-8
<i>Total</i> .....	192

#### TEACHING FIELDS

The first teaching field shall be at least 48 hours, with a second teaching field of sufficient hours to meet the minimum preparation for teaching in the various fields and subjects (the first teaching field and the second teaching field being in different areas), or the student may carry a 36-hour first teaching field with two approved second teaching fields. It is the pol-

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\* Required for a standard special certificate in addition to Secondary Education 352D.

NOTE: 1. A student must pass an examination on the national and state constitution's principles as required by Illinois Law.

2. No general requirement in foreign language applies to the Bachelor of Science degree in education.



icy of the Education Division that the courses and prerequisites within the first teaching field area be approved by the adviser in that teaching field. Additional elective hours in the first teaching field and the second teaching field are encouraged, with a first teaching field and a second teaching field selected from the following subject fields:

FIELD	HOURS	FIELD	HOURS
Art Education broad teaching field	67	Geography 1st teaching field	48
2nd teaching field	31	2nd teaching field	27
Botany 1st teaching field	48	Government 1st teaching field	48
2nd teaching field	27	2nd teaching field	27
Biological Science 1st teaching field	48	History 1st teaching field	48
2nd teaching field	27	2nd teaching field	27
Business Teacher Education		Mathematics 1st teaching field	48
broad teaching field	73-77	2nd teaching field	27
2nd teaching field	27	Physical Education 1st teaching field	48
Chemistry 1st teaching field	48	2nd teaching field	27
2nd teaching field	27	Physics 1st teaching field	48
English 1st teaching field	48	2nd teaching field	27
2nd teaching field	27	Psychology 1st teaching field	48
Foreign Languages 1st teaching field	48	2nd teaching field	27
2nd teaching field	27	Social Studies broad teaching field	75
General Science and Mathematics		27 hours in history, 24 in govern-	
broad teaching field	84	ment or geography, and 12 hours in	
57 hours in general science: Chemistry		each of two of the following: anthro-	
111-15, 341-4, GSA 201-9, 356-3,		pology, economics, geography or gov-	
Physics 211-15, plus 6 hours related		ernment, sociology.	
earth and health science from General		Sociology 1st teaching field	48
Studies; and 27 hours in mathematics:		2nd teaching field	27
GSD 114-9, Mathematics 150-8, 300-		Speech Education 1st teaching field	48
4, 320-3, plus one other mathematics		Speech 2nd teaching field	27
course above 299.			

## EXECUTIVE SECRETARIAL STUDIES

### CARBONDALE CAMPUS

#### BACHELOR OF SCIENCE DEGREE, *School of Business*

<i>General Studies Requirements</i> (See Chapter 3.)	96
<i>Requirements for Concentration in Secretarial Studies</i>	109
GSB 211a, GSD 110	(6)
Accounting 251-12	12
Economics 214, 215	6
English 300	4
Management 271, 320, 340, 371, 385, 481	24
Marketing 225, 325	7
Secretarial and Business Education <sup>1</sup> 201-9, 221-12, 241, 304, 324-8, 326, 341, 407, 427	49
<i>Total</i> <sup>1</sup>	197

<sup>1</sup> The total hours required for most students will be 192, because they will be able to omit the first two or three courses in beginning shorthand and typewriting as a result of their having taken such courses in high school. Students who demonstrate by examination an initial competence in typewriting may be excused from as many as 9 hours of typewriting (201a,b,c); those starting with a proficiency in shorthand may in a similar manner be excused from as many as 16 hours of shorthand (221a,b,c, and 324a).

## SECONDARY CONCENTRATION

Secondary concentrations are offered in the following areas: (1) secretarial studies and office management consisting of a minimum of 24 hours in business; (2) business-teacher education consisting of a minimum of 30 hours in business.

Secondary concentrations are planned for each student individually by the student and his adviser. This procedure is necessary because students' backgrounds and needs vary greatly.

## SMALL BUSINESS MANAGEMENT

## CARBONDALE CAMPUS

The School of Business, in co-operation with the Small Business Institute, grants the Bachelor of Science degree with a concentration in small business management.

Each student must designate the particular small business he plans to enter within the areas of manufacturing, distribution, and services by the end of his sophomore year. Courses are then selected from several areas to provide specific knowledge about the designated business and to give a sound management background applicable to all business.

As the student completes his third year of study, much of his basic training is completed. Each student is then given the opportunity to *intern* in his chosen field. This practical experience may be obtained during summer sessions or regular quarters under the supervision of the staff of the Small Business Institute.

BACHELOR OF SCIENCE DEGREE, *School of Business*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Small Business Management</i> .....	71
GSB 211a, GSD 110 .....	(6)
Accounting 251-12 .....	12
Economics 214, 215 .....	6
Management 320, 327, 340, 360, 364, 371, 421, 472, 481 .....	38
Marketing 225, 325, 333, 337 .....	5
<i>Electives</i> .....	25
Some should relate directly to the student's special area.	
<i>Total</i> .....	192

In addition to the courses listed above, each student must pass an English qualifying examination, taken during his sophomore year.

## SOCIOLOGY

## CARBONDALE CAMPUS

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Sociology</i> .....	42
GSB 201-9 .....	(9)

GSD 108-9 (or Mathematics 220-4), FL .....	(9) or (4) + 9
Sociology 301, 302, 312 .....	2
Sociology electives in courses whose second digit is not 8, to complete 42 hours (counting GSB 201b) .....	30
<i>Secondary Concentration</i> .....	24
<i>Elective Courses in College of Liberal Arts &amp; Sciences</i> .....	30
<i>Total</i> .....	192

*Social Work*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Sociology</i> .....	42
GSD 201-9 (3 hours count toward the concentration), GSD FL, 108-9 (or Mathematics 220-4) .....	(18) + 9
Government (2 courses) .....	5
Sociology 312, 375, 383, 481, 482 .....	19
Sociology electives to complete 42 hours (counting GSB 201b) .....	23
<i>Secondary Concentration</i> .....	24
<i>Elective Courses in College of Liberal Arts &amp; Sciences</i> .....	30
<i>Total</i> .....	192

## SECONDARY CONCENTRATION

A secondary concentration in sociology consists of a minimum of 24 hours.

*EDWARDSVILLE CAMPUS*BACHELOR OF ARTS DEGREE, *Social Sciences Division*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Sociology</i> .....	53
GSD FL .....	(9)
Anthropology, psychology (one course in each) .....	8
Sociology 301, 308 (or GSD 114d or Mathematics 410a), 312, 321, 405, 451 .....	23
Sociology electives to complete 45 hours .....	22
A background course in physical anthropology is also recommended.	
<i>Secondary Concentration</i> .....	27
<i>Electives</i> .....	16
<i>Total</i> .....	192

*Social Welfare*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Sociology Concentration Requirements</i> .....	63
GSD FL .....	(9)
Anthropology, economics, psychology (one course in each) ..	12
Government (two courses in the area of American national, state, and local government) .....	9



Sociology 301, 302, 308 (or GSD 114d or Mathematics 410a), 321, 340, 375, 481, 482 .....	31
Sociology electives .....	11
<i>Secondary Concentration</i> .....	27
<i>Electives</i> .....	6
<i>Total</i> .....	192

BACHELOR OF SCIENCE DEGREE, *Education Division*

For this degree, the Requirements for Concentration in Sociology include 301, 302, 321, 333, 340, 374, and sociology electives to complete 48 or 36 hours depending on whether the student has one or two secondary concentrations. One (but not two) secondary concentration should be in another social science.

SECONDARY CONCENTRATION

A secondary concentration of 27 hours may include GSB 201–9 and 359–6.

SPECIAL EDUCATION

Concentration in special education leads to certification as teachers of specific kinds of exceptional children.

Students who are concentrating in other areas of education may qualify for the above-mentioned special certificate for teachers of exceptional children by taking approximately twenty-four hours of special work. Usually these courses can be taken in place of regular electives, and can be obtained in the junior and senior years. This permits a student (by the time of graduation) to qualify for both his regular teaching certificate and the special certificate.

CARBONDALE CAMPUS

BACHELOR OF SCIENCE DEGREE, *College of Education*

Required courses for specialization in teaching the mentally retarded: students in the elementary education area must take Special Education 410b, 413b, 414, and 420b; Psychology 301 or 303 and 412; Guidance 422; Speech Correction 428; 8 hours of student teaching with normal children and 12 hours of student teaching with mentally retarded children. Students in secondary education who wish to qualify for this certification must have the above courses and may need to take additional courses required in the elementary education program but which are not required on the secondary level. These additional courses will need to be worked out on an individual student basis with his adviser.

EDWARDSVILLE CAMPUS

BACHELOR OF SCIENCE DEGREE, *Education Division*

*Requirements for a Concentration in Special Education, Educable  
Mentally Handicapped*

<i>Language Arts</i> .....	24 hours
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GSC 251-6, GSD 101-6, 103, English 300 or 391, Speech Correction 428, plus elective hours to total 24.

*Natural Science* .....24 hours  
GSA 101a,b,c, 201a,b,c (GSA 200 substitutes for 201b or 201c), plus 6 hours.

*Social Science* .....24 hours  
GSB 101a,b,c, 201a,b, plus 8 or 9 hours from History 201 and Government 210 or the General Studies equivalents.

*Mathematics* .....9 hours  
GSD 112a,b,c, Mathematics 310 or equivalent.

*Fine and Applied Arts* .....18 hours  
GSC 100 or 101, plus electives to equal 18.

*Health and Physical Education* .....10 hours  
GSE 201, plus 3 hours in physical education activity; plus Physical Education 350.

*General Psychology* .....7 hours  
GSB 201c; Psychology 301 or 303

*Education* .....31 hours  
GSB 331; Elementary Education 314, 337, 351-8, Guidance 305; 412, 422; Instructional Materials 417, Educational Administration 355.

*Special Education* .....24 hours  
Special Education 410b, 413b, 414, 420b, 428, 481b, 8 hours of student teaching of educable mentally handicapped children.

This course of study fulfills all the requirements for an elementary teaching certificate in Illinois plus a certificate to teach educable mentally handicapped children.

Information relative to course of study leading to a master's degree appears in the Graduate School catalog.

#### *Requirements for Concentration in Special Education, Emotionally Disturbed*

Requirements for the Bachelor of Science degree with the concentration in special education, Emotionally Disturbed, are the same as those listed above for Special Education, Educable Mentally handicapped except in the last section entitled *Special Education* where the required courses are as follows:

*Special Education* ..... 32  
Special Education 410a, 413a, 414, 420a, 428, 481a, 8 hours of student teaching of Emotionally Disturbed Children.

This course of study fulfills all the requirements for an elementary teaching certificate in Illinois plus approval to teach emotionally disturbed children.

Information relative to course of study leading to a master's degree appears in the Graduate School bulletin.

#### *Requirements for Concentration in Special Education, Gifted*

Requirements for the Bachelor of Science Degree with the concentration in Special Education, Gifted, are the same as those listed above for Special

Education, Educable Mentally Handicapped except in the last section entitled Special Education, where the required courses are as follows:

<i>Special Education</i> .....	32
Special Education 410c, 413c, 414, 420c, 481c, 8 hours of student teaching of gifted children.	

This course of study fulfills all the requirements for an elementary teaching certificate in Illinois plus approval to teach gifted children.

## S P E E C H

### C A R B O N D A L E C A M P U S

BACHELOR OF SCIENCE DEGREE, *School of Communications*

<i>60 hour concentration in speech</i>	
<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Speech</i> .....	54
GSC 200, GSD 103 .....	(6)
Speech 102, 201, 202, 205, 209, 300 or 104, 301, 313, 407a, 407b or 417 or 418, 408 and 16 additional hours .....	54
<i>Electives</i> .....	39
<i>Total</i> .....	192
<i>48 hour concentration in speech (requires a secondary concentration)</i>	
<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Speech</i> .....	42
GSC 200, GSD 103 .....	(6)
Speech 102, 200, 201, 202, 205, 209, 313, 407-4 .....	26
Speech electives .....	16
<i>Secondary Concentration</i> .....	24
<i>Electives</i> .....	30
<i>Total</i> .....	192

### *Interpretation*

<i>For student obtaining a 60 hour concentration in communications</i>	
<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Speech</i> .....	57
GSC 200, GSD 103 .....	(6)
English: A course of study of 16 hours of English will be worked out on an individual basis.	
Speech 102 or 313, 104, 202, 209, 309, 323, 301, 408, 434, and any two of 422, 423, 424, (4 hours elective) .....	43
<i>Electives</i> .....	6
<i>Total</i> .....	192

*For Students Obtaining a Teaching Certificate with an emphasis in Interpretation*

Students taking a teaching degree should follow the teaching course



of study in Speech for the School of Communications with the following adjustments:

1. The 10 hours of electives allowed in this course of study should be taken in Interpretation.
2. The secondary concentration should be the regular English secondary concentration.

### *Teaching*

The following course of study leads to the Bachelor of Science degree with a concentration in speech education in the School of Communications and meets requirements for a state teaching certificate.

This course of study may also lead to a Bachelor of Science degree in the College of Education.

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for a Concentration in Speech</i> .....	48
GSC 200, GSC 203, GSD 103 .....	(9)
Speech 102, 104 or 200, 202, 205, 209-1, 323, 427 .....	23
Theatre 111a or 111b or 111c, 208-1, 402a .....	8
Radio-TV 367 .....	3
Speech Correction 428 .....	4
Electives in Speech and/or Theatre .....	10
<i>Related Requirements for the Teaching Concentration</i> .....	32
Guidance 305 or Psychology 303 .....	4
Education: two courses listed below * .....	8
Secondary Education 310, 352 .....	16
Speech Methods 406 .....	4
<i>Secondary Concentration</i> .....	24
* One secondary concentration is required in a separate area with a sufficient number of hours to meet the teaching requirements for that area. A secondary concentration in English or social sciences is recommended.	
<i>Total</i> .....	200

### BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Speech</i> .....	42
GSC 200, GSD 103 .....	(6)
Speech 102, 202, 304 .....	10
Speech electives to complete 48 hours .....	32
<i>Secondary Concentration</i> .....	24
<i>Electives</i> .....	30
<i>Total</i> .....	192

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\* The Education courses referred to above are Educational Administration and Supervision 355-4, Guidance 422-3, Instructional Materials 417-4, Secondary Education 407-4, 440-3.

## SECONDARY CONCENTRATION

A 30-hour secondary concentration in speech should be planned in consultation with the chairman of the department or the director of speech education. Students electing speech as a secondary concentration to a teaching concentration must include Speech 406.

## EDWARDSVILLE CAMPUS

Every student who concentrates in speech and theater must participate in the Speech Arts Performance Program for at least three quarters by enrolling in any of the performance courses: Speech 209 or 309 or Theater 208 or 308. He must also present to an examining committee of speech and theater faculty members a special graduation project in his senior year. The committee shall certify the candidate's project only if it meets certain minimum standards of excellence. Normally, this project will take the form of an extensive and thoroughly documented paper to be orally presented and defended. Examples of topics include: the role of public address in the civil rights struggle, a study of an orator of the past or of a famous contemporary speaker, the manifestation of psychological concepts in modern plays, the historical development of the radio and television documentary, or an analytical report on a theory of stuttering. The topics listed are suggestions only; the student with the consent and advice of his adviser, will determine the exact nature of the project and the format of the paper. For example, if he wishes, the student may offer a short play or a public performance. Unlike the Speech Arts Performance Program, in which the students work together, (e.g., in a play, a television production, or on a debate team), the graduation project is to be accomplished by the student *alone*. Seniors must take the initiative early in their senior year for arranging the project with their advisers and for setting the time for its presentation.

Students who choose either a concentration or a secondary concentration in speech and theater must contact the chairman of the speech and theater faculty for the assignment of a faculty adviser.

BACHELOR OF ARTS DEGREE, *Fine Arts Division*  
*General Speech and Speech Education*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Speech Concentration Requirements</i> .....	48
GSC 200 or 203, GSD 103, FL .....	(15)
Speech 102, 104, 200, 202, 205, 209 or 309 or Theater 208 or 308 .....	21
Speech and theater electives in at least three of the following areas: general speech, radio-television, speech correction, theater .....	27
<i>Secondary Concentration</i> .....	24
<i>Electives</i> .....	24
<i>Total</i> .....	192

Students concentrating in Speech Education must take Speech 406, at least 9 elective credits in English, and meet all other minimum standards for certification as outlined in the Education Division, Edwardsville, section of this catalog.

#### SECONDARY CONCENTRATION

A 30-hour secondary concentration in speech should be planned in consultation with the chairman of the speech faculty. Students electing speech as a secondary concentration to a teaching concentration must include Speech 406.

### SPEECH CORRECTION

#### CARBONDALE CAMPUS

Speech correction, pathology, and audiology is an area which has as its objective the training of qualified personnel to work with people impaired in either speech or hearing. Positions in this field are available in the public schools, colleges, and universities, and in highly specialized public or private clinics. Experience is obtained through work at the University's Speech and Hearing Clinic, which is one of the participating agencies in the Co-operative Clinical Services. Additional practical experience is available at the University School; a six-week summer camping program in co-operation with the Division of Services for Crippled Children and the Easter Seal Society; the Marion V.A. Hospital and the Anna State Hospital; rehabilitation work sponsored by the Division of Vocational Rehabilitation.

A student in the School of Communications who plans to be a public school speech correctionist in Illinois must meet the following required courses to obtain a Limited State Special Certificate.

1. GSB 202 and Psychology 301; Elementary Education 314 or Speech 340; GSB 331, 337; Guidance 421 or 422; GSD 103 with a minimum grade of C; History 201a or 201b, and/or GSB 212 or Government 300; English 391 or proficiency examination. In addition, the following courses should be taken during the student's professional quarter, when he does his student teaching: GSB 331 and 355 or Instructional Materials 417; Elementary Education 351B (student teaching, 8 hours).

2. Additional courses required for certification are Psychology 412 or 305 or Health Education 312 and Special Education 414 or Special Education 200.

3. Thirty to thirty-eight hours of speech correction.

4. Eight hours in the field of hearing.

5. Two hundred clock hours of supervised case work in a teacher-training center. (The requirement is satisfied by Elementary Education 351B and/or Speech Correction 405.)

The above items 2, 3, 4, 5 are pertinent for those not wishing to be public school speech correctionists.

#### BACHELOR OF SCIENCE DEGREE, *School of Communications*

The following applies toward certification requirements of the American Speech and Hearing Association.



<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Speech Correction</i> .....	62
Guidance 422 .....	4
Psychology 201, 301, 412 or 305 .....	12
Speech Correction 200, 203, or 409, 212, 318, 319, 405-12, 406, 412, 414, 415, 419 .....	46
<i>Electives</i> .....	28
<i>Total</i> .....	192

The following meets requirements for a state teaching certificate.

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Requirements for Concentration in Speech Correction</i> .....	95-104
Courses listed above .....	62
GSB 331, GSD 103 .....	6
Elementary Education 314, 337, 351B .....	20-24
English 391 (or proficiency) .....	0 or 3
Guidance 305 .....	4
Special Education 200 or 414 .....	2-4
<i>Electives</i> .....	17-26
<i>Total</i> .....	192

**BACHELOR OF SCIENCE DEGREE, *College of Education***

<i>Requirements for Concentration in Speech Correction</i> .....	107-117
All requirements listed above .....	95-104
Administration and Supervision 100 .....	3
History 201 or 202 .....	5
Government 101 or 300 .....	4-5

Other requirements for the degree are given in the College of Education section of this catalog.

**EDWARDSVILLE CAMPUS**

**BACHELOR OF ARTS DEGREE, *Fine Arts Division***

*Speech Correction*

<i>General Studies Requirements</i> (See Chapter 3.) .....	96
<i>Speech Correction Concentration Requirements</i> .....	55
GSD 103, FL .....	(12)
Speech 209 or 309 or Theater 208 or 308 .....	3
Speech Correction 104, 200, 203, 212, 318, 319, 405-8, 406, 412, 414, 415, 419 .....	52
<i>Related Requirements for the Concentration</i> .....	43
GSB 331 .....	(3)
Elementary Education 314, 337, 351B-8 .....	16
English 391 (or proficiency) .....	3
Guidance 305, 422 .....	8
Psychology 201, 301, 305 .....	12
Special Education 414 .....	4
<i>Total</i> .....	194

## STUDENT TEACHING

## CARBONDALE CAMPUS

Supervised student teaching is conducted in co-operating public schools in Southern Illinois and the Chicago City Schools and at Southern Illinois University in the University School. The College of Education requires 12 to 16 hours of student teaching for the Bachelor of Science degree. Students are expected to enroll for the entire 12 to 16 hours during one quarter.

One of the following professional-quarter plans of student teaching must be pursued by the student with the approval of the director of Student Teaching.

## ELEMENTARY PROFESSIONAL QUARTER

The student-teaching quarter is devoted to full-time student teaching in an approved off-campus center or in University School. The student teacher earns 16 hours of credit and is expected to participate in the teaching program for the entire school day, following exactly the schedule of his co-operating teacher. The teaching program includes both regular and extra-class activities.

The university consultant calls a meeting of student teachers planning to do elementary student teaching at least one quarter in advance of the student teaching quarter. The purpose of this meeting is to complete plans and answer questions pertaining to the professional quarter.

## EARLY-CHILDHOOD EDUCATION PROFESSIONAL QUARTER

The early-childhood education professional quarter is essentially the same as the one described for elementary student teachers with this exception: student teachers in this area teach full time for a quarter in either kindergarten or one of the primary grades. Students must indicate their preference at the time of filing the final application for student teaching.

## SECONDARY PROFESSIONAL QUARTER

*(Except Vocational Agriculture and Vocational Home Economics)*

## PLAN A. EIGHT QUARTER HOURS

This professional-quarter plan is designed for those student teachers wishing to meet only state minimum certification requirements.

Student Teaching, Secondary Education 352A—8 hours of credit for student teaching. Additional hours may be earned by registering for courses taught on campus during the evening or on Saturday.

## PLAN B. TWELVE QUARTER HOURS

This professional-quarter plan is designed for secondary student teachers in the College of Education and for other student teachers desiring to earn additional hours during any one quarter.

Student Teaching, Secondary Education 352B—12 hours of credit for student teaching. Additional hours may be earned by registering for courses taught on campus during the evening or on Saturday.

PLAN C. SIXTEEN QUARTER HOURS

This professional quarter plan is designed for secondary student teachers in the College of Education and for other student teachers desiring the maximum amount of secondary student teaching offered by Southern Illinois University during any one quarter.

Student Teaching, Secondary Education 352C—16 quarter hours credit for student teaching. This program does not permit additional hours to be earned without the approval of the Professional Quarter Committee.

VOCATIONAL AGRICULTURE PROFESSIONAL QUARTER

A 3.5 grade point average is required before student teaching.

Psychology and education courses required include Psychology 201, Guidance 305, Educational Administration and Supervision 331, 355, and Secondary Education 310.

For the professional quarter the student registers for Agricultural Industries 312a-2, Summer Practice; 309-5, Methods of Teaching Vocational Agriculture; 311-3, Adult Education in Vocational Agriculture; 312b-10, Student Teaching.

Seniors preparing to be teachers of vocational agriculture do their student teaching in a professional quarter. The first five to six weeks of the quarter are devoted to an intensive study of methods, including both methods of teaching vocational agriculture in high school and adult education in agriculture. The last six weeks of the quarter are given to supervised teaching in an approved off-campus center.

In addition, all prospective teachers of vocational agriculture do two weeks of summer practice at the center where they later will student teach. This summer practice includes the week prior to and the first week of school. A combination handbook and workbook is provided each student for directed experiences. Altogether the student has eight weeks of practice experience.

The student is responsible for transportation to and from the center and also housing. It is recommended but not mandatory that the student teacher reside in the community while teaching. He is expected to remain on duty as long as the supervising teacher requires. He makes necessary visits after school hours to the homes of students to observe supervised farming programs. This may be true also for Saturday mornings. The student teacher is expected to attend all evening meetings such as the FFA, PTA, and adult farmer classes.

When the student teacher uses his personal car in visiting and supervising the vocational agriculture student's farming program, he records his mileage on appropriate forms provided by the supervising teacher and is reimbursed at the same rate as the supervising teacher by the local board of education.

VOCATIONAL HOME ECONOMICS PROFESSIONAL QUARTER

A professional-quarter student preparing to teach home economics should register for Secondary Education 352B-12, Home Economics Edu-



cation 310-3, 311-2. (During the transition period those students who have earned credit for 311 may register for 572-2, Special Problems.)

For three-fourths of the quarter (approximately 9 weeks), the student does full-time student teaching in an approved off-campus center. During the first week of the quarter, the student reports for pre-student-teaching day and to the Department of Home Economics Education for intensive work in the courses listed above. Likewise, at the end of the off-campus student-teaching period the student reports for the remainder of the quarter including the examination period to the Department of Home Economics Education for further intensive work in the evaluation of student teaching.

In the off-campus student-teaching centers, students are assisted in locating housing by the university supervisors of home economics education and the local public school teacher. Students who live in University Housing should indicate to the co-ordinator of housing the time when they will be off-campus for student teaching and/or Home Management House residence so that adjustments in contracts can be made. Students living in housing other than university housing should make arrangements directly with those involved.

The Department of Home Economics Education calls a meeting of students planning to do student teaching at least one quarter in advance of the student teaching period to plan for the professional quarter.

#### THE PROFESSIONAL QUARTER COMMITTEE

A representative from the College of Education, College of Liberal Arts and Sciences, School of Business, School of Fine Arts, School of Communications, School of Agriculture, School of Home Economics, and School of Technology serve on the Professional Quarter Committee. The purposes of this committee are as follows:

1. To recommend to the director of Student Teaching regulations and procedures applying to all student teachers working on the professional quarter plan.
2. To review petitions for special student teaching consideration where a student feels that he is an exception to the rules and regulations pertaining to the professional quarter. In most cases final reviewing is made from a written request form known as the Petition for Special Student Teaching Consideration. However, the committee as a whole feels that students should not be denied an opportunity of presenting their own cases in person to the committee.
3. To afford each college and school that is concerned with student teaching a personal representative.

No student may pursue a student teaching assignment other than one described previously under one of several professional-quarter plans, unless approved by the Professional Quarter Committee. To request such approval, the student must complete the forms known as the Petition for Special Student Teaching Consideration. These forms may be secured from the office of the director of Student Teaching, Room 135, Wham Education Building. Petitions will be accepted for review by the Professional Quarter Committee no later than the end of the second week of the quarter preceding the stu-

dent teaching quarter. However, petitions may be filed as early as the filing of the final application for student teaching.

Since student teaching is designed in terms of the needs of beginning teachers for complete and integrated experience, and since more than one supervisor may be in charge of the work done by the student teacher, no part of the work may be dropped by the student teacher with the expectation of continuing the remainder of the work for credit. Furthermore, if one supervisor finds it necessary to drop a student teacher from a part of the program, the College of Education reserves the right to require such student teacher to drop all of his program of assigned student teaching rather than merely a part of it.

Two applications are necessary for student teaching. The preliminary or first application must be made during the first six weeks of the winter quarter, approximately one year prior to graduation. Students are scheduled for either fall, winter, or spring quarter of the following year on the basis of information given on the preliminary application. A final, detailed, application blank must be filed prior to the quarter the student is scheduled for student teaching. A student scheduled to do student teaching during the fall or winter quarter should file his final application during the first two weeks of the preceding spring quarter. A student scheduled for student teaching during the spring quarter should file his final application during the first two weeks of the preceding fall quarter.

Application for student teaching by in-service teachers for the summer sessions should be made not later than March 1. Application blanks may be secured from the office of the director of Student Teaching.

#### STUDENT TEACHING PREREQUISITES

1. Preliminary application should be made to the director of Student Teaching during the winter quarter of the academic year prior to graduation.

2. A final, detailed application form must be completed two quarters prior to the student teaching assignment.

3. The student must have 128 hours of credit with a 3.2 average before beginning work in student teaching.

4. The student is responsible for having transcripts of credit earned at colleges or universities other than Southern Illinois University on file in the office of the director of Student Teaching.

5. The student in secondary education must have at least 16 hours of credit in each subject which he proposes to teach. The major areas of concentration are listed under Secondary Education elsewhere in the catalog.

6. Each student must have at least 12 hours in professional education courses prior to doing student teaching. One preparing to teach in junior or senior high school must have had general psychology, educational or adolescent psychology, high school methods or a special methods course in his public school teaching subject area, and Secondary Education 310. One preparing to teach in the elementary school must have had general psychology, educational or child psychology, reading methods, and elementary methods. An early-childhood education concentration must have had gen-

eral psychology, educational or child psychology, reading methods, and kindergarten-primary methods. He must also be approved in class piano and must have had typewriting and duplicating courses or passed a proficiency exam in both.

7. A student with a concentration or secondary concentration in English must have completed English 300, securing a grade of *C* or better. Other students must have completed English 391, securing a grade of *C* or better. One may pass the undergraduate English Qualifying Examination in lieu of English 391. An undergraduate student with a *B* average (4.0) or better in English Composition (English 101, 102, 103 or GSD 100, 101, 102, or their equivalent) may be waived from the Undergraduate English Qualifying Examination requirement.

8. The student must have at least one quarter of residence credit at Southern Illinois University, earning a minimum of 16 hours of credit, prior to any student teaching assignment.

9. The student must pass satisfactorily a physical examination prior to doing student teaching. The examination is given at the University Health Service.

### EDWARDSVILLE CAMPUS

Supervised student teaching is conducted in cooperating public schools in and near the Edwardsville campus. At least eight quarter hours' credit in student teaching is essential for certification and graduation. As many as sixteen hours' credit may be taken at either the elementary or secondary level.

Application for student teaching should be completed at least two quarters prior to enrollment in the program. The necessary forms are available at the Student Teaching office.

The student is responsible to schedule his work so that a half day is cleared for each eight hours' credit in student teaching.

### PREREQUISITES

The student teacher should meet the following requirements prior to enrollment in student teaching:

1. At least 144 quarter hours with a *C* average.
2. Satisfactory completion of GSD 103 or an equivalent public speaking course.
3. One quarter of residence at the Edwardsville Campus or completion of a minimum of 15 hours.
4. Conference with and approval of adviser in teaching field and adviser in professional education.
5. The state of Illinois requires that all students doing student teaching take a physical examination including a tuberculin test or a chest X-ray. Forms for these examinations can be obtained from the University Health Service office and should be returned to the same office at least *two months* prior to the student entering the public school classroom.

### SECONDARY

1. At least 24 quarter hours in teaching field.



2. At least 11 quarter hours in professional education courses prior to enrollment in student teaching. It is recommended that Secondary Education 315 be taken the quarter prior to student teaching.

#### ELEMENTARY

1. Guidance 305 and Elementary Education 314 and 337. At least 24 quarter hours recommended.

#### EARLY CHILDHOOD

1. Meet elementary requirements with exception of Elementary Education 316 instead of 314.

2. Additional 4 hours of student teaching at the kindergarten level.

3. Three terms of Music 010e or pass proficiency in piano.

#### SPECIAL EDUCATION

1. Meet elementary requirements.

2. Additional courses: Special Education 410 and 413.

3. Eight quarter hours of student teaching in elementary education.

#### THEATER

##### *CARBONDALE CAMPUS*

Instruction and training in all phases of dramatic production for the stage and in basic techniques for dramatic production in television, radio, and motion pictures are provided.

Education for dramatic production entails (1) training and practice in acting, directing, and technical production (stage management, crew work, the planning and execution of costumes, lighting, and scenery); (2) understanding of the essential nature of theater art through study of theater esthetics, history, and criticism; (3) a survey of theater management practices; (4) a knowledge of dramatic literature.

The courses are designed to achieve the following objectives: (1) to teach the theory and practice of play production; (2) to provide a foundation for graduate study, in dramatic production, theory, and history; (3) to provide basic professional training in all phases of dramatic production for stage, screen, radio, and television; (4) to provide the general college student with opportunities to participate on an extracurricular basis in a co-operative artistic enterprise, and with courses which will contribute to a broad liberal arts education; (5) to provide the student of general speech with training and experience in an important type of speech activity; (6) to provide campus, city, and area with live theater performances of the best plays, including children's plays and operas, of past and present; (7) to permit students some degree of specialization in any one of four areas of dramatic production: acting and directing; scenic and costume design; playwriting and dramatic literature; theater history, theory, and esthetics.

The Southern Players, under the supervision of the theater faculty, produce each school year five three-act plays, three plays for children, programs of original one-acts. Each fall the Touring Theater, a troupe composed of students registered in 322 tours Southern Illinois for several weeks,



<i>Secondary Concentration Requirements</i> .....	24
<i>Electives</i> .....	24
Art 100, Philosophy 360, English 365, 460, 468, 471 are recommended	
<i>Total</i> .....	192

## ZOOLOGY

Students planning to concentrate in zoology should consult with the zoology faculty representatives.

### CARBONDALE CAMPUS

BACHELOR OF ARTS DEGREE, *College of Liberal Arts and Sciences*

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Zoology</i> .....	69.5–73.5
GSA 201–9 (4.5 hours count toward the 48-hour concentration), GSD FL (Recommended French, German, or Russian) .....	(18)
Botany or physics (one year) .....	11–15
Chemistry 111–15 .....	15
Zoology 102, 103, 202, 300, 310, 382–1.5, 401 .....	31.5
Zoology electives to complete 48 hours, which may include GSA 312, 313, and 315 .....	12
<i>Electives</i> .....	7.5–11.5
Recommended: three additional quarters of the foreign language elected, two of mathematics, one of physiology, one of microbiology, and organic chemistry	
<i>Secondary Concentration</i> .....	24
<i>Total</i> .....	192

One who desires a concentration in zoology is expected to register consecutively in Zoology 102, 103, 202, and 300.

Zoology students who expect to enter such professions as teaching, fish and wildlife management, dentistry, medicine, veterinary medicine, or allied fields should consult with the zoology adviser concerning their course of study.

### SECONDARY CONCENTRATION

A secondary concentration in zoology consists of at least 24 hours, including GSA 201–9 (which contributes only 4.5 hours); Zoology 102, 103; and at least one laboratory course numbered above 199. GSA 312, 313, 314, 315 may be counted toward the 24-hour minimum.

### EDWARDSVILLE CAMPUS

BACHELOR OF ARTS DEGREE, *Science and Technology Division*

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Zoology</i> .....	69



GSA 201a,c, GSD FL .....	(15)
Chemistry 111-15 .....	15
Physics (GSA 101a,b may be used for credit) .....	6
Zoology 102, 103, 202, 300, 382-1.5, 401 .....	26
Electives above 300 in zoology and physiology to complete at least 48 hours including one field course and one physiology course .....	22
<i>Secondary Concentration</i> .....	27
<i>Electives</i> .....	9
Recommended: organic chemistry, three quarters of physics, three of botany, and three of mathematics	
<i>Total</i> .....	192

BACHELOR OF SCIENCE DEGREE, *Education Division*

For this degree in the Education Division, the Zoology Concentration Requirements are as listed above, under Bachelor of Arts degree.

BACHELOR OF SCIENCE DEGREE, *Science and Technology Division*

Students planning to become medical technologists should consult with an appropriate faculty representative.

<i>General Studies Requirements</i> (See Chapter 3.) .....	87
<i>Requirements for Concentration in Zoology</i> (Medical Technology) ..	54
GSA 201a,c, GSD 114-9 .....	(15)
Physics (GSA 101a,b may be used for credit) .....	6
Zoology 102, 103, 202, 300, 382-1.5, 401 .....	26
Electives above 300 in physiology and zoology to complete 48 hours, including one field course and one physiology course .....	22
<i>Secondary Concentration</i> .....	27
Chemistry 111-15, 336-8, and organic chemistry	
<i>Electives</i> .....	24
<i>Medical Technology</i> (one year at an affiliated Medical Technology School) .....	(48)
<i>Total</i> .....	192

Upon successful completion of the year of study and laboratory work at a school of medical technology affiliated with the Science and Technology Division, the student will usually be credited with 48 hours towards the Bachelor of Science degree (of which 16 will count towards the 64 quarter hours of senior college credit needed for graduation). These hours may be used for hours indicated above in Elective (general) and Electives above 300 in physiology and zoology.

Schools of medical technology approved by the Council on Medical Education and Hospitals of the American Medical Association require for entrance completion of three years (135 quarter hours) from an accredited college or university, with credit for 24 hours in biological science and 24 in chemistry. Students successfully completing the year of study and labora-

tory training at an approved school of medical technology are eligible to take the national registry examination conducted by the Board of Registry of Medical Technology for certification as a registered technologist MT (ASCP).

#### SECONDARY CONCENTRATION

The minimum zoology secondary concentration is 27 hours including 102, 103 and electives in physiology and zoology.





# Course Descriptions

## 9

Here are described all of the courses offered by the University for credit toward a bachelor's, master's, or doctor's degree. (Associate degree courses and certificate courses offered by the Vocational-Technical Institute are described in the Division of Technical and Adult Education catalog.) Courses are listed *numerically* within each subject-matter area. Areas are listed below in the order of their appearance on the following pages.

General Studies Area A	Geography
General Studies Area B	Geology
General Studies Area C	Government
General Studies Area D	Guidance
General Studies Area E	Health Education
Accounting	Higher Education
Aerospace Studies	History
Agricultural Industries	Home and Family
American Studies	Home Economics Education
Animal Industries	Humanities
Anthropology	Industrial Education
Applied Science	Industrial Technology
Art	Instructional Materials
Astronomy	Journalism
Botany	Management
Chemistry	Marketing
Clothing and Textiles	Mathematics
Comparative Literature	Microbiology
Design	Music
Economics	Nursing
Education	Philosophy
Administration	Physical Education—Men
Elementary	Physical Education—Women
Secondary	Physics
Special	Physiology
Engineering	Plan "A"
Engineering Technology	Plant Industries
English	Printing and Photography
Food and Nutrition	Psychology
Forestry	Radio and Television
Foreign Languages	Recreation and Outdoor Education
French	Religion
German	Secretarial and Business Education
Greek	Sociology
Latin	Speech
Romance Philology	Speech Correction
Russian	Technology
Spanish	Theater
Freshman Convocation	Zoology

The first entry for each course is a three-digit numeral which, together with the subject area, serves to identify the course. The first digit indicates

that the course is for freshmen, sophomores, juniors, seniors, or graduate students only, depending on whether the digit is 1, 2, 3, 4, or 5, respectively.

Following the identification number are a dash and another number, which indicates the maximum credit allowed for the course. The maximum may be variable, such as Art 401-2 to 12. Some courses do not terminate at the end of one quarter, as evidenced by two or more numerals in parentheses indicating the credit allowed for each quarter of participation in the course, such as GSA 101-9 (3,3,3).

Next is the title, followed by a description of the course. If certain requirements must be satisfied before enrollment in a course, they are listed as prerequisites.

The final entry for each course is a letter or no letter. The letter *C* means that the course is available only on the Carbondale Campus. Similarly, the letter *E* means Edwardsville Campus only. The absence of any letter means that the course is offered at both campuses. However, not all of the courses described here are offered every quarter or even every year. To find out when and where a course is to be offered, consult the Schedule of Classes, which may be obtained from Central Publications, Southern Illinois University, Carbondale, Illinois 62903. When requesting a schedule, please specify *campus* (Carbondale or Edwardsville) and *quarter* (fall, winter, spring, or summer).

For example, GSA 101-9 (3,3,3) is offered at both campuses for a total of 9 hours of credit. The course runs for three quarters at 3 hours per quarter. First a student takes 101a-3, then he takes 101b-3, and finally he completes the course by taking 101c-3.

## MAN'S PHYSICAL ENVIRONMENT AND BIOLOGICAL INHERITANCE (GSA)

**101-9 (3,3,3) Introduction to Physical Science.** The basic physical and chemical principles necessary to understand energy, and the properties and behavior of matter. Must be taken in a,b,c sequence. Prerequisite: Mathematics 106 or satisfactory score on placement test.

**200-3 Earth Science.** A study of the earth: the materials which compose it, its various surface formations, the processes which change it, its relationship to the sun, and its mapping. No second level prerequisites. May be taken in lieu of one part of 201.

**201-9 (3,3,3) Man's Biological Inheritance.** The fundamentals of biological science: the cell, inheritance, evolution, the diversity of living organisms, and the structure and function of higher animals and plants. Must be taken in a,b,c sequence, with these exceptions: Carbondale students may take either 200, 201a, and 201b or 201a, 201b, and 200; Edwardsville students may take either 201a, 200, and 201c or 201a, 201b, and 200. Prerequisite: 101c (C); high school chemistry or Chemistry 111 (E).

**301-4 Principles of Physiology.** A comprehensive introductory analysis of the functional machinery of the human body. C

**302-3 Psychobiological Foundations of Behavior.** A study of the behavioral characteristics of living organisms, especially those of mammals and man. C

**312-3 Conservation of Natural Resources.** A study of man's use and misuse of natural environment.

**313-3 Evolution.** Principles and processes of the evolution of living things, including man. Prerequisite: one year of biology. C

**314-3 Man's Genetic Heritage.** Principles of heredity as related to man, with emphasis on the effects of environment on his biological inheritance. C

- 315-3 History of Biology.** The inter-relationships between the development of biological knowledge and the history of mankind. C
- 321-3 Introduction to Paleontology.** A study of the record of fossil plants and animals and the application of biological and geological principles to the development of theories regarding their origin, evolution, distribution, and extinction. C
- 330-3 Weather.** A study of weather elements basic to understanding the various atmospheric happenings, with application to agriculture, industry, recreational resources, etc. Students may take only 330 or 331 for General Studies credit.
- 331-3 Climate.** Description and interpretation of climatic regions and their influence on human activity. Students may take only 330 or 331 for General Studies credit.
- 340-3 Ecology.** A consideration of ecological principles with emphasis upon examples relating to vegetation. C
- 345-3 Economic Botany.** The study of man's dependence upon plants, domestication, production, consumption, crop ecology, possible new uses of plants. C
- 356-3 Astronomy.** The earth, moon, solar system, galaxy, and universe. A first course, largely descriptive, but relating behavior of celestial bodies to fundamental physical laws. Prerequisite: GSA-1 or Physics 211a. E
- 358-6 (3,3) Analysis of Physical Systems.** Quantitative applications of the principles of classical and modern physics. Prerequisite: GSA-1 or 211a, GSD 114-9. Not open to student who have taken college physics.
- 361-3 Physics of Music and Acoustics.** Nature, propagation, sources, and receptors of sound; acoustic phenomena; physics of musical instruments; mathematics of music; ears and hearing; physiology and psychology; transmission, storage, and reproduction. E
- 363-6 (3,3) Philosophy of Science.** (a) The logic of scientific explanation illustrated by analysis of physical concepts and theories. (b) The logic of explanation in the biological and behavioral sciences and their implications for the individual and society. May be taken in a,b or b,a sequence, but a,b is preferable.

## MAN'S SOCIAL INHERITANCE AND SOCIAL RESPONSIBILITIES (GSB)

- 101-9 (3,3,3) Survey of Western Tradition.** (a) A general survey of the geographic setting in which Western civilization developed. Physical, economic, and historical geography of past and present Europe. (b) A general survey of the political, economic, social, and intellectual development of Western Europe from the Middle Ages through the French Revolution. (c) A general survey of the political, economic, social, and intellectual development of Western Europe since the French Revolution. Must be taken in a,b,c sequence (E) or b,c,a sequence (C).
- 201-9 (3,3,3) Culture, Society, and Behavior.** An examination of the anthropological, sociological, and psychological contributions to the understanding of human behavior. Must be taken in a,b,c sequence at Edwardsville or a,b,c sequence at Carbondale.
- 211-9 (3,3,3) Political Economy.** The functioning of the economy, the theory, organization, and operation of government, and the making of public policy in the economic sphere. Must be taken in a,b,c sequence.
- 300-9 (3,3,3) History of the United States.** A general survey of the political, social, and economic development of the United States. (a) 1492 to 1815, (b) 1815 to 1900, (c) 1900 to the present.
- 301-3 Law: Comparative Legal Systems.** A comparison of the legal institutions and laws in the United States, Western Europe, South America, and Eastern nations. C
- 302-3 Law: Civil Rights.** The law protecting the civil liberties and rights of people. C
- 303-3 International Relations.** A study of world politics. The causes of international conflict and the conditions of peace. C
- 304-3 Law: History and Philosophy.** A study of the evolution and development of law beginning with the ancient and archaic periods. Greek law, Roman law, and English and American law. In addition, the historical development of legal philosophy is reviewed. C
- 311-3 Economic Development of the United States.** Emphasizes the underlying trends



and forces of change that have led to our present economic structure, level of performance, and world position. Prerequisite: 211-9 (C), 101c or 211c (E).

**312-3 Comparative Economic Systems.** A comparative study of the goals, structure, and operation of the major economic systems, such as capitalism, socialism, communism, and fascism. Emphasis upon basic systems of organization and control, and upon mixed economies, rather than upon the traditional compartments within which economic systems are sometimes put. Prerequisite: 211c (E).

**313-3 Economics of War and Peace.** A study of relations between wartime and peacetime economies with specific reference to government controls, impact of military expenditures in "hot" and "cold" wars, and the reallocation of resources. C

**314-3 Economic Analysis of the Agricultural Policies of the United States.** Emphasis on the underlying economic bases of agricultural policies and the effects of such policies on farmers, middlemen, and consumers. C

**320-6 Modern Britain.** History, economics, government, and sociology of contemporary Britain (summer only, abroad). C

**321-3 Socialization of the Individual.** A study of the emergent social process in which the native capacities of the infant are shaped and developed through interaction with significant others during infancy and childhood. C

**323-3 East and West in the 20th Century—Origins and Prospects.** Study of the development since the late 19th century of basic internal forces such as industrialization, nationalism, socialism, and fascism in the U.S., Europe, and Asia, and the manner in which these forces have led to both conflict and co-operation between these geographical areas. C

**325-3 Race and Minority Relations.** An analytical study of the status of racial, ethnic, and religious minorities in the United States. C

**331-3 The American Educational Systems.** A comprehensive study of the nature and purpose of education in the United States and of how our schools are organized, financed, and conducted.

**\* 333-3 Seminar in Problems of War and Peace.** Interdisciplinary topics in the general area of war and peace. C

**341-3 Marriage.** An examination of marriage in various societies with an emphasis on the origins, changes, and present status of dating, courtship and marriage in the United States.

**343-3 Geographical Basis of International Conflicts.** Examination of geographical factors of world political relations and conflicts during the inter-war and post-war periods. C

**345-3 Introduction to American Foreign Policy.** An investigation of the means by which American foreign policy is formulated and executed and an analysis of the most significant challenges confronting America abroad.

**351-6 (3,3) Geographic and Cultural Background of Developing Africa.** (a) The relation of geography to the culture of Africa, with emphasis on the place cultural and geographic factors have in the developing nations of Africa, (b) An introduction to the many diverse cultures of Africa from the Egyptian civilization to the Bushman hunters. Either part may be taken separately. E

**354-3 Industrial Economic Geography.** Geographic resource relationship to the economic life of our nation, distribution of resources, industrial production, and the transportation of industrial products. E

**356-3 The Consumer and the Economy.** A study of consumer motivations; institutional arrangements conditioning and affected by consumer economic behavior; and public policies and issues relevant to consumers. Prerequisite: 211a or consent of instructor. E

**359-6 (3,3) Society and State: Social and Political Theories.** Historical survey of political and social theories from ancient times to the 20th century. The formation of concepts are traced from their origins in the early civilizations to their development in Western thought. Critical analyses of representative thinkers. Either part may be taken separately. E

**369-3 The Contemporary Far East.** A study of relations between wartime and peacetime economies with specific references to government controls, impact of military expenditures in "hot" and "cold" wars, and the re-allocation of resources.

- 375-3 **Alienation and Mass Society.** C
- 380-6 (3,3) **East Europe: Cultural Heritage and Present Institutions.** (a) Cultural Heritage, (b) Present Institutions. An introduction to the European area east of the iron curtain with attention evenly divided among Russia, the Balkans, and Northern East Europe.
- 382-6 (3,3) **History of Great Britain Since 1782.** The evolution of industrial democracy in Great Britain from the beginning of the Industrial Revolution to the present day. E
- 385-3 **Contemporary Political Isms.** An advanced survey of recent political systems: Nationalism, Socialism, Communism, Liberal Democracy, Christian Socialism, Corporatism, Fascism.
- 390-3 **Introduction to Comparative Government.** A comparative survey of the organization and operation of politics in modern states. C
- 392-3 **Introduction to Latin American Government and Politics.** A general introduction to Latin American government on the institutionalized political expression of Latin American civilization and culture. Does not require a reading knowledge of Spanish or Portuguese. C
- \* Problems of Peace and War is a sequence of three separate courses, (303, 313, 343) any one of which leads to an integrated seminar (333).

## MAN'S INSIGHTS AND APPRECIATIONS (GSC)

- 100-3 **Music Understanding.** Criteria for discriminative music listening as an asset to general culture. An examination of basic materials, techniques, and forms.
- 101-3 **Art Appreciation.** Study of significant achievements in art related to Western culture and contemporary life.
- 102-3 **Problems of Moral Decision.** An introduction to contemporary and perennial problems of personal and social morality, and to methods proposed for their resolution by great thinkers of past and present. C
- 103-3 **Masterpieces of Literature.** Reading in English, literary masterpieces of the Western world, to increase the student's competence in reading imaginative literature, to acquaint him with the great ideas and values of the best literature, and to train him to deal with literary materials in his writing. C
- 110-9 (3,3,3) **An Introduction to Western Humanities.** A selection of great works expressing the aesthetic, moral, and religious values of Western man. Sets forth the critical vocabulary of six humanistic disciplines: art, music, philosophy, design, literature, and theater; provides some direct experience of each one; and calls attention to interrelations among the disciplines and between the humanities and other aspects of Western culture. Must be taken in a,b,c sequence. C
- 151-3 **Introduction to Poetry.** Introduction to the enjoyment of poetry. Practice in techniques of critical reading and writing. E
- 152-3 **Logic.** Study and practice in the analysis of verbal traps, relations between statements, deductive arguments, and inductive inferences. E
- 200-3 **The Oral Interpretation of Literature.** Students participate in a dynamic analysis of literature stressing the creative role of the oral interpreter. Emphasis is on individual problems in understanding and communicating significant literary works.
- 201-3 **Introduction to Drama.** Not a history of the drama. The class will read about a dozen plays, modern and ancient, and consider how various dramatic conventions and devices are used to give form and meaning to human experience. C
- 202-3 **Introduction to Poetry.** A variety of poems, from the simpler to the more complex, are read and discussed. Emphasis is upon enjoyment and upon heightened insight into human experience. Devices of artistic form, such as imagery and meter, are discussed as they are involved with the substance they express, human actions, feelings, and attitudes, including the poet's satisfaction in giving artistic form to his material. C
- 203-3 **Drama and the Arts of the Theater.** The study of drama as a literary type; the relationship with the theater audience, the role of the theater in Western culture and its relation to other creative arts.



**204-3 Meaning in the Visual Arts.** A historically-oriented conception of the relationship between art and civilization which seeps through the examination of relevant examples of the visual arts to develop awareness of the great complexities of artistic motivation, the development of art styles, and the interaction between the artist and society. C

**205-3 The Contemporary Environment.** A lecture-laboratory course designed to create a picture plane whereon a student may see some principles underlying architecture, visual communication, and other products of his physical and cultural environment. C

**206-3 Foundation of Music.** Emphasis on the historical sequence of musical development from primitive ages through the contemporary scene. An introduction to the materials of music, including application of basic skills to keyboard performance, is provided in studio sections. Two hours of lecture, one hour of studio each week. C

**207-3 Philosophy of the Beautiful.** A study of the structure and importance of the beautiful in nature, society, personality, and the arts. C

**208-3 Logic and Meaning.** A critical study of expressive, informative, and other modes of discourse, with emphasis on their roles in rational process. C

**209-3 Modern Literature: Form and Idea.** Designed to give the student an interest in and an understanding of the forms, themes, and values of modern American, British, and Continental literature. C

**210-3 Introduction to Fiction.** A study of the chief techniques of fiction and of some of the acceptable criteria for judging fiction. Readings in some of the masterpieces among American and European short story and novel writers. C

**211-9 (3,3,3) An Introduction to Oriental Humanities.** The literature, music, drama, visual art, and definitive cultural motifs of three great Asian traditions. (a) focuses on India, (b) on China, and (c) on Japan. May be taken in any sequence. C

**251-9 (3,3,3) Literary and Philosophical Masterpieces.** An introduction to great works of the Western heritage. (a) Introduction to the Hebraic, Greek, and Latin traditions; beginning with Genesis and concluding with Augustine. (b) The heroic and courtly traditions; the new learning of the Renaissance in Europe; beginning with Beowulf and concluding with Milton. (c) An introduction to literary and philosophical rationalism, romanticism, realism, and naturalism; beginning with Moliere and concluding with Nietzsche. May be taken in a,b,c sequence or by combining a,b or a,c with GSC 203 or 255. E

**255-3 Music in History.** An introduction to music history within history in general. E

**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 rise of language. C

**305-3 Contemporary French Drama.** Study of French contemporary drama since 1930, to be read in translation, with emphasis on the piece a these, the Theatre libre, symbolist drama, and the drama of modern social problems. C

**310-3 Religious Foundations of Western Civilization.** Examination of the historical backgrounds and contemporary expressions of Jewish, Catholic, and Protestant thought. C

**311-3 Philosophies and Religions of India.** Historical and comparative study of Hindu, Jain, and early Buddhist thought and practice. C

**312-3 Philosophies and Religions of the Far East.** Historical study of the religious and secular thought of China and Japan; Confucianism, Taoism, and the varieties of Mahayana Buddhism. C

**313-3 Folklore.** The types of folklore, with extensive reading in American and European folklore: practice in collecting and classifying, and in the use of Thompson's index, etc. C

**317-3 Recent American Literature.** C

**318-3 Modern British Literature.** Contemporary British Fiction and Drama (Summer only—Oxford program). C

**320-3 Greek Literature in Translation.** A study of the masterpieces of Greek literature in translation. C



- 321-3 Revolution and Romanticism.** English literature of the late 18th and early 19th century in relation to the social and philosophical crises of times with animadversions on the relevance to our own times. C
- 330-3 Classical Mythology.** Study of the classical myths and their literary value. C
- 331-3 Latin Literature in Translation.** Discussion of Latin literary works and their influence on later literature. C
- 335-3 Studies in Short Fiction.** The development of the short story as an artistic expression, its techniques, and its versatility, from the early 19th century to the present time.
- 340-3 Modern Art A: The Art of the 19th Century.** The principal movements of the 19th century: neo-classicism, romanticism, realism, impressionism, and post-impressionism. The styles of David, Ingres, Delacroix, Corot, Courbet, Manet, Degas, Monet, Renoir, Seurat, Van Gogh, and Gauguin receive emphasis. C
- 341-3 Modern Art B: Art of the Early 20th Century.** A study of modern art as manifest in Fauvism, cubism, and expressionism. Emphasis on the artistic development of Cezanne, Matisse, Rouault, Picasso, Braque, Gris, Leger, Kirchner, and Kandinsky. C
- 342-3 Modern Art C. Art of the Mid 20th Century.** Abstraction, later German expressionism, the school of Paris, and surrealism. Special attention to the work of de Chirico, Klee, Miro, Beckman, Chagall, Kokoshka, Soutine, and late Matisse, Picasso, Braque, and Leger. C
- 345-3 World Literature.** A study of the outstanding works representative of various types and of varying cultures and eras, showing the fundamentally unchanging nature and spirit of man. C
- 348-3 Photography and Cinema.** The basic technology of photography and cinema. The development of photography and cinema as art forms and their uses in education and mass communications. Criteria for the evaluation and appreciation of photography and cinema. C
- 351-12 (4,4,4) History of World Art.** A study of painting, sculpture, and architecture from early to modern times, emphasizing the social and intellectual content of the major periods and significant styles. Prerequisite: 9 hours in GSC-2. E
- 354-6 (3,3) History of the Theater.** A study of (a) primitive, Greek, medieval, and Italian Renaissance theater, (b) the theater since the Italian Renaissance.
- 357-9 (3,3,3) Music History and Literature.** Integrates the development of musical thought and literature from Greek and Roman periods through the Renaissance and continuing through the twentieth century. Prerequisite: 255 or consent of instructor (E).
- 360-6 (3,3) Arts and Ideals in Famous Cities.** A presentation of the chief art styles and aesthetic ideals of Western culture as they flowered in seven famous cities. A close study of selected masterworks of architecture, fine art, music, literature, and philosophy of art as expressions of men who shaped the physical faces and cultural lives of their cities. (a) 5th-century B.C. Athens, 13th-century Chartres, late 15th-century Florence, and early 16th-century Rome. (b) 18th-century London, 19th-century Paris, 20th-century New York. E
- 363-6 (3,3) Philosophy of Science.** (a) The logic of scientific explanation illustrated by analysis of physical concepts and theories. (b) The logic of explanation in the biological and behavioral sciences and their implications for the individual and society. May be taken in either a,b or b,a sequence, but a,b is preferable.
- 365-3 Shakespeare.** The major works of William Shakespeare. C
- 381-3 Greek Philosophy.** The thought of the pre-Socratics, Plato, and Aristotle. C
- 382-3 Graeco-Roman & Medieval Philosophies.** Epicureanism, Stoicism, and medieval Christian thought. C
- 383-3 Early Modern Philosophy.** Bacon, Hobbes, Descartes, Leibniz, Spinoza, and the British empiricists in the context of the scientific and general social outlook of the period. C
- 386-3 Early American Philosophy.** From the colonial period to the Civil War. C
- 387-3 Recent American Philosophy.** Thought of Howison, Royce, Peirce, James, Dewey, and others. C

## ORGANIZATION AND COMMUNICATION OF IDEAS (GSD)

- 100-0 English Composition—Grammar and Usage. C
- 101-6 (3,3) English Composition. Basic rhetorical principles in expository writing. Must be taken in a,b sequence. Prerequisite: GSD 100 or satisfactory score on placement test.
- 103-3 Oral Communication of Ideas. The basic principles and techniques of oral communication as applied to everyday speech activities.
- 106-0 Intermediate Algebra. C
- 108-9 (3,3,3) Fundamentals of Mathematics. An introduction to mathematical concepts and reasoning presented at a level appropriate for university students who have had high school courses in intermediate algebra and plane geometry. Topics include the number system, college algebra, analytic geometry, probability and statistics. Must be taken in a,b,c sequence. C
- 110-3 Economic and Business Statistics. Elementary statistical concepts, including the nature of statistical methods, sampling, probability, frequency distributions, estimations, and hypothesis. May be taken as part c of the 108 sequence by economics and business students. C
- 112-9 (3,3,3) Introduction to Mathematics. Logical rules of deduction, the real number system, mathematical structures. Must be taken in a,b,c sequence. Prerequisite: Mathematics 100 or satisfactory score on placement test. E
- 114-9 (3,3,3) College Algebra and Trigonometry. For students who have had intermediate algebra and plane geometry in high school. Must be taken in a,b,c sequence, or b,c may be taken concurrently.
- 114d-3 Statistics. Descriptive statistics, probability distributions, sampling, problems of statistical inference, regression and correlation. Prerequisite: 114b. May be taken in lieu of 114c. E
- 120-9 (3,3,3) Elementary Chinese. Emphasis on development of reading skills. Must be taken in a,b,c sequence. C
- 123-9 (3,3,3) Elementary French. Open to students who have had no previous work in French. Must be taken in a,b,c sequence.
- 126-9 (3,3,3) Elementary German. Open to students who have had no previous work in German. Must be taken in a,b,c sequence.
- 130-9 (3,3,3) Elementary Greek. (a) Grammar is emphasized, (b,c) reading of a text, usually the New Testament. Must be taken in a,b,c sequence. C
- 133-9 (3,3,3) Elementary Latin. Open to students who have had no previous work in Latin. Must be taken in a,b,c sequence. C
- 135-9 (3,3,3) Elementary Portuguese. C
- 136-9 (3,3,3) Elementary Russian. No previous knowledge of Russian required. Must be taken in a,b,c sequence.
- 140-9 (3,3,3) Elementary Spanish. Open to students who have had no previous work in Spanish. Must be taken in a,b,c sequence.
- 144-9 (3,3,3) Elementary Italian. Open to students who have had no previous work in Italian. Must be taken in a,b,c sequence. E

## HEALTH AND PHYSICAL DEVELOPMENT (GSE)

Courses numbered 100-104 are for men; 110-114 are for women.

100-3 (1,1,1) Restricted Physical Education (Men).

Notes pertaining to GSD 120 through 144:

1. Sections of conversation for 1 hour of credit are available with each of these languages, but on an elective basis.
2. Students having had high school language training should see the Department of Foreign Languages for placement.

- 101-3 (1,1,1) **Swimming (Men)**. (a) Beginning swimming, (b) Intermediate swimming, (c) Diving.
- 101d-1 **Life Saving (Men)**. E
- 102-1 **Physical Fitness (Men)**.
- 103-3 (1,1,1) **Dance (Men)**. (a) Square, (b) Folk, (c) Social.
- 104-(1 per activity) **Individual and Team Activity (Men)**. (a) Archery, (b) Badminton, (c) Basketball, (d) Bowling, (e) Golf, (f) Soccer, (g) Speedball, (h) Tennis, (i) Volleyball, (j) Softball, (k) Horseback riding, (m) Fencing, (n) Cross country, (p) Ice Skating, (q) Fly and bait casting, (r) Stunts and tumbling, (s) Gymnastics, (t) Touch football, (u) Wrestling, (v) Personal defense, (w) Judo (C).
- 110-3 (1,1,1) **Restricted Physical Education (Women)**.
- 111-3 (1,1,1) **Swimming (Women)**. (a) Beginning Swimming, (b) Intermediate Swimming, (c) Diving.
- 111d-1 **Life Saving (Women)**. E
- 112-1 **Basic Body Movement (Women)**.
- 113-5 (1,1,1,1,1) **Dance (Women)**. (a) Square, (b) Folk, (c) Social, (d) Beginning Contemporary, (e) Intermediate Contemporary.
- 114-(1 per activity) **Individual and Team Activity (Women)**. (a) Archery, (b) Badminton, (c) Basketball, (d) Bowling, (e) Golf, (f) Soccer, (g) Speedball, (h) Tennis, (i) Volley Ball, (j) Softball, (k) Horseback riding, (m) Fencing, (n) Hockey, (p) Gymnastics and tumbling.
- 201-3 **Healthful Living**. Personal and community health. Presents scientific health information as a basis for helping the student develop wholesome health attitudes and practices.

## ACCOUNTING

- 250-4 **Accounting Fundamentals**. A study of accounting principles covering the more prevalent types of business organizations. Usefulness of accounting reports and data rather than technical practice is stressed. Not open to students with a concentration in the School of Business or the Business Division.
- 251-12 (4,4,4) **Accounting**. Principles and practices in handling transactions in original recordings and books of account: trial balances, adjustments, and construction and presentation of financial statements for proprietorships, partnerships, and corporations. Third course in this sequence emphasizes management's uses of the product of the accounting function, through budgeting procedures, cost accounting, and other criteria for sound decision-making. Must be taken in a,b,c sequence. Prerequisite: sophomore standing.
- 301-1 to 6 **Accounting Readings**. Directed readings in books and periodicals in a defined field, under supervision of one or more staff members. Periodic written and oral reports are required. Prerequisite: junior standing and consent of division head. E
- 309-2 **Individual Income Tax**. Preparation of income tax returns. Federal income tax law as applied to individuals. Not open to those with a concentration in accounting. C
- 331-4 **Tax Accounting**. Study of accounting principles and procedures for meeting requirements of current laws and regulations which relate to federal income tax. Laboratory problems and preparation of tax returns with special emphasis on the individual taxpayer. Prerequisite: 251-12.
- 341-4 **Cost Accounting**. Cost determination and control of manufacturing activities. Interpretation and managerial implications of material, labor, and overhead for job order, process and standard types of cost systems. Cost reports to executives. Prerequisite: 251-12.
- 351-8 (4,4) **Intermediate Accounting**. Further study of current accounting principles and procedures relating to various elements of financial reporting. Special emphasis on asset valuation, income determination, and alternative statement construction. Also, analysis and interpretation of statements; preparation and use of special statements. Must be taken in a,b sequence. Prerequisite: 251-12.



355-3 (C), 355-4 (E) **Governmental Accounting.** Study of the unique characteristics of fund accounting used in governmental units and subdivisions, and in certain private institutions. Emphasis upon budgeting and accounting control as a means of furthering sound financial administration of these organizations. Prerequisite: 251-12.

410-4 **Survey of Accounting.** Purpose is to permit students not concentrating in accounting and teachers to study advanced accounting from the standpoint of its usefulness in controlling and administering an enterprise. Critical analysis of reports, statements, and other accounting data but with little attention given to accounting techniques used in collecting and reporting such information. Prerequisite: 250 or 251-12 or equivalent. Not open to students with concentration in accounting.

415-4 **Electronic Data Processing in Business.** A study of the uses of electronic computers in business data processing. Includes an introduction to linear programming as it assists management in decision making. The student will prepare some programs in compiler language. There will be a limited amount of instruction in the operation of computer equipment. Prerequisite: 251-12 and consent of instructor. C

432-4 **Problems in Federal Taxation.** Study of income tax problems which arise from partnership, corporation, estate, and trust types of organization. Brief study of social security, federal estate, and gift taxes. Student does research in source materials in arriving at solutions of complicated tax problems. Prerequisite: 331.

442-4 **Advanced Cost Accounting.** Cost accounting for complex process production flows, joint products and by-products, spoilage, defective units and scrap. Managerial control and profit planning through capital budgeting, inventory planning, subjective probabilities, statistical methods, and operations research. Non-manufacturing costs, differential and comparative cost analysis. Prerequisite: 341.

453-4 (C) 453-8(4,4) (E). **Advanced Accounting.** Advanced study of accounting principles and procedures relating to specialized topics, including partnership equity, installment and consignment sales, insurance, branch accounts, compound interest in relation to accounting practice, and preparation and use of consolidated statements. Prerequisite: 351-8.

456-4 **Auditing.** Objectives, standards, and procedures involved in examining and reporting on financial statements of business organizations. Prerequisites: 331, 341, 351-8.

458-4 **Accounting Systems.** Problems in accounting systems design and installation. Examination of existing systems and practice in system design and reports. Prerequisites: 341, 351-8.

459-4 **Internship in Accounting.** Supervised work experience in professional accounting. Prerequisite: outstanding record in accounting and recommendation of the committee on internship. C

461-4 **C.P.A. and Advanced Accounting Problems.** A problems course, using problems from the examination sponsored by the American Institute of Certified Public Accountants and given in the last few years. Some problems also drawn from other sources. Prerequisites: 341, 351-8. C

461-4 **Advanced C.P.A. Problems (E).**

500-1 to 5 **Readings in Accounting.**

501-1 to 5 **Individual Research in Accounting.** C

550-4 **Accounting Theory.**

557-4 **Advanced Auditing.** C

562-4 **C.P.A. and Advanced Accounting Problems.** C

565-4 **Controllorship.** C

599-1 to 9 **Thesis.** C

## AEROSPACE STUDIES

100a-0 **Leadership Laboratory.**

101-2 **Aerospace Studies 1, General Military Course.** An introductory course exploring the ideological causes of present world conflict and how nations develop and pursue their objectives. This is followed by discussions on the United States organi-

zation for national security, oriented primarily to aerospace power and a study of the Air Force as a profession. 2 hours lecture-discussion; 1 hour leadership laboratory. C

**200a-0 Leadership Laboratory.**

**201-2, 202-2 Aerospace Studies 2, General Military Course.** A study of the political-military issues surrounding the existence of world military forces. Included are a study of the U.S. Army and U.S. Navy including their missions and employment concepts; a study of the military forces of NATO, CENTO, and SEATO and their role in free world security. A study of the military forces of the USSR, Soviet satellites, and Communist China; a look at the trends and implications of world military power. 2 hours lecture-discussion; 1 hour leadership laboratory. C

**301-3, 302-3, 303-3 Aerospace Studies 3 (C); Growth and Development of Aerospace Power (E).** Professional Officer Course. A study of the nature of war, the growth and development of aerospace power, the United States Air Force, astronautics and space operations, and the future development of aerospace power. Involves specific exercise of written and spoken communication skills. Requires 3 hours lecture-seminar; in some cases a 1 hour leadership laboratory is also required. Prerequisites: satisfactory completion of the GMC or six week field training course.

**350-4 Aerospace Studies 4.** A study of flight regulations, weather, and navigation. 4 hours lecture, demonstration-performance. Prerequisite: Enrollment in AF ROTC Flight Instruction Program or with consent of the PAS. C

**351-3, 352-3, 353-3 Aerospace Studies 4. Professional Officer Course.** A study of professionalism, leadership, and management. Includes professional responsibilities, the military justice system, leadership theory, functions and practices, management principles and functions, problem solving, and management tools, practices, and controls. 3 hours lecture-seminar; in some cases 1 hour leadership laboratory. Prerequisite: A.S. 301, 302, and 303, or with consent of the PAS. C

## AGRICULTURAL INDUSTRIES

**114-4 Introduction to Agricultural Economics.** Agriculture in local and national economy; distribution; size and organization of the farm business units; policies affecting agriculture. C

**210-2 Introduction to Agricultural Education.** An introduction to the history and philosophy of high school vocational agricultural programs. C

**214-2 Agricultural Drawing.** The fundamentals of lettering; use of instruments, orthographic and isometric projections, topographic drawing, and graphic depiction of statistical information. C

**215-4 Introduction to Farm Structures and Electrification.** An introduction to the basic concepts of structures and electricity as they apply to agriculture. Includes farm structures, soil and water structures, and farm electrification. C

**303-4 Surveying.** Elementary surveying; use of tape, compass, level, and transit, with practice in making simple maps. Prerequisite: 214, and Mathematics 114c. C

**306-5 (3,2) Soil and Water Conservation.** (Same as Plant Industries 306.) (a) The study of the theoretical factors affecting soil erosion and excessive water run-off, including practices of water management and soil conservation. Prerequisite: one course in soils. (b) Laboratory. Practical structural methods of controlling water run-off and soil erosion. Prerequisite: 306a or concurrent enrollment. C

**309-5 Agricultural Education.** Methods of teaching agriculture in secondary schools. Taken concurrently with 312 in a professional quarter. Field prerequisites: GSB 201b, Guidance 305, Secondary Education 310, 48 hours in agriculture. C

**310-4 General Agriculture.** A survey of the agricultural field as it relates to the art and science of food and fiber production; problems in livestock and poultry production; soil and water management; and field crops, fruit, and vegetable production. Can be used for natural science credit in elementary education. C

**311-3 Adult Education in Agriculture.** Nature and scope of adult education in agriculture; methods of effectively working with adult and young farmer groups. Prerequisite: Guidance 305. C



**312-12 (2.10) Student Teaching in Vocational Agriculture.** (a) Summer Practice. An internship with the vocational agriculture teacher in an approved center for practice in summer activities. (b) Student teaching. Experience in conducting a complete program in vocational agriculture in an approved center. Taken concurrently with 309. C

**350-5 Farm Management.** Measuring profits, principles, and practice in organizing and operating the business. Field trips. Prerequisites: GSB 211a, junior standing. C

**351-4 Farm Financial Management.** Farm records and accounts as aids in solving financial problems; obtaining and using credit and insurance, budgeting. Prerequisite: 350 or consent of instructor. C

**352-3 Agricultural Prices.** Fluctuations in the general price level, causes and stabilization policies as they affect agriculture. Price determination including the measurement of supply and demand, elasticity, their application to price stabilization. Prerequisites: 354, GSB 211a. C

**354-3 Agricultural Marketing.** Marketing outlets for farm products, price determinants, agricultural market efficiency, margins, and costs. Prerequisite: GSB 211a. C

**373-5 Farm Power and Machinery.** A basic course to acquaint the student with the principles, operating adjustments, maintenance, and economical use of common farm power units and field machines. Prerequisite: GSD 108b or equivalent. C

**374-4 Farm Electrification.** A study of the more common electrical fundamentals and their application to farmstead needs; factors to consider in the selection and use of specialized electrical equipment and motors. Prerequisite: GSD 108b. C

**375-3 Farm Shop.** Set-up of the farm workshop; selection, care, and use of tools and machinery for farm repair work; equipment construction. Prerequisite: GSD 108b or equivalent. C

**376-4 Tractor Maintenance.** A study of daily and periodical service needs of tractors and on-farm servicing of functional parts. Prerequisite: 373. C

**377-4 Farm Structures.** Basic requirements of farm buildings; materials used; elementary principles of design; practical application of these principles. Prerequisite: GSD 108b or equivalent. C

**381-1 to 2 Agricultural Seminar.** (Same as Animal Industries 381, Forestry 381, and Plant Industries 381.) Discussions of problems in agriculture. Limited to senior students. C

**390-1 to 6 Special Studies in Agricultural Industries.** Assignments involving research and individual problems. C

**410-2 to 4 Problems in Agricultural Services.** Discussion, assignments, and special workshops on problems related to in-service training programs in the agriculturally related fields. Development of more effective programs in working with farm people. Prerequisite: graduate student in agricultural services or consent of instructor. C

**411-3 Agricultural Extension.** A study of the history, organization, objectives, programs, and methods of agricultural extension work. Prerequisite: Journalism 393 and a course in psychology or sociology or consent of instructor. C

**413-3 Agricultural Education Practices.** A discussion of problems and practices in teaching agriculture in high school. Prerequisite: 312b. C

**417-4 Agricultural Development in Emerging Countries.** Principles and practices in improving agriculture in areas with limited capital and low levels of technology. Special emphasis on developments in Asia, Africa, and South America. Prerequisite: GSB 211a and consent of chairman. C

**450-4 Advanced Farm Management.** Methods of analyzing farm enterprises, comparing farm businesses, allocating farm resources, combinations of enterprises, and production factors. Field trips. Prerequisite: 350. C

**456-11 (3,2,2,2,2) Agricultural Marketing Problems and Practices.** (a) Cooperatives. Development of the agricultural cooperative movement, agricultural cooperative organization, legal requirements, principles and practices of agricultural cooperative associations. (b) Livestock. Problems and their solutions in marketing livestock. (c) Field Crops. Problems and their solutions in marketing field crops. (d) Dairy and Poultry. Problems and their solutions in marketing dairy and poultry products. (e) Horticultural crops. Problems and their solutions in marketing horticultural crops. Field trips cost \$5. Prerequisites: 354, GSB 211a, or consent of instructor. C



- 471-4 Land Resource Planning.** (Same as Forestry 471 and Economics 471.) The use of land as an economic variable in production of goods and services; land markets; group versus individual conflicts; elementary land resources planning techniques. Field trips. Prerequisite: 350 or Forestry 470. C
- 478-4 Advanced Farm Machinery.** Materials on construction; basic mechanics involved in tillage machinery; rotary powered transmission; product cleaning, drying, and sorting; costs of operation; materials handling. Prerequisites: 350, 373, 374, or consent of instructor. C
- 505-3 Agricultural Economics Research Methods.** C
- 520-1 to 6 Readings.** C
- 520b-1 to 6 Readings in Resource Economics.** C
- 550-4 Production Management.** C
- 552-2 Advanced Agricultural Prices.** C
- 554-4 Advanced Agricultural Marketing.** C
- 575-1 to 6 Research.** C
- 581-1 to 6 Seminar.** C
- 582-1 to 3 Seminar on Foreign Agricultural Problems.** C
- 599-2 to 9 Thesis.** C

## AMERICAN STUDIES

- 398-4 Seminar in American Studies.** Helps the student to integrate his knowledge of American culture and to undertake scholarship that crosses the boundaries of traditional disciplines. Prerequisite: senior standing. E

## ANIMAL INDUSTRIES

- 105-4 Animal Husbandry.** Survey of beef cattle, sheep, and hog industries; laboratory work in judging. Field trip. C
- 125-4 Elementary Poultry Production.** Brooding and rearing of chicks; housing, feeding, disease control, flock selection, management, and marketing of poultry. C
- 231-4 Dairy Husbandry.** Introductory work, including selection, herd improvement, milk secretion, manufacturing of dairy products. C
- 311-6 (3,1,2) Livestock Judging.** (a) Comparative judging of breeding and feeder livestock. (b) Grading and selection of breeding, feeder and market livestock. (c) Grading of live market meat animals. Field trip. Must be taken in a,b,c sequence. Prerequisite: 105 and consent of instructor. C
- 312-3 (2,1) Dairy Cattle Judging.** (a) Comparative judging of dairy cattle, (b) Comparative selection and evaluation of dairy cattle. Field trip. Must be taken in a,b sequence. Prerequisite: 231. C
- 313-4 (2,1,1) Poultry Judging.** Selection of poultry for egg production and breeding; grading of poultry and eggs. Field trips. May be taken in b,c,a sequence, but a,b,c is preferable. Prerequisite: 125. C
- 315-4 Feeds and Feeding.** Principles of domestic animal nutrition and feeding. Balancing rations. Prerequisite: 105, 125, or 231. C
- 316-4 Insect Pests and Their Control.** (See Zoology 316.) C
- 319-3 Horses.** Types, breeds, selection, use, care, and management of saddle and draft animals. Field trip. Prerequisite: 315 or consent of instructor. C
- 321-4 Processing and Grading of Poultry Products.** Skills required in price determination, processing, grading, storage, merchandising, and distribution of poultry products. Prerequisite: 125. C
- 327-4 Hatchery and Breeding Farm Management.** Flock selection, testing, sexing, trade rules and regulations, trap-nesting, wing-banding, incubation, disease control, hatchery-producer agreements, records. Prerequisite: 125. C
- 332-4 Animal Breeding and Genetics.** The application of the basic principles of genetics and breeding systems to the improvement of farm animals. Prerequisites: 105, 125, or 231; GSA 203 or equivalent. C
- 337-4 Animal Hygiene.** Contagious, infectious, and nutritional diseases and parasites of animals; their prevention and control. Field trip. Prerequisites: 105, 125 or 231. C

**381-1 to 2 Agricultural Seminar.** (Same as Agricultural Industries 381, Forestry 381, and Plant Industries 381.) Discussions of problems in agriculture. Limited to junior and senior students. C

**390-1 to 6 Special Studies in Animal Industries.** Assignments involving research and individual problems. Approval of department chairman required. Juniors and seniors only. C

**415-8 (4,4) Animal Nutrition.** (a) Physical and chemical properties of nutrients and their uses and principles involved in determination of nutrient requirements. (b) An integration of the basic facts concerning the nature of nutrients and their metabolism. Must be taken in a,b sequence. Prerequisite: 315 and GSA 101c or equivalent. C

**420-4 Commercial Poultry Production.** Broilers, layers, and turkeys as adapted to poultry specialty farms. Field trips. Prerequisite: 125. C

**430-4 Dairy Production.** Milk sanitation, feeding, breeding, calf raising, records, buildings and equipment, sanitation, and diseases. Field trip. Prerequisites: 231, 315. C

**431-4 Reproduction and Artificial Insemination of Farm Animals.** The anatomy and physiology of reproduction and the principles of artificial insemination in farm animals. Field trip. Prerequisites: 105 or 231; GSA 203 or equivalent. C

**432-3 Quantitative Inheritance of Farm Animals.** A review of the principles underlying the influence of mutation, selection, migration, and random drift in animal breeding populations; castination and interpretation of heritabilities and genetic correlations; effects of variances of quantitative traits of farm animals. Prerequisite: 332. C

**433-3 Feeding Dairy Cattle.** Nutrient requirement of dairy cattle. Feeding calves and heifers for commercial growth, and cows for economical milk production. Pasture, hay, and silage utilization in milk production. Field trip. Prerequisites: 231 and 315. C

**456-4 (2,2) Agricultural Marketing Problems and Practices.** (b) Livestock. Problems and their solutions in marketing livestock. (d) Dairy and poultry. Problems and their solutions in marketing dairy and poultry products. Prerequisites: GSB 211a, Agricultural Industries 354 or consent of instructor. (See also Agricultural Industries 456.) C

**465-5 Swine Production.** Breed selection, breeding, feeding, management, and marketing of swine. Field trip. Prerequisites: 105, 315. C

**480-4 Sheep Production.** Breeding, feeding, and management of sheep. Field trip. Prerequisites: 105, 315. C

**485-4 Beef Production.** Breeding, feeding, and management of beef and dual-purpose cattle. Field trip. Prerequisites: 105, 315. C

**486-4 The Range Livestock Industry.** Designed to acquaint advanced animal industries students with range livestock operation; consists of full-time classroom review of beef cattle and sheep production followed by a two-to-three-week field trip through the range area. Prerequisites: 480, 485. Summer only. C

**487-4 Commercial Livestock Feeding.** Consideration of principles and problems in fattening beef cattle and sheep for market. Field trip. Prerequisites: 105 and 315. C

**505a-5 Research Methods in Agricultural Science.** C

**520-1 to 6 Readings in Animal Industries.** C

**525-4 Advanced Poultry Production.** C

**530-4 Advanced Dairy Production.** C

**565-4 Advanced Swine Production.** C

**575-1 to 6 Individual Research.** C

**581-1 to 6 Seminar.** C

**585-4 Advanced Beef Production.** C

**599-2 to 9 Thesis.** C

## ANTHROPOLOGY

**300-3 Physical Anthropology.** 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. C

- 300-4 Man's Place in Nature.** Man as a biological being, his relationships to other living things, human origins and development, the concept of race and races of mankind, human genetics, and normal human variation. E
- 303-3 Old World Prehistory.** A survey of man's earliest cultural beginnings. Paleolithic and Neolithic periods in Europe, Africa, the Near East, and Asia. C
- 304-3 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 the Old and New Worlds. C
- 304-4 The Origins of Civilization.** The conditions that produced the early high culture of both Old and New Worlds. A study of the complex environmental and cultural factors that led to the rise and fall of early civilizations. E
- 305-9 (3,3,3) Peoples and Cultures of the World I.** The biological and cultural history of man in (a) North America, (b) Asia, and (c) Oceania from early times to the present.
- 306-9 (3,3,3) Peoples and Cultures of the World II.** The biological and cultural history of man in (a) South America, (b) Europe, and (c) Africa from early times to the present. C
- 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. C
- 402-4 Human Biology: The Interaction of Biological and Cultural Behavior.** The viewing of man as to his zoological position, genetics, past and present; and the biological bases for his unique behavior in the animal world, i.e., cultural behavior. C
- 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. C
- 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.
- 408-8 (4,4) History of Anthropological Thought.** The growth of anthropology to about 1860, 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.
- 413-4 Introduction to General Linguistics.** C
- 415-4 Culture Change.** Examination of long and short range culture change, acculturation process and innovation, theory and method in study of culture change. E
- 430-4 Archaeology of North America.** An introduction to the methods of archaeology and a survey of prehistoric Indian cultures north of Mexico, with particular emphasis upon the cultures of the Mississippi Valley. E
- 483-3 to 18 Individual Study in Anthropology.** Guided research upon anthropological problems. Students should consult the chairman before enrolling.
- 501-9 (3,3,3) Pro-seminar in Physical Anthropology.** C
- 503-9 (3,3,3) Pro-seminar in Archaeology.** C
- 505-9 (3,3,3) Pro-seminar in Linguistics.** C
- 507-9 (3,3,3) Pro-seminar in Social Anthropology.**
- 509-9 (3,3,3) Pro-seminar in Ethnology.** C
- 510-3 to 27 Seminar in New World Archaeology.** C
- 511-3 to 27 Seminar in Mesoamerican Archaeology.** C
- 512-3 to 27 Seminar in Old World Archaeology.** C
- 520-3 to 27 Seminar in the Ethnology of the New World.** C
- 521-3 to 27 Seminar in the Ethnology of Mesoamerica.** C
- 522-3 to 27 Seminar in the Anthropology of Oceania.** C



523-3 to 27 Seminar in the Anthropology of Africa.	C
524-3 to 27 Seminar in the Anthropology of Europe.	C
535-3 to 27 Seminar in Physical Anthropology.	C
545-3 to 27 Seminar in Linguistics.	C
550-3 to 27 Seminar in the Cultures of Latin America.	C
560-3 to 27 Seminar in Comparative Social Organization.	C
562-3 to 27 Seminar in the Anthropology of Contemporary Peoples.	C
565-3 to 27 Seminar in Cultural Change and Development.	C
567-3 to 27 Seminar in Anthropological Theory and Method.	C
570-3 to 27 Seminar in Art and Technology.	C
575-3 to 27 Seminar in the Individual and Culture.	C
581-3 to 27 Seminar in Anthropology.	C
582-3 to 27 Problems in Archaeology.	C
584-3 to 27 Problems in Cultural Anthropology.	C
585-3 to 27 Readings in Anthropology.	C
597-3 to 27 Fieldwork in Anthropology.	C
599-1 to 9 Thesis.	C
600-1 to 48 Dissertation.	C

## APPLIED SCIENCE

101-9 (3,3,3) **Graphics.** (a) Basic principles of graphic communications. Pictorial projection, sections and conventions, dimensioning, auxiliary views, freehand lettering, and sketching. (b) Graphical solution of problems involving the understanding of the space relationships of points, lines, and planes; intersections and developments. (c) Auxiliary views, threads and fasteners, dimensioning. Laboratory. Must be taken in a,b,c sequence. No prerequisite. E

260-9 (3,3,3) **Analytical Mechanics.** (a) Resultants of force systems, algebraic and graphical conditions of equilibrium of force systems; analysis of forces acting on members of trusses, forces due to friction; centroids. (b) Displacement, velocity, and acceleration of a particle; translation, rotation; plane motion. (c) Solutions using the principles of force, mass and accelerations, work and energy, and impulse and momentum. Must be taken in a,b,c sequence. Prerequisite: Physics 211a, Mathematics 150b or concurrent enrollment. E

263-12 (4,4,4) **Surveying.** (a) The use and care of surveying instruments. Fundamental principles of surveying, computations, land surveying, topographic surveying data processing. (b) Field astronomy, route surveying, introduction to photogrammetry, hydrographic surveying, and subsurface surveys. (c) Precise surveying, geodesy, altimetry, analysis of errors and error propagation, measurements conditioned and adjusted by method of least squares and other methods. Laboratory. Must be taken in a,b,c sequence. Prerequisites: GSD 114c or Mathematics 111b. E

300-9 (3,3,3) **Thermodynamics.** (a) The study of fundamental energy concepts and the laws of thermodynamics, availability of energy, properties of gases, vapors and gas-vapor mixtures, flow and non-flow processes. (b) Engine cycles and applications to internal combustion engines, gas turbines, steam turbines, jet devices, air compressors, and air engines. Combustion refrigeration and air conditioning. Heat transfer principles. (c) Axiomatic thermodynamics, criteria for equilibrium; absolute temperature; Maxwell's relations; open systems; the phase rule; systems of one and two components; idealized systems; equations of state; systems involving chemical and electrochemical equilibrium. Must be taken in a,b,c sequence. Prerequisite: Mathematics 150b, Physics 211b. E

300-5 **University Physics IV.** (See Physics 300) C

307-5 **Analytical Problems in Technology.** Methods of formulation and solution of special problems encountered in industry and technology using advanced techniques. Prerequisites: Mathematics 114a,b,c. C

420-3 **Digital Computers in Research.** Basic foundations used in operations research. An intensive study in the use of digital computers as related to topics such as probability and statistics, matrices, game theory, Monte Carlo techniques, dis-

tribution and scheduling problems, and simulation. Prerequisite: Engineering 222. C  
**421-3 Programming Languages.** A study of development and the use of automatic programming languages for stored program electronic computers. Included are symbolic languages, interpretive systems, algebraic-oriented and business-oriented data processing languages, macro assemblers, and list processors. (ALGOL, FORTRAN, COBOL, COMIT, IPL, etc.) A comparison of the languages will be made, and each student will prepare programs using the languages studied. Prerequisite: Engineering 222. C

**422-3 Programming Systems.** The use and methods of electronic data processing systems. Topics are searching, ordering, codifying, information retrieval, process control, executive routines, and heuristic programming. The student will apply system techniques for solution of problems using the computer equipment of Data Processing and Computing Center. Prerequisite: Engineering 222. C

**431-9 (3,3,3) Nuclear Science.** An introductory course to provide a background for further work in Nuclear Science. Lectures and problems in radioactivity and the uses of radioisotopes, nuclear engineering, introductory reactor theory, and use of an analog computer in solving problems of neutron transport and reactor kinetics. Prerequisite: Mathematics 252b and Applied Science 300. C

**450-4 Elementary Statistical Mechanics.** Elementary statistical mechanics, with applications to simple physical and chemical systems. C

**470-5 Introduction to Quantum Theory.** Study of the experimental foundations of quantum mechanics and the quantum theoretical interpretation of atomic phenomena. C

**501-9 (3,3,3) Materials Science.** C

**502-6 (3,3) Materials Structure Analysis.** C

**503-6 (3,3) Physical Properties of Crystalline Materials.** C

**504-4 X-Ray Diffraction and Solid State Physics.** C

**521-6 (3,3) Design of Automatic Programming Language Processors.** C

**522-6 (3,3) Programming Systems Design.** C

## ART

Art Education Courses: 300, 306, 307, 308, 365, 408, 460, 466, 560, 566, 599.

Art History Courses: 225, 301, 309, 345, 346, 347, 348, 349, 350, 356, 369, 380, 445, 449, 471, 473, 475, 482, 483, 571, 573, 599.

Studio Courses: 100, 200, 201, 203, 302, 305, 310, 324, 325, 332, 341, 358, 385, 393, 400, 401, 404, 405, 406, 410, 416, 420, 426, 430, 436, 440, 441, 446, 493, 501, 502, 504, 506, 511, 516, 520, 526, 530, 540, 546, 599.

**100-15 (5,5,5) Basic Studio.** A studio course in visual fundamentals emphasizing the ways in which art may be structured. Studio experience in two- and three-dimensional materials. Must be taken in a,b,c sequence.

**200-12 (4,4,4) Studio Disciplines.** Disciplines in drawing, painting, and sculpture. C

**201-8 (4,4) Drawing and Composition.** An extension and intensification of Basic Studio experiences with emphasis on draughtmanship and composition. Must be taken in a,b sequence. Prerequisite: 100-15. E

**203-8 (4,4) Beginning Ceramics.** An exploration of the technical and aesthetic possibilities of the potter's craft. Must be taken in a,b sequence. Prerequisite: 100-15. E

**225-9 (3,3,3) History of World Art.** A study of painting, sculpture, and architecture from prehistoric to modern times. Emphasis is placed upon the major periods and great styles in relation to their geographical and social backgrounds. Open to all university students during the junior or senior year, with consent of the department. (a) The art and architecture of ancient and classical man. (b) Art of the medieval epoch. (c) From the Renaissance to the present. C

**245-2 to 12 The Figure.** C

**300-12 (4,4,4) Art Education.** Theory and practice of art activities in the elementary schools. Designed for elementary education students.

**301-3 Mannerist, Baroque, and Rococo Art.** A study of European art from the end



of the High Renaissance until the late eighteenth century. Emphasis is placed upon the works of such masters as Tintoretto, El Greco, Bernini, Poussin, Rubens, Rembrandt, Watteau, Chardin, Fragonard. C

**302-2 to 12 Pottery.** Similar to 203 with higher level of achievement expected. Advanced subject matter adjusted with reference to number of hours of credit in ceramics previously earned. C

**305-12 (4,4,4) Advanced Ceramics.** Intensive study of ceramics as an art form. Prerequisite: 203-8. E

**306-3 Materials and Techniques in Art Education.** Studio courses providing a broad experimental experience with materials and techniques adaptable to art classes in grade and high school. In addition to studio assignments, each student is required to complete a working file of published material and notes on materials and techniques in art. C

**307-3 Theory and Philosophy of Art Education.** Survey of art education theory providing the art education student with an introduction to theoretical studies in his field, and through scheduled observation visits to art classes at the University School, with the problems of relating theory to practice. C

**308-3 Curriculum and Administration in Art Education.** Provides experience in dealing with problems of planning, organizing, introducing, and administering art curricula in grade and high school. Includes comparative study of published material and preparation of a working file on the subject. C

**309-3 Oriental Art.** C

**310-12 (4,4,4) Painting.** Intensive study of painting as a medium of expression. Individual rather than group problems are engaged. Prerequisite: 201-8. E

**323-4 The Figure Advanced.** C

**324-4 Watercolor.** Intensive study of watercolor painting as a medium of expression. Transparent watercolor, gouache, casein, and tempera techniques may be explored. Prerequisite: 201-8. E

**325-2 to 15 Studio (C); 325-12 (4,4,4) Studio (E).** No more than 4 hours per quarter. Prerequisites: 8 hours in medium of choice (except where such courses do not exist) and consent of instructor.

**332-2 to 12 Jewelry and Silversmithing.** Basic processes in jewelry and metalwork. Emphasis upon design experience and high critical standard. C

**341-2 to 12 Drawing.** C

**345-3 Art of the Nineteenth Century.** The meaning and varieties of art from the time of the French Revolution until late Impressionist art of the nineteenth century. Relations to the social environment are interpreted. E

**346-3 Medieval and Renaissance Art.** A study of the development of art in Europe from the early Christian period through the Renaissance. Prerequisite: GSC 351-12. E

**347-9 (3,3,3) Ancient Art.** An interpretation of painting, sculpture, and architecture from prehistoric times through the ancient Egyptian, Mesopotamian, Greek, and Roman civilizations, presented with consideration of the general cultural settings of the peoples involved.

**348-3 Medieval Art.** The formation and development of religious art in Europe from the early Christian period through the Gothic. Relationships between Middle Ages society and art are studied. C

**349-3 Renaissance Art.** Lectures in European art and architecture from the late 14th century to the mid-18th century. C

**350-9 (3,3,3) American Art.** A survey of American painting, sculpture, and architecture from the early 18th century to the present.

**356-3 Theory of Art.** C

**358-2 to 12 Prints.** Introduction to printmaking as a medium. Studio projects in intaglio, relief, and planographic processes. Prerequisite at Edwardsville: 201-8.

**365-4 Art Education in the Secondary Schools.** For art education students preparing to teach on secondary level; includes studio projects designed to develop awareness of technical and aesthetic needs of high school students, reading and discussion of literature, planning of curriculum. Fall quarter only at Edwardsville.



- 369-3 **Primitive Art.** A study of the arts of "Primitive" peoples of Africa, the Pacific, and the Americas. Characteristic works are interpreted in context with the general conditions of primitive society. The significant influences of primitive art on modern painting and sculpture are considered. C
- 380-4 **Theory and Appreciation of Art.** C
- 385-2 to 12 **Weaving.** Development of understanding of two and four harness loom and essential processes in weaving simple and pattern textiles. C
- 393-4 to 12 **Sculpture.** Problems in modeling, carving, casting and construction. Prerequisite: 200-12 (C); 201-8 (E).
- 401-2 to 12 **Research in Painting.**
- 405-2 to 12 **Studio in Sculpture.**
- 406-2 to 12 **Studio in Painting.**
- 408-4 **Art Education for Elementary Teachers II.** C
- 410-2 to 12 **Research in Prints.**
- 416-2 to 12 **Studio in Prints.**
- 420-2 to 12 **Research in Pottery.**
- 426-2 to 12 **Studio in Pottery.**
- 430-2 to 12 **Research in Metal Construction.** C
- 436-2 to 12 **Studio in Metal Construction.** C
- 440-2 to 12 **Research in Weaving.** C
- 441-2 to 6 **Studio in Drawing.** C
- 445-9 (3,3,3) **Modern Art.** (a) 19th Century, (b) Early 20th Century, (c) Mid 20th Century. C
- 446-2 to 12 **Studio in Weaving.** C
- 449-3 **Renaissance Art.** 15th and 16th century European art with consideration of the significance of Renaissance art to the growth of Humanism. C
- 450-1 **The Visual Arts in Higher Education.** C
- 460-2 to 12 **Research in Art Education.**
- 466-2 to 12 **Studio in Art Education.** C
- 471-3 **Baroque Painting in Italy.** Major developments in style and expression in Italian painting from the late Mannerist period until the early 18th century. C
- 473-3 **Romantic Art of the 19th Century.** A study of the sources and characteristics of Romantic art, approached through the works of such masters as Gros, Delacroix, Blake, Friedrich, Goya, and certain Americans. C
- 475-3 **Impressionist and Post-Impressionist Painting.** The late 19th century in France: Impressionism, Neo-Impressionism, Pointillism, and early Expressionism. The styles of Manet, Monet, Degas, Renior, Seurat, Van Gogh, and Cezanne receive emphasis. C
- 482-3 **Art History Seminar.** Lectures, readings, and reports on artists, styles, subjects of special interest which will be announced periodically. C
- 483-3 to 12 **Research in Art History.** Individual research in the painting, sculpture, architecture, and related arts of the various periods.
- 493-2 to 12 **Advanced Sculpture.** C
- 501-2 to 12 **Seminar in Painting.**
- 502-2 to 12 **Seminar in Sculpture.**
- 504-2 to 12 **Research in Sculpture.** C
- 506-2 to 12 **Research in Painting.** C
- 511-2 to 12 **Seminar in Prints.**
- 516-2 to 12 **Research in Prints.** C
- 520-2 to 12 **Seminar in Pottery.**
- 526-2 to 12 **Research in Pottery.** C
- 530-2 to 12 **Seminar in Metal Construction.** C
- 536-2 to 12 **Research in Metal Construction.** C
- 540-2 to 12 **Seminar in Weaving.** C
- 546-2 to 12 **Research in Weaving.** C
- 560-2 to 12 **Seminar in Art Education.** C
- 566-2 to 12 **Research in Art Education.**
- 571-2 to 5 **Readings in Art History.**

573-3 to 12 Problems of Art History.  
599-5 to 9 Thesis.

C  
C

## ASTRONOMY

201-4 **Introduction to Astronomy.** Uses of astronomy, reference systems, time, instruments, solar and galactic systems and satellites. Includes evening observations in addition to lecture-demonstrations.

202-4 **Introduction to Astronomy.**

C

GSA 356-3 **Astronomy.**

E

## BOTANY

101-5 **General Botany.**

E

131-5 **Field Biology.** A course in methods of identification of various plants and animals and location of source material suitable for teaching nature study. Primarily for those planning to teach in primary and rural schools. Five Saturday field trips and laboratory studies. Approximate cost: \$5.

202-5 **General Botany.** A study of representative plants of the major plant groups; classification; evolution of the plant kingdom. Three lecture and four laboratory hours per week, and one all-day (required) field trip. Cost: about \$5.

E

203-5 **Taxonomy of Local Seed Plants.** A study of the principles of classification and the use of manuals, with reference to local ferns and flowering plants. Three lecture and four laboratory hours per week. Cost: about \$5. Prerequisite: GSA 201c.

E

225-5 **Cellular Physiology.** A discussion with laboratory illustration of basic physiological processes. Generally, plant materials will be used in the laboratory. Three lecture and four laboratory hours per week. Prerequisite: GSA 201c, organic chemistry.

E

300-3 **Morphology of Non-Vascular Plants.** Introduction to the structure, development, and relationships of the algae, fungi, and bryophytes. Prerequisite: GSA 201c.

C

301-3 **Morphology of Vascular Plants.** Introduction to the structure, development, and relationships of the fern-allies, ferns, gymnosperms, and angiosperms. Prerequisite: GSA 201c. Recommended: Botany 300.

C

308-5 **Taxonomy and Cultivated Plants.** A study of the classification of woody and herbaceous cultivated plants, both exotic and native. Prerequisites: GSA 101c, Botany 203.

C

310-5 **Plant Anatomy.** An introduction to cell division, development, and maturation of the structures of the vascular plants. Three lecture and four laboratory hours per week. Prerequisite: GSA 201c.

E

311-5 **General Bacteriology.** An advanced treatment of cytology, theories and techniques of staining, physiology, enrichment cultures, and classification of microorganisms and their agricultural, industrial, and medical relationships. 3 hours lecture, 4 hours laboratory. Prerequisite: one course in biological science and organic chemistry.

E

313-3 **Natural History of Local Plants.** Increases insight and appreciation of plants. Identification and natural history stressed. Lecture, laboratory. Field trip costs about \$5. Prerequisite: GSA 201c.

C

315-4 **Plant Genetics.** (Same as Plant Industries 315.) (C); 315-3 **Plant Genetics** (E). A general course involving principles of evolution and genetics of plants. Prerequisite: secondary concentration in agriculture, botany, or zoology. (C); GSA 201a or consent of instructor (E).

320-5 **Elements of Plant Physiology.** A study of the functions of plants and their relation to the various organs. Three lecture and four laboratory hours per week. Prerequisite: GSA 201c; chemistry 350 or a secondary concentration in chemistry. (C); GSA 201c (E).

321-3 to 5 **Elementary Botanical Microtechnique.** Methods of preservation and preparation of plant materials for examination by the light microscope. One lecture and

four laboratory hours per week. Prerequisite: GSA 201c. (C) consent of instructor. (E)

**325-5 Metabolism.** Intermediary metabolism of plants and animals with emphasis upon the newer knowledge. Laboratory organization will be adapted to the student's area of concentration (physiology, agriculture, medicine, etc.). Three lecture and four laboratory hours per week. Prerequisite: GSA 201c, organic chemistry. E

**GSA 340-3 Ecology.** C

**341-3 Autecology.** An introduction to plant life processes and life form in relation to the factors of the environment. Prerequisite: 320, GSA 340, or consent of instructor. Field and laboratory expenses \$5. C

**GSA 345-3 Economic Botany.** C

**350-4 Plants in Relation to Man.** A study of the basic relationships of plants to man; the history, geography, crop ecology, production, consumption, and uses of plants and plant products of economic importance. E

**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. Prerequisites: concentration in botany, 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. Prerequisite: concentration in botany, consent of department or division.

**400-5 Plant Anatomy.** An introduction to cell division, development, and maturation of the structures of the vascular plants. Laboratory. Prerequisites: 300, 301. C

**403-3 History and Principles of Plant Taxonomy.** Important concepts in plant classification through the ages, and study of the International Code of Botanical Nomenclature. Consideration of the functions of genetics, evolution, morphogenesis, and ecology in taxonomy. Prerequisite: 203 or consent of instructor. May be repeated. E

**404-4 The Algae (C); 404-5 The Algae (E).** Structure, development, and relationships of the algae. Laboratory and some field work. Prerequisite: 300.

**405-5 Mycology.** Structure, development, and relationships of the fungi. Problems of economic and scientific interest stressed. Laboratory. Prerequisite: 300.

**406-5 Industrial Mycology.** C

**411-4 The Bryophytes and Pteridophytes.** Structure, development, and relationships of the liverworts and mosses, and the ferns and fern allies. Laboratory. Prerequisite: 301. C

**412-4 The Spermatophytes.** Structure, development, and relationships of the gymnosperms and angiosperms. Laboratory. Prerequisites: 301, 313. C

**413-5 Comparative Morphology of Vascular Plants.** Comparative studies of representative groups of vascular plants, including origin, structure, developmental tendencies, embryology, and fossil evidence. Three lecture and four laboratory hours per week. Prerequisites: GSA 201c, 202. E

**414-5 Paleobotany.** (Same as Geology 414). An introduction to the study of fossil plants emphasizing the major features of plant evolution and the applications of paleobotany to problems in the botanical and geological sciences. Lecture, laboratory, and field trips. Student cost about \$5. Prerequisite: 310 or 400 or consent of instructor. C

**420-4 Physiology of Fungi.** C

**425-15 (5,5,5) Advanced Plant Physiology.** (a) Physics of the plant, water relations, membrane phenomena, photobiology. (b) Covers the absorption, translocation, function and interaction of inorganic nutrient elements in green plants with application to forest, agronomic, and horticultural species. (c) Chemistry of the plant; anabolic and catabolic processes, photosynthesis, respiration, chemosynthesis. Prerequisites: 320, Chemistry 350, or a secondary concentration in chemistry. C

**428-3 Plant Nutrition.** The physiological importance of carbon, nitrogen, and phosphorus-containing compounds is stressed. Prerequisites: organic chemistry, secondary concentration in botany or agriculture. C

**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: GSA 340 or consent of instructor. C

**445-5 Ecology of Forests and Arable Lands.** Forest areas in North America. De-



developmental and structural analysis of forest types. Autecology of important species. Field trips, approximate cost \$10. Prerequisite: GSA 340. C

**449-3 Elements of Taxonomy.** Principles of taxonomy including historical sketch, phyletic concepts, biosystematics, classical and experimental methods. Lecture. Laboratory. Prerequisite: GSA 203. C

**450-3 Plant Geography.** World distribution of plants related to environmental, floristic, and historical factors. Prerequisites: 3 courses in botany or geography or consent of instructor. C

**451-4 Introduction to Floristics.** Principles involved and methods used in the analysis of the flora of an area. Laboratory and field work. Student cost about \$5. Prerequisite: Botany 313; GSA 340. C

**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. C

**456-5 Plant Pathology.** (Same as Plant Industries 455.) A study of plant diseases caused by fungi, bacteria, and viruses. Special attention given diseases of southern Illinois plants. Laboratory and field trips. Prerequisite: consent of instructor. C

**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 are included. Prerequisite: consent of instructor or 456. C

**470-4 Methods of Teaching High School Biology.** Methods, objectives, types of courses taught in secondary school biology. Laboratory and field trips. Prerequisite: concentration in botany or zoology. C

**480-4 Classic Principles of Botany.** Theories, principles, and developments in the various divisions of the plant sciences. Prerequisites: GSA 203, or consent of instructor. C

**501-4 Plant Biology for High School Teachers.** C

**502-2 Recent Developments in Biological Sciences.** C

**503-15 (5,5,5) Advanced Angiosperm Taxonomy.** C

**507-8 BSCS—High School Biology.** C

**522-5 Advanced Microtechnique.** C

**525-5 Cytology.** C

**526-5 Cytogenetics.**

**533-3 to 4 Growth and Development in Plants.** C

**542-3 Genecology and Community Concepts.** C

**543-5 Experimental Ecology.** C

**551-4 The Natural Vegetation of the Mississippi Basin, Upland.** C

**552-4 Mississippi Flora, Aquatic.** C

**555-4 Advanced Plant Pathology I.** C

**556-4 Advanced Plant Pathology II.** C

**557-4 Advanced Plant Pathology III.** C

**570-2 to 5 Readings.** C

**580-1 to 4 Seminar.** C

**590-2 to 4 Introduction to Research.** C

**591-3 to 9 Research.** C

**599-3 to 9 Thesis.** C

**600-1 to 48 Dissertation.** C

## BUSINESS EDUCATION

(See Secretarial and Business Education)

## CHEMISTRY

**101-2 (1,1) Optional Laboratory for GSA 101.** Elementary general and organic chemistry laboratory. Prerequisite: concurrent enrollment in GSA 101b or c. C

**110-4 General and Inorganic 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. Not applicable to a concentration or to a secondary concentration in chemistry. No prerequisite. E

**111-15 (5,5,5) General-Inorganic Chemistry.** For engineering students and others requiring at least 10 hours of Chemistry, including pre-professional (medicine, etc.) students and those with a concentration in Chemistry. (a) For students who have not had high school Chemistry, or upon the advice of their department, (b) beginning course for those who have had high school Chemistry, covering general principles and non-metals, (c) metals, some ionic equilibrium, and qualitative analysis. Lecture, help, and laboratory sessions. Must be taken in b,c or a,b,c sequence. C

**111-15 (5,5,5) Chemical Principles and Inorganic Chemistry.** (a) Nature of matter, gas laws, periodic classification, laws of combination, chemical calculations. Students with an excellent record in high school chemistry may be able to start with (b). Three lecture, one quiz, and three laboratory hours per week. Prerequisites: high school algebra and geometry or equivalent; (b) solutions, kinetics, equilibrium, electrochemistry, and chemistry of the elements. Three lecture, one quiz, and three laboratory hours per week. Prerequisite: 111a or strong background in high school chemistry; (c) continuation of chemistry of the elements, ionic equilibria, and qualitative analysis. Three lecture and six laboratory hours per week. Prerequisite: 111b. E

**230-4 General Analytical Chemistry.** A survey course in chemical analysis not open to students with a concentration in chemistry. A brief introduction to various analytical methods. Qualitative and quantitative measurements, including gravimetry, volumetry, colorimetry and other techniques. 2 lecture and 6 laboratory hours per week. Prerequisite: 101b (with GSA 101b) or 111b. C

**235-5 General Quantitative Analysis.** Introduction to theories and methods of volumetric and gravimetric techniques. 3 lecture and 6 laboratory hours per week. Prerequisite: 111c.

**240-4 Organic Chemistry.** A survey course not open to those concentrating in chemistry. An introduction to aliphatic and aromatic compounds with emphasis on those of biological importance. Three lecture and three laboratory hours per week. Prerequisite: 110 or 111b. E

**305-9 (4,5) Organic Chemistry, Preprofessional.** For secondary concentration in chemistry and preprofessional students. Lecture and laboratory. Must be taken in a,b sequence. Prerequisite: 111c. C

**305-10 (5,5) Organic Chemistry, Preprofessional.** For secondary concentrations in chemistry and preprofessional students. Three lecture and six laboratory hours per week. Prerequisite: 111b. E

**311-3 Inorganic Chemistry.** Introduction to theories of bonding and structure, symmetry, complex ions, and less familiar elements. Three lectures per week. Prerequisite: 111c. E

**336-4 Analytical Chemistry.** Continuation of volumetric and gravimetric theories and methods with an introduction to instrumental methods. Two lecture and six laboratory hours per week. Prerequisite: 235. E

**341-15 (5,5,5) Organic Chemistry.** 3 lecture and 6 laboratory hours per week. Must be taken in a,b,c sequence. Prerequisite: 111c.

**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: 101c (with GSA 101c) or 305b or 341c. C

**375-0 to 2 Senior Seminar.** For seniors with a concentration in chemistry. C

**375-0 to 3 Chemistry Seminar.** One lecture hour per week. Prerequisite: senior standing. E

**396-2 to 6 Senior Research.** Investigation of a chemical problem and preparation of a thesis under the direction of a staff member. Prerequisite: senior, concentrating in chemistry, 4.0 average in chemistry, and consent of faculty. E

**411-4 Intermediate Inorganic Chemistry.** Modern inorganic chemistry including atomic structure, chemical bonds, complexes, and chelate structures; with emphasis on physical chemical principles. 4 lecture hours per week. Prerequisites: 460 or 461b. May be taken concurrently.

**412-3 Inorganic Preparations.** A study of several important types of inorganic syn-



theses. 1 lecture and 6 laboratory hours per week. Prerequisites: 235, 305b or 341c.  
**432-8 (4,4) Instrumental Analytical Measurements.** Theory and practice of instrumental analytical measurements, including spectrophotometric, electro-analytical, and chromatographic methods. 2 lecture and 6 laboratory hours per week. Prerequisite: 461b (May be taken concurrently). May be taken in either sequence.

**433-3 Intermediate Quantitative Analysis.** A study of the analysis of complex materials, with emphasis on separations, functional group analysis, and instrumental applications. 2 lecture and 3 laboratory hours per week. Prerequisites: 432a or b and 461c.

**444-3 Organic Reactions.** An intermediate course with emphasis on monofunctional compounds. Additional topics, not included in elementary courses, will be considered. 3 lecture hours per week. Prerequisite: 341c. C

**446-4 Qualitative Organic Analysis.** 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: 305b or 341c.

**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: 305b or 341c. C

**451-11 (3, 3 or 4, 3 or 4) Biochemistry.** (a) Chemistry, function, and metabolism of carbohydrates; energy metabolism, vitamins. (b) Enzymes, lipids, amino acids, proteins. Modern laboratory methods, (c) Enzyme kinetics, nucleic acids, comparative biochemistry. Prerequisite: 235, 305b, or 341c. Must be taken in a,b,c sequence. C

**451-8 (4,4) Biochemistry.** (a) Carbohydrates, fats and related substances, proteins and amino acids, enzymes, digestion, absorption, and detoxication. (b) The blood and lymph; acid-base regulation; metabolism of carbohydrates, lipids, and proteins; urine; calorimetry and energy metabolism; nutrition and vitamins; and hormones. Three lecture and three laboratory hours per week. Must be taken in a,b sequence. Prerequisites: 235 and 305b or 341c. E

**460-5 Theoretical Chemistry.** Traditional aspects of physical chemistry without the requirement of calculus. 4 lecture and 3 laboratory hours per week. Prerequisites: 235, 305b or 341c, and one year of physics or consent of instructor.

**461-12 (4,4,4) Physical Chemistry.** (a) Gases, liquids, solids, solutions, and homogeneous and heterogeneous equilibria. 3 lecture and 3 laboratory hours per week. (b) Chemical kinetics, electrical conductance, electromotive force, and electrolytic equilibrium. 3 lecture and 3 laboratory hours per week. (c) Chemical thermodynamics, the quantum theory, nuclear structure, photochemistry, atomic and molecular structure. 3 lecture and 3 laboratory hours per week. Prerequisites: 235 (concurrent), 341c, 12 hours of physics, and one year of calculus. Must be taken in a,b,c sequence.

**464-3 Intermediate Physical Chemistry.** Intermediate between the first year of undergraduate physical chemistry and advanced physical chemistry. 3 lecture hours per week. Prerequisite: 461c.

**471-3 Industrial Chemistry.** A survey course on modern industrial chemistry and an introduction to chemical research processes. 3 lecture hours per week. Prerequisite: 305b or 341c. C

**490-2 Chemical Literature.** A study description of the various sources of chemical information and the techniques for carrying out literature searches. 2 lecture hours per week. Prerequisites: 235, 305b or 341c, reading knowledge of German or consent of instructor.

**496-1 to 9 Chemical Problems.** Investigation of relatively simple problems under the direction of a staff member. Prerequisites: senior standing, concentration in chemistry with 4.0 average, and consent of chairman.

**511-9 (3,3,3) Advanced Inorganic Chemistry.** C

**517-3 Laboratory Techniques in Inorganic Chemistry.** C

**519-2 to 30 (2 to 6 per quarter) Advanced Topics in Inorganic Chemistry.** C

**531-3 Theory of Quantitative Analysis.** C

**532-3 Instrumental Methods of Analysis.** C

**533-3 Industrial Analytical Methods.** C

**539-2 to 30 (2 to 6 per quarter) Advanced Topics in Analytical Chemistry.** C



541-3 Advanced Organic Chemistry.	C
542-3 Advanced Organic Chemistry.	C
543-3 Advanced Organic Chemistry.	C
547-3 to 6 Advanced Laboratory Preparations in Organic Chemistry.	C
549-2 to 30 (2 to 6 per quarter) Advanced Topics in Organic Chemistry.	C
551-3 Advanced Biochemistry.	C
552-3 Advanced Biochemistry.	C
553-3 Advanced Biochemistry.	C
554-3 Biochemical Mechanisms.	C
555-3 Enzymes.	C
559-2 to 30 (2 to 6 per quarter) Advanced Topics in Biochemistry.	C
561-3 Chemical Thermodynamics.	C
562-3 Atomic and Molecular Structure.	C
563-3 Chemical Kinetics.	C
569-2 to 30 (2 to 6 per quarter) Advanced Topics in Physical Chemistry.	C
575-1 to 3 Graduate Seminar.	C
594-2 to 15 (2 to 6 per quarter) Special Readings in Chemistry.	C
595-0 to 9 Advanced Seminar in Chemistry.	C
596-3 to 9 Advanced Chemical Problems.	C
597-3 to 15 Research and Thesis.	C
598-3 to 48 Research—Doctoral.	C
600-3 to 48 Dissertation—Doctoral.	C

## CLOTHING AND TEXTILES

- 127-4 **Clothing Selection and Construction.** Fundamentals of clothing construction and fitting. Use and alteration of patterns and construction of basic garments using fabrics made of different fibers. C
- 129-1 to 4 **Fashion Millinery.** Fundamentals of millinery. Experience in millinery construction; discussion and observation of demonstrations. C
- 131-3 **Applied Design.** Theory of design. Judging decorative and structural design of objects. Principles and elements of design applied to our visual environment—homes, furnishings, buildings—and the person. Supplementary laboratory experiences with emphasis on color. C
- 135-3 **Textiles.** Selection of textiles from consumer standpoint. Characteristics of commonly used fibers and fabrics; textile information as a tool in the selection and care of household textiles and clothing. C
- 145-1 to 4 **Three Dimensional Arrangement.** Principles of selection and arrangement of designs including flowers, foliage, and other elements from nature for use in homes and other interiors. C
- 231-3 **Applied Design.** The study of design of products used in interiors of homes and in clothing and textiles. Laboratory experiences in applying the principles and elements of design to two- and three-dimensional studies related to these. Prerequisite: 131, equivalent, or consent of instructor. Offered alternate years. C
- 233-3 **Pattern Designing and Clothing Construction.** Principles of flat pattern design, pattern manipulation, and fitting. The making of dress patterns from master patterns. Construction of dresses using custom finishes. Field trip. Prerequisites: 127, 131, 135, or consent of instructor. C
- 251-3 **Clothing Selection and Care.** Study of suitability of clothing in terms of line, design, color, texture, interest, upkeep, and cost. Offered alternate years. C
- 300-2 to 4 **Display.** The application of design principles in windows, cases, department displays. Laboratory problems to provide experience in planning, execution, and evaluation of display. Prerequisite: 131, equivalent, or consent of instructor. C
- 322-3 **Advanced Textiles.** A study of textile testing, fabric analysis, textiles legislation. Prerequisite: 135, GSA 101b,c or consent of instructor. Offered alternate years. C
- 323-2 **Housing.** Housing needs of families. Housing design, plans, and construction. Historic modes of housing. C
- 327-3 **Home Furnishings and Interiors.** Principles and elements of design related to selection and arrangement of furniture and the use of fabrics, accessories and other

media utilized in furnishing homes and their interiors. Prerequisite: 131, equivalent, or consent of instructor. C

**329-3 Fashion.** A study of economic, psychological, social, and aesthetic factors in fashion which affect the individual and family. Exploration into the fashion industry and opportunities in the field of fashion. Offered alternate years. C

**331-3 Applied Design.** Laboratory experiences in applying the principles and elements of art to textile designing. Linoleum block printing, silk screen print, contemporary embroidery, batik, tie-dye, and others. Prerequisite: 131, equivalent, or consent of instructor. Offered alternate years. C

**334-3 Costume Design.** The development of original dress design and adaptation from period costume and other sources, using various media. Prerequisites: 127, 131. Offered alternate years. C

**339-3 Clothing Economics.** Factors of production, distribution, and consumption which influence economics of clothing. Offered alternate years. C

**360-4 Tailoring and Clothing Construction.** Fundamental construction processes reviewed and basic principles of tailoring applied in the construction of a suit or coat and a dress. Prerequisite: 233. C

**364-3 Draping and Construction.** Principles of design applied to draping of fabric on dress form. Emphasis on interpretation of design in relation to different fabrics and figures. Construction of one draped garment. Prerequisite: 233. Offered alternate years. C

**371-6 Field Experience.** Opportunity for supervised learning experiences in the chosen area. C

**380-4 Furniture and Interiors.** A study of furniture in relation to interiors from antiquity through the eighteenth century. Field trip. C

**381-4 The Modern Movement in Interior Design.** A study of furniture in relation to interiors from the eighteenth century to the present. Field trip. C

**382-4 The Decorative Arts.** A study of ceramics, textiles, glass, paper, plastics, lighting and lighting fixtures, metals and hardware, selecting and hanging pictures, window treatments, floor coverings, wall treatments, and backgrounds considered in relation to problems in interior decoration. Field trip. C

**390-5 Interior Design Fundamentals.** Analysis and practices of interior decoration with emphasis on present-day problems and solutions. Field trip. Prerequisite: 131, 231 or consent of instructor. C

**391-15 (5,5,5) Advanced Interior Design.** The major problems and trends in interior design. (a) residential interiors, (b) commercial interiors for restaurants, hotels, and motels, (c) commercial interiors for transportation systems, industrial and governmental buildings. Lecture and laboratory. Field trips. Must be taken in a,b,c sequence. Prerequisites: 390 or consent of instructor. C

**394-4 Professional Practice.** Practical organization and methods of conducting an interior decorating business; production, management, customer relationships, and professional ethics. Prerequisite: 390 or consent of instructor. C

**395-2 to 8 Special Problems.** Specific problems in clothing, textiles, applied design, housing, home furnishings, or interiors. Prerequisite: consent of instructor. C

**423-4 Advanced Family Housing.** (See Home and Family 423.) C

**431-4 Advanced Applied Design.** Research problems in experimentation with materials in textile design, linoleum block printing, stencilling, contemporary embroidery, silk-screen printing, etc. Prerequisite: 131 or consent of instructor. C

**432-2 to 8 Workshop.** Designed to aid leaders in the field with current problems. Discussion, reports, lectures, and other methods of analyzing and working on solutions to problems. Emphasis for the workshop to be stated in the announcement of the course. Prerequisite: consent of chairman. C

**433-4 Advanced Pattern Designing.** Experimentation in the application of flat pattern design principles to the making of patterns for garments of various designs. Emphasis upon suitability of patterns for specific fabrics. Construction of garment as final step in experimentation. Prerequisite: 233 or consent of instructor. C

**434-4 History of Costume.** The history of costume from prehistoric times to the present. Social, economic, and aesthetic developments that influenced its design. C

**461-4 Problems in Fitting and Pattern Alterations.** Principles of fitting and pattern



alterations as related to various figure types and special figure problems. Application made by fitting and constructing a garment. Prerequisites: 127, 233, or equivalent. C  
**473-4 Advanced Tailoring.** The student will tailor one garment for herself. Time-saving methods, high-quality construction details, and professional finishes stressed. Prerequisite: 360 or equivalent. Offered on demand. C

**474-4 Advanced Textiles.** The physical and chemical analysis of textiles. Problems dealing with economical and industrial developments, standards, labeling, and legislation. Current literature of developments within the field. Prerequisites: 322, GSA 101c or consent of instructor. C

**481-2 to 6 Readings.** Supervised readings for qualified students. Prerequisite: consent of instructor and chairman. C

**528-4 Recent Developments in Clothing and Textiles.** C

**570-4 Clothing and Textiles Seminar.** C

**571-4 Recent Research.** C

**572-2 to 8 Special Problems.** C

**582-4 Foundations of Fashion.** C

**599-5 to 9 Thesis.** C

**600-1 to 48 Dissertation.** C

## COMPARATIVE LITERATURE

**300-12 (4,4,4) Survey of Comparative Literature.** (a) from Homer to Dante. (b) from Rabelais to Racine. (c) from Voltaire to Kafka. E

**310-20 (4,4,4,4,4) Comparative Literature: Genres.** (a) lyric and epic poetry. (b) drama. (c) prose. (d) tragedy. (e) novel. E

**399-4 Traditional Themes of World Literature.** Prerequisites: any course in comparative literature and a course in English, foreign, or comparative literature. E

## DESIGN

(For Edwardsville courses, see Art.)

**100-5 to 15 Design Fundamentals.** Three-quarter sequence. Comprehensive workshop and lecture course in design fundamentals. Exploration of two- and three-dimensional design principles using various media and materials. C

**200-2 to 6 Materials and Basic Techniques.** Three-quarter sequence. Laboratory exploration of two- and three-dimensional materials utilized in design process. No more than 2 hours per quarter. Prerequisite: 100-15. C

**215-4 to 12 Basic Product-Shelter Design.** Three-quarter sequence. Development of an analytical approach to the solutions of product and shelter problems, using lecture, text, and laboratory methods. Prerequisite: 100-15. C

**250-2 Survey of Product-Shelter Design.** Presents basic material offered in 215 but adapted to interests of those who do not have a concentration in design. One hour lecture and two hours laboratory. C

**260-2 Survey of Visual Design.** Presents basic material offered in 275 but adapted to interests of those not majoring in design. One hour lecture and two hours laboratory. C

**275-4 to 12 Basic Visual Design.** Three-quarter sequence. Development of an analytical approach to the solution of visual problems, using lecture, text, and laboratory methods. Prerequisite: 100-15. C

**300-2 to 6 Materials and Basic Techniques.** Three-quarter sequence. A continuation of 200. Prerequisite: 200-6. C

**345-4 to 12 Design Studio.** Special projects in two- and three-dimensional experimental structures. C

**366-5 to 15 Product-Shelter Design.** Three-quarter sequence. Development of three-dimensional design projects of community scope. Prerequisites: 200-6, 215-12, 275-12. C

**375-5 to 15 Visual Design.** Development of design projects exploiting various communications media. Prerequisites: 200-6, 215-12, 275-12. C

**390-2 Principles of Design.** Comparative studies of European and Asiatic influences



on contemporary American approaches to design. Readings from Sullivan, Wright, Le Corbusier, Moholy-Nagy, and others. C

400-0 to 2 Materials and Basic Techniques.

465F-5 to 15 Research in Product-Shelter Design.

465G-5 to 15 Research in Visual Design.

490F-2 to 12 Studio in Product-Shelter Design.

490G-2 to 12 Studio in Visual Design.

520-4 to 10 Educational Tool Systems.

530-4 to 12 Studies in the Industrial Process.

535-4 to 12 Research in Product Design.

540-4 to 12 Studies in Communications Design.

545-4 to 12 Research in Communications Design.

550-2 to 16 Field Study in Design.

560-4 to 12 Environmental Control.

570-4 to 12 Design Science Exploration.

575-4 World Ecological Studies.

576-4 to 8 Structural Evolution.

599-3 to 9 Thesis.

## E C O N O M I C S

210-5 Principles of Economics. The basic principles and tools of economic analysis including national income determination, business fluctuations, price-output determination in product markets, distribution of national income, factor pricing, and other economic problems. Prerequisite: GSB 211a. E

214-3 Economics (Macro). Explores more fully some of the topics introduced in GSB 211a and brings in others such as: national income; money & banking; economic fluctuations; government fiscal policy; economic growth. Prerequisite: GSB 211a. C

215-3 Economics (Micro). Explores more fully some of the topics introduced in GSB 211a and brings in others such as: supply, demand, prices, theory of the firm, labor, rent, interest, profits. Prerequisite: GSB 211a. C

301-1 to 6 Economic Readings. Readings in books and periodicals in a defined field, under direction of one or more staff members. Periodic written and oral reports. Prerequisite: consent of chairman or division head.

308-4 Economics and Business Statistics I. 3 hours lecture; 2 hours laboratory. Prerequisite: GSD 110 (C); 307 or GSD 114d. (E)

310-4 Labor Problems. Prerequisites: 210 (E); or 214 and 215 (C).

GSB 311-3 Economic Development of the United States. Prerequisite: GSB 101c or 211c.

GSB 312-3 Comparative Economic Systems.

GSB 313-3 Economics of War and Peace. C

315-4 Money and Banking I. Prerequisite: 210 (E); 206 or 214 (C).

317-4 Economic History of the United States. Prerequisite: 205 or 214 at Carbon-dale; 210 (E).

328-4 International Economics I. Prerequisite: 210. E

330-4 Public Finance. Prerequisite: 210 (E) or 214 or GSB 211c (C).

GSB 333-3 Seminar in Problems of War and Peace. C

340-3 Public Utility Economics. Prerequisites: 205 & 206; or 214 & 215. C

GSB 356-3 The Consumer and the Economy. E

408-4 Economic and Business Statistics II. Techniques for making decisions when the economic conditions are not known with certainty. 3 hours lecture; 2 hours laboratory. Prerequisite: 307 or GSD-110, or GSD-108c, or GSD-114c, or consent of instructor (C); 307 or 308 or GSD-114d, or consent of instructor (E).

411-4 Collective Bargaining and Dispute Settlement. Nature, issues, procedures, economic effects. Prerequisite: 310 or consent of instructor.

416-4 Money and Banking II. Emphasis upon the Federal Reserve System and other banking systems. Prerequisite: 315 or consent of instructor.

**418-4 Economic History of Europe.** A survey of the economic growth of Europe with emphasis upon the development of European agriculture, industry, finance, and international trade since 1750. Prerequisites: 205 or GSB-211a, or consent of instructor (C); 210 (E).

**419-4 Latin American Economic Development.** A survey of the resource base of Latin American economic development with special reference to the problems of transition from an export-import to an integrated industrial economy; monetary policies; problems of economic planning. Prerequisites: 205 or GSB-211a. C

**429-4 International Economics.** Intensive treatment of the principles of international economics with special emphasis on the classical and modern theories of international trade. Income effects. Balance of payments adjustments. Prerequisites: 205 and 206, or 214 and 215, or consent of instructor. C

**430-4 Regional Economy.** Natural economic regions, governmental action (as in the T.V.A.), local applications. Prerequisites: (205 and 206) or (214 and 215). C

**431-3 Public Finance II.** State and local. Prerequisite: 330 or consent of the instructor.

**432-3 to 4 Fiscal Policy of the United States.** Countercyclical, secular, and emergency use of government expenditures, debt, and taxes. Prerequisites: 205 and 206, or 214 and 215, or consent of instructor (C); 210 (E).

**436-3 Government and Labor.** (Same as Government 436.) A study of labor relations and legislation considering both constitutional and economic aspects. Prerequisite: 205 or 215 (C) or GSB-211c or consent of instructor (E).

**440-4 Intermediate Micro Theory.** A more intensive treatment of price and income theory. Prerequisites: 205 and 206, or 215, or consent of instructor (C); 210 (E).

**441-4 Intermediate Macro Theory.** Basic analytical concepts of the modern theory of aggregative income determination. Prerequisites: 205 or 214 or consent of instructor (C); 210 (E).

**450-6 (3,3) (C); 450-3 (E) History of Economic Thought.** The development of economic thought; (a) ancients to 1850; (b) 1850 to present. Must be taken in a,b, sequence. Prerequisites: 205 and 206, or 214 and 215, or consent of instructor (C); 210 or consent of instructor (E).

**460-4 Russian Economy.** Development of Russian trade, agriculture, industry, government, finance, and standards of living in successive periods in relation to the historical, geographic, economic, and ideological background. Prerequisite: 205, or GSB-211a, or consent of instructor. C

**461-4 Comparative Economic Development in Asia.** A comparison of the economies of Japan, India, and China within the framework of emerging economic theory of developing economies. Prerequisite: 205, or GSB-211a, or consent of instructor. C

**465-4 Mathematical Economics I.** A systematic survey of mathematical economic theory. Conditions of static equilibrium (including stability conditions), dynamic models using difference equations, and linear production models of input-output analysis and activity analysis (linear programming). Prerequisite: 440 and consent of instructor. C

**467-4 Econometrics I.** Introduction to resource allocation under uncertainty. Probabilistic economic models, theory of games and economic choices, and stochastic economic processes. Prerequisite: consent of instructor. C

**470-3 Business Cycles.** Major business fluctuations in the United States. Prices, employment, production, credit, inflation and deflation, and government action during the cycles. Prerequisite: 315, or 441, or consent of instructor (C); 315 (E).

**471-4 Land Resource Planning.** (Same as Forestry 471 and Agricultural Industries 471.) The use of land as an economic variable in production of goods and services; land market; group versus individual conflicts; elementary land resources planning techniques. Prerequisite: 440, or 441, or Agricultural Industries 350, or Forestry 470. C

**473-4 Business Enterprise and Public Policy.** Some of the major problems of social control of business arising out of the operation of business in modern society; covering types of control, necessity and effects of control. Prerequisite: senior standing. E

**481-4 (C); 481-3 Comparative Economic Systems (E).** Capitalism, socialism, fas-

cism, and other forms of the economy. Prerequisite: 205, or 214 and 215, or consent of instructor (C); 210 (E).

**490-4 Workshop in Economic Education.** (Same as Elementary or Secondary Education 490.) Designed to assist elementary and secondary school teachers in promoting economic understanding in the minds of their students through the translation of economic principles and problems into classroom teaching materials.

**500-4 to 8 Economics Seminar.**

**501-1 to 5 Economics Readings.**

**502-1 to 6 Readings in Resource Economics.**

**512-4 Labor Economics.**

**517-4 Monetary Theory and Policy.**

**519-4 Economic Growth.**

**530-4 Foreign Trade and Finance.**

**531-4 Seminar in International Economics.**

**533-4 Public Finance Theory and Practice.**

**541-4 National Income Theory.**

**542-4 Price Theory.**

**543-4 Seminar in Economic Policy.**

**552-4 Seminar in Economic Thought.**

**562-4 Seminar in Economic Systems.**

**566-4 Mathematical Economics II.**

**575-4 Economic Regulation.**

**581-4 Economics of Welfare.**

**582-0 to 4 Economic Behavior.**

**599-2 to 9 Thesis.**

**600-3 to 48 Doctoral Dissertation.**

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## EDUCATIONAL ADMINISTRATION AND SUPERVISION

**GSB 331-3 The American Educational Systems.**

**355-4 Philosophy of Education.** (Same as Philosophy 355.) The philosophical principles of education and the educational theories and agencies involved in the work of the schools.

**420-4 Legal Basis of American Education.** Particular emphasis is placed on common-law principles. Prerequisite: 424.

**424-4 School Administration.** Designed primarily for those who look forward to positions as supervisors, principals, or superintendents. Prerequisite: 460. C

**431-4 History of Education in the United States.** An historical study of the problems of American Education which have relevance to contemporary education.

**432-4 Education and Social Forces.** Analysis and classification of propaganda. Designed to show how public opinion is formed by a use of current materials from the different channels of communication. Differences between propaganda and indoctrination.

**434-4 Administrator's Workshop.** A special program for the consideration of administrative problems pertinent to superintendents, high school principals, and elementary school principals. Prerequisite: 424. C

**456-4 School Supervision.** The function of the principal or supervisor in the improvement of instruction. Some activities, methods, and devices for improving the effectiveness of teaching. Prerequisites: 424, and 535 or Elementary Education 557 or Secondary Education 564.

**460-4 Curriculum.** Modern practices and procedures in curriculum development, with attention to the professional, social, economic, and other major factors in curriculum planning. Prerequisite: 500. C

**485-4 to 9 Educational Utilization of Community Resources.** A workshop providing an opportunity for teachers to acquire a detailed knowledge of community resources, construct teaching units utilizing these resources and assemble files of resource materials dealing with economic and social problems of the community.



500-4 Research Methods.	
501-0 to 4 Seminar in Educational Administration.	
502-4 Seminar in Comparative Education.	
502S-4 Seminar in Comparative Education: Soviet Russia.	C
503-0 to 4 Seminar in Philosophy of Education.	
504-4 Seminar in History of European Education.	
506-4 Seminar: Curriculum in Relation to American Culture.	
507-12 (4,4,4) The Twentieth Century and Education.	C
511-12 (4,4,4) Internship Practicum.	C
520-4 Illinois School Law.	
524-4 School Administration.	E
525-4 Personnel Administration.	E
527-4 to 6 Administrative Problems of Small Schools.	C
533-4 School Buildings.	
534A-4 School Finance.	
534B School Business Administration.	
535-4 Research in Problems of School Administration.	C
539-4 Community Development Through the School.	C
554-4 Contrasting Philosophies of Education.	
556-4 Seminar in Educational Supervision.	
560-4 Curriculum.	E
563-4 Workshop in School Public Relations.	
565-4 The Junior College.	E
575-1 to 4 Individual Research.	
576-1 to 4 Readings in Administration and Supervision.	C
589-2 to 12 General Graduate Seminar.	C
591-4 Seminar—Social and Philosophical Foundations.	C
596-5 to 9 Independent Investigation.	
597-1 to 3, 598-1 to 3, 599-1 to 3 Thesis.	C
600-1 to 48 Dissertation.	C

## ELEMENTARY EDUCATION

000-0 Reading and Study Techniques. A service course to aid students in improving reading and study skills. Time schedules, general principles of effective study, improving reading, making notes, etc.	C
100-3 Introduction to Elementary Education. A thorough investigation of the factors which are involved in teaching in the elementary school.	C
203-3 Understanding the Elementary School Child. Concepts needed to understand the child in the elementary school situation. Two hours lecture and two hours observation. Prerequisite: GSB 201c.	
309-3 Kindergarten-Primary Social Studies Methods. The objectives and methods of teaching social studies at the kindergarten-primary level, culminating in the planning of a unit of work. Prerequisite: 316.	C
314-4 Elementary School Methods. The fundamental principles of education, the interpretation of current educational theory and practice, the processes of teaching and learning involved in elementary education. Prerequisite: Guidance 305.	
316-4 Kindergarten-Primary Methods and Curriculum. Philosophy and principles underlying the teaching of four-to-eight-year-olds. Emphasis upon organization, equipment, materials and methods for promoting growth of young children. Prerequisite: Guidance 305.	
337-4 Reading in the Elementary Schools. The principles of reading, factors that condition reading, together with grade placement of aims and materials; diagnostic and remedial treatment. Prerequisite: 314.	
350B-4 to 16 Kindergarten-Primary Student Teaching.	C
350D-8 to 12 Kindergarten-Primary Student Teaching.	E
350E-4 to 8 Advanced Kindergarten-Primary Student Teaching. Prerequisite: 350D.	E
351A, 351B, 351C-4 to 16 Elementary Student Teaching.	C

- 351D-8 to 16 **Elementary Student Teaching.** E
- 351E-4 to 8 **Advanced Elementary Student Teaching.** Prerequisite: 351D. E
- 401-2 to 4 **Problems in Public School Reading.** Requirements: attendance at all sessions of a reading conference; preparation of a paper showing practical applications of theory to the student's own teaching situation. Summer. C
- 402-4 **Aerospace Education Workshop.** (See Secondary Education 402.) C
- 410-4 **Improvement of Instruction in Arithmetic in Kindergarten-Primary Grades.** Recent findings and current practices in building a basis for quantitative thinking in early childhood education. Special emphasis upon grade placement of content and of techniques to aid children in understanding of the number system. Prerequisite: Mathematics 210. C
- 411-4 **Seminar in Instruction.** To assist student teachers and in-service teachers in solving classroom problems. Involves clinical study and discussion of behavioral and learning situations, with special attention to the development of characteristics and needs of students. C
- 413-4 **Children's Literature.** Emphasizes types of literature, analysis of literary qualities, selection and presentation of literature for children. Not for students who have had English 213. Prerequisite: Guidance 305.
- 415-2 to 4 **Improvement of Instruction in Arithmetic in the Elementary School.** Items to be taught, the grade placement of content, newer instructional practices and materials of instruction, and means of evaluating achievement. Prerequisite: Mathematics 210 or consent of instructor.
- 430-3 **Workshop in Creative Writing in the Elementary School.** Techniques of encouraging creative writing in the elementary school. C
- 433-4 **Workshop in Kindergarten-Primary Education.** Meets needs of in-service teachers in such areas as curriculum adjustment, remedial teaching, child development, and early childhood education. No credit if student has had 333 or 390.
- 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 or education. Prerequisite: basic language credit.
- 437-4 **Problems in Reading.** Practices and trends in the teaching of reading; materials of instruction in reading, particularly remedial materials; techniques and materials for prevention of reading difficulties; diagnosis and remediation of reading difficulties. Prerequisites: senior standing, 337. Not open to students having had 505.
- 441-4 **Teaching Elementary Science.** A workshop course for teachers of elementary school science. C
- 442-4 **Science for the Elementary Teacher.** Study of content and methods of elementary school science.
- 443-4 **Workshop in Social Studies.** Material on critical areas of the world, not commonly emphasized in elementary social studies. Areas considered; significant geographical concepts, Asia, Africa, Russia, and Eastern Europe. Outstanding specialists in social science present their specialties. C
- 465-4 **Seminar in Psychology of Elementary School Subjects.** Psychological principles of learning applied to the mastery of materials used in elementary school subjects. Prerequisites: 314, Guidance 305.
- 490-2 to 3 **Workshop in Economic Education in Elementary Schools.** A study of newer programs stressing economic understandings of the social studies in the elementary school. C
- 505-4 **Improvement of Reading Instruction.**
- 507-2 to 4 **Readings in Reading.**
- 509-4 to 8 **Practicum in Reading.**
- 510-4 to 8 **Seminar: Problems in Reading.** C
- 514-4 **Organization and Administration of Reading Programs.**
- 515-4 **Special Problems in the Teaching of Arithmetic in the Elementary School.**
- 516-8 to 12 **Internship in Reading.** C
- 517-2 to 4 **Kindergarten-Primary Practicum.** C
- 518-2 **Supervision of Student Teachers.**

521-9 (3,3,3) (C); 521-3 to 4 (E). Diagnosis and Correction of Reading Disabilities.	
525-4 Kindergarten-Primary Seminar.	C
537-4 Kindergarten-Primary Reading.	C
541-4 Selected Teaching and Curriculum Problems in Elementary School Science.	
542-3 to 4 Language Arts in the Elementary School.	
543-4 Teaching the Social Studies in the Elementary School.	
557-4 The Elementary Principalship.	
558-3 to 4 Leadership in Elementary Education.	C
559-3 Workshop in Instructional Leadership.	
560-4 Kindergarten-Primary Education.	C
561-4 The Elementary School Curriculum.	
563-4 Organization of the Elementary School.	
570-4 Seminar, Research in Elementary Education.	C
575-2 to 4 Individual Research.	
596-5 to 9 Independent Investigation.	
597-1 to 3, 598-1 to 3, 599-1 to 3 Thesis.	C
600-1 to 48 Dissertation.	C

## ENGINEERING

- 222-3 Digital Computer Programming for Engineers.** Programming of digital computers in a problem-oriented language (FORTRAN). Problems solved will illustrate some of the elementary methods of numerical analysis. Prepares the student to use digital computers in later courses. Includes programming of a computational problem from inception to completion: formulation and analysis, flow charting, coding, check-out, documentation. Prerequisite: Mathematics 150b. C
- 260-9 (3,3,3) Analytical Mechanics.** (a) Resultants of force systems, algebraic and graphical conditions of equilibrium of force systems; analysis of forces acting on members of trusses, forces due to friction; centroids. (b) Displacement, velocity, and acceleration of a particle; translation, rotation; plane motion. (c) Solutions using the principles of force, mass and accelerations, work and energy, and impulse and momentum. Must be taken in a,b,c sequence. Prerequisite: Mathematics 150b, or concurrently. C
- 300-9 (3,3,3) Thermodynamics.** (a) The study of fundamental energy concepts and the laws of thermodynamics, availability of energy, properties of gases, vapors and gas-vapor mixtures, flow and non-flow processes. (b) Engine cycles and applications to internal combustion engines, gas turbines, steam turbines, jet devices, air compressors, and air engines. Combustion refrigeration and air conditioning. (c) Axiomatic thermodynamics, criteria for equilibrium; absolute temperature; Maxwell's relations; open systems; the phase rule; systems of one and two components; idealized systems; equations of state; systems involving chemical and electrochemical equilibrium. Must be taken in a,b,c sequence. Prerequisite: Mathematics 252a. C
- 302-6 (3,3) Heat and Mass Transfer.** (a) Dimensional analysis and its application to the theory of heat transfer. Mathematical and graphical methods of analyzing problems in conduction, convection, and radiation. Particular attention to the applications of heat transfer principles used in various processes. (b) A study of the theory related to all types of heat power equipment. The design calculations for various components of heat power machines such as steam and gas turbines, air compressors, pumps, refrigeration, and air conditioning equipment. Must be taken in a,b, sequence. Prerequisite: 300a,b. C
- 305-12 (3,3,3,3) Architectural Engineering Design.** (a) An introduction to the profession of architecture; work illustrating basic architectural forms and their organization. (b) A study of architectural planning, composition, and sketching. (c) A study of the fundamentals of architectural design. (d) A study of architectural planning of contemporary architectural problems. Must be taken in a,b,c,d sequence. Prerequisite: 260a,b,c. C
- 311-9 (3,3,3) Engineering Materials.** (a) Stress and strain in the elastic as well as



the plastic states. Failure theories. Elastic and plastic torsion. Thick cylinders and rotating discs. Energy methods. Beams on elastic foundations. Introduction to plates and shells. Limit design. (b) Mechanics of continua for elastic, plastic, viscoelastic, and creeping materials, limit analysis, applications to brittle, ductile, and transitional modes of fracture, to creep, fatigue, friction, and wear. Laboratory emphasizing student-planned projects. (c) Physical and chemical properties of all types of materials; influence of these properties on behavior of materials under various structural, magnetic, dielectric, heat, and other environmental conditions. Laboratory. Must be taken in a,b,c sequence. Prerequisite: 260a,b,c. C

**313-6 (3,3) Fluid Mechanics.** (a) A broad introduction to concepts, principles, and methods of fluid dynamics. Model and properties of the continuum. Continuity, momentum, and energy equations for the system and the control volume. Kinematics of fluid motion. Equations of motion of nonviscous fluid, and their integration. Potential flows. Navier-Stokes equations for viscous fluids, and applications. Boundary layers, turbulence, and drag. Lift, dimensional reasoning, and similitude. (b) Introduction to theoretical fluid mechanics. Forces on floating and submerged bodies, equations of motion, dynamic similarity, laminar and turbulent flow, skin friction, flow resistance in conduits, cavitation and propulsion, drag, circulation and principles of turbomachinery. Must be taken in a,b sequence. Prerequisite: 260a,b,c. C

**321-9 (3,3,3) Physical Metallurgy.** (a) The elementary physics of metals, constitutional diagrams, equilibrium and non-equilibrium conditions. The properties of metals and alloys as related to structure. (b) A study of the internal structure, treatment, and properties of iron, plain carbon steel, and cast iron. (c) Properties of x-rays and x-ray diffraction; the structure of polycrystalline aggregates of alloys; precise lattice-parameter measurements; chemical analysis by x-rays; measurement of grain sizes; pole figures and orientation determinations; determination of phase diagrams with x-rays; superlattices; the structure of cold-worked metal and preferred orientations resulting from cold work and after annealing; orientations in castings and deposited films. Laboratory. Must be taken in a,b,c sequence. Prerequisite: 311a. C

**331-12 (4,4,4) Circuit and Field Theory.** (a) Introduction to the theory of circuits. Study of network theorems, sources of electrical energy, basic electric measurements, magnetic circuits. (b) Solution of electric and magnetic fields of simple geometry. Study of Coulomb's Law, Gauss' Theorem, Maxwell's equations for static fields by vector methods. (c) Vector analysis, electrostatics, space charge flow, steady magnetic fields, Maxwell's equation, uniform plane waves, circuits concepts, transmission lines, dipole radiation, field theory of rotating machinery and transformers. Laboratory. Must be taken in a,b,c sequence. Prerequisite: Mathematics 252b. C

**333-9 (3,3,3) Electrical Energy Conversion.** (a) The principles and physical aspects of electromechanical energy conversion and the basic concepts of machine performance; analysis and performance of D.C. machines. (b) Basic theory of transformers, analysis of performance of synchronous and induction machines. (c) Analysis of performance of fractional-horsepower motors, control-type generators and self-synchronous machines, dynamics of electromechanically-coupled systems, magneto-hydrodynamics, and other energy conversion methods. Laboratory. Must be taken in a,b,c sequence. Prerequisite: 331a,b,c. C

**334-9 (3,3,3) Microwave and Antenna Theory.** An advanced study of electromagnetic fields, a study of the modes of propagation of electromagnetic energy of short wave length through guided ducts and the radiation of this energy into space. Laboratory. Must be taken in a,b,c sequence. Prerequisite: 331a,b,c. C

**335-9 (3,3,3) Electronics.** (a) An introduction to electronics for all students of engineering. A foundation for more advanced studies in electronics. (b,c) Electron tube theory, amplifiers, modulation, vacuum tube and transistor circuits. Laboratory. Must be taken in a,b,c sequence. Prerequisite: 331a,b,c. C

**341-3 Mechanical Vibrations.** Equations of motion applied to systems with free and forced vibrations, damping, multiple-degrees of freedom. Applications to engines and rotating machinery. Prerequisite: 260a,b,c, Mathematics 252b. C

**343-9 (3,3,3) Engineering Design.** Projects of a research design or development nature. The student will select a problem, develop the theory for a solution, check

the theory experimentally, analyze the data, and compare the results. The project can be from one to three quarters in length. Laboratory. Must be taken in a,b,c sequence. Prerequisites: 300, 311, 331(a,b,c). C

**344-9 (3,3,3) Structures.** (a) Analysis of statically determined structures under stationary and moving loads. Application of the theory of statically determinate structures to stress and deflection computations. (b) Fundamental theory of statically indeterminate structures to the evaluation of deformations, reactions and moments in continuous structures. (c) Introduction to design. Must be taken in a,b,c sequence. Prerequisite: 260a,b,c. C

**346-6 (3,3) Concepts of Energy Release.** (a) A study of various energy conversion principles. The theory and application of energy release to conventional devices. (b) Thermodynamics analysis of low temperature phenomena. Solar energy and the concepts of thermonuclear power. Must be taken in a,b sequence. Prerequisite: 300a,b,c. C

**350-6 (3,3) Analog and Digital Computer Design.** An introduction to the design of analog and digital computers. Subjects include: operational amplifiers, multiplying circuits, regulated power supplies, Boolean algebra, switching circuits, memory devices. Not a course in programming. Must be taken in a,b sequence. Prerequisites: 335, Mathematics 252b. C

**351-6 (3,3) Electromechanical Design.** Develops and makes use of the mechanical and electrical knowledge of the student in the synthesis of complete control systems, to train students for careers in creative automation. Must be taken in a,b sequence. Prerequisite: 335a,b,c. C

**352-6 (3,3) Electronic Device Design.** (a) Helps students use the latest electronic devices in designing circuits and equipment. (b) The use of tunnel diodes, lasers, masers, traveling wave tubes in the design of equipment. Emphasis will be on total design concept. Laboratory. Must be taken in a,b sequence. Prerequisite: 335a,b,c. C

**361-4 Engineering Economics.** (Same as Engineering Technology 361.) A study of factors and methods involved in selecting the most economical and feasible plan in industrial and engineering ventures considering both the business and technical aspects involved. Prerequisite: junior standing.

**370-4 Theory of Stochastic Processes.** Concept of a stochastic process. Renewal theory. Markov processes with application to reliability of systems, queues, and other problems of engineering interest. Related statistical problems. Prerequisite: 300a,b,c. C

**401-9 (3,3,3) Principles of Propulsion.** (a) The basic principles of propulsion dynamics. (b) The thermodynamics of fluid flow and application to propulsion engines. (c) An extensive treatment of the technological problems in the design of propulsion systems. Must be taken in a,b,c sequence. Prerequisite: 300a,b,c. C

**406-3 Statistical Mechanics.** Introductory subject for graduate engineering students. Classical mechanics of systems of particles and motion in phase space. Quantum mechanical concepts and energy of microscopic systems. Most probable distribution. Determination of thermodynamic properties of gases, crystals, black body radiation field. Fluctuation theory. Application to plasmas, thermionics, masers, cryogenics. Prerequisites: 461, Mathematics 305b. C

**412-9 (3,3,3) Engineering Practice.** (a) Written communication encountered in engineering organizations; correspondence, memoranda, technical papers, specifications, and reports. Lectures, conferences, and frequent written assignments are adapted to the individual needs of each student. (b) The law of contracts with enough emphasis on legal procedure to enable students to understand decided cases. The study of the legal material will be followed by practice in applying some of the principles. (c) Research methods. Prerequisite: 361. C

**413-6 (3,3) Intermediate Mechanics of Fluids.** (a) Application of the basic laws of nature to the theory of fluids using the continuum approach. Kinematics of fluid motion using various coordinate systems. Dynamics of viscous fluid motion with some solutions to the fundamental system of equations. (b) Vorticity, stream functions and the velocity potential. Incompressible irrotational flow. The compressible flow equations and an introduction to the theory of homogeneous turbulence. Must be taken in a,b sequence. Prerequisites: 313a,b, Mathematics 305A. C



**415-9 (3,3,3) Water Supply and Waste Water Disposal.** (a) A study of the principles involved in the collection, storage, treatment, and distribution of water for its myriad uses. (b) The fundamental principles involved in waste water treatment and disposal. (c) Application of basic concepts to unit process design and operation for both water and waste water treatment facilities. Must be taken in a,b,c sequence. Prerequisite: consent of instructor. C

**420-9 (3,3,3) Transport Phenomena.** (a) Mechanism of heat, mass and momentum transport on both molecular and continuum basis. Estimation of transport properties. Generalized equations of transport in one or three dimensional system. (b) Interphase transport in isothermal and nonisothermal systems. Unsteady state transport problems in multicomponent systems. Mechanism ratio analysis. Analogy of mass, heat and momentum transfer. (c) Macroscopic balances, diffusion operations, penetration theory, simultaneous mass and heat transfer, equilibrium operations. C

**422-4 Operations Research and Mathematical Model Formulation.** C

**423-3 Hybrid Computation.** The simultaneous use of the analog and the digital computer for the solution of engineering problems. Scaling of problems. Block diagrams and logic are stressed. Linear and non-linear differential equations. Simulation as well as iterative analog computation are covered. Prerequisites: 222 or Mathematics 225. C  
**439-6 (3,3) Transient Analysis.** A study of electrical and mechanical networks by means of the Laplace Transform. Theoretical vibration problems in the real and complex time domain, as they apply to engineering will be discussed. Prerequisites: 335a,b,c, Mathematics 305b. C

**445-9 (3,3,3) Structural Design.** (a) General principles of structural design. Probabilities of failure or unserviceability. Factor of safety. Ultimate versus elastic design. Stress control and erection of indeterminate structures. Economics and preliminary planning of structures. Approximate analysis of beams, trusses, frames, and slabs. Preliminary design of intermediate structures. (b) Consideration of behavior and modes of failure of typical metal structures, structural components, and connections as affected by design features, service conditions, and material properties. Comprehensive review of methods of plastic analysis and design of steel structures. Correlation of buckling behavior of structures and structural members with buckling criteria and requirements. (c) An introduction to the design of reinforced concrete structures, behavior of beams, columns and frames, proportioning of members. Laboratory. Must be taken in a,b,c sequence. Prerequisites: 311a,b,c, 344a,b,c. C

**446-9 (3,3,3) Mechanical Energy Conversion.** (a) Modern power plant cycles, pumps, fans, fuels, steam generator boiler auxiliaries, and heat exchangers. (b) A detailed study of the design and operation of steam turbines. (c) The theory and design of gas turbines and jet engines. Must be taken in a,b,c sequence. Prerequisite: 346a,b. C

**460-8 (4,4) Engineering Analysis for Decision Making.** (a) An analytical approach to economic aspects of professional engineering practice. Fundamental techniques for economy studies including cost control, investment studies, replacement theory, depreciation, valuation and taxation. (b) Tools for developing qualitative and quantitative models for decision-making based on concepts of operations research and game theory. Application of these concepts to problems in marketing, production, and administration. Prerequisites: Mathematics 252b and Engineering 361, or consent of instructor. C

**461-6 (3,3) Advanced Mechanics.** (a) Stress and strain at a point in three dimensions. Introduction to the theory of elasticity with examples of solutions in two dimensions. Consideration of bending of flat plates; energy methods in elasticity; elastic stability problems. (b) The foundation of dynamics leading to Lagrange's equations and Hamilton's principle. Gyroscopic effects in mechanical systems. Analysis of the stability of steady motions. Self-excited vibrations and non-linear vibrations. Must be taken in a,b sequence. Prerequisite: 260a,b,c. C

**462-6 (3,3) Theory of Elasticity.** (a) The linear theory of homogeneous, isotropic; elastic media. Analysis of stress and strain. (b) The solution of differential equations of elasticity by numerical inverse, energy, and complex variable methods. Must be taken in a,b sequence. Prerequisite: 461. C

**502-9 (3,3,3) Advanced Heat Transfer.** C



503-9 (3,3,3) Heating and Cooling Systems.	C
510-9 (3,3,3) Electromagnetic Fields.	C
511-6 (3,3) Quantum Electronics.	C
512-8 (4,4) Continuum Mechanics.	C
513-9 (3,3,3) Fluid Mechanics.	C
516-4 Water Resource Development.	C
517-12 (4,4,4) Analysis and Design of Engineering Systems.	C
520-9 (3,3,3) Reaction Engineering and Rate Processes.	C

## ENGINEERING TECHNOLOGY

**301-9 (3,3,3) Refrigeration and Air Conditioning.** (a) Discussion of refrigerating cycles. Refrigeration at more than one level. Operation and ratings of various types of compressors, evaporators, condensers, and automatic controls used in commercial refrigerating systems. Heat flow problems in condensers, evaporators, and cooling towers. (b) Control of temperature and humidity in buildings, or other large areas. Air handling equipment, duct systems, and air distribution within the space. Fundamental principles and techniques for cooling and dehumidification for comfort. Equipment and control systems. (c) Physiological aspects of air conditioning. Air and water vapor mixtures, load estimates for heating, boilers, radiators, and heating systems. Complete and part air conditioning systems, including air handling equipment. Must be taken in a,b,c sequence. Prerequisite: Engineering 300a. C

**303-9 (3,3,3) Electronics Technology.** A study of the application of electrical and electronic controls to the generation and regulation of power conversion. Laboratory. Must be taken in a,b,c sequence. Prerequisite: 304a,b,c. C

**304-9 (3,3,3) Electrical Circuits.** The principles of electrical science as applied to modern industry. A study of magnetic circuits. Principles of D.C. and A.C. circuits. The fundamental laws of current flow. Laboratory. Must be taken in a,b,c sequence. Prerequisite: Mathematics 252a. C

**308-9 (3,3,3) Machine Design.** (a) Applications of the principles of mechanics to problems of design and development, mechanisms for specific functions, dynamic effects and friction in mechanisms. (b) Strength and safety considerations in design of machine parts. Fatigue and stress concentrations; power transmissions, bearings, brakes, clutches, and springs. (c) Combined stresses; helical, bevel, and worm gearing; curved beams, thick cylinder and flat plates; high-speed cams. The student puts previous studies into practice by design of a complete machine. Laboratory. Must be taken in a,b,c sequence. Prerequisite: Engineering 260a,b,c. C

**310-9 (3,3,3) Construction Mechanics.** (a) A study of construction methods, the forces involved in the management of machinery and manpower. (b,c) The dynamics of estimating, scheduling and controlling procedures. Must be taken in a,b,c sequence. Prerequisite: Engineering 260a,b,c. C

**314-9 (3,3,3) Soil Mechanics.** (a) Mechanics of soil masses; soils as engineering materials. Soil identification and testing. (b) Shearing resistance and consolidation of soils, deformations with an analytical review of the theoretical concepts, results of laboratory materials, including cement, foundation, and surfacing materials. Use of X-ray diffraction and Debye-Scherrer camera equipment. Influence of mineral constituents on soil behavior and design. Laboratory. Must be taken in a,b,c sequence. Prerequisite: Engineering 311a,b,c. C

**318-6 (3,3) Hydraulics.** (a) The fundamentals of fluid statics, open channel flow and flow measuring equipment. (b) The design of fluid machinery. Analysis of hydraulic and pneumatic systems for response characteristics. Response studies on pumps, motors, and valves. Laboratory. Must be taken in a,b,c sequence. Prerequisites: Engineering 260a,b,c, 300a. C

**320-9 (3,3,3) Mechanical Engineering Laboratory.** (a) A study of various types of measuring instruments. (b) Fuels and lubricants testing and exhaust gas analysis. (c) A study of the characteristics of internal combustion engines, steam turbines, compressors, pumps, fans, and refrigeration systems. Report writing. Laboratory. Must be taken in a,b,c sequence. Prerequisite: Engineering 300a. C

**322-6 (3,3) Internal Combustion Engines.** (a) The design and principles of opera-

tion of internal combustion engines. The Otto, Diesel, and Brayton cycles and the fundamental thermodynamic laws involved. (b) Theories of combustion and detonation, combustion charts, fuels, and air tables. Effects of chemical equilibrium and variable specific heats. Cetane and octane numbers; carburetion and injection. Must be taken in a,b sequence. Prerequisite: Engineering 300b. C

**332-9 (3,3,3) Electrical Machinery.** (a) Introduction to direct and alternating current machinery. Theory and operating characteristics. (b) Advanced studies on polyphase alternators, motors, machinery, and power generation. Laboratory. Must be taken in a,b,c sequence. Prerequisite: 304a,b,c. C

**336-9 (3,3,3) Electrical Measurements.** (a) Theory and use of D.C. and A.C. instruments; analysis of sensitivity, accuracy, precision, and error. (b) A study of ammeters, voltmeters, and wattmeters. Energy measurements, watt-hour and demand meters. (c) Theory and application of impulse testing; oscillography; standards and tests. Laboratory. Must be taken in a,b,c sequence. Prerequisite: 304a,b,c. C

**337-9 (3,3,3) Manufacturing Processes.** (See Industrial Technology 337.) C

**338-12 (4,4,4) Electrical Instrumentation.** (a) A discussion of the basic operating principles of control instruments and their applications to industrial processes. (b) The application of commercially available instruments to research problems. Dynamic and static calibration of instruments. (c) Control elements and techniques for devices and processes, dynamics of open and closed cycle control systems. Laboratory. Must be taken in a,b,c sequence. Prerequisite: 304a,b,c, 318a,b. C

**340-4 Mechanisms.** The movement of bodies in space, basic mechanisms including analytical and graphical analysis. Linkages, cams, gears and their manufacture. Vibration, critical speeds, and gyroscopic applications. Laboratory. Prerequisite: Engineering 260a,b,c. C

**342-9 (3,3,3) Engineering Technology Design.** An elective project on any engineering subject selected by the student with advice from the instructor. Stimulates original thought and creativity. Laboratory. Must be taken in a,b,c sequence. Prerequisite: 304a,b,c, Engineering 300a,b, 311a,b,c. C

**347-9 (3,3,3) Foundation Engineering.** (a) Subsurface investigation, theory of consolidation and settlement, strength theory and conditions of failure due to stresses imposed by engineering structures on foundation materials. (b) Study of the principal problems involved in the analysis, design, and construction of foundations for buildings, highways and other engineering structures. (c) Science of soil stabilization, utilization of stabilization agents, stabilization of foundation materials. Laboratory. Must be taken in a,b,c sequence. Prerequisite: 314a,b,c. C

**349-9 (3,3,3) Agricultural Design.** (a) Analysis of factors affecting farm buildings, functional planning and structural design of various farm buildings. (b) Analytical study of operating characteristics of selected farm equipment and machinery. (c) Analysis of distribution, lighting, motors, and controls as applied to agriculturally related operations. Laboratory. Must be taken in a,b,c sequence. Prerequisites. 304a,b,c, Engineering 300a,b, 311a,b,c. C

**361-4 Engineering Economics.** (See Engineering 361.) C

**363-12 (4,4,4) Surveying.** (a) The use and care of surveying instruments. Fundamental principles of surveying, computations, land surveying, topographic surveying data processing. (b) Field astronomy, route surveying, introduction to photogrammetry, hydrographic surveying, and subsurface surveys. (c) Precise surveying, geodesy, altimetry analysis of errors and error propagation, conditioned and adjusted by method measurements of least squares and other methods. Laboratory. Must be taken in a,b,c sequence. Prerequisites: Technology 101a,b and GSD 114c. C

**364-6 (3,3) Highway Engineering.** (a) Applications of route surveying and photogrammetry to highway location and design. Highway administration, planning, economics and finance; geometric design; traffic engineering; drainage; sub-grade; base courses; design and construction of flexible and rigid pavement. (b) Advanced highway surveying; applications of interpretation of aerial photographs; geometric highway design, traffic engineering, bituminous materials and airport design and engineering. Laboratory. Must be taken in a,b sequence. Prerequisite: 363a, 314a (concurrently). C



**426-9 (3,3,3) Photogrammetry.** (a) Principles and practice of terrestrial and aerial photogrammetric mapping, including planning flights, control surveys, uncontrolled mosaics, radial-line control, simple stereoplotting instruments, parallel distortions, graphical tilt determination, trimetrogon charting and economics. (b) An advanced study of photogrammetric principles including controlled mosaics, rectification, graphical, mechanical, and analytical space orientation. Readings and reports from current technical literature. The principles of many photogrammetric plotters are studied together with economic relation of these instruments to density of field control, office methods, and personnel. (c) A study of the soil and rock areas of the United States and the patterns present in aerial photographs. Fundamental elements of soil patterns are analyzed to permit determination of materials present and their properties. Emphasis is placed on photo interpretation for engineering and regional planning purposes. Laboratory. Prerequisite: 363A. C

**437-9 (3,3,3) Industrial Electronics and Communications.** Theory of active networks; radio communication, radar, television. Prerequisite: 304a,b,c. C

## ENGLISH

**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. C

**300-4 Principles of English Grammar.** Required for English students. Others should take 391. Credit not allowed for both courses.

**GSC 301-3 Introduction to Semantics.** C

**302-12 (4,4,4) Survey of English Literature.** (a) to 1550, (b) 1550-1750, (c) after 1750. May be taken in any sequence.

**309-8 (4,4) Survey of American Literature.** (a) to 1860, (b) since 1860. May be taken in either sequence.

**GSC 313-3 Folklore.** C

**GSC 317-3 Recent American Literature.** C

**GSC 318-3 Modern British Literature.** (Summer, abroad.) C

**320-4 Early Nineteenth-Century Poetry.** E

**GSC 321-3 Revolution and Romanticism.** C

**GSC 335-3 Studies in Short Fiction.**

**GSC 345-3 World Literature.** C

**GSC 365-3 Shakespeare.** C

**365-4 Shakespeare.** E

**390-3 Advanced Composition.** Expository writing.

**391-3 Usage in English.** The essentials of grammar and the "common decencies." Prerequisite to student teaching, except in English concentrations, which require 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 introduction to the methods of descriptive linguistics as applied to English: the phonemics, morphemics, and syntax of English. Recommended for those preparing to teach English.

**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.

**404-8 (4,4) Middle English Literature.** (a) Contemporaries and successors of Chaucer: late 14th and early 15th century English literature, from *Sir Gawayne and the Grene-Knight* to the Scottish Chaucerans, (b) Chaucer. May be taken singly.

**405-8 (4,4) Descriptive Linguistics.** (a) Phonetics and phonemics, an analysis of language structure from phone to phoneme; (b) morphology and syntax, an analysis of language structure from morph to sentence, with emphasis on immediate constituent analysis. May be taken singly. Prerequisite: consent of instructor.

**412-12 (4,4,4) English Nondramatic Literature.** (a) 16th century, (b) 17th century, (c) 18th century. May be taken singly.



**420-8 (4,4) American Poetry.** (a) Trends in American poetry to 1900 with a critical analysis of the achievement of the more important poets, (b) the more important poets since 1900. May be taken singly. Prerequisite: 309a or 309b.

**421-16 (4,4,4,4) English Poetry.** (a) Early Romantics: major emphasis on general background and on Blake, Coleridge, and Wordsworth; (b) later Romantics: emphasis on Byron, Shelley, and Keats, the minor figures; (c) Victorian poets: Tennyson, Browning, Arnold, and other poets of England, 1830-1900; (d) modern British poets. May be taken singly.

**431-12 (4,4,4) Major American Writers.** Significant writers of fiction and non-fictional prose from the Puritans to the 20th century. (a) 1620-1800, (b) 1800-1865, (c) 1865-1915. May be taken singly.

**438-4 Intellectual Backgrounds of American Literature.** The relationship of basic ideas in America to American literature. Prerequisite: 309a or 309b.

**441-4 The 18th 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: 302c.

**447-4 American Humor and Satire.** A consideration of the writers and forms of 19th and 20th century humor.

**454-12 (4,4,4) English Fiction.** (a) 18th century: Defoe through Jane Austen, (b) Victorian novel: 1830-1900, (c) 20th century. May be taken singly.

**456-4 Modern Continental Fiction.** Selected major works of European authors such as Mann, Silone, Camus, Kafka, Malraux, Hesse.

**458-8 (4,4) American Fiction.** (a) The novel in America from its beginnings to the early 20th century, (b) trends and techniques in the American novel and short story since 1914. May be taken singly.

**460-16 (4,4,4,4) British Drama.** (a) Elizabethan drama: from the beginning of the drama in late Middle Ages through its flowering in such Elizabethan playwrights as Greene, Peele, Kyd, Marlowe, Heywood, Dekker, but excluding Shakespeare; (b) Jacobean drama: the Jacobean and Caroline playwrights: Jonson, Webster, Marston, Middleton, Beaumont and Fletcher, Massinger, Ford, Shirley; (c) Restoration and 18th century drama: after 1660, representative types of plays from Dryden to Sheridan; (d) modern British drama. May be taken singly.

**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: 309a or 309b.

**471-8 (4,4) Shakespeare.** (a) The plays before 1600, (b) the plays of 1600 and later. Readings on the life of Shakespeare, the theater, and the acting company. May be taken singly.

**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 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 on the teaching of English in junior high school. Curriculum, materials, methods, aims. Directed by competent authorities in the field.

**488-9 (3,3,3) Methods of Teaching English as a Foreign Language.** (a) Classroom techniques, (b) laboratory methods, (c) preparation of materials. Restricted to English as a Foreign Language students and must be taken in a,b,c sequence.

**492-8 (4,4) Professional Writing II.** Must be taken in a,b sequence. Prerequisite: 392 or consent of instructor.

**494-4 Literature in Society.**

**495-8 (4,4) Literary Criticism.** (a) History of criticism: ideas and techniques from

Aristotle to the end of the 19th century, (b) modern criticism: recent critics and critical attitudes, and practice in writing criticism.

497-12 (4,4,4) **Senior Honors Seminars.** (a,b) Topic will vary yearly, (c) honors readings. Enrollment restricted to undergraduates. Prerequisite: consent of department.

499-2 to 6 **Readings in English.** For English students only. Departmental approval required. No more than four hours may be taken in any one quarter.

500-2 **Materials and Methods of Research in English.**

501-4 **Old English Grammar.**

502-4 **Beowulf.**

504-4 **Advanced English Syntax.**

505-4 **Contrastive Linguistic Structures.**

508-4 or 8 **Studies in Chaucer.**

509-4 or 8 **Studies in Middle English Literature.**

511-4 or 8 **Studies in the Renaissance.**

513-4 or 8 **Studies in 17th Century Literature.**

514-4 or 8 **Studies in Restoration and 18th Century Literature.**

519-4 or 8 **Studies in Contemporary British Literature.**

520-4 or 8 **Studies in Romantic Writers.**

521-4 or 8 **Studies in Victorian Poetry.**

524-4 or 8 **Studies in the Metaphysical Poets.**

531-4 or 8 **Studies in American Colonial Period.**

E

532-4 or 8 **Studies in American Transcendentalism.**

534-4 or 8 **Studies in Early 19th Century American Writers.**

536-4 or 8 **Studies in Later 19th Century American Writers.**

537-4 or 8 **Studies in 20th Century American Writers.**

538-4 or 8 **Problems in American Literature.**

540-4 **Studies in Linguistics. (Historical and Dialectal.)**

E

543-4 or 8 **Studies in Victorian Nonfiction Prose.**

555-4 or 8 **Studies in the Victorian Novel.**

560-4 or 8 **Studies in Renaissance Drama.**

566-4 or 8 **Studies in Shakespeare.**

569-4 **Seminar in Special Problems of English as a Foreign Language.**

579-16 (4 or 8, 4 or 8) **Studies in Modern Literature.**

580-4 **Traditional Themes.**

581-12 (4,4,4) **Problems in High School English.**

585-2 to 8 **Teaching College Composition.**

C

586-4 to 8 **Teaching College Literature.**

C

594-8 (4,4) **Studies in Literary Form and Symbolic Action.**

C

597-2 to 4 **Readings in Linguistics.**

598-1 to 9 **Independent Review of English and American Literature.**

599-2 to 9 **Thesis.**

600-1 to 48 **Dissertation.**

C

## FOOD AND NUTRITION

103-4 **Nutrition.** Principles of normal nutrition, including the essentials for selecting and planning the family dietary with some emphasis on the needs for varying ages, economic and social conditions. This course meets the requirements for nursing. Not open to students with concentration in home economics. Prerequisite: Chemistry 101b,c.

C

105-4, 206-4 **Foods.** Production, marketing, food preservation, preparation and service of foods common to family meals.

C

247-6 (2,2,2) **The School Lunch Program.** Lecture, discussion, and demonstration of quantity food production, menu-making, institutional equipment, record-keeping, administration, and sanitation as they apply to the school lunchroom. Emphasis on the needs and problems of the school lunch personnel. May be taken in any sequence.

C

- 312-4 Nutrition and Food Selection.** Fundamentals and principles of normal nutrition with emphasis on food selection to meet the nutritional needs of adults and children. Not for those specializing in Food and Nutrition. C
- 316-3 to 4 Food Preservation.** Newer methods in the canning, preserving, and freezing of foods for home use. Prerequisites: 105, 206, or consent of instructor. C
- 320-4 Nutrition.** Principles of normal nutrition and metabolism, food values, and requirements for maintenance and growth. Prerequisites: 105, 206; Chemistry 101b,c. C
- 321-3 Food Demonstration.** A course offering opportunity to discuss, observe, and practice demonstrations. Emphasis on food standards and demonstration techniques. Field trip. Prerequisites: 105, 206. C
- 335-4, 336-4 Meal Planning and Table Service.** The planning, preparing and serving of formal and informal meals. Selection and care of table appointments. 336 does not include laboratory work and is offered on demand. Students may not take both courses. Prerequisites: 105, 206, or consent of instructor. C
- 340-4 Diet Therapy.** Modifications of the normal diet for therapeutic purposes. Prerequisite: 320. Offered alternate years. C
- 350-3 Institutional Equipment and Layouts.** Materials, construction, operation, cost, use of equipment, and analysis of floor layouts for efficient work routing in various types of institutions doing group feeding. Field trips. Prerequisite: 352a. Offered alternate years. C
- 351-3 Organization and Management.** Planning, direction, supervision, control of time, labor, and money in the operation of feeding large groups. Field trips. Prerequisite: 350. Offered alternate years. C
- 352-11 (4,4,3) Quantity Food Production.** Use of standardized formulas, power equipment, and techniques for preparation and service of food to large groups, and calculation of food costs for uniform control. Emphasis in the second course is on tearoom management and in the third on school lunchroom management. Prerequisites: 105, 206, or equivalent. Offered alternate years. C
- 355-3 Food Purchasing for Institutions.** Producing areas, distribution, varieties, cost, specifications, buying practices, storage, and storeroom control for institution food supplies. Field trips. Offered alternate years. C
- 356-4 Experimental Foods.** Advanced food preparation from the experimental standpoint, showing how ingredients, proportions, and techniques affect the quality of the product. Prerequisites: 105, 206, Chemistry 101b,c. Offered alternate years. C
- 359-4 Advanced Nutrition.** Reports and discussion of normal nutrition and metabolism. Prerequisite: 320. Offered alternate years. C
- 371-6 Field Experience.** Opportunity for supervised learning experiences in the student's area of concentration. C
- 376-4 Workshop in Health and Nutrition.** (Same as Health Education 376.) Investigation of food, nutrition, sanitation, and other health problems of community quantity feeding programs. C
- 404-4 Personal and Community Nutrition.** The role of food and nutrition in personal and community health and in emergency feeding programs. Field trips. Prerequisite: 320 or equivalent. C
- 481-2 to 6 Readings.** Supervised readings for qualified students. Prerequisite: consent of instructor and chairman of department. C
- 490-4 Nutrition and Physical Growth.** Lectures, readings, and discussions on nutrition in relation to human growth—pregnancy through adolescence—and its practical applications. Prerequisite: 320 or consent of instructor. C
- 500-4 Research Methods.** C
- 515-1 to 6 Seminar.** C
- 556-4 Advanced Experimental Food.** C
- 571-4 Recent Research.** C
- 572-2 to 8 Special Problems.** C
- 580-4 Recent Developments in Nutrition.** C
- 581-4 Recent Trends in Foods.** C
- 599-5 to 9 Thesis.** C



## FOREIGN LANGUAGES

The student who has completed one year of foreign language in high school will usually begin with the first quarter of the first year course which is in General Studies. The student who has completed two years of high-school foreign language will usually begin with the intermediate course.

Students taking work in any first year college foreign language series should note that the first two terms will not be counted as electives toward graduation unless the third term is also completed.

### GENERAL FOREIGN LANGUAGE COURSES

**399-3 to 9 Readings.** Readings in selected works of representative writers. Offered in French, Spanish, and German. May be taken for one, two, or three quarters. Primarily for students with no foreign language concentration, but may be taken for credit in foreign language concentration with consent. Prerequisite: 201. E

**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.

**486-8 (4,4) Materials and Methods for Teaching Foreign Languages.** Application of language learning principles to classroom procedures at different levels. Theory and practice of the audio-lingual approach, the language lab, applied linguistics. Required for all majors intending to teach foreign languages. Prerequisite: one quarter of any 300-level course, or consent. E

### CHINESE

**120-3 (1,1,1) Chinese Conversation.** Conversation and oral drill taken with GSD 120 by students who wish additional oral training: elected only by students enrolled in GSD 120. C

**201-15 (5,5,5) Intermediate Chinese.** Designed to give the students a review of the Chinese language and its expansion, a reading ability of modern prose, and practice in conversation and composition. Must be taken in a,b,c sequence. Prerequisite: one year of college Chinese (GSD 120c) or equivalent. C

### FRENCH

**123-3 (1,1,1) French Conversation.** Conversation and oral drill taken with GSD 123 by students who wish additional oral training: elected only by students enrolled in GSD 123. Parts may be taken singly.

**161-0 French for Graduate Students.** Intensive study of grammar and vocabulary. Designed for graduate students desiring a reading knowledge of French. C

**201-9 (3,3,3) Intermediate French.** Composition, oral practice, rapid reading of modern authors with special attention to the role of French culture in world civilization. Must be taken in a,b,c sequence. Prerequisite: GSD 123 or two years of high school French, or equivalent.

**220-6 (2,2,2) Intermediate French Conversation.** Development of oral skill on the intermediate level. Offered for 3 quarters at 2 hours per quarter; may be taken for credit each time. Prerequisite: 201c or concurrent registration in any quarter of 201.

**301-12 (4,4,4) French Literature from the 18th Century to the Contemporary Period.** (a) Montesquieu, Voltaire, Diderot, Rousseau, and others, with reference to the social, political, and philosophic environment of the 18th Century. (b) Nineteenth Century Romanticism, Realism, and Naturalism. (c) Representative works of the 20th Century with special emphasis on the novel and drama. Parts may be taken separately. Prerequisite: 201 and one quarter of 220. E

- GSC 305-3 **Contemporary French Drama.** C
- 310-9 (3,3,3) **Survey of French Literature.** French literature from the beginning to the present time. Should be taken in a,b,c sequence. Prerequisite: 201c. C
- 311-9 (3,3,3) **French Culture and Civilization.** Analysis of significant aspects of French culture designed to improve intercultural understanding and to develop language skills. Oral discussions, readings, written reports, and laboratory practice. Prerequisite: 201 and one quarter of 220. Parts may be taken separately. E
- 320-6 (2,2,2) **Advanced Conversation.** Conversation based on French history. Should be taken in a,b,c sequence concurrently with 311a,b,c. C
- 338-12 (4,4,4) **French Literature from the Middle Ages Through the 17th Century.** (a) French literature from *La Chanson De Roland* to Francois Villon with special reference to the social, political, and cultural development of the Middle Ages. (b) Representative works of the Renaissance: Rabelais, Montaigne, Marot, Ronsard, and others. (c) Corneille, Racine, Moliere, Pascal and other writers of the 17th Century with reference to the political and social environment of the period. Parts may be taken separately. Prerequisite: 201 and one quarter of 220. E
- 350-8 (4,4) **Advanced Composition and Conversation.** Oral and written practice for advanced students; intensive study of idiomatic expressions and current usage. Should be taken in a,b sequence. C
- 351-6 (3,3) **Advanced French Conversation and Composition.** (a) Oral work of a practical nature for advanced students. Prerequisite: 201 and one quarter of 220, or consent. (b) Rapid grammar review, daily writing practice, controlled composition. Must be taken in a,b sequence. E
- 352-5 **French Conversation and Phonetics.** A thorough study of the phonetic alphabet and the formation of French sounds. C
- 400-4 **French Literature Between 1870 and 1914.** A survey of French literature from 1870 to 1914. Prerequisite: 313. C
- 401-6 (3,3) **17th Century French Drama.** (a) 17th Century French Drama. (b) 17th Century French Drama. C
- 403-3 **French Literature of the 18th Century.** French literature of the 18th Century. Drama and Novel. C
- 405-3 **French Contemporary Novel.** A study of the novel from 1900 to the present with detailed attention to Proust and Gide. C
- 406-3 **French Poetry from 1850 to 1900.** The Parnassian and Symbolist Movements in French poetry. C
- 407-3 **French Poetry Since 1900.** A study of French poetry from 1900 to the present. C
- 451-6 (2,2,2) **Seminar.** Integration of the specialized major courses and the development of a comprehensive view of the major field in terms of its relationship to the growth of Western Civilization. Required of all seniors with French concentration. E
- 461-4 **French Stylistics.** Study of writing style in French and its application to the development of skill in written expression. For those who wish to do advanced work in the principles of French grammar and composition. Prerequisite: 9 hours of 300-level courses. E
- 500-2 **Seminar in Contemporary French Literature.**
- 501-2 to 6 **Seminar on a Selected French Author.**
- 502-3 **French Literature from La Chanson de Roland to Rabelais.** C
- 503-3 **Rabelais and Montaigne.** C
- 504-3 **La Pleiade.** C
- 507-3 **A Study of Romanticism in France.** C
- 510-4 **French Literature from 1850 to 1900.** C
- 511-3 **20th Century French Drama.** C
- 515-3 **Old French.** C
- 520-4 **Graduate Composition and Diction.** C
- 543-2 to 6 **Research Problems.** C
- 544-6 **French Language and Culture.** E
- 545-3 **Applied Linguistics and Remedial Phonetics.** E
- 546-3 **Professional Preparation.** E
- 599-2 to 9 **Thesis.** C



## GERMAN

**126-3 (1,1,1) German Conversation.** Conversation and oral drill taken with GSD 126 by students who wish additional oral training: elected only by students enrolled in GSD 126. May be taken singly.

**161-0 German for Graduate Students.** Intensive study of grammar and vocabulary. Designed for graduate students desiring a reading knowledge of German.

**201-9 (3,3,3) Intermediate German.** Composition, oral practice, rapid reading of modern authors with special attention to the role of German culture in world civilization. Must be taken in a,b,c sequence. Prerequisite: GSD 126 or two years of high school German, or equivalent.

**220-6 (2,2,2) Intermediate German Conversation.** Development of oral skill on the intermediate level. Offered for 3 quarters at 2 hours per quarter; may be taken for credit each time. Prerequisite: 201c or concurrent registration in any quarter of 201.

**251-4 Scientific German.** Study of vocabulary and sentence construction as commonly found in German scientific writings. Prerequisite: one year of college German or equivalent. E

**301-8 (4,4) Survey of German Literature to 1800.** Historical development of German literature. Should be taken in a,b sequence. C

**303-4 German "Novelle" in the Nineteenth Century.** A study of representative works from 1800 to 1900, with emphasis on the literary movements of that time. C

**304-5 Advanced Composition and Conversation.** Required for prospective teachers of German. C

**310-8 (4,4) Introduction to German Classical Literature.** Lessing, Goethe, Schiller. Reading and discussion of representative works. C

**311-9 (3,3,3) German Culture and Civilization.** Analysis of significant aspects of German culture designed to improve intercultural understanding and to develop language skills. Oral discussions, readings, written reports, and laboratory practice. Each quarter may be taken separately. Prerequisite: 201 and one quarter of 220. E

**312-4 German Drama in the Nineteenth Century.** Kleist, Grillparzer, Hebbel. Reading and discussion of representative works. C

**313-12 (4,4,4) German Literature Before Romanticism.** (a) The Old High German and Middle High German periods. (b) From the Ackermann in Böhmen to Johann Christian Günther. (c) German Literature from 1700 to the death of Schiller. Parts may be taken separately. Prerequisite: 201, 220-2. E

**315-4 From Rationalism to Realism.** Study of German literary works representing 18th Century Rationalism, "Sturm und Drang," and Romanticism which leads over to the literature of Realism; lectures and reports. C

**316-12 (4,4,4) German Literature from Romanticism to Modern Times.** (a) Introduction to the background, personalities and works of the period from 1798 to Heine. (b) The leading 19th Century Realists from Droste-Hülshoff to Fontane including the novel and drama of the period. (c) German literary masterpieces from Naturalism to the present. Parts may be taken separately. Prerequisite: 201, 220-2. E

**351-6 (3,3) Advanced German Conversation and Composition.** (a) Oral work of a practical nature for advanced students. Prerequisites: 201 and one quarter of 220, or consent. (b) Rapid grammar review, daily writing practice, controlled composition. Must be taken in a,b sequence. E

**401-4 (2,2) Goethe's Faust.** (a) The Faust legend and early Faust books and plays; the genesis of Goethe's *Faust*: reading of Part I. (b) reading of Part II; study of symbolism such as blending of paganism with Christianity, ancient Greek culture with Germanic culture. Must be taken in a,b sequences. C

**401-4 Faust.** Analysis of both parts of Goethe's masterpiece, its background, meaning, and impact on world literature together with a general survey of the life and times of the author. Prerequisite: 201 and one quarter of 220. E

**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 Hesse, Benn, etc. Lectures, recitations. C



- 404-4 Weimar and Its Aftermath.** German writings from the inception of the Weimar Republic to the end of World War II, with special reference to the correlation existing between literary expression and social, economic and political conditions. C
- 406-3 The German Comedy.** Comic and satirical works in German Literature, with special emphasis on the "Lustspiel" since 1800; lectures, reports. C
- 407-2 Great German Plays of the 20th Century.** Study and selective readings of outstanding stage successes; lectures, reports. C
- 408-4 German Civilization.** Intensive study of the German speaking areas of the world, with emphasis on the anthropological and sociological aspects of their respective cultures (Austrian, German, Swiss, "Reichs-deutsch," etc.); lectures, reports. C
- 411-6 (3,3) Middle High German.** (a) Grammar, and selective readings in both MHG originals and NHG translations of such epics as the Nibelungenlied and Gudrun. (b) The courtly epic poetry of such authors as Wolfram von Eschenbach, Gottfried von Strassburg, Hartmann von Aue, the lyric poetry of Walther von der Vogelweide, and didactic prose. C
- 413-6 (3,3) German Linguistics.** (a) Introduction to Comparative German Linguistics tracing relationships among German languages on the basis of phonology, morphology, and syntax; (b) History of the German language; a survey of the development of German through the Old-, Middle-, and High German periods; lectures, readings, reports. C
- 451-6 (2,2,2) Seminar.** Integration of the specialized major courses and the development of a comprehensive view of the major field in terms of its relationship to the growth of Western Civilization. E
- 497-1 to 2 Readings in 18th Century German Literature.** Departmental approval required. C
- 498-1 to 2 Readings in 19th Century German Literature.** Departmental approval required. C
- 499-1 to 2 Readings in 20th Century German Literature.** Departmental approval required. C
- 500-2 Seminar in Contemporary Literature.** C
- 501-2 Seminar on a Selected German Author.** C
- 506-2 Romanticism I.** C
- 507-2 Romanticism II.** C
- 509-4 (2,2) Old High German.** C
- 512-3 19th Century German Novel.** C
- 513-3 20th Century German Novel.** C
- 514-3 Seminar in Folklore.** C
- 543-2 to 6 Research Problems.** C
- 544-9 NDEA German Institute.** C
- 591-2 to 6 Seminar on Kant.** C
- 599-2 to 9 Thesis.** C

## GREEK

- 201-12 (4,4,4) Intermediate Greek.** Grammar review and composition. Readings from Plato. Must be taken in a,b,c sequence. Prerequisite: GSD 130c. C
- 301-4 Introduction to Greek History.** Reading and discussion of selections from the histories of Herodotus and Thucydides. C
- 302-4 Plato.** Reading and discussion of the *Republic*. C
- 303-4 Aristotle.** Reading and discussion of the *Ethics*. C
- 311-8 (4,4) Introduction to Homer.** Reading and interpretation of selections from the *Iliad* and the *Odyssey*. Should be taken in a,b sequence. C
- 313-4 Introduction to Greek Tragedy.** Reading of at least two plays from the works of Aeschylus, Sophocles, and Euripides. C
- GSC 320-3 Greek Literature in Translation.** C
- GSC 330-3 Classical Mythology.** C

# ITALIAN

- 144-3 (1,1,1) **Italian Conversation.** Taken with GSD 144 by students who wish additional oral training; elected only by students enrolled in the corresponding beginning sections. Each quarter may be taken separately. E
- 201-9 (3,3,3) **Intermediate Italian.** Development of listening, speaking, reading and writing skills on the intermediate level, with special attention to the role of Italian culture in world civilization. Prerequisite: GSD 144, or two years of high school Italian, or equivalent. E
- 220-6 (2,2,2) **Intermediate Italian Conversation.** Development of oral skill on an intermediate level. Prerequisite: Italian 201c or concurrent registration in any quarter of 201. E

# LATIN

- 201-12 (4,4,4) **Intermediate Latin.** Composition and reading from various authors. Should be taken in a,b,c sequence. Prerequisite: GSD 133 or two years of high-school Latin. C
- 301-4 **Cicero's Letters.** Prerequisite: 201c or equivalent. C
- 302-4 **Vergil's Eclogues and Georgics.** Prerequisite: 201c or equivalent. C
- 303-4 **Tacitus.** Prerequisite: 201c or equivalent. C
- 304-2 **Private Life of the Romans.** C
- 311-4 **Phormio of Terence.** Prerequisite: 201c or equivalent. C
- 312-4 **Horace's Odes and Epodes.** Prerequisite: 201c or equivalent. C
- 313-4 **Letters of Pliny.** Prerequisite: 201c or equivalent. C
- 326-4 **Ovid's Metamorphoses.** C
- GSC 331-3 **Latin Literature in Translation.** C
- 335-4 **Vergil's Aeneid.** C
- 342-4 **Advanced Composition.** A careful study based on classic prose-writers. C

# PORTUGUESE

- 135-9 (3,3,3) **Elementary Portuguese.** Open to students who have had no previous work in Portuguese. Must be taken in a,b,c sequence. C

# RUSSIAN

- 136-3 (1,1,1) **Russian Conversation.** Conversation and oral drill taken with GSD 136 by students who wish additional oral training; elected only by students enrolled in GSD 136. Parts may be taken singly. C
- 161-0 **Russian for Graduate Students.** C
- 201-9 (3,3,3) **Intermediate Russian.** Composition, oral practice, rapid reading of modern authors with special attention to the role of Russian culture in world civilization. Must be taken in a,b,c sequence. Prerequisite: GSD 136 or two years of high school Russian, or equivalent. C
- 220-6 (2,2,2) **Intermediate Russian Conversation.** Development of oral skill on the intermediate level. Offered for three quarters at 2 hours per quarter; may be taken for credit each time. Prerequisite: 201c or concurrent registration in any quarter of 201. C
- 308-9 (3,3,3) **Survey of Russian Literature.** Historical survey of major movements, authors, and works in Russian to the present time. Should be taken in a,b,c sequence. Prerequisite: 201c. C
- 320-2 **Readings in Russian Literature.** Selected readings in areas not covered in regular course work. C
- 330-6 (2,2,2) **Advanced Composition and Conversation.** Based on the history of Russian and the cultural heritage of the Russian people. Should be taken in a,b,c sequence concurrently with 308a,b,c. C

- 401-8 (4,4) **The Russian Novel in the Nineteenth Century.** Should be taken in a,b sequence. C
- 411-8 (4,4) **Introduction to Russian Classical Literature.** Gogol, Pushkin, Turgenev, Tolstoy. Should be taken in a,b sequence. C
- 413-4 **Russian Drama in the Nineteenth Century.** Griboyedov, Gogol, Pushkin, and minor dramatists. C
- 414-3 **Russian Poetry from Zhukovsky to 1920.** A study of Russian Poetry from Sentimentalism through Symbolism. C
- 425-3 **Soviet Literature Since 1917.** A study of satirists and writers of everyday life. Constructivism and followers; Soviet literary criticism. Lectures, readings, and reports. C
- 452-4 **Advanced Composition and Conversation.** Oral and written composition of a practical nature for advanced students; emphasis on study of idiomatic expressions and current usage. C
- 500-2 **Seminar in Contemporary Russian Literature.** C
- 501-2 **Seminar on a Selected Russian Author.** C
- 503-2 **Seminar on 19th Century Russian Literature.** C
- 509-3 **Russian Literature of the 17th Century.** C
- 510-3 **Russian Literature of the 18th Century.** C
- 514-6 (2,2,2) **History of the Russian Language.** C
- 520-4 **Russian Linguistic Structure.** C
- 543-2 to 6 **Research Problems.** C
- 599-2 to 9 **Thesis.** C

## SPANISH

- 140-3 (1,1,1) **Spanish Conversation.** Conversation and oral drill taken with GSD 140 by students who wish additional oral training: elected only by students enrolled in GSD 140. Parts may be taken singly.
- 161-0 **Spanish for Graduate Students.** Intensive study of grammar and vocabulary. Designed for graduate students desiring a reading knowledge of Spanish. C
- 201-9 (3,3,3) **Intermediate Spanish.** Composition, oral practice, rapid reading of modern authors with special attention to the role of Spanish culture in world civilization. Must be taken in a,b,c sequence. Prerequisite: GSD 140 or two years of high school Spanish, or equivalent.
- 220-6 (2,2,2) **Intermediate Spanish Conversation.** Development of oral skill on the intermediate level. Offered for 3 quarters at 2 hours per quarter; may be taken for credit each time. Prerequisite: 201c or concurrent registration in any quarter of 201.
- 301-12 (4,4,4) **Spanish Literature from the Medieval Period Through Romanticism.** (a) Spanish Literature from the 12th to the 15th Century: the epic, *El Cantar Del Cid*, ballads, lyric poetry, chronicles and other prose works. (b) Representative works of the 16th and 17th Century: Cervantes, Tirso de Molina, Lope de Vega, and others. (c) Romanticism in Spanish Literature during the 18th and 19th Centuries: Espronceda, Duque de Rivas, Jose Zorilla, and others. Parts may be taken separately. Prerequisite: 201 and one quarter of 220. E
- 304-8 (4,4) **Modern Spanish Literature.** (a) Spanish Literature of the 19th Century as influenced by trends of European thought of the period: Galdos, Bazan, Benavente, and others. (b) Spanish Literature of the 20th Century with emphasis on the novel, essay, and poetry: Unamuno, Ortega y Gasset, Garcia Lorca, and others. Parts may be taken separately. Prerequisite: 201 and one quarter of 220. E
- 306-4 **Latin American Literature.** Representative writers in Latin-American Literature from the Colonial to the Contemporary period with emphasis on the novel, essay, and poetry. Prerequisite: 201 and one quarter of 220. E
- 310-9 (3,3,3) **Survey of Spanish Literature.** The literature of Spain to the present. Should be taken in a,b,c sequence. Offered alternately with 333. Prerequisite: 201c. C
- 311-9 (3,3,3) **Spanish Culture and Civilization.** Analysis of significant aspects of Spanish culture designed to improve intercultural understanding and to develop language skills. Oral discussions, readings, written reports, and laboratory practice. Each quarter may be taken separately. Prerequisite: 201 and one quarter of 220. E



**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. C

**320-6 (2,2,2) Advanced Composition and Conversation.** Required of students with a concentration in Spanish and students preparing to teach. May be taken concurrently with 311 or 333. C

**333-9 (3,3,3) Survey of Spanish American Literature.** Spanish literature in America from the conquest to modern times. Offered alternately with 311. Prerequisite: 201c. C

**350-3 Advanced Composition.** Daily themes based on Spanish models, with free composition once a week. Class discussions. C

**351-6 (3,3) Advanced Spanish Conversation and Composition.** (a) Oral work of a practical nature for advanced students. Prerequisite: 201 and one quarter of 220, or consent. (b) Rapid grammar review, daily writing practice, controlled composition. Must be taken in a,b sequence. E

**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. C

**451-6 (2,2,2) Spanish Seminar.** Integration of the specialized major courses and development of a comprehensive view of the major field in terms of its relationships to the growth of Western Civilization. E

**461-4 Spanish Stylistics.** Study of writing style in Spanish and its application to the development of skill in written expression. For those who wish to do advanced work in the principles of Spanish grammar and composition. Prerequisite: 9 hours of 300-level courses. E

(Iberian)

**401-3 Spanish Novel of the 19th Century.** Study of representative novels of Fernán Caballero, Valera, Pereda, Galdós, etc. C

**402-3 Spanish Drama of the 18th and 19th Centuries.** Reading of representative plays of the chief dramatists from Moratín to the Generation of 1898. C

**403-3 Spanish Poetry.** General survey of Spanish poetry from its beginnings to 1900. C

**404-3 Spanish Literature of the 20th Century: Novel and Essay.** Main trends of the Spanish novel and essay since 1900. C

**415-3 Spanish Phonetics.** Analysis of the sounds of Spanish and their manner of production; intonation; levels of speech; oral practice. C

**440-6 (3,3) The Golden Age: Drama.** Plays of Lope de Vega, Calderón, Tirso de Molina, Ruiz de Alarcón, and others. C

**445-4 Cervantes. Don Quijote;** other works assigned as collateral readings. C

**501-2 Seminar on a Selected Spanish Author.** C

**505-3 The Picaresque Novel.** C

**506-3 The Renaissance.** C

**515-3 Old Spanish.** C

**520-3 Seminar in Syntax.** C

**525-3 The Spanish Ballads.** C

**543-2 to 6 Research Problems.** C

**599-2 to 9 Thesis.** C

(American)

**421-3 Survey of Modernism in Spanish American Poetry.** Study of its origins, characteristics and achievements. C

**422-3 Contemporary Spanish American Poetry.** Spanish American poetry since modernism. C

**423-3 to 4 The Mexican Novel of the 20th Century.** Emphasis on fiction dealing with the Revolution and related social problems. C

**424-3 to 4 Gaucho Literature.** Study of the Gaucho as a social class and of the types of literature developed to portray and symbolize his way of life, attitudes and values. C

- 426-3 **The Mexican Short Story** Survey of the Mexican short story from pre-Conquest to the present. C  
 427-3 **Spanish American Drama.** Study of representative works of Florencio Sánchez, Rodolfo Usigli, Armando Moock, Samuel Eichelbaum, Xavier Villarrutia, and others. C  
 478-4 **Seminar in Latin American Thought.** (See Philosophy 478.) C  
 500-2 **Seminar in Latin American Literature.** C  
 535-3 **Mexican Essayists of the 19th Century.** C  
 538-3 **Seminar on Spanish American Poetry.** C  
 541-3 **Seminar on Spanish American Literary Criticism.** C  
 543-2 to 6 **Research Problems.** C  
 599-2 to 9 **Thesis.** C

ROMANCE PHILOLOGY<sup>1</sup>

- 410-4 **Romance Philology I.** Survey of phonology, morphology, and syntax changes in Romance languages in general; special attention to the developments in French and Spanish for students with concentration in these fields. C  
 514-4 **Romance Philology II.** C  
 516-4 **Arthurian Romance.** C

## FORESTRY

- 104-3 **Introduction to Forestry.** Acquaints students with the broad field of multiple-use forestry. Special emphasis is given to forestry as a profession. Field trips. For forestry majors or with instructor's consent. Only offered to freshmen or sophomore students. C  
 221-2 to 4 **Dendrology.** Taxonomy and silvics of angiospermous and gymnospermous trees and shrubs. Field trips. Prerequisite: GSA 201c. C  
 230-2 **Lumber Grading.** The study and practice of applying National Hardwood, Southern Pine, and West Coast Rules in grading lumber. Tally methods and grading for special products are also covered. C  
 306-3 **Silvical Field Studies.** The forest as a result of site and biotic factors. Influences of the forest on the site. Prerequisite: GSA 340. C  
 320-4 **Wood Technology.** Structure, identification, and physical properties of wood. Prerequisite: GSA 201c. C  
 330-2 **Harvesting Forest Products.** Principles of harvesting and transporting forest products. Field trips. C  
 333-4 **Forest Products Industries.** Principles of management and manufacturing methods in forest products industries. Utilization studies of Illinois logging and lumber companies. C  
 340-2 **Forest Fire Control.** The causes and effects of forest fires; physics of fire behavior, use of fire as a silvicultural tool. C  
 350-3 **Forest Recreation Management.** Recreational use of forest and adjacent lands with emphasis on parks and national forests. Administration; interpretation; trends in use and developments. Field trips. C  
 360-4 **Farm Forestry.** The management of farm woodlands; measurement of logs, trees, and stands; planting and harvesting methods; improvement cuttings; uses and marketing of woodland products. Field trips. Forestry majors not admitted. For. 104, 360, and 361 mutually exclusive. C  
 361-4 **Forest Conservation.** The importance and use of forests, their management and conservation, public forest policy. Forestry and other agricultural majors not admitted. For. 104, 360, and 361 mutually exclusive. C  
 363-11 (5,3,3) **Forest Mensuration.** (a) Principles and methods of measuring volume of trees, stands of timber, and rough wood products. Preparation of yield tables and growth studies. Field trips. Prerequisite: GSD 109 or 115. (b) Timber cruising, log

<sup>1</sup> Courses count toward concentration in French or Spanish.

scaling, and growth studies on S.I.U. Experimental Forest and cooperating forest owners. Spring field camp and trips. Prerequisite: 363a. (c) Background and practical problems in biometrical procedures for obtaining estimates of forest populations. Prerequisite: 363a. C

**365-10 (4,3,3) Silviculture.** (a) The theory and practice of applying ecological knowledge to economic management of establishment, composition, and growth of forest stands. Field trips. Prerequisites: Bot. 320, Pl. I. 301 (concurrent), GSA 340. (b) Student participation in planting, weeding, thinning, pruning, and improvement cuttings. Prerequisite: 365a. (c) Applied systems of silviculture to commercially important timber species and types in the U.S. Prerequisite: 365a. C

**369-3 Forest Photogrammetry.** Use of stereoptic plotting instruments and aerial photos to map and type forest stands. C

**375-4 Forest Management.** Economic and technical principles involved in managing forests. Prerequisite for 365a,b. C

**381-1 to 2 Agricultural Seminar.** (Same as Animal Industries 381, Agricultural Industries 381, and Plant Industries 381.) Discussion of problems in agriculture and forestry. Limited to senior students. C

**390-1 to 6 Special Problems in Forestry.** Assignments involving research and individual problems in forestry. Prerequisite: advanced standing and written consent of instructor and 3.75 grade point average or petition to Department. C

**410-3 Forest Management for Wildlife.** Interrelations between forest practices and game. Forest protection from mammals and birds. Emphasis is on the treatment of the forest. Prerequisite: Zoology 463 and concentration in forestry or consent of instructor. C

**440-4 Ecology of Grasses and Grasslands.** (Same as Botany 440.) Structure, analysis, and dynamics of grassland communities; structure and growth of individual species. Field and laboratory work. Prerequisite: GSA 340 or consent of instructor. C

**450-4 Forest and Park Administration.** Fundamentals of management and administration of recreation Forests. Development of Forest and suburban parks under a Forest environment. Review of current local, state, and Federal legislation applicable to Forest recreation. C

**464-4 Advanced Silviculture.** Analysis and measurement of site quality; stand density; growth as related to site factors and competition; factors affecting reproduction; the tree as a variable. Prerequisite: For. 365A and B. C

**465-2 Forest Field Studies.** An extended trip to study forest conditions and management practices in different forest regions of the United States. Cost shared by students. Prerequisites: For. 330, 363A, 365A. C

**466-3 Forest Watershed Management.** Effects of treatment of forested watersheds on quality and quantity of water yield. Consideration of alternatives in water use and flood control. Prerequisites: Pl. I. 301, GSA 330, or consent of instructor. C

**470-8 (4,4) Economics of Forestry.** (a) Production. Introduction to forestry economics; micro-economics of forestry production and conservation. Prerequisite: GSB 211a. (b) Marketing. Marketing in the forestry economy; introduction to aggregate planning in forestry including consumption and production goals. Prerequisite: 470A or consent of instructor. C

**471-4 Land Resource Planning.** (Same as Agricultural Industries 471 and Economics 471.) The use of land as an economic variable in production of goods and services; land markets; group versus individual conflicts; elementary land resources planning techniques. Prerequisites: 470A or Agricultural Industries 350 or Economics 440. C

**476-3 Cases in Forest Management.** A series of case studies analyzing governmental, industrial, and private forest management objectives and plans implemented by executive decisions. Prerequisite: For. 375. C

**520A-1 to 6 Readings in Forestry.** C

**520B-1 to 6 Readings in Resource Economics.** C

**570-3 Principles of Research.** C

**575-1 to 6 Research.** C

**581-1 to 6 Seminar.** C

**599-2 to 9 Thesis.** C



**G E O G R A P H Y**

- 300-4 World Cultural Geography.** C
- 302-4 Introduction to Physical Geography.** A study of the earth's physical surface, world distribution patterns of the physical elements, their relationship to each other and their importance to man. Field trip and laboratory work.
- 304-4 Introduction to Economic Geography.** Study of the spatial distribution and interaction of economic activities. Introduction to locational theory. Prerequisite: GSB 101a.
- 306-4 Introduction to Cultural Geography.** An overview of the geographic viewpoint in the study of the human occupancy of the earth. 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: GSB 101a.
- 308-3 Introduction to Geographic Methods.** Designed to introduce the geographic methods of integrating physical, economic and cultural elements in the study of areas. Cartographic and quantitative techniques utilized.
- 310-7 (4,3) (C); 310-6 (3,3) (E) Introduction to Cartographic Methods.** Properties of maps and air photos, their uses and sources; Map symbols, map projections and map construction. Introduction to the use of quantitative techniques as applied in geographic study. Laboratory. Prerequisite: GSB 101a.
- GSA 312-3 Conservation of Natural Resources.** E
- 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: GSB 101a or consent of instructor.
- GSA 330-3 Weather.**
- GSA 331-3 Climate.**
- 343-4 Teaching of Geography.** Presentation and evaluation of methods of teaching geography. Emphasis upon geographic literature, illustrative materials, and teaching devices suitable to particular age levels. Prerequisite: GSB 101a at Carbondale; none at Edwardsville.
- GSB 351a-3 Geographic and Cultural Background of Developing Africa.** E
- 387-2 to 4 Honors in Geography.** Supervised research and investigation in different branches of geography. Open to students in the honors program. C
- 402-10 (4,3,3) Advanced Physical Geography I.** Deals with one or more of the following: land forms, climate, soil, and water; depending on, and varying with, interests of the instructors. Thus, a student may register more than one time. Emphasis will be directed at familiarizing the student with techniques of analysis, and at developing concepts and principles that underlie understanding of the phenomena and their geographic significance. Prerequisite: 302 or consent.
- 403-7 (4,3) Advanced Physical Geography II.** Content drawn from same broad range of topics as 402. To be alternated with 402 to enable student to specialize further in physical geography. Prerequisite: 302 or consent.
- 404-10 (4,3,3) Advanced Economic Geography I.** Deals with one or more of the following: transportation, manufacturing, agriculture, resources, trade and urban geography; depending on, and varying with, interests of instructors. Thus, a student may register more than one time. Emphasis will be directed at familiarizing the student with techniques of analysis, and at developing concepts and principles that underlie understanding of the phenomena and their geographic significance. Prerequisite: 302 or consent.
- 405-7 (4,3) Advanced Economic Geography II.** Content drawn from same broad range of topics as 404. To be alternated with 404 to enable student to specialize further in economic geography. Prerequisite: 302 or consent.
- 406-10 (4,3,3) Advanced Cultural Geography I.** Deals with one or more of the following: population, settlement, ethnic characteristics, political factors; depending on, and varying with, interests of the instructors. Thus, a student may register more than one time. Emphasis will be directed at familiarizing the student with techniques

of analysis, and at developing concepts and principles that underlie understanding of the phenomena and their geographic significance. Prerequisite: 306.

**407-7 (4,3) Advanced Cultural Geography II.** Content drawn from same broad range of topics as 406. To be alternated with 406 to enable student to specialize further in cultural geography. Prerequisite: 302 or consent.

**410-8 (4,4) (C); 410-6 (3,3) (E) Advanced Geographic Techniques.** Geographic applications of cartographic and quantitative research techniques. Prerequisite: 310 or consent of instructor.

**416-8 (4,4) Cartography (C); 416-6 (3,3) Advanced Cartography (E).** Instruction and practice in the techniques of map-making and problems in map reproduction. Laboratory. Prerequisite: 310.

**424-4 Regional Problems in Conservation.** The distribution, use, and interrelationship of the resources of the U.S. and the conservation techniques applied to them.

**440-2 to 6 Reading for Majors.** Supervised readings in selected subjects. Prerequisite: advanced standing. C

**450-3 to 15 Travel Study Course.** Enrichment through travel, supervised study, and readings on areas visited. E

**461-7 (4,3) Advanced Regional Geography: Anglo-America.** Deals geographically with present-day United States and Canada. (a) A general survey of the area, open to students without a concentration. (b) Investigates specific topics in depth, for students with a concentration in geography.

**462-7 (4,3) Advanced Regional Geography: Europe.** See 461.

**463-7 (4,3) Advanced Regional Geography: Mediterranean Lands and Southwestern Asia.** See 461.

**464-7 (4,3) Advanced Regional Geography: Soviet World.** See 461.

**465-7 (4,3) Advanced Regional Geography: Africa.** See 461.

**466-7 (4,3) Advanced Regional Geography: Asia.** See 461.

**467-7 (4,3) Advanced Regional Geography: Latin America.** See 461.

**468-7 (4,3) Advanced Regional Geography: Oceania.** See 461.

**470-12 (4,4,4) Urban Planning.** (Same as Government 470.) The basic problems of planning in the urban community. Includes the administrative and physical principles involved in the planning of urban land use. Emphasis is upon research technics, design principles, and governmental instrumentalities in the planning process. Prerequisite: consent of instructor. C

**470-18 to 22 (4,4,4,4 to 8) Urban Planning.** (Same as Government 470.) (a) Planning concepts and methods, (b) planning administration and the planning function in public process, (c) field problems, (d) urban planning seminar: Planning in a Free Society, (C), (e) planning and public administration internship. Parts c and d may be taken concurrently. E

**471-8 (4,4) Regional Planning.** Examination of the viewpoint, methods, and techniques of regional planning. Prerequisite: consent of instructor. C

**471-7 (4,3) Regional Planning.** Area and regional development, theory, and practices. E

**475-4 to 8 Methods of Field Geography.** Application of geographic field techniques. E

**480-4 Workshop in the Teaching of Geography.** Gives the geographic approach to man in space. Skills, techniques in the use of maps, globes, pictures, statistics and graphics, and reading the landscape and literature will be acquired. C

**490-4 (1,1,1,1) Tutorial in Geography (C); 490-6 (2,2,2) Tutorial in Geography (E).** Individual and small group conferences with staff members to examine geographic concepts.

**500-4 Geographic Techniques I.**

**501-4 Geographic Techniques II.**

**511-4 Philosophy of Geography.**

**514-2 Teaching of College Geography.** C

**515-4 to 6 Field Course.** C

**520-2 to 8 Seminar in Physical Geography.** C

**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.  
 527-2 to 8 Seminar in Urban and Regional Planning. C  
 530-2 to 10 Independent Studies in Geography.  
 540a-2 to 12 Research in Physical Geography. C  
 540b-2 to 12 Research in Economic Geography. C  
 540c-2 to 12 Research in Regional Geography. C  
 540d-2 to 12 Research in Cultural Geography. C  
 599-2 to 9 Thesis.

## FRESHMAN CONVOCATION

- 000-0 Freshman Convocation. C

## FRESHMAN HONORS SEMINAR

- 111-0 Seminar for Superior Freshmen. C

## GEOLOGY

- 200-1 Optional Laboratory for GSA 200. C  
 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. C  
 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: 220 or consent of instructor, elementary course in zoology or botany recommended. C  
 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. C  
 310-4 Crystallography. The study of morphological crystallography including crystal symmetry, Hermann-Mauguin symbolism for the crystal classes, space groups, and solution of problems by means of the stereographic projection. Prerequisite: Trigonometry. C  
 311-4, 312-4 Determinative Mineralogy. A study of nonsilicate and silicate minerals including the influence of crystal chemistry upon their structures, and physical and chemical properties. Laboratory practice in chemical determination and sight identification. Prerequisites: 310, Chemistry 111b (concurrently). C  
 315-4 Petrology. A study of the characteristics and classification of rocks, their origin and geologic distribution. Laboratory. Prerequisite: 220. C  
 320-4 Economic Geology. Study of the world's larger mining districts and the economics and political importance of their geological resources. C  
 GSA 321-3 Introduction to Paleontology. C  
 405-3 Geologic Interpretation of Maps 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. Prerequisite: 221, 302, 431. C  
 410-4 Stratigraphy and Sedimentation. The characteristic features of sedimentary rocks and their processes of origin; the classification of stratigraphic units, methods of correlation, and paleogeologic reconstruction. Laboratory. Prerequisite: 220, 221. C  
 414-5 Paleobotany. (See Botany 414.) C  
 415-4 Optical Mineralogy. The optical properties of minerals and the use of the petrographic microscope for identification of crystals by the immersion method and by thin section. Laboratory. Prerequisites: 310, Physics 208. C  
 416-4 X-Ray Crystallography. Introduction to the study, measurement, and identification of unknown crystalline materials by X-ray diffraction techniques (especially



- the Debye-Scherrer methods). Upon request, non-geology majors may work with unknowns from their own fields of study. Prerequisites: 310, Mathematics 150. C
- 420-9 (3,3,3) Geology of Petroleum.** 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. C
- 425-13 (5,4,4) Paleontology.** (a) a survey of the important invertebrate phyla and their fossil representatives; (b) the mollusca, arthropoda, brachiopoda, and echinodermata; (c) the protozoa, porifera, coelenterata, bryozoa, and other minor groups. Includes classification, evolution, paleoecology, and geographic and stratigraphic distribution. Laboratory. Prerequisites: 221, Biology 201. C
- 430-4 Physiographic Provinces of North America.** Designed to give the student an intelligent appreciation of the evolution of land forms in the physiographic provinces of North America and to explain the surface features in a landscape. Prerequisite: 220. C
- 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. C
- 440-1 to 4 Independent Study.** Prerequisites: 220, 221, advanced standing. C
- 450-9 Field Geology.** A field mapping course including problems in stratigraphy, structure, paleontology, physiography, and economic geology. Requires a written geologic report. Consult the department for dates, cost, and equipment. Students will live at the Little Grassy Lake campus. Prerequisite: 302. C
- 450B-3 Advanced Field Geology.** C
- 510-9 (3,3,3) Stratigraphy.** C
- 515-12 (4,4,4) Mineral Deposits.** C
- 520-12 (4,4,4) Advanced Petrology.** C
- 528-3 Introduction to Micropaleontology.** C
- 540-1 to 9 Advanced Studies.** C
- 541-1 to 9 Research.** C
- 599-2 to 9 Thesis.** C

## GOVERNMENT

- 210-4 American Government.** A general survey of national, state, and local governments. Includes the national and state constitutional principles as required by Illinois law. E
- 231-5 American National Government.** A survey covering the structure, functions, and principles of national government. Also meets social science and American government requirements. C
- 232-5 State and Local Government.** A survey of the structure and functions of American state and local government. C
- 232-4 State and Local Government.** A survey of the structure and functions of American state and local governments. Prerequisite: 210 or equivalent. E
- 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 231 or GSB 211b. C
- GSB 303-3 International Relations.** C
- 305-5 Development of the American Constitution.** The evolution of the United States constitutional system. Recommended for pre-law students. Prerequisite: 231. C
- 315-3 Administration of Justice.** The organization and work of the American judicial system. Recommended for prelaw students. Prerequisite: 210; or 232.
- 321-1 to 6 Readings in Government.** Prerequisite: consent of instructor.
- 330-2 Illinois Government.** The development and functioning of government in Illinois. Prerequisite: 210; or 232.
- 340-3 The Legislative Process.** A study of the principles, organization, and work of American legislative bodies. Prerequisite: 210, or 231.

- GSB 345-3 Introduction to American Foreign Policy.**
- GSB 359-6 (3,3) Society and State: Social and Political Theories.** E
- 360-5 Public Administration.** Principles and problems of administration on the national, state, and local level. Prerequisite: 231. C
- 360-4 Introduction to Public Administration.** Nature of public administration in the United States, basic administrative practices, the peculiar governmental systems; major issues in public administration. Prerequisite: 210. E
- 361-3 Problems in Public Administration and Policy Formulation.** Intensive examination of problem areas illustrating administrative and management practices in public service and demonstrating linkages between politics and administration in our political system. Prerequisite: 360.
- 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. C
- 370-4 International Relations.** A study of world politics—the causes of international conflict and the conditions of peace. Prerequisite: GSB 345. E
- 371-3 Problems of American Foreign Policy.** An analysis of selected problems in the field of American foreign policy. Prerequisite: 231 or 243. C
- 371-4 Problems of American Foreign Policy.** An analysis of selected problems in the field of American foreign policy. Prerequisite: 210 or GSB 345. E
- 379-3 Political Parties II.** A study of the historical development of American political parties. Prerequisite: 210, 231 or 232.
- 380-3 Political Parties.** The development and work of American political parties. Prerequisite: 231 or 232. C
- 380-4 Political Parties.** An analysis of contemporary American political parties. Prerequisite: 210 or equivalent. E
- GSB 385-3 Contemporary Political "Isms."**
- 390-8 (4,4) Comparative European Government.** (a) The Constitutional and Liberal Systems: A comparative study of Great Britain, France (liberal and constitutional phases) and the nontotalitarian phases of German government. Other states may be included at the option of the instructor. (b) The Authoritarian and Totalitarian Systems: An examination of the authoritarian systems of Fascist Italy, Nazi Germany and the U.S.S.R. Also included is a comprehensive comparison of these two types of government. E
- GSB 390-3 Introduction to Comparative Government.** C
- 391-3 Comparative Governments—Dictatorship.** C
- GSB 392-3 Introduction to Latin American Government and Politics.** C
- 398-3 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. C
- 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, 232 (C); 210 or equivalent (E).
- 410-3 Labor and Politics.** A political history of the American labor movement from its early 19th century origins to the present. Attention given to the political philosophy and practice of labor unions. Prerequisite: 231. C
- 415-6 (3,3) 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 (C); 210 or equivalent (E).
- 420-3 Pressure Groups and Politics.** An analysis of interest groups and their techniques of political propaganda. Prerequisite: 231 (C); 210 or equivalent (E).
- 430-3 Government and National Security.** A study of the organization of government for national security; the historical and current developments in civil-military relations; the legal status of over-seas military aid programs; international defense programs; and the problem of disarmament. Prerequisite: 231 or consent of instructor. C
- 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. C

**434-3 Government and Agriculture.** An 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. C

**435-4 Government and Business.** An historical study, with contemporary emphasis upon relations between government and economic institutions. Prerequisite: 231 or consent of instructor (C); 210 or equivalent (E).

**436-3 Government and Labor.** (See Economics 436.) C

**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: consent of instructor. C

**440-4 Public Personnel Administration.** An analysis of some of the central problems encountered by the government executive in recruiting, maintaining, and developing personnel, such as political neutrality, leadership and motivation, career development, security regulations, and the role of personnel in policy planning and execution. Prerequisite: 210 or equivalent (Edwardsville), 360 (Carbondale).

**441-4 Philosophy of Politics.** (See Philosophy 441.) C

**451-3 International Politics of Europe.** Nation-wide system in Europe; foreign politics of major states; nationalism as a source of conflict, Soviet expansionism; progress toward European security and unification. E

**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: GSB 390 or consent of instructor. C

**453-12 (4,4,4) Soviet Russia and the Communist States of Eastern Europe.** C

**453-12 (4,4,4) The Government and Politics of the Soviet Union.** An intensive study and research exercise in communist government and politics. Prerequisite: 390b or consent of instructor. E

**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. C

**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: GSB or Government 390 or consent of instructor.

**456-4 Great Britain and the British Empire.** A survey of the governmental institutions and practices within the British Commonwealth, with particular attention to the political systems of Australia, Canada, and South Africa. (The governments of India and Pakistan are treated in 458.) Prerequisite: GSB 390 or consent of instructor (C); 390a or consent of instructor (E).

**457-8 (4,4) Government and Politics in the Near and Middle East.** Iran, Iraq, Syria, Lebanon, Egypt, Jordan, Saudi Arabia, etc. Prerequisite: GSB 390 or consent of instructor (C); 370 or consent of instructor (E).

**458-12 (4,4,4) (C); 458-8 (4,4) (E) Government and Politics of Asia.** (a) Burma, Thailand, Malaya, Indochina, Indonesia, Philippines. (b) China, Japan, Korea, Formosa. (c) India, Pakistan, Ceylon. Prerequisite: GSB 390 or consent of instructor (C); 390 b or consent of instructor (E).

**461-4 Organizational Theory and 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 (C); 360 or concurrent registration with 360 (E).

**462-3 Intergovernmental Relations.** C

**463-3 Government, Social, and Economic Policy.** Explanation of contemporary agencies of policy determination within the national government; attention to methods and devices utilized to effectuate national social and economic policy within the federal



system; appraisal of historical developments, trends, and results as they affect American governmental, constitutional, and political philosophy, public administration, and the general welfare. Prerequisite: GSB 211c or consent of instructor. C

**464-3 Regulatory Administration.** A study of the work of the major regulatory commissions of the national government. Prerequisite: 360 or consent of instructor. C

**465-3 Local Government and Public Administration.** Problems and issues at local governmental level. Emphasizes administrative approaches, special problems in inter-governmental relationships, and the developing tasks related to urban expansion. Prerequisite: 360. E

**466-3 State Government and Administration.** Leading problems of government and administration of American states. Prerequisite: 232. C

**467-4 Municipal Government and Administration.** Development and functioning of city government in the U.S. Prerequisite: 232. C

**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 U.S. Prerequisite: 232. C

**469-3 Administration of State and Local Finance.** An examination of the administrative problems connected with local and state revenues and expenditures in the U.S. Prerequisite: 232. C

**470 Urban Planning.** (See Geography 470.)

**471-4 The Organization and Administration of American Foreign Policy.** An advanced course dealing with the organizational and administrative aspects of American foreign policy. Prerequisite: 243 or 371. C

**472-4 International Organization.** Development and organization of international governmental and administrative systems, with emphasis on the United Nations. Prerequisite: GSB 303. C

**472-4 International Government.** E

**473-3 Metropolitan Studies and Research.** Examination of the reorganization movement related to improvement and restructuring of government in metropolitan areas. Review and evaluation of special problems in research methodology. Prerequisite: 360 or 465 or consent of instructor. E

**475-8 (4,4) International Law.** Rules and practices governing the nations in their relations in peace and war. Prerequisite: GSB 303. C

**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: GSB 303 or consent of instructor. C

**480-4 The Pacific and the Far East.** Political and strategic problems in this area. Prerequisite: GSB 303 or History 370. C

**484-8 (4,4) History of Political Parties.** C

**484-12 (4,4,4) History of Western Political Theories.** (Same as Philosophy 484.) (a) Outstanding political theories of the ancient and medieval periods, including theories of Aristotle, Plato, Cicero, St. Augustine, and Thomas Aquinas. (b) Important political theories from the Renaissance to the end of the 18th century, including the theories of Machiavelli, Hobbes, Rousseau, Locke, and Burke. (c) The theories of Publius, Bentham, Hegel, Tocqueville, Mills, Marx, and Nietzsche. Prerequisite: 6 hours of government. E

**487-6 (3,3) American Political Ideas.** An historical study of the political ideas of leading American statesmen and publicists, and their resulting influence upon our governmental system. Prerequisite: 305 or GSB 385.

**488-12 (4,4,4) Recent Political Theory.** (a) The outstanding Anglo-American liberal political theorists from John Stuart Mill to the present. (b) The outstanding "scientific" political theorists from Karl Marx to the present. (c) The outstanding idealistic and nationalistic political theorists from Hegel to the present. Prerequisite: GSB 385 or 390. C

**495-8 (4,4) American Constitutional Law.** (a) Constitutional law of the United States with emphasis upon cases dealing with the framework of our federal system. (b) American liberties. Prerequisite: 231. C

- 495-12 (4,4,4) Constitutional Law.** (a) A study of the development of American constitutional law chiefly through judicial opinion. Emphasis is placed on the analysis of federalism and the distribution of powers. Prerequisite: 210 or equivalent. (b) A study of government power and the rights of property. Special attention is directed to tension between the public welfare and private rights, the extent of government power to regulate property rights, and state versus federal power over commerce and taxation. Prerequisite: 210 or equivalent. (c) A study of the nature and extent of civil rights and liberties in the United States. Special attention is given to freedom of speech, press, and association, separation of church and state, equal protection of the laws, and the rights of persons accused of crime. Prerequisite: 210 or equivalent. E
- 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. C
- 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. C
- 499-4 Scope and Method of Government.** Practical training in research and writing techniques in the field of government. Bibliographical materials, footnotes, use of law library facilities, and government documents. Required of all beginning graduate students. C
- 501-525 Seminars.** C
- 501-2 to 9 Seminar in Contemporary Legislation.** C
- 502-2 to 9 Seminar in Governmental Problems.** C
- 503-2 to 9 Seminar in Pressure Groups.** C
- 505-2 to 9 Seminar in Political Parties.** C
- 508-2 to 9 Seminar in International Relations.** C
- 509-2 to 9 Seminar in International Organization.** C
- 510-2 to 9 Seminar in State Government.** C
- 511-2 to 9 Seminar in Local Government.** C
- 512-2 to 9 Seminar in Public Administration.** C
- 513-2 to 9 Seminar in Constitutional Law.** C
- 515-2 to 9 Seminar in Comparative Constitutions.** C
- 516-2 to 9 Seminar in Municipal Administration.** C
- 517-2 to 9 Seminar in Problems in Political Theory.** C
- 520-2 to 9 Seminar in American Foreign Policy.** C
- 521-1 to 12 Readings.** C
- 525-2 to 9 Seminar in International Law.** C
- 526-2 to 9 Seminar in County Government.** C
- 530-4 to 12 Internship in Public Affairs.** C
- 595-2 to 12 Individual Research.** C
- 598-1 Teaching Government.** C
- 599-2 to 9 Thesis.** C
- 600-1 to 48 Dissertation.** C

## GUIDANCE

- 305-4 Educational Psychology.** Study of the learner and the learning process. Includes study of behavior, discipline, development, the school environment, application of learning theories, and methods of assessment. Prerequisite: GSB 201c.
- 412-4 Mental Hygiene.** A survey of principles concerning factors and conditions in personal life that tend to facilitate or deter mental health. Mental health viewed as living creatively in an atmosphere of satisfactory inter-personal relations. Prerequisite: 305.
- 420-4 Educational Statistics.** The statistics needed by teachers for classroom use, the reading of educational literature, and informal educational research. Includes methods of organizing and presenting data, describing group performance, describing individual performance, model distributions, measure of relationship, measures of reliability, and tests of significance. Prerequisite: 305. E
- 422-12 (4,4,4) Educational Measurement and Statistics.** (a) Study of the philos-



ophy and techniques of measurement. Special attention to the construction and use of teacher-made tests. (b) The statistics needed by teachers for classroom use, the reading of educational literature, and informal educational research. (c) Study of standardized tests and other measuring devices to reveal individual and group characteristics. Emphasizes application and interpretation for counseling, education, and research purposes. Must be taken in a,b,c sequence. Prerequisite: 305. C

**422-4 Educational Measurements I.** Study of the philosophy and techniques of measurement. Special attention to the construction and use of teacher-made tests. Prerequisite: 305. E

**426-4 Individual Inventory.** Principles and procedures for studying individual pupils and their problems, for guidance purposes. Emphasis on interview, observation, ratings, case study, cumulative record, etc. Prerequisites: 422b, 442, 542.

**442-4 Basic Principles of Guidance.** Introductory course on student personnel services. Survey of philosophy, principles, and organization of guidance services. Prerequisite: 305. C

**475-4 Implementation of Guidance Principles In the Public Schools.** C

**481-1 to 6 Seminar.** Conducted by staff members and/or distinguished guest lecturers on pertinent topics. Prerequisite: 305. C

**483-6 Community Programs for the Prevention of Juvenile Delinquency.** Analysis of delinquency prevention in community programs administered by the public schools, social welfare, governmental agencies. A study of the various categories of juvenile delinquency is applied to a critique of existing programs and to the development of experimental programs. The roles of professional workers pertinent to such programs is delineated with special reference to the public school administration, counselor, the social workers, the court, probation officers, and police. Prerequisite: consent of instructor. E

**485-4 to 9 Workshop in Educational Utilization of Community Resources.**

**501-2 to 6 Special Research Problems.**

**502-4 Measurement and Evaluation of Products and Procedures.** C

**503-4 Tests and Measurements in Business Education.** C

**511-4 Educational Implications of Learning Theories.**

**515-4 Psychological Aspects of Education.**

**520-8 (4,4) Educational Statistics and Experimental Design.**

**522-4 Educational Measurements II.** E

**525-4 School Behavior Problems and Their Prevention.**

**526-4 Techniques in Individual Guidance.**

**528-4 Advanced Guidance of the Individual.**

**535-4 Introduction to Individual Measurement.** E

**536-8 (4,4) Individual Measurement and Appraisal.** C

**536-4 Appraisal of Intelligence.** E

**537-12 (4,4,4) Counseling Theory and Practice.** C

**537-4 Counseling Theory and Practice I.** E

**538-4 Counseling Theory and Practice II.** E

**541-4 Occupational Information and Guidance.**

**542-4 Basic Principles of Guidance.** E

**543-4 Guidance Through Groups.**

**545a-4 Seminar in Guidance.** E

**545f-4 Seminar in Guidance: Pupil Adjustment.** E

**545j-4 Seminar in Guidance: Organization and Administration.** E

**545-2 to 4 Seminar in Guidance.**

**562a-4 Child Development in Education.** E

**562b-4 Adolescent Development in Education.** E

**562-8 (4,4) Human Development in Education.** C

**565-4 Psychology of Elementary School Subjects.**

**566-4 Psychology of Secondary School Subjects.**

**573-2 Selection, Placement, and Follow-up.** C

**575a-1 to 12 Practicum in Counseling.** C

**575b-1 to 12 Practicum in Elementary Guidance.** C

**575c-1 to 12 Practicum in Secondary Guidance.**



575d-1 to 12 Practicum in Rehabilitation Practices.	C
575e-1 to 12 Practicum in College Student Personnel Work.	C
576-4 Practicum in School Personnel Work.	E
581a-1 to 12 Internship in Counseling.	C
581b-1 to 12 Internship in Elementary Guidance.	C
581c-1 to 12 Internship in Secondary Guidance.	C
581d-1 to 12 Internship in Rehabilitation Guidance.	C
590-4 Seminar in Behavioral Foundations.	C
596-5 to 9 Independent Investigation.	C
599-2 to 9 Thesis.	C
600-1 to 48 Dissertation.	C

## HEALTH EDUCATION

203-3 Health Problems of the Handicapped.	C
205-4 Principles and Foundations of Health Education. Introduction to philosophy and history of health education as well as functions of the school health department and voluntary agency interaction in the health education program. Prerequisite for all 300 and above.	
300-3 Communicable Disease. A study of the communicable diseases with emphasis on control and principles of prevention, and application of these principles to the individual school and community.	
302S-4 Driver Education and Training. To prepare the college student for teaching driver education and training in the secondary school. Prerequisite: a valid driver's license.	
310-4 Home Nursing. Theory, practice, and demonstration concerning equipment, care of patient and sick room, maternity and child care, recognition of common symptoms of disease, administration of simple treatments.	C
311-4 Child Development. Physical development of the child beginning with the study of pregnancy, pre-natal and maternal care continuing with overview of development from birth through puberty.	C
312-4 Emotional Health. Concepts of positive emotional health as related to teacher and parent in terms of influences of the child in the classroom and community.	C
313S-4 Introduction to Safety Education. Prepares for safety education in the public schools. Concerns safety as a social problem, development of safety skills, accident causes, teacher liability, research in the field.	
320S-2 Safety in Physical Education and Athletics. For preparation to teach in elementary or secondary school athletic or physical education programs. Emphasis on sports safety methods.	C
323S-4 Methods and Materials in Safety Education. To acquaint student with material aids and methods, techniques in the teaching of safety education at elementary and secondary school levels.	C
325-3 Community Health Problems. Problems of a community health nature are treated and methods outlined to meet the problems. Areas include community health organization, problems of the environment, food, sanitation, and disease. Epidemiological process stressed.	C
330-4 Consumer Health. Legislation on state and federal levels affecting the health of the consumer; official agencies serving as watchdogs of consumer health; non-official agencies (AMA, CU, etc.) doing the same job; health and medical protection in the form of insurance, group practice, prepayment, etc.; health hazards of the space age; false and misleading information and advertising in health and medicine; cultists and faddist and their effect on the health of the consumer; media and publications and consumer health.	C
334S-4 First Aid. Red Cross First Aid Course with lectures, demonstrations, and practical applications. Red Cross Instructor's Certificate given.	
350-4 Methods and Materials in Elementary Health Education. Designed to show the prospective teacher fundamental processes, techniques, and material aids involved in elementary school health teaching.	
355-4 Introduction to Public Health. Philosophy, organization, administration, and	

functions of federal, state, and local, official and voluntary public health agencies. Periodic field trips involved.

356-5 **Public Health II.** An examination of specific public health problems and measures of control. Intended for health science students only. C

365-4 **Problems of Health Education in the Public Schools.** Study and observation of existing health education problems in the public schools; of recent developments in education and their influences upon the school health program. C

376-4 **Workshop in Health and Nutrition.** (Same as Food and Nutrition 376.) C

400-4 **Health Appraisal of School Children.**

405-3 **Methods and Materials in Social Hygiene.** C

413s-4 **Safe and Healthful Living Outdoors.** C

415s-3 to 4 **Workshop in Driver Education and Traffic Safety.**

443s-4 **Methods and Materials in Driver Education.**

450-4 **Health Education in the Elementary School.** C

460-4 **Methods and Materials in Secondary School Health Education.**

461-4 to 8 **Workshop in Health Education.**

462-4 **Health Education Workshop.** C

463-4 **Health Education Workshop.** C

464-4 **Workshop in Alcohol Education.** C

471-4 **Organization and Administration of School Health.**

475s-3 **Traffic Law Enforcement and Planning.** C

480s-4 **Workshop in Safety Education.**

481s-4 **Safety Education Workshop.** C

488-4 **Educational Aspects of Environmental Sanitation.** C

489-4 **Introduction to Vital Statistics.** C

490-2 to 8 **Field Work in School and Community Health.** C

500-4 **Community Organization for Health Education.** C

510-4 **Construction of the Curriculum in Health Education.** C

511-5 **Practicum in Health Education Workshop.** C

515-4 **Review Cur Lit in H Ed Pub Health and Safety Education.** C

520-4 to 6 **Special Projects.** C

525s-4 **Org Admin and Supervision of Safety Education.** C

526-4 **Evaluation in Health Education.** C

530s-4 **Problems and Research in Accident Prevention.** C

533-12 (4,4,4) **Human Conservation.**

536-4 **Professional Preparation in Health Education.** C

590-4 to 12 **Field Internship.** C

595-4 to 6 **Thesis.** C

597-1 **Seminar in Health Education.** C

598-1 **Seminar in Health Education.** C

599-1 **Seminar in Health Education.** C

600-1 to 48 **Dissertation.** C

## HIGHER EDUCATION

402-2 **Careers in Higher Education.** An exploratory course designed to acquaint the student with the career possibilities and functions of higher education. C

441-4 **Functions and Organization of College Student Personnel.** A description and discussion of the functions of college student personnel programs with an emphasis on the organizational relationships of the various functions. C

510-4 **Higher Education in the United States.** An overview of higher education with emphasis on current problems and organizational relationships. C

511-4 **History and Philosophy of Higher Education.** C

512-4 **Higher Education in the Nations of the World.** C

513-4 **Policy Making and Control of Higher Education.** C

521 (2 per quarter) **Seminar in Higher Education.** C

522-1 to 12 **Readings in Higher Education.** C

523-1 to 12 **Internship in Higher Education.** C

524-2 to 6 Special Research Problems.	C
546-4 Personnel Work with College Student Groups.	C
551-4 Curriculum Design and Development in Higher Education.	C
565-4 The Junior College.	C
576-4 Administrative Practices in Higher Education.	C
577-2 Principles of College Staff Management. A study of systems and problems of personnel practices.	C
578-4 Finance of Higher Education.	C
599-1 to 9 Thesis.	C
600-1 to 48 Dissertation.	C

## HISTORY

100-3 Survey of Western Civilization. Ancient Period to 1000 A.D.	E
201-8 (4,4) History of the United States.	E
GSB 300-9 (3,3,3) History of the United States.	
304-9 (3,3,3) (C); 304a-3 (E) History of the Ancient World. (a) The Near East, (b) Greece, (c) Rome. May be taken individually or in any sequence.	
306-9 (3,3,3) History of Rome. (a) The Republic. (b) The Western Empire. (c) The Eastern Empire. Prerequisite: 100 or equivalent.	E
308-3 History of Illinois. The history of the state from 1818 to the present. Recommended for students with a concentration in history and those who expect to teach in elementary schools.	
309-4 (E) The Negro in America. The role of the Negro in America from the seventeenth century to the present with emphasis on the period since 1865.	
311-3 Medieval History. Europe from the fall of Rome to the establishment of national monarchies.	C
312-3 (C); 312-4 (E) Central Europe in the Nineteenth Century. An analysis of the rise of nationalism with emphasis on Germany and Italy and of the problems of the Austro-Hungarian Monarchy. Prerequisites: GSB 101b,c.	
322-12 (4,4,4) English History. (a) Britain to 1603, (b) 1603-1815, (c) since 1815. May be taken individually or in any sequence.	C
GSB 323-3 East and West in the 20th Century—Origins and Prospects.	C
330-3 (C); 330-4 (E) 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.	
332-6 (3,3) (C); 332-8 (4,4) (E) Medieval History. (a) Early Middle Ages. (b) Later Middle Ages. Prerequisite: sophomore standing.	
338-6 (3,3) History of Greece. (a) Hellenic history. (b) 401-133 B.C. Prerequisite: sophomore standing.	E
352-9 (3,3,3) History of Latin America. (a) Colonial Latin America, (b) Independent Latin America, (c) Latin America in World Affairs. May be taken individually or in any sequence.	
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.	
367-6 (3,3) History of the Far East. (a) Introduction to 1800, (b) 1800-1945. May be taken singly or in either sequence.	
GSB 369-3 The Contemporary Far East.	
372-6 (3,3) (C); 372-8 (4,4) (E) History of Russia. (a) To 1905. (b) Since 1905. May be taken individually or in any sequence. Prerequisite: GSB 101b,c.	
GSB 380-6 (3,3) East Europe.	
401-6 (3,3) (C); 401-8 (4,4) (E). History of the South. (a) The Old South. (b) The New South. An intensive study of the social, economic, political and cultural developments of the South.	
405-3 The American Civil War. Emphasis upon the clash of national and sectional interests; economic, political, and military aspects of the conflict. Prerequisite: GSB 300b, or consent of instructor.	



**410-2 to 5 Special Readings in History.** Supervised readings for students with sufficient background. Registration by special permission only. Offered on demand.

**411-9 (3,3,3) Social and Intellectual History of the United States.** (a) 1607-1830. (b) 1830-1900. (c) 1900 to present. The development of American society and a study of various types of economic, social, and political thought that have influenced it. C

**412-9 (3,3,3) Intellectual History of the U.S.** (a) 17th, 18th Centuries, (b) 19th Century, (c) 20th Century. Prerequisite: GSB 300-9. E

**415-9 (3,3,3) (C); 415-12 (4,4,4) (E) Early Modern Europe.** (a) Renaissance. (b) The Reformation. (c) Age of Absolutism and Enlightenment. Prerequisite: GSB 101b,c.

**417-9 (3,3,3) (C); 417-16 (4,4,4,4) (E) Advanced English History.** (a) The Empire-Commonwealth. (b) Constitutional History. (c) English Culture in the Age of American Colonization. (d) Tudor England.

**420-4 The French Revolution.** A sketch of the passing of feudalism in France, the background and development of the revolutionary movement, and the Napoleonic period.

**425-4 American Colonial History.** Founding of the American colonies and the development of their institutions to 1763.

**428-4 The Age of Jackson.** Origins, background, and development of that phase of American democracy associated with the Jacksonian era. The political, social, and economic history of the years 1815-44 will be considered in detail. Prerequisite: GSB 300a. E

**430-9 (3,3,3) Late Modern Europe.** (a) Age of Revolution, 1815-1880. (b) 1880-1918. (c) Since 1918. Age of Dictatorships.

**435-9 (3,3,3) Advanced American History.** (a) 1865-1900. (b) 1900-1929. (c) 1929 to present. Prerequisite: GSB 300-9.

**440-6 (3,3) History of American Diplomacy.** (a) To 1913, (b) 1913 to present. A study of the important treaty relations of the United States, and a general consideration of American foreign policies. Prerequisites: GSB 300a,b, or consent of instructor.

**442-9 (3,3,3) History of the West.** (a) Colonial. (b) Trans-Allegheny. (c) Trans-Mississippi. C

**449-3 Development of Afro-Asian Nationalism.** A study of the rise of national movements, the winning of independence, and the vast array of political and economic problems since independence. C

**450-4 Europe Since 1914.** Political and cultural developments in 20th century Europe with emphasis on international relations. Prerequisites: GSB 101b,c. E

**451-3 Historiography.** Development of history as a written subject, including works and philosophy of the various 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. (For concentrations in history only.)

**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 U.S. history.

**455-3 History of Inner-Asian Relations.** Tribes, migrations, wars, and power politics in Central Asia and outlying areas of China from Han times through 19th century rivalries to latest developments along the Sino-Soviet frontier. C

**460-9 (3,3,3) Social and Intellectual History of the Middle Ages.** (a) 500-1000. (b) 1000-1250. (c) 1250-1500.

**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.

**471-6 (3,3) History of Mexico.** (a) 19th century. (b) 20th century. Significant political, economic, diplomatic, social, and cultural aspects of Mexican life from independence to modern Mexican life.

**473-6 (3,3) The Caribbean Area in the Twentieth Century.**

**474-3 United States-Mexican Relations.**

**481-3 Rome: The Early Empire.** E

**500-3 to 9 History Seminar.**

510-2 to 5 Readings in History.	
511-3 Studies in the Middle Ages.	
512-3 Studies in Nineteenth Century Europe.	
514-3 Studies in Asian History.	
515-3 Current United States History and Problems.	
516-4 Studies in Contemporary Europe.	C
517-3 Constitutional History of the United States and Problems.	C
518-3 England in the Age of the "Glorious Revolution."	C
519-4 The Age of Jefferson.	
553-3 New Viewpoints in American History.	
598-3 (1,1,1) Teaching History in College.	C
599-1 to 9 Thesis.	C

## HOME AND FAMILY

227-3 Family Living. A study of relationships and adjustments in family living, designed largely to help the individual.	C
237-3 Child Development. Principles of development and guidance of children as applied to home situations. Directed observation involving children of varying ages.	C
300-3 Home Economics for Men. Units dealing with food selection, serving, and table practice; economics of the home; grooming and clothing selection; family relations; consideration of personality evaluation. Field trip.	C
301-3 Home Arts and Social Usage. Emphasis on the home arts and social usage that will provide for more satisfying personal and family living. For women who are not concentrating in Home and Family.	C
302-4 Basics of Family Living.	C
324-2 Equipment. Selection, use, and care. Field trips.	C
331-3 Home Management, Lectures. A study of factors affecting the management of the home in meeting the needs of individuals and creating a satisfying environment for the family. Special consideration given to those problems involving the use of time, money, and energy.	C
332-4 Home Management Residence. Six weeks' residence in Home Management House, with actual experience in different phases of homemaking. Field trip. Prerequisites or required concomitants: 227, 331; Food and Nutrition 335.	C
341-4 Consumer Problems. Study of motives of consumption, family income and expenditures, selection of commodities and services, buying and selling practices, and evaluation of consumer aids. Consideration of contemporary consumer problems. Field trips.	C
345-3 to 4 Child Development Practicum. Observation and participation in direction of young children. Prerequisite: 237.	C
366-3 Family Development. Study of changing patterns in family living throughout the family life cycle. Prerequisites: GSB 201-9, 227; or GSB 341.	C
407-2 to 8 Workshop. Designed to aid workers in professions related to home and family. Emphasis for the workshop will be stated in the announcement of the course.	C
423-4 Advanced Family Housing. (Same as Clothing and Textiles 423.) Further appreciation and understanding of aesthetic, economic, psychic, and social factors influencing choice of family housing today. Prerequisite: Clothing and Textiles 323 or consent of instructor.	C
424-4 Selection, Use, and Care of Appliances. Materials used in equipment, methods of construction, principles of operation of appliances for cooking, refrigeration, laundering, cleaning; selection, operation, and care of appliances to obtain maximum satisfaction in use. Prerequisite: 324 or consent of instructor.	C
435-4 Work Simplification in Home Management. Basic scientific work simplification principles applied to work done in the home by full-time, employed or physically handicapped homemakers.	C
456-4 Infant Development. Current theories and knowledge concerning growth and development of infants with related laboratory and field experiences. Prerequisite: 237 or Psychology 301 or equivalent.	C
466-2 Practicum in Parent-Child Study. Designed to increase student's ability to work	



with parents and parent groups through an awareness of factors in the parent-child relationship and knowledge of current research and methods in parent education. Integration with infant and child development laboratories and related field experience. Prerequisites: 227, 237 or equivalent. C

**471-2 to 6 Field Experience.** Opportunity for supervised learning experiences in selected areas. Prerequisite: Consent of departmental chairman. C

**481-2 to 6 Readings.** Supervised readings for qualified students. Prerequisite: consent of instructor and chairman. C

**500-4 Research Methods.** C

**540-4 Trends in Consumer Problems.** C

**550-4 Advanced Home Management.** C

**556-4 The Pre-School Child.** C

**562-4 Child Development Through Home and School.** C

**566-4 Interpersonal Relationships Within the Family.** C

**571-4 Recent Research.** C

**572-2 to 8 Special Problems.** C

**599-5 to 9 Thesis.** C

**600-3 to 48 Dissertation.** C

## HOME ECONOMICS

The Home Economics Honors courses are listed below. In each course, the subject matter depends upon the needs and interests of the students.

**305-2 to 6, 306-2 to 6 Home Economics Honors Seminar.** C

**387-2 to 8 Special Problems—Honors.** C

**388-2 to 8 Research and Investigations—Honors.** C

## HOME ECONOMICS EDUCATION

**111-2 Home Economics Orientation.** Surveying professional opportunities in home economics; planning for the development of personal and professional proficiencies. C

**306-2 Seminar and Readings in Home Economics Education.** A philosophical approach to the field of home economics. Social, psychological, anthropological, economic considerations as held by home economists and others in relation to the professions in the field of home economics and for homemaking in a democratic society. Offered alternate years. C

**307-3 Methods of Teaching for Dietetics Majors.** Designed as preparation for the teaching role of the dietitian. Selection and organization of materials. Practice in using a variety of techniques and teaching aids. Offered alternate years. C

**309-5 Methods and Philosophy of Teaching.** Study of techniques and devices in teaching vocational homemaking (for in-school and out-of-school groups). Methods in group work and individual counseling. Philosophy of homemaking education, development of teaching aids, units of work, and courses of study. Prerequisites: Guidance 305, consent of instructor. C

**310-4 Evaluation and Adult Education.** Using and developing instruments for evaluation with respect to goals of a family-community centered homemaking program and preparing students to carry on adult education. Prerequisites: 309 & Secondary Education 352B concurrently. C

**313-2 to 4 Special Problems.** For students recommended by their chairman and approved by the chairman of their department and the instructor in charge for independent, directed study. Prerequisite: 309. C

**370-5 History, Development, and Principles of Extension Work.** A study of the history, development, organization, and purposes of extension work. Discussion of problems in principles of conducting and administering extension work in home economics. Field trips. Offered alternate years. C

**371-6 Field Experience.** Six weeks of observing and assisting a county home adviser. Opportunity for supervised learning experiences in various phases of extension work. Prerequisite: 370. C

**414-4 Home Economics for Elementary Teachers.** Units of work in nutrition, school



- lunches, family and social relationships, textiles, and clothing. C
- 415-1 Introduction to Graduate Study.** Seminar to orient the student to graduate work through relation of courses to goals of program, standards of work, habits of thinking, communication of ideas, uses of professional materials and publications. Required. Students should take at first opportunity. C
- 481-2 to 6 Readings.** Supervised readings for qualified students. Prerequisite: consent of instructor and chairman of department. C
- 500-4 Research Methods.** C
- 505-4 Home Economics in Secondary Schools.** C
- 506-4 Evaluative Procedures in Home Economics.** C
- 507-2 to 8 Workshop.** C
- 510-4 Supervision of Home Economics.** C
- 510A-1 to 4 Practicum in Supervision.** C
- 515-4 Trends in Home Economics Education.** C
- 516-4 Advanced Methods of Teaching Home Economics.** C
- 517-4 Methods and Materials for Adult Programs in Home Economics.** C
- 571-4 Recent Research.** C
- 572-2 to 8 Special Problems.** C
- 573-1 to 6 Seminar: Research in Home Economics.** C
- 599-5 to 9 Thesis.** C
- 600-3 to 48 Dissertation.** C

## HUMANITIES

- 301-3, 302-3, 303-3 Humanities Honors.** Prerequisite: completion of the second-level General Studies courses and invitation of the Humanities Honors Program Committee. E

## INDUSTRIAL EDUCATION

- 100-2 Orientation in Industrial Education.** Introduction to the various phases of industrial education to enable the student to develop an understanding of the role of industrial education in industry and in education, and to help guide his thinking in relation to occupational goals. C
- 217-4 General Typography.** (Same as Printing and Photography 217.) After brief introductory work in screen and block typography, major portion of course is devoted to study of foundry type, type classifications, use of job cases, hand typesetting, layout, use of illustrations, and proof-pulling. Laboratory. C
- 302-4 Construction Methods for Primary Teachers.** Various media such as wood, metal, and paper. Acquainting the primary teacher with the materials, tools, and processes which students at the primary level can manipulate and use in the classroom. Laboratory. C
- 303-4 Diversified Crafts for Teachers and Recreational Leaders.** Experience in constructional activities involving the use of wood, metals, leathers, plastics, reed, raffia, clay, and other materials adaptable to the needs and interests of camp counselors and elementary school leaders. Laboratory. C
- 319-3 to 24 (3 per quarter) Industrial Internship.** Industrial experience includes job skills, manufacturing processes, technical information, and labor-management relationships with supervised instruction, conferences and examinations. Prerequisite: consent of coordinator. C
- 380-1 to 12 Special Skills in Teaching Technological Subjects.** Develops new and special industrial skills for teaching industrial and technological subjects. For advanced students and teachers to develop new but basic manipulative skills and understandings in selected areas. Prerequisite: 12 hours in industrial education. C
- 408-3 Teaching Aids in Technological Education.** Selection of development, analysis, cataloging, and use of commercial and self-made instructional aids and devices. C
- 419-8 to 16 Advanced Student Teaching in Technical Programs.** Experience in working with special and post-high school technical training programs in approved centers. The student teacher will follow the program of the supervisors of the primary

specialization in both regular and extra-class activities. Prerequisite: 9 quarter hours professional Industrial Education. C

**435-6 to 18 Manual Arts Internship.** Supervised hospital experience featuring various applications of manual arts therapeutical treatments. Prerequisite: consent of co-ordinator. C

**450-1 to 12 (1 to 4 per quarter) Advanced Skills in Technical Subjects.** Modern industrial practices and techniques in various selected technical fields. For experienced persons seeking an opportunity to develop advanced techniques and to increase understanding in specialized industrial fields. Emphasis on modern industrial processes, methods, materials, and techniques used in school shops, drafting rooms, and industrial organizations. Prerequisite: basic training in area selected for study. Limited to certified teachers. C

**465-8 (4,4) Industrial Safety.** (See Industrial Technology 465.) C

**480-3 Problems of Junior High School Industrial Arts.** Ways and means of correlating industrial arts with other curriculum areas, selecting content, and solving problems pertinent to industrial arts at the junior high school level. Prerequisite: 12 hours in technical subjects. C

**485-3 Principles and Philosophy of Industrial, Vocational, and Technical Education.** An understanding of the nature and purpose of practical arts, vocational and technical education, their relationships and differences, and the place of each in preparing people for the world of work. C

**487-3 Layout and Planning of Technical Facilities.** Principles and practices underlying the planning and designing of shops and laboratories in vocational, industrial, and technical education. Prerequisite: 12 hours in technical subjects. C

**491-6 (3,3) Principles of Industrial Teaching.** (a) Problems and special methods in teaching industrial arts. (b) Emphasis on methods of teaching trade subjects. May be taken in either sequence. Prerequisite: one-half of concentration must be completed. C

**494-3 Organization and Administration of Industrial Education.** Principles and policies governing the administration of industrial education programs in elementary, junior, senior high schools; relation of federal and state supervision of industrial education to local administration. Prerequisite: 12 hours in technical subjects. C

**495-3 Occupational Analysis.** Involves the fundamental steps for analyzing trades and other occupations with some thought toward establishing appropriate units of instruction for the apprentice or student. Jobs, operations, and essential related information are analyzed. Prerequisite: 12 hours in technical subjects. C

**496-3 Selection and Organization of Subject Matter.** Selection and arrangement of teaching content; preparation of assignment, operation, information, and job sheets; preparation of tests. Prerequisite: 12 hours in industrial education. C

**497-3 Leaders and Literature in Technological Education.** An understanding of the literature available, one's obligation for keeping abreast of new developments, and emphasis on reading and scanning for new ideas in student's specialized field. Prerequisite: 12 hours in industrial education. C

**498-3 Planning Multiple Activity Programs.** Philosophy, techniques, and administration of laboratories and shops featuring multiple offerings. Prerequisite: consent of instructor. C

**502-6 Measurements and Evaluations of Products and Procedures.** C

**504-4 History of Industrial and Vocational Education.** C

**505-4 Administration and Supervision of Industrial Education.** C

**506-4 Co-operative Programs.** C

**540-2 to 6 Research in Technological Education.** C

**541-4 Occupational Information and Guidance.** C

**550-4 College Teaching of Industrial and Technical Subjects.** C

**560-2 to 12 (2 to 8 per quarter) New Developments in Technological Education.** C

## INDUSTRIAL TECHNOLOGY

**212-9 (3,3,3) Wood Science and Technology.** (a) Wood science; a study of the structure and properties of wood. (b) New wood products and their industrial uses.



(c) Modern industrial processes in wood technology including plant layout and production management. Laboratory. Must be taken in a,b,c sequence. No prerequisite. C  
**235-9 (3,3,3) Technical Drafting.** (a) Basic fundamentals and principles of drafting. Emphasis on orientation, techniques, reading and understanding the language of industry. (b) Emphasis on drafting problems and an understanding of complete working drawings, pattern development, and reproduction techniques. (c) Machine drafting, including detail and assembly drawings of machines and machine parts. Laboratory. Must be taken in sequence. No prerequisite. C

**300-12 (4,4,4) Plastic Materials and Processes.** (a) An introduction to the general field of plastics. History, development, commercial materials, and processing will be explored. (b) Thermoplastics, including a study of the materials, equipment, design, tooling, and techniques of forming. (c) Thermo-setting plastics and specialized processing and converting, including advanced techniques and experimental development with all types of plastics. Laboratory. May be taken in any sequence. Prerequisite: GSA 101c or Chemistry 111a. C

**304-9 (3,3,3) Architectural Drafting and Design.** (a) Basic room planning, analysis of family needs, utilization of building sites, and developing preliminary plans. (b) Preparation of house plans, including elevations, details, plot plan, and service plans. (c) Advanced residential planning and designing; standards, codes, specifications, and research. Laboratory. Must be taken in a,b,c sequence. Prerequisite: one course in high school drafting or sketching. C

**305-9 (3,3,3) Technical Illustration.** (a) Basic pictorial illustration, sketching, angular perspective and parallel perspective. (b) Tone values and rendering various industrial materials in illustrations, technical and pictorial sketching. (c) Idea computation, detail, assembly, oblique, diagrammatic and axonometric sketching, manufacturing, maintenance, and assembly illustration. Integrated system schematics. Laboratory. Must be taken in sequence. Prerequisite: Technology 101a. C

**306-9 (3,3,3) Industrial Design.** (a) Basic design with industrial materials. (b) Advanced design problems with opportunity for concentration in one or two areas of industry. (c) Applied industrial design through cooperative arrangements with industry. Laboratory. Must be taken in sequence. Prerequisite: Technology 101a. C

**309-12 (4,4,4) Graphic Arts.** (a) An introduction to the basic fundamentals of graphic arts such as layout, type composition, presswork, bookbinding, silk screen and linoleum block techniques. (b) Continuation of fundamentals with special emphasis on typographic design, further experiences in letterpress, lithography, copy preparation, and plate making. Laboratory. Must be taken in sequence. Prerequisite: one course in drafting. C

**312-9 (3,3,3) Wood Products and Processes.** (a) Introduction to processing of wood materials and use of the basic industrial tools and machines. (b) Industrial jigs and fixtures of the wood industry and their use in production techniques. (c) Custom design and fabrication with wood materials and research on industrial technology in processing. Laboratory. Must be taken in sequence. Prerequisite: one course in drafting. C

**314-9 (3,3,3) Foundry Processes.** (a) Basic tools, materials and industrial processes used in constructing patterns and molds in the casting of common metals. (b) Advanced instruction in the use of special material in patternmaking; coring techniques, shell molding, and other special casting processes. (c) New developments in the foundry industry; sand testing standards and procedures; special foundry equipment. Laboratory. Prerequisite: Technology 101a, IT 312a. C

**316-9 (3,3,3) Industrial Covering.** (a) Basic materials and processes used in surface coverage and ecoration of forms, frames and bodies. (b) Fabric and plastic material and processes used on firm and cushioned surfaces. (c) Techniques and processes in flat surface coverings such as plastics, ceramics, metal, etc. Laboratory. May be taken in any sequence. No prerequisite. C

**318-9 (3,3,3) Industrial Welding.** (a) Fundamentals in the techniques, care and use of oxyacetylene and electric arc welding and flame-cutting equipment on the common metals. (b) Advanced instruction in the use of oxyacetylene, electric arc, inert gas, and special procedures used in fabricating ferrous and non-ferrous metals and alloys. (c) Technical instruction in the use of semi-automatic and automatic welding equip-



ment; metallurgical aspects of metals and welds, testing procedures and standards. Laboratory. No prerequisite. Must be taken in sequence. C

**320-12 (4,4,4) Industrial Crafts.** (a) Basic designing, decorating, and fabricating of a variety of craft materials such as reed, textiles, plastics, leather, ceramics, wood, and metal. (b) Continuation of basic fundamentals with special emphasis on art metal techniques and processing. (c) Emphasis upon creative design and new techniques with all craft media, but special emphasis on leather and industrial fabrics. Laboratory. Prerequisite: one course in drafting. C

**322-9 (3,3,3) Machining of Metals.** (a) Introduction to machine shop theory and practice: provides practice and information in using the basic machine tools. (b) Provides techniques and information in using basic and specialized machine tools. (c) Provides additional procedures and information in the use of specialized machine tools with emphasis on production problems. Laboratory. Must be taken in sequence. Prerequisite: one course in drafting. C

**325-9 (3,3,3) Precision Forming and Shaping of Metals.** (a) Advanced machine-tool techniques related to the production of precision-made metal parts. (b) Specialized machine-tool techniques for the development of devices used in the transmission of machine power. (c) Methods and procedures in the set up and scheduling of automatically controlled machine tools. Laboratory. Must be taken in sequence. Prerequisite: 322a. C

**327-9 (3,3,3) Materials, Processes, and Fabrication of Metals.** (a) Study of the basic tools, materials and processes used in a number of metalworking areas. (b) Designing, planning and fabrication of metal products; industrial processes and mass production applications; properties of metals. (c) Basic processes, materials, and equipment in forming, fabrication, and decorating of metal products with special emphasis on the non-ferrous metals and alloys. Laboratory. May be taken in any sequence. Prerequisite: one course in drafting. C

**332-9 (3,3,3) Power Mechanics.** (a) An introduction to the fundamentals of power development, generation, and transmission, including such areas as heat engines, hydraulics, wind, electrical levers, and gears. (b) Continuation of fundamentals of power with special emphasis on fuel type engines, their design, construction, operating principles, and major operating systems. (c) Automotive internal combustion engines, chassis and power transmission. Emphasis on construction, operation and care. Laboratory. Must be taken in sequence. No prerequisite. C

**337-9 (3,3,3) Manufacturing Processes.** (a) Analysis of tools and the basic processes of machining, forming and shaping materials used in modern manufacturing. (b) A study of the principles and procedures involved in casting, forming, and joining of industrial materials. (c) A study of fabrication, assembly, and methods of manufacture with emphasis on machine tools, automatic machines, and correlation of design with materials and processes. Lectures. Laboratory. Must be taken in sequence. No prerequisite. C

**341-9 (3,3,3) Industrial Maintenance.** (a) Care, repair, sharpening and maintenance of cutting tools, hand tools, portable power tools, and machine tools. (b) Installation procedures, equipment layout, replacement of parts, and upkeep of plant services, facilities and shop equipment; preventive maintenance procedures, inspection and inventory. (c) Characteristics, properties, and maintenance problems of mechanical equipment, hydraulic systems, and electrical motors and controls; lubrication, bearings, belts, drive components. Laboratory. Must be taken in sequence. Prerequisite: 312a, 327a. C

**342-9 (3,3,3) Industrial Finishes.** (a) Methods, tools, and equipment used in finishing the common industrial materials; surface preparations; application procedures, types of finishes; and restoring and refinishing techniques. (b) Industrial materials, processes and equipment used in applying protective and decorative coatings; spraying techniques and testing procedures used on industrial finishes. (c) Composition, properties, and performance of industrial finishes, metallic and organic coatings; management and theory of colors; and new industrial finishing processes. Laboratory. Must be taken in sequence. Prerequisite: 312a, 327a. C

**343-9 (3,3,3) Electricity-Electronics.** (a) An introduction to electricity and elec-

tronics. (b) Introduction to vacuum tubes and associated circuitry. (c) Advanced application of electronic theory with emphasis on electronic control circuits. Laboratory. Must be taken in sequence. No prerequisite. C

**345-9 (3,3,3) Industrial Electronics.** (a) Study of basic principles, concepts, and techniques in industrial application of electronics. (b) Analyses of complex circuits for fundamental principles and concepts which facilitate trouble shooting of industrial equipment. (c) Principles and concepts involved in multivibrators, oscillators, pulse generators and computer circuits. Laboratory. Must be taken in a,b,c sequence. Prerequisite: 343a. C

**351-9 (3,3,3) Industrial Tool Design.** (a) Analysis of size and geometric specifications with emphasis on the design of comparative gauges. Fundamental principles involved with the design of woodholding devices; (b) The design of tools for the metal removal process including turning, broaching, milling, grinding, and automatic mechanism design; (c) Metal forming design involving blanking, bending, drawing, lancing, coining, forging, and other forming operations. Laboratory. Sequence is preferred but not required. Prerequisite: GSD 114c and Technology 101c. C

**371-12 (4,4,4) Graphic Arts Technology.** (a) Machine composition, including keyboard operation, nomenclature, use, care, and operation of linecasting machines. (b) Offset lithography, including camera work, plate making, and press work. (c) Printing design, including type design, commercial layouts, color, papers, cover design folders, booklets, bookbinding, presswork, printing economics, advanced lithography, advanced machine composition, and advanced printing mechanics. Laboratory. Must be taken in a,b,c sequence. Prerequisite: 309a. C

**400-9 (3,3,3) Plastics Technology.** (a) Uses of plastic materials including laboratory research and techniques using various methods of fabrication and processing of plastic materials. (b) Properties of high polymers, stability, testing, rheology, mechanical, electrical, thermal, optical and chemical properties; specialty uses. (c) Plastics as materials of construction and their uses in industrial applications, laminates, engineering properties of rubbers, foams, adhesives and surface coatings; designing with plastics; plastics in electrical applications. C

**465-8 (4,4) Industrial Safety.** (Same as Industrial Education 465.) (a) Basic fundamental principles of industrial accident prevention; significant accident statistics and costs; appraising safety performances; industrial plant hazards and safeguards; fire control fundamentals. (b) Effective industrial safety organizations, management and supervision; safety psychology; safety training programs; industrial hygiene programs; health safeguards; occupational diseases and other industrial hazards. Prerequisite: junior standing. C

**506-2 to 12 Industrial Design Research.** C

## INSTRUCTIONAL MATERIALS

**301-2 The Instructional Materials Approach to Learning.** An introductory course to the study of instructional materials. A survey of the history of libraries and audiovisual centers; the complete range of materials of teaching with their unique and common characteristics; the background of the school instructional materials program. C

**306-4 School Libraries as Information Centers.** Evaluation, selection, and use of reference sources for elementary and secondary school libraries. Principles and methods of reference service. C

**308-4 Introduction to Cataloging (C); School Library Technical Processes (E).** Organization of library materials for effective service. Acquisition, classification, cataloging, preparation, preservation, and circulation. Laboratory assignments.

**400-2 Library Research Methods.** Introduction to the use of library materials in graduate research. Includes a survey of scholarly publishing and the use of reference works in various subjects.

**403-4 School Library Functions and Management.** Effective library services in relation to the educational objectives of elementary and secondary school programs: organization, supervision, finance, housing, equipment, standards, and evaluation.



- 405-4 Library Materials for Children.** Study of the aids, methods, and criteria for the selection and use of books and other instructional materials for children in the elementary schools. Open to juniors with consent of instructor.
- 406-4 Library Materials for Adolescents.** A study of the aids, methods, and criteria for the selection and use of books and other instructional materials for students in the high school. Open to juniors with consent of instructor.
- 407-4 Basic Reference Sources.** E
- 410-4 Public Library Administration.** The administration of municipal, county, and regional libraries, both large and small, with emphasis on meeting the needs of different types of communities. C
- 413-4 Cataloging of Non-book Materials.** C
- 417-4 Audio-Visual Methods in Education.** Selection and utilization of instructional materials in the learning environment, elementary through adult levels. Audio and visual materials and procedures are emphasized with some attention given to bibliographies and reference books for teachers.
- 420-4 School Library Activities and Practice.** Supervised practice and observation integrated with instruction in the typical activities of school librarianship: storytelling, publicity, developing units of library instruction, and work with students. Prerequisites: 306, 308, 403, 405, or 406.
- 440-2 Photography for Teachers.** Techniques of picture-taking and the preparation of color slides of community resources for use in classroom instruction and for school public relations.
- 445-4 Preparation of Teacher-Made Audio-Visual Materials.** Laboratory practice in the preparation of bulletin boards, opaque materials, models, slides, recordings, felt-boards, and other graphic materials. Prerequisite: 417 or consent of instructor.
- 448-4 Supervision and Administration of an Audio-Visual Program.** C
- 450-2 Classroom Teaching with Television.** Classroom utilization of open and closed circuit television. Emphasis is placed on the changed role of the classroom teacher who uses television. Evaluation of programming, technicalities of ETV, and definition of responsibilities are included. Demonstration and a tour of production facilities are provided. C
- 457-4 Radio and Television in the Classroom.** Educational programs and their value to the teacher in the classroom. Sample tapes of radio programs and kinescopes are used.
- 458-4 The Medium of the Motion Picture.** A study of the full range of expression by motion pictures including the documentary, theatrical, educational, experimental, and industrial films. Representative films are screened.
- 470-4 Programmed Automated Instruction.** The principles and practices of writing both linear and intrinsic types of programmed instruction with emphasis on pictorial and performance branches. Individual experience in planning and producing programs.
- 510-4 Mass Communications in Education.**
- 514-4 Survey of Research and Development in Instructional Materials.**
- 530-4 History of Books and Libraries.**
- 546-4 Integration of Audio-Visual Materials in the Classroom.**
- 547-4 School Film and Filmstrip Production.**
- 549-4 Visual Learning.**
- 554-4 Administration of an Instructional Materials Center.**
- 560-4 Seminar in Instructional Materials.**
- 576-2 to 8 Problems in Instructional Materials.** C
- 599-5 to 9 Thesis.** C

## JOURNALISM

- 100-1 Current Events.** Contemporary events in the modern world and their treatment in the newspaper and periodical press. May not be counted toward the journalism concentration. C
- 101-3, 102-3 Introduction to Journalism, I, II.** Development of the newspaper and other media in America; role of the press in modern society.



- 103-3 **News.** Study of the newspaper story with experience in writing and rewriting news; the fundamentals of copyreading. C
- 201-3, 202-3, 303-3 **News Writing and Editing I, II, III.** How to cover assignments and write news stories; preparation of copy for publication; writing headlines; laboratory exercises. C
- 214-3 **Typography.** Fundamental printing operations, use of type, illustrations, and other elements of layout and composition. C
- 260a-4 **Fundamentals of Still Photography.** (See Printing and Photography 260.) C
- 265-4 **Machine Composition.** (See Printing and Photography 265.) C
- 297-3 **Introduction to Magazine Journalism.** The magazine as a journalistic medium. Its varied divisions in general circulation, professional, technical, industrial, and specialized publications. The nature and extent of magazine work: staff and free lance. C
- 310-4 **Radio-TV News.** (See Radio-Television 310.) C
- 330-3 **Editorial Writing.** The work and responsibility of the editor and editorial writer with emphasis upon editorial writing and thinking. Editorial problems, methods, policies, and style. C
- 331-3 **Public Relations.** Study of current methods of planning and executing public relations policies; evaluation of media; preparation of campaigns. C
- 340-3 **The Law of Journalism.** Legal limitations and privileges affecting publishing, fair comment, criticism, contempt of court, right of privacy, copyright, and legal provisions affecting advertising. E
- 345-3 **History of Journalism.** Development of American journalism with emphasis upon the struggle for freedom of the press, leading editors, outstanding newspapers and periodicals. C
- 346-3 **Comparative Journalism.** Analysis of editorial and management policies and methods of American newspapers, with particular reference to economic and social factors affecting them. C
- 350-3 **The Community Newspaper.** The small newspaper recognized as a distinct medium, performing a specialized function for its readers. Equal weight given to the problem of news presentation and to leadership with careful examination of news and editorial policies of representative newspapers. C
- 351-3 **Community Newspaper Management.** Organization, operation, and policy of the revenue departments of the weekly and small daily newspapers with special attention to the circulation procedures, retail, general, and classified advertising problems, and other phases of management. C
- 353-2 **Advanced Newspaper Management.** C
- 360-12 (3,3,3 to 6) **Publications Photography.** (See Printing and Photography 360.) C
- 369-3 **Magazine Writing.** The writing of magazine articles by the free-lancer and staff member. Prerequisites: 103, 201, 202. C
- 370-3 **Principles of Advertising.** Advertising fundamentals in relation to modern business activities; economic and social aspects, research, media, appeals, production, schedules. Prerequisite: Economics 205. C
- 370-4 **Principles of Advertising.** Advertising fundamentals in relation to modern business activities; economic and social aspects, research, media, appeals, production, schedules. Prerequisite: GSB 211a. E
- 371-3 **Advertising Salesmanship.** Practical application of the principles of advertising copy and layout as related to the mechanics and psychology of space selling. Students engage in daily work with newspaper advertisers, handling specific assignments in various lines of business. Prerequisite: 370. C
- 372-5 **Advertising Copy, Layout, and Production.** The principles and practices in the preparation of copy and layout for all types and forms of advertising, as well as study of the processes involved in the production of advertising. C
- 373-3 **Advertising Media and Markets.** Manufacturers' advertising precedures related to campaigns, markets and market research, media, and organization of the advertising function. Prerequisite: 370. C
- 374-3 **Advertising Policies and Problems.** Application of advertising principles to merchandising, sales, promotion, research. Prerequisite: consent of instructor. C

- 376-4 **Advertising Campaigns.** Application of advertising principles and skills to the solution of a specific problem; co-ordination of strategy and technique. Prerequisite: consent of instructor. C
- 382-3 **Newspaper Circulation.** C
- 383-6 (3,3) **Newspaper Production Management.** Organization and function of the mechanical department; costs and cost accounting; personnel problems. C
- 385-1 to 4 **Radio-TV Special Events.** (See Radio-Television 385.) C
- 390-3 **Advanced Reporting.** Covering city council meetings, courthouse, city hall, courts, society, and other special assignments. C
- 391-3 **Feature Writing.** How to plan and write newspaper features and special articles. C
- 392-3 **Reporting Special Events.** Experience in planning and executing coverage of conventions, expositions, and tours; special editions; interpretative news stories. C
- 393-3 **Publicity Methods.** Not open to students with concentration in journalism. Designed for students who do not plan a career in writing, but desire guidance and practice in writing for newspapers and magazines about their fields of specialization. C
- 394-3 **Agricultural Journalism.** C
- 396-3 **Editorial Production.** Practical work in details of planning and producing one or more issues of a newspaper. Field trips. C
- 397-3 **Special Publications.** The function and operation of industrial, trade, and business publications. Relationships of management and personnel through the editorial policies and practices of such special publications. C
- 398-3 **Magazine Production and Layout.** The editorial and production functions of the magazine. Application of the principles of article layout and makeup to editorial content. Relationships with printing production. C
- 399-1 **Senior Seminar.** Contemporary newspaper policies as related to professional journalism. To be taken in the student's last quarter. C
- 401-3 **International Journalism.** A study of the history, development, current status and implications of the press and news services of other countries, and their relationship to the international communications system. C
- 420-2 to 4 **High School Journalism Clinic.** For public school teachers. C
- 421-4 **School Publications.** Designed for the prospective journalism teacher or high school publication director. Deals with practical production problems of newspapers and yearbooks. C
- 422-3 **Teaching High School Journalism.** Teaching methods of journalism in secondary schools, organization and course of study, bibliography, use of journalism courses for school publications production. C
- 432-3 **Communication Agencies and Public Opinion.** Press, radio, television, and motion pictures and their role in the opinion process. C
- 433-3 **Measurement of Public Opinion.** The sampling survey as a research tool; survey methodologies. C
- 440-3 **Content Analysis.** Theory and practice of various systems designed to reveal the orientation of editorial material in the mass media. C
- 442-3 **The Law of Journalism.** Legal limitations and privileges affecting publishing, fair comment, criticism, contempt of court, right of privacy, copyright, and legal provisions affecting advertising. C
- 449-2 **Practicum.** Study, observation, and participation in publication supervision. Work required on *The Egyptian* newspaper. C
- 479-3 **Role of Advertising in our Society.** An exhaustive analysis of the literature covering such topics as: definitions and scope of advertising; advertising and the press; advertising as a social and economic force; evaluation of advertising, policies as related to the practices of specific business firms. C
- 495-3 **Book Reviewing.** Theory and practice in reviewing modern books; study of newspapers and magazines devoted entirely or in part to this type of journalism. C
- 499-3 **Summer Workshop in News Analysis in the Classroom.** A study of the relationship of the newspaper to other high school coursework. Time spent in developing ways of integrating the newspaper in the classroom. C



501-4 Literature of Journalism.	C
530-2 Seminar in Press Freedom.	C
532-4 Seminar in Public Opinion and Propaganda.	C
533-1 to 4 Research Problems in Journalism.	C
540-3 Philosophy of Journalism.	C
545-3 Studies in Journalism History.	C
599-1 to 8 Thesis.	C
600-1 to 36 Dissertation.	C

## MANAGEMENT

**170-4 Introduction to Business Administration.** A survey of business, intended to give to the student a general knowledge of the modern business world, a better basis for choosing his specialty, and certain information not covered in the various specialized courses offered.

**240-4 Introduction to Data Processing.** Development of the concept of an organization; problems of co-ordination and control; feedback loop; management by exception. Study covers machine functions, procedure planning, flow charting and integrated data processing; also, the stored program concept, input-output methods and problems involved with electronic data processing equipment. Prerequisite: sophomore standing. E

**241-4 Principles of Programming for Electronic Data Processing.** Comparative study of stored program concepts, binary coding principles, study of machine language and symbolic coding; definition of problem and preparation of flow charts and block diagrams; symbolic programming system; timing sequences for input-output functions. Laboratory work involves practice problems requiring the preparation of flow charts, block diagrams, coding and preparation of source, program, and test running on IBM 1401 equipment. Three hours lecture; two hours laboratory. Prerequisite: 240-4, or equivalent, or consent of instructor. E

**271-4 Business Writing.** Principles and practice in writing typical kinds of business correspondence and reports. Prerequisite: GSD 152 (E); GSD 101 (C).

**301-1 to 6 Management Readings.** Reading in books and periodicals in a defined field, under direction of one or more staff members. Periodic written and oral reports. Prerequisite: consent of division head. E

**320-5 Corporation Finance.** Financial structure in industry, sources of capital, regulation of securities, of stock exchanges, and the Security and Exchange Commission; dividend and other financial policies. Interpreting corporation reports and evaluating securities through the analysis of financial statements. Prerequisites: Accounting 251c or consent of instructor, Economics 215 (C); Accounting 251c, Economics 210 (E).

**323-4 Investments.** Survey of the problems and procedures of investment management; types of investment risks; security analysis; investment problems of the individual as well as the corporation. Prerequisite: 320.

**327-4 General Insurance.** Underlying principles and functions of insurance in the economic life of the individual and of business. Prerequisite: junior standing or consent of instructor at Carbondale; Accounting 251c, Economics 210 at Edwardsville.

**328-3 Real Estate.** A study in real estate decision making and analysis of real estate problems. Examines the environment and variables; the background; the specialists on decision making; and, the purchase, financing, and estate planning decisions.

**340-4 Business Organization and Management.** Business organization, management theory, and practice. Prerequisite: junior standing or consent of instructor.

**360-5 Seminar in Small Business.** Provides final research into the special field of the small business major, helps him to decide upon the precise steps he will take in furthering his objective upon graduation. Open with the approval of the director of the Small Business Institute to senior students in that program. C

**361-4 Business Report Writing.** Discussion, illustration, and practical application of report-writing techniques, including study of uses, forms, and structures of different types of reports. Prerequisite: GSD 101 (C).

**364-3 to 14 Small Business Management Internship I.** On-the-job training in man-



agement of a specific small business in the area of the student's aims. All phases of management are covered. The student lives in the community and participates in the normal civic functions in order to parallel the true role of a small business man. Conference hours and working hours will be arranged. Students do not carry additional courses. Open only to approved majors in small business management. May be taken for one or two quarters, but not for more. C

**365-3 to 14 Small Business Management Internship II.** C

**371-4 Business Law I.** Introduction to the history and philosophy of law, contract law, and agency law.

**372-4 Business Law II.** Real property law, personal property law, partnership law, and corporation law. Prerequisite: 371 at Carbondale.

**373-4 Business Law III.** Negotiable instrument law, sales law, suretyship law. Prerequisite: 371.

**380-4 Production Management.** Plant location, design, and construction; internal organization for operations, production control, stores control, routing of materials, job analysis, and time study; wage systems, subdivision of executive responsibilities and duties; methods of coordination and planning. Prerequisite: Economics 210 at Edwardsville.

**382-4 Time and Motion Study.** Principles and methods for simplifying work and establishing sound time-standards for performance.

**385-4 Personnel Management.** Relations of the human element to production; the art of securing understanding and co-operation; employee organizations and outside activities; work of the personnel department; wage standards and working conditions. Prerequisite: junior standing or consent of instructor at Carbondale; Economics 210 at Edwardsville.

**421-4 Management of Business Finance.** The principal problems of managing the financial operations of an enterprise. Emphasis upon analysis and solutions of problems pertaining to policy decisions. Scope includes both short-term working capital and long-term financing. Prerequisite: 320.

**428-4 Life Insurance.** Particular attention given to policy forms and provisions, reserve and investment problems, company organization, legal aspects, taxation, and personal and business needs. Prerequisite: 327. C

**442-4 Management of Data Processing Systems.** A systematic examination of the principles and practices of data processing management. Includes installation layout, employment requirements, machine utilization, scheduling, work loads, interdepartmental relations, legal considerations, etc. Prerequisite: 241. E

**451-4 Quantitative Business Analysis.** Instructions in the use of quantitative methods for business. The early section of the course will deal with systems design and model-building. Quantitative techniques including linear programming, probability theory, inventory models, and queuing theory. Applications to case problems will be made. Prerequisite: One year of Statistics, Finite Mathematics, and one year of Calculus, or the equivalent if evaluated and approved in advance by the instructor. C

**455-4 Programming for Digital Computers.** Computer organization and characteristics, machine language-coding, flow charts, sub-routines, optimum and symbolic coding, compilers and interpretative systems. Laboratory uses Computing Center equipment. Prerequisite: consent of instructor. C

**472-5 (C); 472-4 (E) Small Business.** Small business analysis, primarily through case studies of business financing, location, organization, merchandising practices, records, government regulation, and taxes. Open only to students with concentration in business.

**473-4 Business Enterprise and Public Policy.** A social and legal evaluation of the federal laws designed to stimulate competition, emphasizing the anti-trust and fair trade laws, commission regulation, and public ownership. Prerequisite: senior standing.

**475-4 Budgeting and Systems.** Budgeting and system as aids in coordinating and directing business operation. Prerequisites: 320. Accounting 251c.

**479-4 Problems in Business and Economics.** C

**479-2 to 8 Problems in Business and Economics.** Application of economic theory to practical business problems. Prerequisite: senior standing (E).

**480-4 Seminar in Labor Law.** A legal and social evaluation of the most recent labor law problems and court decisions, including the Taft-Hartley Act and the 1959 amendments, Fair Employment Practice Laws and the Fair Labor Standards Act. Prerequisite: business law or Economics 310 or Government 395 or consent of instructor (C); two quarters of Business Law or Economics 310 (E).

**481-4 Administrative Management.** An intensive study of the principles of management and their application to the current industrial setting. Lecture and case methods will be used. Prerequisite: 340.

**483-4 Advanced Production Management.** Internal problems of managerial control of production including recent developments in theory and techniques: case material will be utilized for the development of analytical ability. Prerequisite: 380.

**485-4 Problems in Personnel Management.** Analysis of problems in personnel administration arising from current developments in organization and techniques; case problems and special reports. Prerequisite: 385.

**500-2 to 5 Readings.** C

**501-2 to 5 Individual Research.** C

**521-4 Financial Policies.** C

**527-3 to 5 Seminar in Finance.**

**540-4 History and Theory of Management.**

**541-4 Quantitative Business Analysis.** C

**573-4 Business and Government.**

**576-4 Business Conditions Analysis.** C

**581-4 Business Policies.** C

**594-4 Seminar in Management.** C

**595-4 Seminar in Personnel Management.**

**596-4 Seminar in Production Management.**

**599-2 to 9 Thesis.** C

## MARKETING

**225-3 Marketing and the Economy.** A general (macro) approach to the subject. Attention is given to the structural organization of marketing institutions and to factors influencing the marketing environment. Consumption, costs, efficiency, and social productivity are also covered. Prerequisite: GSB 201b or 211b or Economics 214 or equivalent. C

**230-5 Principles of Marketing.** A general survey of the entire field of marketing. Consideration is given to the underlying economic principles; historical development of distributive systems, channels, agents, institutions, functions, policies, and principles. Prerequisite: Economics 210. E

**301-1 to 6 Marketing Readings.** Readings in books and periodicals in a defined field, under the direction of one or more staff members. Periodic written and oral reports. Prerequisite: consent of division head. E

**325-4 Marketing and the Firm.** A specific (micro) approach. Attention is given to the management of the marketing efforts of the individual firm. Emphasis on application of basic management concepts within the field of marketing and its areas of major functional activity: research, product planning, sales, advertising, traffic and inventory management, and distribution. Prerequisite: 225. C

**329-4 Retail Management.** Presents the basic principles and decision areas such as location, layout, organization, personnel, merchandise control, sales promotion, advertising, etc. or retail and wholesale merchandising through an inter-related and managerial perspective. Prerequisite: 325 or concurrently. C

**331-4 Retailing.** Principles underlying the evolution, organization, and operation of retailing, including techniques used and opportunities offered in this field. Prerequisite: 325, or concurrently at Carbondale. E

**332-4 Store Management.** Store management; organization, location; layout. Procedures in receiving goods, handling sales; packing; wrapping; customer complaints; telephone orders, etc. Prerequisites: 331 and Accounting 250 or 251c. E

**333-4 Advertising.** Advertising fundamentals in relation to modern business activities;



fields of advertising; advertising media, campaigns, and systems. Prerequisite: 325, or concurrently, at Carbondale; 230 at Edwardsville.

**334-4 Credits and Collections.** Organization and operation of the credit department, including the sources and analysis of credit information, collection methods, and correspondence. Retail credit management emphasized. Prerequisite: 325 and Accounting 250 or 251c at Carbondale; 230 at Edwardsville. **E**

**335-4 International Marketing.** Factors affecting export and import marketing. Emphasis on international regulating bodies, trade agreements, channels of distribution, financing and governmental roles. Prerequisite: 230-5.

**336-3 Purchasing.** Dealer-supplier relationship, in manufacturing, wholesaling, and retailing. Purchasing for resale and for consumption. Influence in sales promotion materials. Buying from single and multiple suppliers. Prerequisite: 325, or concurrently, at Carbondale; 230 at Edwardsville.

**337-4 Principles of Salesmanship.** History, scope, and importance of selling in modern business; the sales department; the salesman's part in the selling process. Prerequisite: 325 or consent of instructor at Carbondale; or 230 at Edwardsville.

**338-4 Consumer Behavior.** An analysis and interpretation of the consumer's buying habits, motives, and the appeals marketing utilizes. The consumer's statistical, psychological, and socio-cultural nature will be stressed. Prerequisite: 230-5. **E**

**339-4 Industrial Marketing.** Economic and managerial factors affecting policy in the marketing of industrial goods. Channels of distribution, buying, advertising, pricing, research, and selling of industrial goods. Prerequisite: 230-5.

**341-4 Transportation.** Evolution of American transportation systems, and of the current problems of transportation facilities in connection with governmental control and regulation. Prerequisite: 325 or consent of instructor at Carbondale; or 230 at Edwardsville.

**349-3 Wholesaling.** Evolution, economic status, and management of non-retailing marketing. Position of wholesaling in distribution. Kinds of wholesaling; types of middlemen; internal organization and operation of wholesalers; trading areas. Analysis of relationships between marketing policies of wholesaler and manufacturer and changing patterns of wholesale distribution. Prerequisite: 325, or concurrently, at Carbondale; or 230 at Edwardsville. **E**

**384-4 Advertising Media Analysis.** A study of the businessman's problems of selecting appropriate advertising media for the particular advertising mix that affords him the best strategy. Prerequisite: 333. **E**

**401-4 Problems of Retailing.** An analysis of current problems and trends in distribution systems and in the marketing of consumer goods. Emphasis upon economic and legal aspects of the retail competitive environment, channels of distribution, retail store operation, and non-store retailing. Prerequisite: 329 or consent of instructor. **C**

**438-4 Sales Management.** Developing and training a sales force. The different types of sales forces. Managing sales functions: determining salesman's territories, quotas, compensation. Budget preparation. Developing and implementing the merchandise plan. Prerequisite: 325 or to be taken concurrently (C); 230 and 337 or consent of instructor. (E)

**444-4 Marketing Management.** Marketing management's place in theory and as a part of the marketing process. Emphasis given to planning the marketing effort, management of the marketing organization and control of marketing operations. Prerequisite: 230-5, senior standing. **E**

**451-4 Traffic Management.** Primary industrial traffic management functions, including determination of rates, classification, routing, and proper documentation. Consideration given to loss and damage claims, terminal charges, demurrage, reconsignment and conversion, transit privileges, warehousing, and packing. Emphasis upon co-operative aspects of traffic management requiring transportation. Prerequisite: 341. **E**

**452-4 Physical Distribution Management.** A systematic, integrated treatment of problems of managing the flow of raw materials, parts, semi-manufactured and finished goods from their sources to the ultimate consumer. Attention will focus on



spatial relationships of plant capacity and storage facilities and their connecting link, transportation. Topics include transportation service availability, plant location theory, distribution and transfer cost analysis, inventory control, and other matters influencing distribution system design. Prerequisite: 341.

**463-4 (C); 463-3 (E) Advertising Management.** The effective use of advertising by business management. An understanding of what advertising can be expected to accomplish under different sets of marketing factors and products. The selection of advantageous advertising programs under different marketing mixes. Prerequisite: 333 or consent of instructor (C); 333 (E).

**490-4 Marketing Research and Analysis.** A nonmathematical development of the basic procedures, methods, and theory underlying analysis of primary and secondary market data. Prerequisites: 325, and one quarter of basic statistics or its equivalent (C); 230 and one quarter of basic statistics or its equivalent (E).

**500-2 to 5 Readings in Marketing.** C

**501-2 to 5 Individual Research in Marketing.** C

**510-4 Product Strategy and Management.** C

**550-4 Graduate Survey of Marketing.** C

**555-4 Marketing Theory.** C

**560-4 Marketing Policies.** C

**575-4 Seminar in Transportation.** C

**590-4 Advanced Marketing Research and Analysis.** C

**595-3 Seminar in Marketing.** C

**599-2 to 9 Thesis.**

## MATHEMATICS

**111-10 (5,5) Elementary Analysis.** Beginning course for students in mathematics, pre-engineering, etc., who cannot qualify for 150. Includes: (a) Sets, logic, real number system, and college algebra; (b) Functions and trigonometry. Must be taken in a,b sequence. Part (a) may not be taken for credit after GSD 114a,b. Part (b) may not be taken for credit after GSD 114c. Prerequisite: (a) three semesters of high school algebra and satisfactory A.C.T. score. (b) Part a; GSD 114a,b; or advanced standing. E

**150-10 (5,5) Elementary Calculus and Analytic Geometry.** Elementary differential and integral calculus with analytic geometry and applications. Includes the definite integral and differentiation of transcendental functions. Must be taken in a,b sequence. Prerequisites: GSD 114b,c. C

**220-4 Elementary Statistics.** C

**225-4 Programming for Digital Computers.** An intensive course. Topics include computer organization and characteristics, machine language coding, flow charts, subroutines, symbolic coding, and compiler systems. Equipment of the University's Data Processing and computing Center is used for applications. Prerequisite: GSD 108c, 114c, or consent of instructor at Carbondale; 111a or GSD 114b at Edwardsville.

**252-9 (5,4) Calculus and Analytic Geometry.** Continuation of 150. Includes differential and integrated calculus, applications, introduction to solid analytic geometry, infinite series. Must be taken in a,b sequence. Prerequisite: 150b.

**300-4 The Real Number System.** An axiomatic study of the real number system by use of modern logic and elementary set theory. Prerequisite: 150b. E

**305-6 (3,3) Applied Mathematics for the Physical Sciences.** (a) Ordinary differential equations, linear algebra, and applications. (b) Additional topics in applied mathematics such as finite difference methods, Laplace transforms, and Fourier series. Must be taken in a,b sequence. Prerequisite: 252b (also Physics 211c for Edwardsville students).

**310-4 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 concentration only. Prerequisite: GSD 112-9 (E); GSD 108b (C).

**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 concentration for Bachelor of Arts degree students. Prerequisite: 320a at Carbondale; or 320b, Secondary Education 315 at Edwardsville.

**320-6 (3,3) Fundamental Concepts of Algebra.** Introduces abstract algebraic structures, including groups, rings, and fields. Attention is given to classical theory of numbers and polynomials. Must be taken in a,b sequence. Prerequisite: 150b at Carbondale; 300 at Edwardsville.

**324-3 Vector Analysis.** Prerequisites: 252b; Physics 211a. E

**335-6 (3,3) Concepts of Geometry.** An elementary introduction to various geometric systems to acquaint the student with the interrelationship between geometries of current interest. Topics include axiom systems, absolute plane geometry, Euclidean geometry, and non-Euclidean geometry. Must be taken in a,b sequence. Prerequisite: 252a or consent of instructor (C); 300 or concurrent enrollment (E).

**395-2 to 8 Readings in Mathematics.** Supervised reading in selected subjects. Prerequisite: 12 hours of 300- or 400-level mathematics, 4.0 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 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: 150b, 320a (E); 320a or consent of instructor (C).

**407-3 Introduction to Partial Differential Equations.** A continuation of 305. Topics in applied mathematics including linear partial differential equations, Bessel functions, and vector analysis. Prerequisite: 305b.

**410-16 (4,4,4,4) Statistical Analysis.** For students in fields using statistical methods but who are not required to take calculus. Includes (a) elements of probability, estimation, and testing hypotheses; (b) the general linear model (multiple linear regression, analysis of variance, analysis of covariance) and non-parametric statistics; (c) design of experiments; (d) sample survey techniques. May not be used to satisfy requirements for a mathematics concentration. Three lectures and two laboratory hours per week. Must be taken in either a,b,c,d or a,b,d,c sequence. Prerequisites: GSD 108c (C); 111a or GSD 114b (E).

**413-4 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: 252b or consent of chairman.

**415-4 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. Prerequisite: 252a. E

**420-3 Orthogonal Functions.** Principal emphasis on Fourier series and applications. Also includes discussion of other orthogonal sets, such as the Legendre's polynomials, and orthogonalization procedures, such as Gram-Schmidt. Prerequisite: 252b. C

**421-6 (3,3) Linear Algebra.** 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. Must be taken in a,b sequence. Prerequisite: 252b.

**425-3 Theory of Numbers.** Topics in elementary number theory, including properties of integers and prime numbers, divisibility. Diophantine equations, and congruence of numbers. Prerequisite: 320a.

**426-6 (3,3) Mathematical Logic.** (Same as Philosophy 426.) (a) Matrix and set theoretic development of the propositional calculus, many-valued logics, modal logics.



Completion and consistency proofs for the propositional calculus. (b) A formal development of the predicate calculus and related problems. Must be taken in a,b sequence. Prerequisite: 320a or consent of instructor.

**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: 252a or consent of instructor (C); 320a (E).

**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: 252b and six credits in courses numbered 300 or higher, or consent of instructor (C); 300 (E).

**440-2 to 4<sup>1</sup> Modern Algebra for Teachers.** An introduction to algebra as a logical system, including groups, rings, and fields. Prerequisite: consent of instructor.

**442-2 to 4<sup>1</sup> Survey of Geometry.** A survey of geometry, including projective geometry, topology, etc. Prerequisite: consent of instructor.

**446-4 The Structure of Elementary School Mathematics.** A course to assist experienced elementary school teachers in extending their understanding of mathematics. This course may not be taken for credit after credit has been received for 447 and does not count for credit toward a mathematics concentration. Prerequisite: experience in elementary teaching and consent of instructor. E

**447-4 The Structure of Secondary School Mathematics.** A course to assist experienced secondary school teachers in extending their understanding of mathematics. This course may not be taken for credit after credit has been received for 446 and does not count toward a mathematics concentration. Prerequisite: experience in secondary teaching and consent of instructor. E

**452-9 (3,3,3) Advanced Calculus.** 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. Must be taken in a,b,c sequence. Prerequisite: 252b (C); 300 (E).

**456-6 (3,3) Applied Mathematics for the Behavior Sciences.** E

**458-6 (3,3) Finite Mathematics.** An introduction to topics in finite mathematics such as logic, sets, probability, linear algebra, and Markov chains. This course is designed for students preparing for high school teaching and for advanced students in the behavioral sciences. Prerequisite: 252a or consent of instructor. C

**460-4 Modern Geometry.** Advanced topics in Euclidean geometry by the synthetic method. Topics include 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 (C); 300 (E).

**475-9 (3,3,3) Numerical Analysis.** Introduction to approximation methods including finite differences and interpolation; numerical differentiation and quadrature; least squares approximation; numerical solution of linear and non-linear systems; numerical integration of systems of ordinary and partial differential equations. Emphasis upon error analysis throughout. Must be taken in a,b,c sequence. Prerequisite: 305a or 252b and consent of instructor.

**480-10 (4,3,3) Probability.** Introduction to probability theory. Includes the algebra of possibilities; discrete and continuous distributions, limit theorems, generating functions, and some elements of stochastic processes. Must be taken in a,b,c sequence. Prerequisite: 252b.

**483-4 Statistical Inference.** A mathematical introduction to statistical methods. Topics include sampling distributions, estimation, tests of hypotheses, and regression analysis. Prerequisite: 480a.

**484-4 Design of Experiments.** A study of the mathematical and practical considerations involved in the statistical design and analysis of experiments. Consideration given to common experimental designs and such topics as missing plots, experimental constraints, efficiency of method, and separation of degrees of freedom. Prerequisite: 483.

**501-9 (3,3,3) Real Variables.**



505-9 (3,3,3) Theory of Ordinary Differential Equations.	C
510-4 Foundations of Mathematics.	
520-8 (4,4) Modern Algebra.	
530-6 (3,3) Point Set Topology (C); 530-6 (3 to 6) (E).	
531-6 (3,3) Algebraic Topology.	C
536-3 Differential Geometry.	
540-4 Groups and Linear Transformations.	
541-2 to 4 Sets and Probability.	E
542-2 to 4 Elementary Functions from an Advanced Standpoint.	E
544-2 to 4 Fundamental Concepts of Calculus.	
545-4 Intermediate Analysis for High School Teachers.	
546-4 Convex Figures.	C
550-1 to 10 Seminar.	
551-9 (3,3,3) Functional Analysis.	C
555-9 (3,3,3) Complex Variables.	
560-6 (3,3) Calculus of Variations.	C
580-9 (3,3,3) Mathematical Methods of Statistics.	C
592-3 Research in Mathematics Education.	C
595-1 to 10 Special Project.	
599-1 to 9 Thesis.	

## MICROBIOLOGY

- 301-5 Principles of Microbiology.** A survey of morphology, structure, metabolism, population dynamics, and heredity of the microbial agents, with particular emphasis on pure culture methods of study of the bacteria, viruses, and related organisms. 4 hours lecture, 5 hours laboratory. Prerequisite: one year of college chemistry and GSA 201a or equivalent. C
- 302-5 General Microbiology.** Interrelationships of microorganisms and their positions and influence in the biological world; relationships to soil fertility, host-parasite relationships, mechanisms of infection and resistance, principles of chemotherapy, and their exploitation by man in medicine and industry. 3 hours lecture and 5 hours laboratory. Prerequisite: 301. C
- 350-1 to 3 Readings in Microbiology.** C
- 401-1 Seminar.** (For undergraduates only.) Prerequisite: senior standing and consent of instructor. This course may be taken for credit once only. C
- 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: 301 and 302. C
- 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: 301. C
- 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: 301 and organic chemistry. C
- 424-5 (3,2) Soil Microbiology.** C
- 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: 301 and organic chemistry. C
- 426-2 Biochemistry and Physiology of Microorganisms.** 4 hours laboratory. Prerequisite or corequisite: 425. C
- 441-6 Virology.** Properties, cultivation and titration of viruses and rickettsiae; cellular infection, multiplication and liberation of virus; immunological reactions and

serological identification; hemagglutination and interference phenomena. Consideration of selected viral and rickettsiae diseases of animals. 3 hours lecture, 6 hours laboratory. Prerequisite: 451 and consent of instructor. C

**451-6 Immunology.** Natural and acquired immunity; antigens, antibodies and antigen-antibody reactions; hypersensitivity; practical use of immunity and hypersensitivity. 3 hours lecture, 6 hours laboratory. Prerequisite: 403 and consent of instructor. C

**500-1 Seminar.**

**501-2 Genetics of Microorganisms.** C

**503-2 Cytology of Microorganisms.** C

**504-5 Methods of Microbiological Research.** C

**506-2 Bibliographical Methods in Microbiology.** C

**511-1 to 15 Research.** C

**525-3 Biochemistry and Physiology of Microorganisms.** C

**526-2 Biochemistry and Physiology of Microorganisms.** C

**528-1 to 10 Readings in Microbiology.** C

**550-4 Microbiology for High School Teachers.** C

**551-2 Intermediate Microbiology for High School Teachers.** C

**552-1 Seminar in Biological Sciences.** C

**599-3 to 9 Thesis.** C

**600-3 to 48 Dissertation.** C

## MUSIC

**001-4 (1,1,1,0,1) Band.** (a) Saluki Marching Band, (b) Symphonic Band, (c) Stage Band, (d) Laboratory Band, and (e) Wind Ensemble. Prerequisite: b,c,e by audition; a,d by consent of instructor. C

**001-1 (1,0,0) University Bands.** (a) Symphonic Band, (b) Stage Band, (c) Instrumental Laboratory. May be taken in any sequence. Any part may be repeated for 12 quarters. Prerequisite: a,b by audition, c by consent of instructor. E

**002 (1,1,1,1) (a) Chorus, (b) Chorus Oratorio, (c) Collegiate Singers, (d) University Chorus.** May be taken in any sequence. Any part may be repeated for 12 quarters. Prerequisites: Auditions required for a, c, d. C

**002-7 (1,1,1,1,1,1,1) Choral Ensembles.** (a) Collegiate Singers, (b) University Chorus, (c) Male Chorus, (d) Women's Glee Club, (e) Southern Illinois University Community Choral Society, (f) Madrigal Singers, (g) Concert Chorale. May be taken in any sequence. Any part may be repeated for 12 quarters. Prerequisite: auditions for a,f,g. E

**003-1 Orchestra.** C

**010A-1 Class Violin** C

**010B-1 Class Viola.** C

**010C-1 Class Cello.** C

**010D-1 Class String Bass.** C

**011-1 to 4 Private Violin.** C

**012-1 to 4 Private Viola.** C

**013-1 to 4 Private Cello.** C

**014-1 to 4 Private String Bass.** C

**020A-1 Class Flute.** C

**020B-1 Class Oboe.** C

**020C-1 Class Clarinet.** C

**020D-1 Class Bassoon.** C

**020E-1 Class Saxophone.** C

**021-1 to 4 Private Flute.** C

**022-1 to 4 Private Oboe.** C

**023-1 to 4 Private Clarinet.** C

**024-1 to 4 Private Bassoon.** C

**025-1 to 4 Private Saxophone.** C

**030-1 Class Percussion.** C

031-1 to 4 Private Percussion.	C
040-1 Class Piano.	C
041-1 to 4 Private Piano.	C
050A-1 Class French Horn.	C
050B-1 Class Trumpet.	C
050C-1 Class Trombone.	C
050D-1 Class Tuba.	C
050E-1 Class Baritone.	C
051-1 to 4 Private French Horn.	C
052-1 to 4 Private Trumpet.	C
053-1 to 4 Private Trombone.	C
054-1 to 4 Private Tuba.	C
055-1 to 4 Private Baritone.	C
060-1 Class Voice.	C
061-1 to 4 Private Voice.	C
070-1 Class Organ.	C
071-1 to 4 Private Organ.	C
010-6 (1,1,1,1,1,1) Class Applied Music. Offered in all areas of applied music except organ. These courses include the minimum instruction required for passing the proficiency examinations in piano and voice and they offer practical training in the basic principles of playing the instruments of the orchestra and band. They also include introductory techniques and methods for teaching instrumental and choral groups in the elementary and secondary schools.	E
a. Strings	d. Percussion
b. Woodwinds	e. Piano
c. Brass	f. Voice

May be taken in any sequence.

**140, 240, 340, 440, 540-2 or 4 Private Applied Music.** Offered at five levels in the areas listed below. Credit is given at two or four hours on each level. Consult with adviser for details of credit and requirements. May be repeated for three quarters at each level. Students with a concentration in Performance usually take 4 hours. Concentrations in music education and all secondary concentrations usually take 2 hours. Prerequisite for 140; music concentration or secondary concentration or consent of music faculty. Prerequisite for higher levels: three quarters at the previous level on the same instrument or consent of instructor.

a. Violin	j. Percussion
b. Viola	k. Piano
c. Cello	l. French Horn
d. String Bass	m. Trumpet
e. Flute	n. Trombone
f. Oboe	o. Tuba
g. Clarinet	p. Baritone
h. Bassoon	q. Voice
i. Saxophone	r. Organ

**141-0 Recital Class.** E

**105-12 (4,4,4) Theory of Music.** Fundamentals of music in sight singing, ear training, harmony, and keyboard harmony. C

**105-12 (4,4,4) Theory of Music.** Fundamentals of music through sight singing, dictation, written, and keyboard harmony. Must be taken in a,b,c sequence. Prerequisite: piano proficiency or concurrent enrollment in 010e. E

**200-3 Fundamentals of Music.** Rudiments of music for those with little or no musical background. Recommended as a course preliminary to 300 (not for music concentrations). May be taken concurrently with 010e.

**205-9 (3,3,3) Theory of Music.** Advanced harmonic techniques, modulation, altered chords, chromatic harmony, counterpoint (E), and introduction to contemporary harmonic principles. Must be taken in a,b,c sequence. Prerequisite: 105c.

**240-2 or 4 Private Applied Music.** (See Music 140). E

**300-6 (3,3) Music Education—Elementary.** Teaching music in the elementary



grades. (a) For music concentrations only. (b) For non-music concentrations only. Prerequisite: 200 or equivalent. C

**300-3 Music Education—Elementary.** Teaching music in the elementary grades. For non-music concentrations only. Prerequisite: 200 or equivalent. E

**301-9 (3,3,3) Music Education.** (a) Music in the elementary school curriculum, grades K-6. Analysis of instructional materials, development of rhythmic and melodic expressions, creative, instrumental, listening activities. Creating a musical environment in the classroom. (b) Junior high school: Curriculum, organization, and administration of choral, instrumental, and general music classes; resource units; the adolescent voice. (c) Senior high school: Curriculum, organization, and administration of choral, instrumental, and general music classes. May be taken in any sequence. For music concentration only. E

**303-3 Music Education—Secondary.** Teaching music in the high school. C

**305I-3 Instrumental Problems and Materials.** Administration of the school instrumental music program. Emphasis on library, physical facilities, organization of the marching band, arranging music for out-of-door performances. C

**305V-3 Vocal Problems, Materials, and Conducting.** Vocal and psychological problems in handling choral groups, reading and acquaintance with a variety of choral materials at the high school level, and interpretation through conducting techniques. C

**307-4 Recreational Music.** For those interested in the less formal approach to music and for prospective leaders of recreational activities.

**308-4 Folk Music.** Comparison of folk music collected in Southern Illinois with that of other areas with emphasis on melodic structure and textual variants. Use of folk music by composers, ethnic groups, and recreational leaders. Prerequisite: 105c or consent of instructor. C

**309-6 (2,2,2) Arranging.** (a) Rudiments of arranging, choral and instrumental. (b) Techniques of arranging for the small ensemble. (c) Techniques of arranging for the large ensemble. Must be taken in a,b,c sequence. Prerequisite: 105c. C

**309-6 (3,3) Orchestration.** The techniques of writing for orchestral instruments. Must be taken in a,b sequence. Prerequisite: 205c. E

**312-6 (2,2,2) Composition (a,b,c).** Original composition in the smaller forms for piano, voice, string quartet, and other small combinations. Prerequisite: 205c. C

**312-6 (3,3) Composition.** (a) Original composition in the smaller forms for piano, voice, string quartet, and other small combinations. (b) Original composition in the larger forms. Must be taken in a,b sequence. Prerequisite: 205c. E

**315-2 Opera Repertory.**

**317-2 Instruments for Music Recreation.** Practical information in performance, use, and building of instruments. For use in community recreational music programs. Prerequisite: 307. C

**318-6 (2,2,2) Conducting.** (a) Basic conducting techniques. (b) Choral conducting techniques. Prerequisite: 318a, (c) Instrumental conducting techniques. Prerequisite: 318a. C

**318-6 (3,3) Conducting.** (a) General: Fundamental conducting patterns, size of beats, use of each hand; conducting experience with laboratory groups both choral and instrumental; discussion and study of musical terminology. (b) Choral and Instrumental: Continued conducting experience through laboratory group; study of rehearsal techniques, balance, blend, and the relationship of parts to the total ensemble; evaluation and analysis of literature suitable for school groups of all levels of ability. Must be taken in a,b sequence. E

**326-9 (3,3,3) Analysis.** The element of structure, form, and design in musical composition. Prerequisite: 205c. C

**326-6 (3,3) Analysis.** (a) Analysis of the important musical forms and styles from plain song through the 12-tone technique with emphasis on forms of the 18th and 19th centuries. (b) Analysis of the larger homophonic and contrapuntal forms from the 18th century to the present. Must be taken in a,b sequence. Prerequisite: 205c or consent of instructor. E

**340-2 or 4 Private Applied Music.** (See Music 140.) E

**342-6 (2,2,2) Advanced Composition.** Required of undergraduates with concentra-

- tion in theory-composition, culminating with original works in contemporary idioms. Taught by individual instruction. Prerequisite: 312c and consent of department. C
- 345-1 **Chamber Choir.** C
- 346-2 to 12 **Opera Workshop.** C
- 350-3 **Principles of Church Music.** C
- 351-3 **Organ in the Church Service.** C
- 352-3 **Choir in the Church Service.** C
- 355-1 **Chamber Music.** String ensemble. May be repeated for credit. C
- 355-4 (1,1,1,1) **Chamber Music Ensembles.** (a) Brass, (b) Woodwinds, (c) Strings, (d) Percussion. May be taken in any sequence. Any part may be repeated for 12 quarters. Prerequisite: consent of instructor. E
- GSC 357-9 (3,3,3) **Music History and Literature.**
- 365-1 **Chamber Music.** Woodwind and brass ensemble. C
- 411-9 (3,3,3) (a) **Symphonic Literature.** Development of the symphony and the symphonic poem to 1900. (b) **Choral Literature.** The literature of the larger vocal forms such as the cantata and oratorio to 1900. (c) **Chamber Music Literature.** Chamber music literature from the Renaissance to the present. E
- 411-3 **Symphonic Literature.**
- 412-3 **Choral Literature.**
- 413-3 **Chamber Music Education.**
- 414-2 to 6 **Collegium Musicum.**
- 440-2 or 4 **Private Applied Music.** (See Music 140.) E
- 441-6 (2,2,2) **Counterpoint.** (a) 16th Century Counterpoint. Special counterpoint and creative writing in the style of Palestrina and his contemporaries. Prerequisite: 205c. (b) 18th Century Counterpoint. Analysis and creative writing in the contrapuntal-harmonic technique of Bach and his contemporaries. Prerequisite: 205c. (c) Canon and Fugue. Analysis and creative writing of the larger imitative forms. Prerequisite: 441b. C
- 442-6 (3,3) **Contrapuntal Form.** E
- 451-2 (C), 3 (E) **The Teaching of General Classroom Music.**
- 455-2 to 6 **Elementary Music Education Workshop.**
- 461-2 (C), 6 (3,3) (E) (a) **Teaching Techniques and Materials for the Beginning and Intermediate Levels.** Designed to meet the needs of applied students in the Bachelor of Music or Master of Music degree programs in which the problems of private studio teaching and college-level teaching are discussed. (b) **Teaching Techniques and Materials for the Advanced Student.** Prerequisite: 461a.
- 462-2 **Teaching Techniques and Materials for the Advanced Student.**
- 465-3 **Development and Teaching of Strings.** Place and function of string education in the elementary and secondary schools. Techniques of heterogeneous and homogeneous string teaching. Developing and sustaining interest in the string program. Resource aids. May be repeated for a total of 9 hours credit. Prerequisite: Senior standing. E
- 471-2 to 8 **Private Piano.** C
- 472-2 to 8 **Private Voice.** C
- 473A-2 to 8 **Private Violin.** C
- 473B-2 to 8 **Private Viola.** C
- 473C-2 to 8 **Private Cello.** C
- 473D-2 to 8 **Private String Bass.** C
- 474A-2 to 8 **Private Flue.** C
- 474B-2 to 8 **Private Oboe.** C
- 474C-2 to 8 **Private Clarinet.** C
- 474D-2 to 8 **Private Bassoon.** C
- 474E-2 to 8 **Private Saxophone.** C
- 475A-2 to 8 **Private Trumpet.** C
- 475B-2 to 8 **Private French Horn.** C
- 475C-2 to 8 **Private Baritone.** C
- 475D-2 to 8 **Private Trombone.** C
- 475E-2 to 8 **Private Tuba.** C

476-2 to 8 Private Organ.	C
477-2 to 4 Private Percussion.	C
481-2 to 6 Readings in Music Theory.	
482-2 to 6 Readings in Music History and Literature.	
483-2 to 6 Readings in Music Education.	
501-3 Introduction to Graduate Study in Music.	
502-9 (3,3,3) (a,b,c) History and Analysis of Musical Style.	
503-3 Objective Research Techniques in Music Education.	C
512-3 History of Opera.	C
515-3 20th Century Literature.	
518-3 Pedagogy of Music Literature.	
520-3 American Music.	
522-3 Seminar: Music History and Literature.	
531A-3 to 9 Music History.	
531B-3 to 9 Music Literature.	
530C-3 to 9 Music Theory.	
531-3 to 9 Advanced Composition.	C
535-3 Contemporary Idioms.	
540-2 or 4 Private Applied Music. (See Music 140.)	E
545-3 to 9 Philosophy of Music Theory.	C
550-3 (C), 4,4 (E) (a) Administration and Supervision of Music (Elementary).	C
(b) Organization and Administration of Music in the Elementary School.	E
(c) Organization and Administration of Music in the Secondary School.	E
551-2 to 4 Organization and Administration of Music—Secondary.	
553-6 (3,3) Seminar in Choral Materials and Techniques.	
554-3 Seminar in Instrumental Materials and Techniques.	C
556-2 to 6 (C); 3 (E) Advanced Conducting.	
560-2 to 3 (C); 3 (E) Seminar in Music Education.	
566-1 to 4 (C); 1 (E) Instrumental Ensemble.	
567-1 to 4 (C); 1 (E) Vocal Ensemble.	
568-2 to 8 Opera Workshop.	C
571-4 to 16 Private Piano.	C
572-4 to 16 Private Voice.	C
573A-4 to 16 Private Violin.	C
573B-4 to 16 Private Viola.	C
573C-4 to 16 Private Cello.	C
573D-4 to 16 Private String Bass.	C
574A-4 to 16 Private Flute.	C
574B-4 to 16 Private Oboe.	C
574C-4 to 16 Private Clarinet.	C
574D-4 to 16 Private Bassoon.	C
574E-4 to 16 Private Saxophone.	C
575A-4 to 16 Private Trumpet.	C
575B-4 to 16 Private French Horn.	C
575C-4 to 16 Private Baritone.	C
575D-4 to 16 Private Trombone.	C
575E-4 to 16 Private Tuba.	C
576-4 to 16 Private Organ.	C
577-2 to 16 Private Percussion.	C
599-3 to 9 Thesis.	

## NURSING

- 101-3 (1,1,1) Orientation to Nursing. An orientation to the philosophy and functions of nursing in contemporary society. Field trips to various health agencies.
- 210-2 Normal Nutrition. This is a non-laboratory course in which principles of normal nutrition are studied. The ability to use diet variations with people of different cultural backgrounds and economic levels is stressed. E



Courses on the 300 level are open only to students concentrating in nursing.

**301-8 Obstetric Nursing.** Study of the principles of nursing care of mother and baby throughout the maternity cycle. Supervised experience and clinical conferences correlated with theory. E

**302-8 Pediatric Nursing.** Study of principles of nursing care of children during illness. Supervised experience and clinical conferences correlated with theory. E

**303-3 Experience with Pre-School Children.** Given concurrently with Child Psychology. Observation and study of the behavioral development of young children. Day care centers, schools, and other health agencies are used as settings for the educational experiences. E

**325-8 Psychiatric Nursing.** Emphasis on the nurse-patient relationship, leading to development of interpersonal skills which result in the nurse's ability to observe and interpret behavior, to communicate with others, and to understand the significance of such abilities in a broad social context. Supervised experiences and clinical conferences correlated with theory. E

**355-4 Backgrounds and Trends in Nursing.** A study of nursing at the present time in relation to historical and other influences upon it. The implications for its future developments are considered. E

**363-23 (9,6,8) Medical-Surgical Nursing.** (1) Investigations of the scientific basis of health and physical, emotional, mental, and social deviations caused by illness. Learning experiences are based on the scientific knowledge obtained in related and correlated subjects. Emphasis upon the health needs of individuals and society, cooperative endeavors with members of the health team, and the professional nurse's unique contribution in terms of preventive, therapeutic, and rehabilitative care. (2) Supervised experience and correlated conferences in the care of individuals with medical and surgical conditions. E

**375-8 Public Health Nursing.** Objectives, principles, and practices in public health nursing, application of nursing science and art are related to family and community living. Supervised experience in a public health agency conducting a generalized program. Includes orientation, demonstrations, and conferences. Prerequisite: Health Education 355, or concurrently. E

**381-3 Principles & Methods of Teaching in Nursing.** This course offers principles and methods of teaching applicable by all professional nurses in their role as teachers working with patients, families, health teams and other individuals and groups interested in health. Prerequisite: juniors and seniors with a concentration in nursing. E

**382-6 Development of Leadership in Nursing.** Emphasizes the need for responsible leadership in Nursing. Basic principles of administration and supervision are studied as means of developing effective relationships within health and nursing teams and other institutional and community situations. Prerequisite: juniors and seniors with a concentration in nursing. E

**384-2 Senior Seminar.** Study in areas of nursing which present certain professional, national, and international challenges. E

## PHILOSOPHY

**200-4 Types of Philosophy: An Introduction.** Survey of the traditional branches and problems of philosophy, such as religion, metaphysics, epistemology, ethics, political theory, aesthetics, and history.

**240-4 Ethics.** Study of significant ethical theories concerned with such problems as the nature of right and wrong, individual and social values. E

**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. E
- GSC 310-3 Religious Foundations of Western Civilization.** C
- GSC 311-3 Philosophies and Religions of India.** C
- GSC 312-3 Philosophies and Religions of the Far East.** C
- 320-4 General Logic.** Terms, propositions, and reasoning. Logic as an instrument for the solution of problems in natural and social sciences. C
- 324-4 Symbolic Logic.** Use of symbols as tools for analysis and deduction. Study of truth tables, Boolean Expansions, propositional calculus and quantifiers, logic of relations, and their functions in logistic systems. E
- 340-4 Elementary Ethics and Politics.** Problems of right and wrong for the individual and society. C
- 342-4 Social and Political Theory.** Philosophical analysis of social values and their expression in governmental organization. E
- 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.
- GSC 360-6 (3,3) Arts and Ideals in Famous Cities.** E
- GSC or GSA 363-6 (3,3) Philosophy of Science.** C
- 381-12 (4,4,4) History of Western Philosophy.** (a) Greek and early Christian. (b) Medieval and early Modern. (c) Recent. Any part may be taken alone. E
- GSC 381-3 Greek Philosophy.** C
- GSC 382-3 Graeco-Roman and Medieval Philosophies.** C
- GSC 383-3 Early Modern Philosophy.** C
- 386-4 American Philosophy.** A survey of American philosophic thought from colonial days to the present, with emphasis on such recent thinkers as Pierce, James, Royce, Dewey, and Santayana. Prerequisites: 381b,c. E
- GSC 386-3 Early American Philosophy.** C
- GSC 387-3 Recent American Philosophy.** C
- 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. C
- 415-3 Logic of the Social Sciences.** Logical and epistemological examination of the 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. C
- 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. C
- 426-6 (3,3) Mathematical Logic.** (See Mathematics 426.) C
- 428-3 Logic of the Exact Sciences.** Critical study of the technical and philosophical 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: 426-6 or consent of instructor. C
- 441-4 Philosophy of Politics.** (Same as Government 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: GSC 102 or 340 or consent of instructor. C
- 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: GSC 207 or 360, and six courses in music, painting, sculpture, literature, or drama. C

**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 recent trends. Reading of original texts in English translations. Discussions and reports. C

**478-4 Seminar in Latin American Thought.** (See Spanish 478.) C

**481-6 (3,3) 19th Century European Philosophy.** (a) Kant, Schopenhauer, and Hegel. (b) Nietzsche, Bergson, the Utilitarians, and latter day idealists. May be taken singly and in any sequence. C

**482-3 Recent European Philosophy.** Phenomenology. Positivism, Linguistic Analysis, and Existentialism. C

**484-12 (4,4,4) History of Western Political Theory.** (Same as Government 484.) (a) Ancient and Medieval. (b) Renaissance and Rationalist. (c) Contemporary. Any part may be taken alone. E

**487-4 American Political Ideas.** An historical study of the political ideas of leading American statesmen and publicists, and their resulting influences upon our government system. E

**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.

**500-2 to 4 Seminar in Metaphysics.** C

**501-2 to 4 Seminar in the Philosophy of Religion.** C

**515-3 Theory of Nature.** C

**530-2 to 4 Seminar in Theory of Knowledge.** C

**540-3 Philosophy of Journalism.** C

**570-3 Seminar in American Idealism.** C

**581-2 to 4 Seminar in Plato.** C

**582-2 to 4 Seminar in Aristotle.** C

**585-3 Seminar in British Empiricism.** C

**586-2 to 4 Seminar in Spinoza.** C

**587-3 Seminar in Hegel.** C

**588-2 to 4 Seminar in Kant.** C

**589-2 to 12, 590-2 to 12 General Graduate Seminar.** C

**591-1 to 5 Readings in Philosophy.** C

**599-2 to 9 Thesis.** C

**600-3 to 48 Dissertation.** C

## PHOTOGRAPHY

**260-12 (4,4,4) Fundamentals of Still Photography.** (a,b,c) Cameras, lighting, and black-and-white film and print processing techniques with emphasis on (a) their application to photography as a communications medium, (b) the view camera and negative and print controls. Studio and darkroom work. (c) Color Photography. A study of the principles of color as related to color photography. Work in making color transparencies, with interior and exterior light. Color negative exposure and an introduction to direct color printing. Must be taken in a,b,c sequence. C

**303-4 Portrait Photography.** An introduction to posing, lighting, retouching and finishing of portraits. Studio experience. Prerequisite: consent of department. C

**309-12 (4,4,4) Commercial and Illustrative Photography.** Advanced work in product, architectural, and illustrative photography in black-and-white and color. Prerequisite: 260c. C

**341-10 (4,3,3) Cinematography.** (a) The fundamentals of cinematography, basic to further work in any kind of cinema production. Includes study of lenses, cameras, films, lighting, exposure, continuity, animation, titles, and editing. (b) Sound motion



picture production. Study of film types. Laboratory consists of production of short sound films with commentary, music, and effects. (c) Production of a lip-synchronous sound film. Must be taken in a,b,c sequence. C

**344-1 to 6 Workshop in Cinema Production.** Crew work on university film productions. Prerequisite: consent of department. C

**345-6 (3,3) History of Photography and Cinematography.** (a) History, aesthetics, and appreciation of still photography. (b) History, aesthetics, and appreciation of the cinema. Screenings of films of representative type and historical significance. C

**360-8 to 12 (3,3,2-6) Publications Photography.** (a) Work in visual news reporting with emphasis on short picture series and picture stories with captions and text. Prerequisite: 260a. (b) Production of picture essays including subject research, layout, captions, and text. Includes study of historic and current picture essays. Prerequisite: 360a. (c) Picture assignments for campus and other publications. Prerequisite: 360a. C

**364-3 Picture Editing.** Selection, cropping, and layout of pictures for publications. C

**370-1 to 10 Workshop in Still Photography.** Work on magazine picture assignments and internships. Prerequisite: consent of department. C

**390-1 to 6 Problems in Still Photography and Cinematography.** C

**391-3 Managing the Industrial Photographic Unit.** A study of practices, procedures, administration, and management of typical units. C

**392-3 Photographic Methods in Science and Technology.** Photomicroscopy, specimen photography, infrared and ultra-violet photography, high-speed and time-lapse motion pictures, slide and filmstrip making. C

## PHYSICAL EDUCATION

**303-5 Kinesiology.** Study of joint and muscle action as a basis for the mechanical analysis of human physical movement as executed in daily life and as executed in physical education activities and sports. Prerequisite: Physiology 300. E

**305-3 Physical Education for the Atypical Student.** Deals with the recognition of physical deviations and with the provisions of special or modified physical education or recreational activities for such students. Prerequisite: 303. E

**341-3 Principles of Physical Education.** The scientific foundations of physical education based on accepted principles of psychology, physiology, sociology, biology, educational method, philosophy, anatomy, kinesiology and related areas. E

**348-3 Camp and Community Leadership.** Fundamentals of scouting, camping, and counseling. A weekend camping trip required. E

**349-2 Camping Education.** Designed to give the potential camp counselor an understanding of the camp; its physical set-up, equipment and necessary routines; its personnel, purpose, traditions, and possibilities. E

**350-4 Methods and Materials for Teaching Physical Education Activities in the Elementary School.** The organization and conduct of the program, program planning, evaluation of materials, observation and practice in creative rhythms, singing games, folk dancing, and games of low organization. (Required for Elementary education). E

**354-3 Organization and Administration of Physical Education and Athletics.** The organization and conduct of the total program of physical education including inter-scholastic athletics based upon accepted educational policies and practices. Emphasis on problems of administration. E

**355-2 Techniques of Teaching Swimming.** Methods of teaching, analysis of strokes, and the devices for teaching swimming and life saving. Prerequisite: current Senior Lifesaving. E

**365-2 Organization and Administration of Community Recreation.** The social, economic, and governmental structure of the community; establishing the community recreation program; problems of facilities, equipment, finance, promotion; selecting and supervising personnel; integration with associated programs. E

**370-4 Tests and Measurements in Physical Education.** Measurement as an aid in determining student needs, curriculum construction, teaching effectiveness, and the attainment of educational objectives. Includes the selection, administration, and interpretation of tests. E

376-3	Emergency Care and Prevention of Athletic Injuries. The theoretical and practical methods of preventing and treating athletic injuries; techniques of taping and bandaging; emergency first aid; massage; use of physical therapy modalities.	E
402-3	Organization and Administration of Intramural and Extramural Activities.	E
420-4	Physiological Effects of Motor Activity.	E
501-4	Curriculum in Physical Education.	E
502-4	Foundations of Motor Skills.	E
503-4	Seminar in Physical Education.	E
504-4	Problems in Physical Education.	E
509-4	Supervision of Health and Physical Education.	E
525-1-6	Readings in Physical Education.	E

## PHYSICAL EDUCATION FOR MEN

100-15	(1 per course) Physical Education Skill Courses for Men. (a) Basic Rhythms I, (b) Folk Dance, (c) Beginning Stunts & Tumbling, (d) Beginning Gymnastics, (e) Personal Fitness, (f) Swimming, (g) Wrestling, (h) Soccer, (i) Beginning Tennis, (j) Indoor Net Games (Badminton & Volleyball), (k) Baseball, (l) Basketball, (m) Football, (n) Beginning Track and Field, (o) Golf.	E
100A-1	Methods of Teaching Swimming. Stresses techniques and methods of teaching applied to individual and group instruction. Basic strokes, underwater swimming, elementary diving, body and breath control, self support, and watermanship. Prerequisite for nonswimmers: audit beginner's swimming course.	C
100B-1	Methods of Teaching Golf. To prepare the student to teach the fundamental aspects of golf, with emphasis on adaptation to varied approaches in teaching.	C
100C-1	Methods of Teaching Tennis. Enables the student to acquire, through practice, the knowledge and skills necessary to teach this activity; includes consideration of desirable teaching materials to enhance instruction.	C
100D-1	Methods of Teaching Individual and Team Activities.	C
100E-1	Methods of Teaching Basic Rhythms.	C
100F-1	Methods of Teaching Exercise.	C
100G-2	Methods of Teaching Football. Individual instruction and practice in all the fundamentals of the game such as passing, kicking, blocking, tackling, running. Emphasis on effective methods of teaching and coaching.	C
100H-2	Methods of Teaching Basketball. Deals with individual and team fundamentals with special emphasis on passing, pivoting, shooting, dribbling, and variety of play patterns concerned with offense and defense. Basic methods of teaching and coaching.	C
100I-2	Methods of Teaching Baseball. Development of the practical skills and ability to teach and coach the techniques of batting, fielding, and playing the various positions in the game.	C
100J-2	Methods of Teaching Track and Field. Students gain practical experience as a foundation for learning the techniques of teaching the running and field events. Emphasis on individual analysis of movement for effective teaching.	C
100K-2	Methods of Teaching Gymnastics. To develop individual techniques in stunts and tumbling, calisthenics, parallel bars, side horses, trampoline, and high bar; fundamental skills, individual and group methods of instruction.	C
100M-2	Methods of Teaching Wrestling. Enables the student to master the fundamental skills of wrestling as well as to teach the individual and group methods of wrestling instruction.	C
101-2	Orientation Practicum in Physical Education. To introduce the student to his professional field, to enable him to secure a concept of the role of physical education in total education, and to crystallize his thinking in relation to vocational objectives. The significant historical aspects of physical education and its role in the broad cultural heritage in order to provide an interpretation and perspective to contemporary issues and developments. Freshman year.	C
170-2	Varsity Football.	C
171-2	Varsity Basketball.	C



172-2 Varsity Track.	C
173-2 Varsity Tennis.	C
174-2 Varsity Gymnastics.	C
175-2 Varsity Baseball.	C
176-2 Varsity Golf.	C
177-2 Varsity Swimming.	C
178-2 Varsity Cross Country.	C
179-2 Varsity Wrestling.	C
220-1 Recreational Activities and Games (Outdoor).	C
221-1 Recreational Activities and Games (Indoor).	C
303-5 Kinesiology. Study of joint and muscle action as a basis for the mechanical analysis of human physical movement executed in daily life and in physical education activities and sports. Prerequisites: Physiology 300. GSA 301.	C
305-2 Physical Education for the Atypical Student. Deals with the recognition of physical deviations from the normal student and with the provisions of special or modified physical education or recreational activities for such students. Prerequisites: Physiology 300 and GSA 301.	C
306-1 Advanced Stunts and Tumbling.	C
307-1 Advanced Apparatus.	C
317-1 Life Saving and Water Safety.	C
330A-2 Theory of Basketball Coaching. Different types of offense and defense studied; special emphasis given to early season conditioning and practice, offensive and defensive drills, team strategy, rules of the game. Prerequisite: 100H.	C
330B-2 Theory of Football Coaching. Deals with all phases of the game; offensive and defensive formation analyzed; strengths and weaknesses of each studied; various types of individual plays analyzed; rules discussed. Prerequisite: 100G.	C
331A-2 Theory of Swimming Coaching. Treatment of foundations and principles underlying coaching methods; comparative study differences in prevailing theories and methods; development of programs of training in pre-season, mid-season, and post-season of competition. Prerequisite: 100A.	C
331B-2 Theory of Baseball Coaching. A study of the strategy of the game; the conduct of daily practice; analysis of the rules and their application to play situations. Also effective methods of coaching for best results. Prerequisite: 100I.	C
331C-2 Theory of Track and Field Coaching. Theoretical concepts dealing with the effective performance in running and field events; special emphasis on methods of training for such events; methods of organizing and conducting track and field meets. Prerequisite: 100J.	C
331D-2 Theory of Wrestling Coaching. Prepares students to develop program of wrestling; includes comparative knowledge of problems, techniques, materials, and systems in coaching wrestling as well as the organization and administration of the wrestling program. Prerequisite: 100M.	C
331E-2 Theory of Tennis Coaching. Theory of advanced strokes, strategy and tactics, scheduling and conducting matches, tournaments, exhibitions and clinics; officiating; organizing and promoting development programs. Prerequisite: 100C.	C
331F-2 Theory of Gymnastic Coaching. Deals with all phases of gymnastics; organization of dual meets, championships, and exhibitional teams; practice schedules; care and purchase of equipment; development and evaluation of exercises and routines; techniques of judging. Prerequisite: 100K.	C
335-2 Administration of Aquatics. The organization, administration, and supervision of aquatic programs in institutional and community swimming pools and camp waterfronts; the construction, operation, and maintenance of pools and waterfronts; personnel and program problems.	C
341-3 Principles of Physical Education. An understanding of the scientific foundations of physical education as implied by the accepted principles of psychology, physiology, sociology, biology, educational method of philosophy, anatomy, kinesiology, and related areas. Senior year.	C
345-1 to 3 Officiating Technique.	E
345A-1 Officiating of Fall Sports. Interpretation of rules in football, cross country,	



and soccer; techniques of officiating; code of ethics, for officials and players; problems of officiating. Officiating practice required.

**345B-1 Officiating of Winter Sports.** Interpretation of rules in basketball, wrestling, and swimming; techniques of officiating; code of ethics for officials and players; problems of officiating. Officiating practice required.

**345C-1 Officiating of Spring Sports.** Interpretation of rules in baseball, track and field, tennis and golf; techniques of officiating; code of ethics for officials and players; problems of officiating. Officiating practice required.

**350-3 Methods and Materials for Teaching Physical Education Activities in the Elementary School.** The organization and conduct of the program with special emphasis on program planning, evaluation of materials, observation and practice in creative rhythms, singing games, folk dancing, and games of low organization. 2 hours lecture; 2 hours laboratory. C

**354-3 Organization and Administration of Physical Education and Athletics.** The organization and conduct of the total program of physical education including inter-scholastic athletics based upon accepted educational policies and practices. Emphasis on problems of administration. C

**355-2 Assisting Techniques.** C

**365-2 to 4 The Organization and Administration of Community Recreation.** The social, economic, and governmental structure of the community; establishing the community recreation program; problems of facilities; equipment, finance, promotion; selecting and supervising personnel integration with associated programs. C

**370-3 to 4 Tests and Measurements in Physical Education.** Measurements as an aid in determining student needs, curriculum construction, teaching effectiveness, and the attainment of educational objectives. Includes the selection, administration, and interpretation of tests. 3 hours lecture; 2 hours laboratory. C

**376-3 Care and Prevention of Athletic Injuries.** The theoretical and practical methods of preventing and treating athletic injuries; techniques of taping and bandaging; emergency first aid; massage; use of physical therapy modalities. 2 hours lecture; 2 hours laboratory. Prerequisite: Physiology 300 and GSA 301. C

**377-1 Horseback Riding.** C

**378-1 Canoeing and Boating.** C

**381-4 Theory of Coaching.** Principles underlying participation in competitive inter-scholastic athletics; theory of coaching sports; technique; strategy; organization and administration of programs. E

**400-4 Evaluation in Physical Education.** Historical background of measurement in physical education; selection and evaluation of contemporary testing devices; structure and use of tests; administering the testing program; and interpretation and application of results. Fulfills the tests and measurements course requirements for the Master of Science degree. C

**402-3 Organization and Administration of Intramural and Extramural Activities.** Planning intramural programs of sports; planning and co-ordinating extramural activities commonly associated with physical education. C

**403-4 The Adaptation of Physical and Recreational Activities to the Handicapped Individual.** Recognition of postural deviations; devising and planning programs for the physically atypical. C

**404-4 The Teaching of Sports.** Teaching methods, officiating, organization, safety precautions, and selecting equipment for sports. C

**405-4 Current Theories and Practices in the Teaching of Dance.** History and evolution of dance; place of dance in education. C

**406-4 Basic Concepts of Physical Education.** The place of physical education in the school program, and the concepts underlying the program. (Required of all students not presenting the undergraduate courses 354 or 340.) C

**407-4 Scientific Basis of Athletic Training.**

**408-2 to 4 Workshop: Physical Fitness—Its Role and Application in Education.** Improvement of programs and teaching techniques involved in the development of various aspects of physical fitness. Units on postural status; body weight control; tension factors, causes, and control; exercise tolerance; and general body mechanics and control. C

420-4 Physiological Effects of Motor Activity. The general physiological effects of motor activity upon the structure and function of body organs; specific effect of exercise on the muscular system. Prerequisite: Physiology 209 or equivalent.	
475-2 to 4 Individual Research.	
500-4 Techniques of Research.	C
501-4 Curriculum in Physical Education.	C
502-4 Foundations of Motor Skills.	C
503-4 Seminar in Physical Education.	C
504-4 Problems in Physical Education.	C
507-4 Scientific Basis of Athletic Training.	C
508-3 Administration of Interschool Athletics.	C
509-4 Supervision of Physical Education.	
510-4 (2,2) Motor Development.	C
511-2 Analysis of Human Physical Movement.	C
525-1 to 6 Readings in Physical Education.	
599-3 to 9 Thesis.	C
600-2 to 48 Dissertation.	C

## PHYSICAL EDUCATION FOR WOMEN

Basic Movement: 113.  
 Team Sports: 114, 224, 244.  
 Aquatics: 211, 271, 316, 317, 378.  
 Individual Sports: 216, 218, 228, 229, 328, 377.  
 Dance: 212, 222, 242, 272, 374, 376.  
 Officiating: 311.  
 Teaching Physical Education in Elementary School: 319, 350.  
 Teaching Physical Education in Secondary School: 301, 304, 360, 361, 362, 363.  
 Camping: 348.  
 Professional Courses: 303, 308, 351, 352, 353, 354, 355, 370.

025-0 Orientation.	E
100-25 (1 per course) Physical Education Skill Courses for Women. (a) Basic Rhythms, (b) Folk Dance, (c) Field Hockey, (d) Soccer & Speedball, (e) Swimming, (f) Tennis, (g) Basketball, (h) Intermediate Modern Dance, (i) Softball, (j) Volleyball, (k) Stunts & Tumbling, (l) Physical Conditioning, (m) Track & Field, (n) Badminton, (o) Archery, (p) Golf, (q) Life Saving, (r) Bowling, (s) Apparatus Activities, (t) Social Dance, (u) Square Dance, (v) Recreational Sports, (w) Fencing, (x) Diving, (y) Horseback riding.	E
113-1 Fundamentals of Body Movement.	C
114-1 Speedball. Techniques and team tactics.	C
211-1 Intermediate Swimming. Prerequisite: pass beginning swimming test.	C
212-1 Beginning Contemporary Dance. Fundamentals of movement and composition. A basic course leading to the creating of contemporary dance composition.	C
216-1 Archery.	C
218-1 Intermediate Fencing.	C
222-1 Folk Dancing.	C
224-1 Basketball.	C
228-1 Tennis.	C
229-1 Intermediate Golf.	C
242-1 Square and Social Dance.	C
244-1 Hockey.	C
271-1 Sailing.	C
272-1 Tap Dance.	C
273-1 to 6 Dance Workshop.	
301-2 Techniques of Teaching Recreational Sports. Analysis and methods of teaching badminton, deck tennis, volleytennis, table tennis, and other recreational sports.	C
303-5 Kinesiology. The mechanical analysis of physical education activities through the study of joint and muscle action. Prerequisite: Anatomy.	C



- 304-10 (2,2,2,2,2) **Techniques of Teaching Sports.** Methods of teaching, construction of daily lesson plans, and analysis of techniques. (a) soccer and volleyball, (b) hockey and speedball, (c) basketball, (d) tumbling, stunts, and gymnastics, (e) softball and tennis. Assistantship required during a,b,c,d, and e. C
- 308-5 **Methods of Teaching Dance.** A course dealing with each of the various types of dance, including fundamental progressions, and composition in each type. Prerequisites: 212, 222 or equivalent. C
- 311-2 (1,1) **Theory of Officiating Basketball.** Study of requirements of a nationally-rated official as set up by the Division of Girls' and Women's Sports. C
- 316-1 **Advanced Swimming.** C
- 317-1 **Life Saving and Water Safety.** Techniques of Red Cross Life Saving and Water Safety. Prerequisite: pass intermediate swimming test. C
- 319-4 **Teaching Elementary School Group Activities.** Study of age characteristics; planning of an activity program for all grade levels; techniques of teaching activities for elementary grades; fulfillment of the Illinois requirements for elementary school teachers. Prerequisite: Psychology 301 or Guidance 305. C
- 321-6 (2-6) **Methods of Teaching in Physical Education for Women.** (a) Team sports, (b) Dance, (c) Individual sports. Prerequisite: consent of instructor or adviser. E
- 323-3 (1,1,1) **Officiating Techniques.** Study of rules and their interpretation; requirements for ratings given by the United States Field Hockey Association and the Division for Girls' and Women's Sports. Officiating practice required. (a) Fall: field hockey and soccer. (b) Winter: basketball. (c) Spring: volleyball and softball. E
- 328-1 **Intermediate Tennis.** C
- 348-2 to 4 **Camp and Community Leadership.** Fundamentals of scouting, camping, and counseling. A weekend camping trip required. C
- 350-5 **Materials and Methods in Elementary Schools.** For supervisors and teachers of physical education. Curriculum planning based on grade characteristics and educational philosophy, presentation of skills including skill tests, lead-up games, stunts and tumbling, games of low organization, creative rhythms, singing games, and folk dance.
- 351-4 **Recreation and Physical Education for Atypical Handicapped Individuals.** Techniques of physical examination; postural defects and their correction; activities suitable for the atypical; program building; and correlation of this program with the physical education curriculum. C
- 352-2 **History of Physical Education.** A study of the background and development of physical education.
- 353-4 **Organization and Administration of Physical Education.** Criteria for the selection of activities; the organization of classes, the policies and the personnel; the physical plant and its upkeep; the planning, utilization, and care of equipment in the physical education program. C
- 354-2 **Principles of Physical Education.** The scientific foundations applied to physical education. C
- 355-3 **Techniques of Teaching Swimming.** Methods of teaching, analysis of strokes, and devices for teaching swimming and life saving. Prerequisite: 211 or equivalent. C
- 360-4 **The Physical Education Program for Girls in Junior and Senior High Schools.** Program planning, source materials, and selected physical activities. C
- 361-1 to 4 **The Teaching of Team Sports and Dance to Junior and Senior High School Girls.** Techniques of teaching volleyball, basketball, soccer, and dance. C
- 362-1 to 4 **Teaching Basic Activities to Junior and Senior High School Girls.** Teaching badminton, softball, basic movement, and recreational games. C
- 363-1 to 4 **Teaching a Sports Program for High School Girls (workshop).** Designed for teachers in service who have provisional certificates. C
- 370-3 to 4 **Tests and Measurements in Physical Education.** The theory of measurement in health and physical education, the selection and administration of appropriate tests, and the interpretation of results. Projects required. C
- 374-1 **Advanced Folk Dance.** C
- 376-1 **Pre-Classic Dance Forms.** Prerequisite: 212 or consent of instructor. C



- 377-1 **Horseback Riding** (fee required). C
- 378-1 **Canoeing and Boating**. Prerequisite: pass swimming test (fee required). C
- 400-4 **Evaluation in Physical Education**. Historical background of measurement in physical education; selection and evaluation of contemporary testing devices; structure and use of tests; administering the testing program; and interpretation and application of results. Fulfills the tests and measurements course requirements for the Master of Science degree. C
- 402-3 **Organization and Administration of Intramural and Extramural Activities**. Planning intramural programs of sports; planning and co-ordinating extramural activities commonly associated with physical education. C
- 403-4 **The Adaptation of Physical and Recreational Activities to the Handicapped Individual**. Recognition of postural deviations; devising and planning programs for the physically atypical. C
- 404-4 **The Teaching of Sports**. Teaching methods, officiating, organization, safety precautions, and selecting equipment for sports. C
- 405-4 **Current Theories and Practices in the Teaching of Dance**. History and evolution of dance; place of dance in education. C
- 406-4 **Basic Concepts of Physical Education**. The place of physical education in the school program, and the concepts underlying the program. (Required of all students not presenting the undergraduate courses 354 or 340.) C
- 407-4 **Scientific Basis of Athletic Training**. C
- 408-2 to 4 **Workshop: Physical Fitness—Its Role and Application in Education**. Improvement of programs and teaching techniques involved in the development of various aspects of physical fitness. Units on postural status; body weight control; tension factors, causes, and control; exercise tolerance; and general body mechanics and control. C
- 420-4 (C); 420-3 (E) **Physiologic Effects of Motor Activity**. The general physiological effects of motor activity upon the structure and function of body organs; specific effect of exercise on the muscular system. Prerequisite: Physiology 209 or equivalent. C
- 475-2 to 4 **Individual Research**. The selection investigation and writing of a research topic under supervision of an instructor. (a) dance, (b) kinesiology, (c) measurement, (d) motor development, (e) physiology of exercise, and (f) history and philosophy. C
- 500-4 **Techniques of Research**. C
- 501-4 **Curriculum in Physical Education**. C
- 502-4 **Foundations of Motor Skills**. C
- 503-4 **Seminar in Physical Education**. C
- 504-4 **Problems in Physical Education**. C
- 507-4 **Scientific Basis of Athletic Training**. C
- 508-3 **Administration of Interschool Athletics**. C
- 509-4 **Supervision of Physical Education**. C
- 510-4 (2,2) **Motor Development**. C
- 511-2 **Analysis of Human Physical Movement**. C
- 525-1 to 6 **Readings in Physical Education**. C
- 599-3 to 9 **Thesis**. C
- 600-2 to 48 **Dissertation**. C

## PHYSICS

- 206-15 (5,5,5) **College Physics**. Designed to meet premedical requirements and the needs of all students majoring in one of the sciences, except physics. Laboratory. Must be taken in a,b,c or a,c,b sequence. Prerequisite: GSD 114c. C
- 211-15 (5,5,5) **University Physics**. Primarily for students with a concentration in physics and pre-engineers. Laboratory. Must be taken in a,b,c or a,c,b sequence. Prerequisite: Mathematics 150b (or concurrent enrollment). C
- 211-15 (5,5,5) **University Physics**. A basic course for science, mathematics, and pre-engineering students. (a) Mechanics, (b) Light, sound, and heat, (c) Electricity

and magnetism. Three lecture, two recitation, and two laboratory hours per week. Must be taken in a,b,c or a,c,b sequence. Prerequisite: (a) Mathematics 150b or concurrent enrollment; (b,c) 211a, Mathematics 252a or concurrent enrollment. **E**

**300-5 University Physics IV.** A continuation of 211 covering modern physics. Three lecture, two recitation and two laboratory hours per week. Prerequisite: 206 or 211C, Mathematics 252b or concurrent enrollment.

**301-8 (4,4) Mechanics.** Intermediate theoretical mechanics, using vector analysis: kinematics, particle dynamics, rigid body mechanics, oscillations, wave motion, and advanced principles. Prerequisites: 206a or 211a, Mathematics 305a, or concurrent enrollment, or consent of instructor. **C**

**301-8 (4,4) Mechanics.** Intermediate mechanics using vector analysis. Prerequisite: 211a; Mathematics 324 or concurrent enrollment. **E**

**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: 206 or 211, Mathematics 252b. **C**

**304-3 Thermodynamics.** A macroscopic study of the thermal properties of matter and the laws of thermodynamics. Prerequisite: 211b and Mathematics 252b. **E**

**305-10 (5,5) Introduction to Electric Theory.** Vector treatment of the theory, with laboratory; electrostatics in vacua and in matter, steady currents, magnetism, alternating currents, complex number analysis of a-c circuits, electromagnetic radiation. Prerequisites: 206 or 211; Mathematics 305a, or concurrent enrollment, or consent of instructor. **C**

**305-8 (4,4) Introduction to Electric Theory.** Vector treatment of the theory: electrostatics in vacuum and in matter, steady currents, magnetism, alternating currents, complex number analysis of a-c circuits, electromagnetic radiation. Must be taken in a,b sequence. Prerequisite: 211c and Mathematics 324. **E**

**307-2 Electric Measurements.** A laboratory course illustrating basic electrical and magnetic properties and emphasizing precision in their measurement. Prerequisite: 305b or concurrent enrollment. **E**

**309-4 Electric Circuits.** Electron tube and transistor circuit principles and applications. Three lecture and three laboratory hours per week. Prerequisite: 211c. **E**

**310-5 Light.** A study of light propagation and optical instruments; interference, diffraction and polarization of light. Laboratory. Prerequisite: 206b or 211b. **C**

**310-4 Light.** Light propagation and optical instruments: reflection, refraction, interference, diffraction, and polarization of light. Prerequisite: 211b. **E**

**311-1 Optics Laboratory.** Advanced experiments in geometrical and physical optics. Two laboratory hours per week. Prerequisite: 310 or concurrent enrollment. **E**

**312-5 Radio.** A study of radio receivers and transmitters. Laboratory. Prerequisite: 206 or 211. **C**

**316-5 History of Physics.** The development of physical concepts and theories and of contemporary physical research. Designed particularly for students planning to teach. **E**

**375-0 to 6 Seminar.** Topics selected from a wide range of physical theories and applications (maximum credit per quarter 2 hours). Prerequisite: consent of instructor. Junior or senior standing recommended. **E**

**404-3 Introduction to Statistical Mechanics.** A brief treatment of the kinetic theory of gases; introduction of phase spaces and ensemble theory. Shows the connection between mechanical and thermodynamic concepts and obtains a statistical interpretation of thermodynamic processes. Prerequisites: 301, 304 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. Laboratory. Prerequisites: 305; Mathematics 305a or consent of instructor. **C**

**410-5 Physical Optics.** A theoretical and experimental study of light as electromagnetic energy; its production, detection, and measurement. Laboratory. Prerequisites: Mathematics 252b and three advanced physics courses. **C**

**413-8 (4,4) Atomic Physics.** A general survey of modern physics including relativity



theory, quantum theory, atomic structure and spectra, and wave mechanics. Prerequisites: 301, 305; Mathematics 305a or consent of instructor. C

**414-5 Nuclear Physics.** Basic properties of nuclei, systematics of nuclear stability, radioactive decay; alpha, beta, and gamma ray spectroscopy, nuclear reactions, models of the nucleus, neutron physics and elementary particles. Prerequisite: 413. C

**415-12 (4,4,4) Modern Physics.** Elements of wave mechanics, atomic and nuclear physics, fundamental particles, and relativity. Must be taken in a,b,c sequence. Prerequisite: 300; 9 hours of mathematics numbered 300 or above. E

**418-1 to 4 Modern Physics Laboratory.** E

**420-2 to 5 Special Projects.** Each student is assigned to a definite investigative topic. Adapted to advanced undergraduate students. Prerequisites: 301, 305.

**425-5 Electrical Phenomena in Gases.** Excitation and ionization of gas atoms; diffusion of ions; space charge; glow and arc discharges. Prerequisite: 305. C

**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 foreign language. E

**435-3 Plasma Physics.** Basic equations and conservation laws; first order orbit theory with applications to static and dynamic problems; small amplitude plasma waves; hydromagnetic shocks; collision effects; diffusion across a magnetic field; stability; coupling of plasmas and radiation. Prerequisite: 305a,b. E

**445-8 (4,4) X-Ray Crystallography.** (a) Symmetry elements, development of space groups, reciprocal space, geometrical theory of diffraction, determination of lattice parameters, Fourier representations of periodic structure. (b) Production of x-rays, kinematical theory of x-ray diffraction, diffraction techniques, factors affecting the intensity of reflections, extinction contrast methods, introduction to the dynamical theory. Must be taken in a,b sequence. Prerequisite: 300. E

**450-5 (C); 450-3 (E) 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 semiconductors. Prerequisites: 305, 413 or 415a; 304 or consent of instructor.

**501-15 (3,3,3,3,3) Methods of Theoretical Physics.**

**510-9 (3,3,3) Classical Mechanics.** E

**511-12 (4,4,4) Mathematical Methods of Physics.** C

**520-2 to 5 Special Projects.** C

**530-9 (3,3,3) Electromagnetic Theory.** E

**531-9 (3,3,3) Quantum Mechanics.**

**540-3 Nuclear Physics.** E

**555-6 (3,3) Materials Structure Analysis.** C

**560-3 Statistical Mechanics.** E

**570-3 Solid State Physics.** E

**575-1 to 4 Graduate Seminar.** E

**580-3 to 6 Selected Topics in Physics.** E

**590-1 to 9 Thesis.** C

**590-1 to 9 Research in Physics (Thesis).** E

## PHYSIOLOGY

**200-3 Occupational Therapy Orientation.** A survey and history of the field. The uses, techniques and philosophies of occupational therapy and its role in the treatment of disease and in rehabilitation. Three hours lecture per week. C

**209-4 Principles of Physiology.** A comprehensive introductory analysis of the functional machinery of the human body. Three lectures and two laboratory hours per week. Prerequisite: Zoology 103 or Physiology 300. No credit toward a concentration in zoology. E

**215-3 Introduction to Pharmacology.** Use and action of drugs on the human body. Primarily for nurses. Three hours lecture per week. C



**300-4 to 5 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, 300N, is reserved chiefly for nursing students. All bodily systems are reviewed. A three-hour laboratory is substituted for one of the lectures. C

**300-4 Human Anatomy.** The anatomy of the principal systems of the human body. Three lectures and two laboratory hours per week. Prerequisite: GSA 201b, or zoology 103. No credit toward a concentration in zoology. E

**GSA 301-4 Principles of Physiology.** C

**GSA 302-3 Psychobiological Foundations of Behavior.** C

**315-15 (5,5,5) Advanced College Physiology.** Lectures emphasize mammalian and human physiology whereas the laboratory involves function throughout the vertebrate classes. (a) Blood, circulation, and respiration; (b) digestion, excretion, and endocrines; (c) muscles, nervous system, and sense organs. 3 hours lecture and 4 hours laboratory per week. Prerequisite: GSA 201c and 5 hours of chemistry. C

**315-15 (5,5,5) College Physiology.** Lectures emphasize mammalian and human physiology. Laboratory involves function throughout the vertebrate classes. Must be taken in a,b,c or a,c,b sequence. Three lecture and four laboratory hours per week. Prerequisites: GSA 201b or zoology 103, and 5 hours of chemistry. E

**410-15 (5,5,5) Advanced Anatomy.** Dissection of the human body. Primarily for students with a concentration in physiology and other biological sciences. Not a premedical course. 2 hours lecture, 6 hours laboratory. C

**414-4 Anatomy and Physiology of Speech and Hearing Mechanisms.** The anatomy and physiology of the vocal apparatus. Primarily for students with a concentration in speech pathology. 3 hours lecture, 2 hours laboratory. C

**415-8 (4,4) Experimental Animal Surgery.** Preparation of animals for surgery. Anesthesia, instruments, care of animal quarters, selected exercises. 2 hours lecture, 4 hours laboratory. Part b may be elected independently of a, only by consent of the chairman. C

**417-6 (3,3) 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, chemo-therapy, toxicology, and therapeutics. Prerequisites: basic courses in chemistry and biological sciences. 2 hours lecture, 2 hours laboratory. C

**430-12 (4,4,4) Cellular Physiology.** The nature and mechanism of the living cell. Chemical and physical aspects of vital activity. Required for graduate majors in physiology. 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 a concentration in physiology and for students in other biological sciences. 2 hours lecture, 2 hours laboratory.

**440-3 Electron Microscopy.** Lectures, demonstrations, and practical experience with the electron microscope. Fundamentals of specimen preparation. Open to students with advanced knowledge of any natural or physical sciences. 2 hours lecture, 2 hours laboratory. C

**450-4 to 16 Special Problems in Physiology.** Selected problems in various aspects of physiology. 8 hours laboratory. Open only by permission. C

**455-2 Physiological Problems in Rehabilitation.** Designed specifically for the rehabilitation counseling program. Problems of the handicapped. 2 hours lecture. C

**460-12 (4,4,4) Mammalian Physiology.** Function and biochemical organization in mammals, especially man. Open to students with adequate courses in biological sciences and chemistry. (a) blood, circulation, respiration. (b) digestion, excretion, endocrines. (c) nervous system sense organs. 3 hours lecture, 4 hours laboratory.

**500-1 to 9 Advanced Seminar.** C

**519-3 Experimental Pharmacology.** C

**520-9 (3,3,3) Physiological Technics.** C

**521-1 to 6 Readings in Current Physiological Literature.** C

550-3 Radiation Biology.	C
599-3 to 9 Thesis.	C
600-4 to 36 Doctoral Dissertation.	C

## PLAN A

151-12 (3,3,3,3) Honors Seminar.	C
251-12 (3,3,3,3) Honors Seminar.	C
351-9 (3,3,3) Honors Seminar.	C
391-9 (3,3,3) Honors Seminar.	C

## PLANT INDUSTRIES

103-4 Introductory Study of Soils. An introduction to soils and fertilizers, to their role in crop production, and to their management and conservation. Prerequisite: high school chemistry or consent of instructor.	C
264-4 General Horticulture. General principles of plant propagation, vegetable growing, fruit growing, landscape gardening, and floriculture. Field trip. Seniors cannot enroll without consent of department.	C
301-4 Soil Science for Foresters. Basic concepts of soil formation, classification, characteristics, fertilization, and management as they apply to the growth of trees. Field trips. Prerequisite: one course in chemistry and a major in forestry.	C
302-3 to 4 Advanced Soil Science. Basic principles of soil physics, chemistry and fertility as they relate to plant production. Prerequisite: 103 or 301.	C
304-3 Landscape Gardening. Land selection, landscape design and development for home, farm, and public sites with regard to area adaptation. Field trips.	C
306-5 (3,2) Soil and Water Conservation. (Same as Agricultural Industries 306.) (a) The study of the theoretical factors affecting soil erosion and excessive water run-off, including practices of water management and soil conservation. Prerequisite: one course in soils. (b) Laboratory. Practical structure methods of controlling water run-off and soil erosion. Prerequisite: 306a or concurrent enrollment.	C
309-4 Field Crop Production. Principles of growth and production of common field crops: cereals, forages, and miscellaneous crops; growth characteristics; adaptation; improvement; culture; diseases and insects and their control; utilization. Field trip. Prerequisite: GSA 201b.	C
315-4 Plant Genetics. (See Botany 315.)	C
316-4 Small Fruits. Production of strawberries, brambles, grapes, and miscellaneous small fruits. Field trips. Prerequisite: GSA 201c or concurrent enrollment or consent of department.	C
317-4 Insect Pests and Their Control. (See Zoology 316.)	C
324-4 Orchardling. Commercial tree fruit growing, physiology, orchard practices, pest control, harvesting, and marketing. Field trips. Prerequisites: 264, GSA 201c or concurrent enrollment.	C
334-4 Preservation and Processing of Agricultural Produce.	
340-4 Commercial Vegetable Production. Culture, harvesting, and marketing of commercial vegetables. Field trips. Prerequisites: 264, GSA 201c.	C
344-4 General Floriculture. Propagation, culture, and uses of flowering plants in the home and garden. Field trips. Prerequisite: GSA 201c.	C
355-5 Plant Pathology.	
381-1 to 2 Agricultural Seminar. (Same as Agricultural Industries 381, Animal Industries 381, and Forestry 381.) Discussion of problems in agriculture. Limited to senior students.	C
390-1 to 6 Special Studies in Plant Industries. Assignments involving research and individual problems. Prerequisite: consent of chairman.	C
401-4 Soil Physics. Physical properties of the soil; factors affecting them, their measurements, evaluation, and influence in determination of soil productivity. Prerequisite: 103 or 301.	C
402-4 Soil Morphology and Classification. Morphology and soil formation, descrip-	



tion and identification of soil profiles, classification of soils, techniques of soil mapping, and interpretation of survey data. Field trips. Prerequisite: 103 or 301. C

**404-3 Turf Management.** Principles and methods of establishing and maintaining turf for homes, recreational areas, and public grounds. Study of basic plant and soil materials, fertility, culture, water management, and pest control as related to turf-grasses in variable environments. Field trips. Prerequisite: GSA 201c or equivalent; course in soils recommended. C

**406-4 Radioisotopes, Principles and Practices.** Basic characteristics of radioactive materials and detection systems. Application of radioisotope technology to biologically related sciences, such as agriculture; includes requisite health physics safety practices. Prerequisite: Biochemistry, or physiology, or consent of department. C

**407-5 (3,2) Fertilizers and Soil Fertility.** (a) Lecture. The uses of fertilizer material; effects of various fertilizers on soils and crops; fertility maintenance and soil management. Prerequisite: one course in soils. (b) Laboratory. The laboratory study of the chemistry and fertility of soils. Parallels the theoretical presentation given in 407a. Prerequisite: 407a or concurrent enrollment. C

**408-4 World Crop Production.** Ecological and physiological considerations used in the interpretation of crop research data, with emphasis on modern developments and trends in production and research of major agronomic crops. Prerequisite: 309. C

**418-4 Weeds and Their Control.** Losses due to weeds, weed identification and distribution, methods of weed dissemination and reproduction. Mechanical, biological, and chemical control of weeds. State and federal legislation pertaining to weed control herbicides. Herbicide commercialization. Field trips. Prerequisite: GSA 201c or concurrent enrollment. C

**419-4 Forage Crop Management.** Forage crop production and utilization; forage crop characteristics, breeding, and ecology; grasslands as related to animal production, soil conservation, crop rotation, and land use. Prerequisite: GSA 309. C

**424-5 (3,2) Soil Microbiology.** (a) Lecture. A study of the numbers, characteristics, and biochemical activities of soil micro-organisms, with particular consideration of their role in the transformations of organic matter, nitrogen, and minerals as related to soil fertility and management. Prerequisite: one course in Microbiology or soils. (b) Laboratory. Experiments designed to determine numbers, and to study the characteristics and biochemical activities of the soil microflora as related to fertility. Prerequisites: 424a, or concurrent enrollment, Microbiology 301. C

**438-3 Advanced Vegetable Crops.** Studies of the genetic, morphological, and physiological factors influencing the production of vegetable crops. Prerequisites: 264, Botany 320, or consent of instructor. C

**440-3 Plant Propagation.** Fundamental principles of asexual and sexual propagation of horticultural plants. Actual work with seeds, cuttings, grafts, and other methods of propagation. Prerequisites: 264, GSA 201b or consent of department. C

**455-5 Plant Pathology.** (See Botany 456.) C

**456c,e-4 (2,2) Agricultural Marketing Problems and Practices.** (See Agricultural Industries 456c,e). C

**506-2 Laboratory Methods for Radioisotopes.** C

**507-3 Advanced Soil Fertility.** C

**520-1 to 6 Readings.** C

**575-1 to 6 Research.** C

**581-1 to 6 Seminar.** C

**599-2 to 9 Thesis.** C

## PRINTING

**217-4 General Typography.** (Same as Industrial Education 217.) Screen and block typography, foundry type, type classifications, use of job cases, hand typesetting, proof-pulling, and introduction to layout, use of illustrations, and cold-type composition. C

**259-3 to 30 Printing Skills.** A variable-credit course into which students from other



institutions and the Southern Illinois University Vocational-Technical Institute may transfer credit for courses in printing. C

**265-4 Machine Composition.** (Same as Journalism 265.) Elementary hot-type keyboard practice; progressive exercises, adjustments, and maintenance. Study of cold type methods. Prerequisite: 217. C

**271-7 (4,3) Presswork.** Introduction to platen press operation, imposition and lockup, preparation of the press, feeders, cylinder presses, and automatic presses. Principles of presswork management. Must be taken in a,b sequence. C

**302-3 Advanced General Typography.** Advanced work in copy preparation, copy fitting, and layout problems. C

**308-7 (4,3) Photolithography.** Theory and practice of layout, copy preparation, photography, stripping, plate making and presswork for offset lithography. Must be taken in a,b sequence. Prerequisite: 271a. C

**312-3 Paper.** Historical background, materials and methods used in today's modern mills; sources and method of distribution; classification of printing papers—grades, weights, sizes, and quantities; selection to meet end-use specifications; trade customs; testing and quality evaluation; calculating requirements and cost determination. Prerequisite: 271b. C

**314-3 Bindery.** Practical use of bindery equipment. Survey of bindery and finishing operations as they pertain to sheet work, pamphlet binding, case-bound and edition book binding. Equipment common to all types of binding is studied as well as special purpose manual and automatic facilities. C

**365-3 Printing Operation Analysis.** Classification of printed matter by format and design for end-use purposes; determination of materials used and operations performed; comparative evaluation with respect to other processes, methods and facilities. Prerequisite: 312. C

**366-3 Printing Cost Analysis.** Study of pricing methods and practices showing the allocation of materials and labor costs; application of cost accounting methods in the determination of actual vs. budgeted hour cost rates; distribution of administrative and manufacturing expenses; record keeping and the application and use of data processing equipment. Prerequisite: 365 and Accounting 250. C

**379-9 (3,3,3) Printing Production.** Study of all aspects of printing production and plant operation. Functions and responsibilities of general management. Marketing, advertising, and selling techniques. Financial management with its attendant records and controls. Manufacturing practices, including organization, facilities, plant layout, production and quality control, procurement, warehousing and inventory. Industrial relations, including a survey of the jurisdiction, aims, and policies of the printing and related graphic arts trade unions. Must be taken in a,b,c sequence. Prerequisite: 365. May be taken concurrently with 381a,b. C

**381-8 (4,4) Estimating.** A comprehensive study of estimating methods with extensive practice in the preparation of letterpress and offset printing cost forecasts as the basis for selling and production control. Duties and responsibilities of the estimator. Sources of production data, industry standards and performance records. Use of time and motion studies. Must be taken in a,b sequence. Prerequisite: 365. C

**384-3 Seminar in Printing Management.** Subjects relating to some phase of printing plant operation, management problems or new graphic arts developments are assigned for original research and study. A comprehensive term report is required after periodic progress reports have been subjected to class discussion. Prerequisite: 379b. C

## PSYCHOLOGY

**211-8 (4,4) Principles and Methods of Psychology.** An introduction to the experimental methods utilized in the study of behavior. (a) The application of methods to the study of sensation, perception, and learning, (b) the analysis and interpretation of psychological data. Lecture and laboratory. Prerequisite: GSB 201c.

**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: GSB 201c.

**GSA 302-3 Psychobiological Foundations of Behavior.**

C

**303-4 Adolescent Psychology.** Examines the physical and psychological development of the adolescent, and the relevance of childhood development to adolescent problems. Prerequisite: GSB 201c.

**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: GSB 201c.

**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: GSB 201c. C

**305-4 Personality Dynamics.** Exploration of human motivations, personality patterns, and ways of coping with the stresses of modern life. Prerequisite: GSB 201c. E

**307-4 Social Psychology.** Introduction to the study of the individual's interaction with his social environment. Considers problems of social learning, attitude formation, communication, social influence processes and group behavior. Prerequisite: GSB 201c.

**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: 211a, and 211b.

**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 are examined in lectures and laboratory. Prerequisite: 211a and 211b.

**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: 211a and 211b.

**314-4 Experimental Psychology: Comparative and Physiological.** An examination of the physiological and phylogenetic variables affecting behavior. The laboratory will involve work with different types of organisms, emphasizing physiological concomitants of behavior. Lecture and laboratory. Prerequisite: 211b. C

**314-4 Experimental Psychology: Comparative and Physiological.** An examination of the physiological and phylogenetic variables affecting behavior. The laboratory involves work with different types of organisms, emphasizing physiological concomitants of behavior. Lecture and laboratory. Prerequisite: 211. E

**320-4 Industrial Psychology.** A study of the use of psychological methods in the analysis of human factor problems in business and industry. Prerequisite: GSB 201c. C

**320-4 Industrial Psychology.** A study of the functions of psychology as a science and as a profession in contemporary business and industry. Prerequisite: GSB 201c. E

**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: GSB 201c. C

**323-4 Psychology of Employee Relations.** Job satisfaction and morale, psychological aspects of labor relations, interviewing methods, and human relations training. Lecture and laboratory. Prerequisite: GSB 201c.

**399a-3 to 9, 399b-3 to 12 Research and Investigation.** Honors. Intensive study in selected areas for students qualified for honors work in psychology. A research paper or equivalent will be required. Prerequisite: consent of chairman. (a) For juniors, (b) for seniors. C

**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: 211a and 211b 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. Prerequisite: consent of instructor.



- 407-4 Theories of Learning.** A consideration of the major contemporary learning theories and their relation to experimental data. Prerequisite: 211a and 211b 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. Prerequisites: 211a and 211b 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: signed consent of psychology adviser.
- 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. C
- 421-4 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.
- 424-4 Psychophysical Methods.** Survey of the major psychophysical methods, and their applications. Lecture and laboratory. C
- 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 deter mental health. Prerequisite: 305 or consent of instructor.
- 437-3 Fundamentals of Counseling.** Introduction to the common assumptions, dimensions, and communicative skills underlying psychological counseling. Prerequisite: 305 or consent of instructor. E
- 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 psychological 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 Work Methods and Measurement.** A study of the analysis and evaluation of jobs and the measurement of work performances by the use of standard time tables. Prerequisite: 320 or consent of instructor.
- 479-4 Psychology of Industrial Conflict.** Consideration of social and psychological factors underlying controversies between workers and management. Prerequisite: 320 or consent of instructor. E
- 490-1 to 8 Independent Projects.** Independent readings and projects in psychology. Prerequisite: consent of instructor and chairman.
- 495-1 to 18 Seminar: Selected Topics.** Varied content. To be offered from time to time as need exists and as faculty interest and time permit. Prerequisite: consent of department. C
- 501-12 (4,4,4) Proseminar in General Psychology.** C
- 509-4 Instrumentation in Behavioral Science.** C
- 512-4 Sensory Processes.** C
- 514-8 (4,4) Physiological Psychology.** C



520-4 Research Design and Inference I.	C
521-4 Research Design and Inference II.	C
522-4 Research Design and Inference III.	C
523-2 Research Seminar.	C
524-4 Advanced Research Methodology.	C
525-4 Mental Test Theory.	C
530-4 Personality Theory and Dynamics.	C
531-2 to 4 Advanced Psychopathology.	C
532-2 Experimental Approaches to Personality.	C
533-3 Experimental Approaches to Psychopathology.	C
536-4 Fundamentals of Counseling.	C
537-4 Counseling and Psychotherapy.	C
538-2 Group Psychotherapy.	C
541-6 (4,2) Psychodiagnostics I.	C
543-6 (4,2) Psychodiagnostics II.	C
545-2 Psychodagnosis III.	C
546-3 to 4 Psychodiagnostics for Special Populations.	C
547-2 Assessment Procedures in Counseling.	C
552-4 Experimental Child Psychology.	C
554-2 Developmental Theory.	C
556-2 Psychological Treatment of the Child.	C
561-4 Social Influence Processes.	C
562-4 Observational Techniques and Content Analysis.	C
564-4 Communication and Group Behavior.	C
571-4 Industrial Motivation and Morale.	C
572-4 Industrial Training.	C
573-4 (2,2) Employee Selection and Evaluation.	C
574-2 Psychology of Industrial Relations.	C
576-2 to 4 Human Engineering.	C
590-1 to 16 Readings in Psychology.	C
591-1 to 36 Research in Psychology.	C
593-1 to 18 Practicum in Psychology.	C
595-1 to 18 Advanced Seminar.	C
598-2 Ethical and Professional Problems in Psychology.	C
599-1 to 9 Thesis.	C
600-1 to 45 Dissertation.	C

## RADIO-TELEVISION

161-4 **Radio-Television Speaking.** Oral and visual speaking techniques for various radio and television speaking situations such as studio announcing, musical and dramatic programs, interviews and newscasts. Extensive microphone and on-camera practice. Audio and video tape recording sessions, as well as radio and TV studio facilities for practice and performance. Three one-hour lectures and one two-hour laboratory each week. C

251-3 **Survey of Broadcasting.** Examinations of the history of the American system of broadcasting, including discussions of the industry, network structure, and local station organization and economics. Similar examination of various systems of foreign broadcasting.

252-3 **Broadcast Production Analysis.** A comprehensive examination of requirements and techniques of effective broadcast productions, both radio and television, with specific production improving procedures. A basic requirement for those who would create and write effective broadcast productions of any magnitude, whether for commercial or educational broadcasting. C

260-3 **Audio Control Room Practices.** Familiarization with and operation of Radio and Television Audio Control Room equipment, such as audio control consoles, turntables, tape recorders and microphones (types, use and proper placement). This course also includes familiarization and operation of remote broadcasting equipment

- and facilities. Preparation for FCC Third Class License with broadcast endorsement. Recommended for Radio-TV majors and minors only. C
- 261-3 Radio Announcing.** Vocal and interpretative development. Extensive practice for various announcing situations. Numerous audio recordings. Two one-hour lectures and two-hour laboratory period each week. Prerequisite: minimum grade of C in R-TV 161. C
- 273-3 Fundamentals of Radio Program Production.** Techniques of producing and directing various types of radio programs with emphasis on the creative use of sound effects and music. Deals with such matters as timing, pacing, perspectives, and microphone techniques.
- 274-5 Basic Television Production.** Use of equipment and basic techniques in production of television programs of all types. Three one-hour lectures and one four-hour laboratory per week.
- 310-4 Radio-TV News.** The basic techniques of writing, re-writing, and editing news from local and wire service sources, for presentation on radio and television. Actual practice with the WSIU and WSIU-TV facilities are stressed. Prerequisite: Journalism 103, 201, 202, and 303. C
- 351-5 Programs and Audiences.** The structure of broadcast programs, programming objectives, audience characteristics, analysis methods, preparation of station program schedules. Development, organization and planning of new programs within limitations of budgets and local situations. Program revising. C
- 352-4 Broadcast Laws and Policies.** Legal aspects of broadcasting in America. Precedent legal cases and actions by the Federal Communications Commission. Industry and network codes. International agreements. Prerequisite: 251. C
- 353-2 Radio and Television in Education.** The history and role of radio and television in education. Philosophies for education by radio and television. Analysis of types of educational broadcasting, including in-school broadcasting, adult education, and service programs. C
- 355-3 Broadcast Persuasion Factors.** The analysis of persuasion factors and audience responses in terms of program schedules and production. Prerequisite: 351. C
- 358-4 Radio Writing.** Oral forms of writing for radio, including commercials, features, music scripting, women's and children's programs, etc. Prerequisite: 273.
- 359-4 Television Writing.** The writing of continuity forms for television. The writing of dramatic and documentary scripts for television, with emphasis on development of ideas and plot construction. Prerequisites: 274, 358.
- 361-3 Television Announcing.** Television announcing techniques for such situations as voice-over-film, special events, on-camera studio programs, and commercial presentations. Television studio facilities and video tape facilities for practice and performance. Prerequisite: 261. C
- 367-3 Radio-Television Production Survey.** General survey of production problems in radio and television, including problems of writing, announcing, production, direction, sales and management. No prerequisites. C
- 369-4 Television Directing.** Instruction and practical experience in the directing of television programs. Techniques of directing all types of programs including news, instructional, remotes, panel and music. Two one-hour lectures and one four-hour laboratory each week. Prerequisite: 274. C
- 370-2 Films for Television.** The use of films and video tape in the television industry. Included are sections on local film production as well as programming and securing syndicated programs from outside sources. This course is designed for the student concentrating in television interested in programming and management. C
- 371-3 Techniques of Staging, Lighting and Graphics for Television.** A study of television studio set design, the various techniques of studio lighting, and the special demands of the graphic arts in television production. C
- 373-1 to 3 Advanced Radio Production Laboratory.** Staff work on WSIU-FM including actual production of radio programs from conception through completion. May be repeated. Must be repeated by students concentrating in radio-television for a total of 4 hours minimum, 8 hours maximum, but combined total of 373 and 374 cannot exceed 12 hours. Prerequisite: 273. C



**374-1 to 3 Advanced Television Production Laboratory.** Staff work on WSIU-TV and Closed Circuit Television operations, including actual production of television programs from conception to completion. May be repeated. Must be repeated by students concentrating in radio-television for a total of 4 hours minimum, 8 hours maximum, but combined total of 373 and 374 cannot exceed 12 hours. Prerequisite: 274. C

**375-1 to 4 Problems in Radio-Television Programming.**

**375J-1 to 4 Individual Research Problems.** May be repeated, but for no more than a total of 4 hours. Assignments to be made through consultation with the chairman.

**375N-1 to 4 Production Problems.** May be repeated, but for no more than a total of 4 hours. Assignments to be made through consultation with radio-television instructors. C

**377-3 Radio and TV Advertising.** Study and practical radio-television experience in designing and developing promotional and publicity campaigns for the radio and television media. Scope of study includes radio and television advertising and sales techniques, methods and skills. Prerequisite: Journalism 370 and 371. C

**385-1 to 4 Radio-TV Special Events.** Actual practice in the production, from conception to completion, of various types of special news programs for radio and television, including newscasting, sports casting, special events broadcasting, women's programming, children's programming, farm programming, and home economics programming. May be repeated for a total of 4 hours. Prerequisite: 310. C

**390-5 Broadcast Station Management.** Objectives, procedures, equipment, costs, and policies in radio and television station development, management and operation. Prerequisites: 251, 351, 352. C

**393-3 Radio, Television, and Society.** The interrelation of radio and television with social habit patterns and with economic and political systems. International broadcasting. Prerequisite: 251.

## RECREATION AND OUTDOOR EDUCATION

**100-3 Orientation to Parks and Recreation.** An introduction of the student to his professional field. Comparative study of the patterns of work and leisure in folk, urban, and mass societies; of the transition from work for survival, to work as a vocation, to work for leisure. An orientation to the problems of leisure and programming for recreation. C

**201-4 Introduction to Recreation Leadership.** Introduction to concepts of recreation, its nature, significance, and extent. Its application to schools, park departments, and municipalities. C

**202-4 Organization and Conduct of Recreation Programs.** A study of essential elements in a community recreation program. Leadership area and facilities, activities, and organization methods. C

**220-4 Leadership in Outdoor Recreation.** Designed to develop leadership skills in conducting outdoor recreation activities at playgrounds, parks, camps, and other outdoor areas. C

**230-4 Recreational Arts and Crafts.** Methods and materials in arts and crafts projects suitable for playgrounds, recreation centers, clubs, and camps. Emphasis on the use and care of simple hand tools and the use of native and inexpensive materials. C

**301-4 Programs in School Camping and Outdoor Education.** Problems in school camping and their solution in specific cases, guidance in planning for school camp facilities, personnel and program, and patterns of administration and leadership techniques. C

**302-4 Institutional Recreation.** Introduces the basic principles and practices of recreation in a variety of total institutional settings and populations. Emphasis on competencies and skills in working with institutionalized persons. C

**305-4 Maintenance and Repair of Recreation Areas, Facilities, and Equipment.** A study of methods used in maintenance and repair of park and recreation areas, community centers, special play structures and apparatus, and various kinds of recreation equipment. C

**310-3 Social Recreation.** Materials and techniques for planning and conducting



- social activities for groups of varying sizes and ages in the many different social situations. C
- 311-2 to 6 Camp Leadership.** (Field Experiences) C
- 312-2 to 6 Playground Leadership.** (Field Experiences) C
- 313-2 to 6 Agency, Community Center, Social Recreation Leadership.** (Field Experiences) C
- 314-2 to 6 Institutional Recreation Leadership.** (Field Experiences) Supervised leadership in a public agency or private agency or at the University's camp at Little Grassy Lake. Emphasis on recreational activities common to such organizational programs. One regularly scheduled group meeting each week to discuss leadership problems and to coordinate materials, principles, and theory with practices in field work situations. Students to spend two hours a week for each hour of credit. C
- 315-4 Recreational Dramatics.** Principles, theory and techniques of producing all types of dramatic activities for recreation. Informal and impromptu drama for the playground and camping situations is stressed. C
- 360-4 Playground Administration.** Practical study of such problems as providing facilities and equipment, setting up the program, budgeting and financing, selecting and supervising the personnel and building good will. One hour a day, four days a week. C
- 365-2 to 4 The Organization and Administration of Community Recreation.** Practical study of such problems as providing facilities and equipment, setting up the program, budgeting and financing, promotion, selecting and supervising the staff, and integrating the administration. C
- 368-4 Camping Administration.** To develop an understanding of accepted methods of selecting and managing personnel, planning programs, maintaining health and safety measures, preparing food, developing camp counselors, evaluating camps, administering business, and doing other related procedures involved in setting up and operating a camp. C
- 413-4 Safe and Healthful Living Outdoors.** Areas to be included are foods, sanitation, survival, plants and animals, natural hazards, emergency care, water, riflery, and others. Prerequisites: 334, and at least 10 hours of biological sciences. C
- 425-4 Construction and Maintenance of Recreation Areas.** Principles of planning, construction, management and maintenance of shelters, utilities, sanitation, structures, erosion control, and other related problems. C
- 450-4 Principles and Interpretations of Recreation.** Principles of recreation in relation to education and everyday life. Basic concepts underlying the interpretation of recreation and leisure in the light of economic, psychological, political, and social conditions. C
- 470-4 Recreation in Public Education.** Emphasis on current practices and trends in curriculum content, adult education, extracurricular activities, after-school and vacation programs, and co-operative programs with other agencies. C
- 480-4 Techniques in Camping.** Preparation of material for use in camps; techniques of camp procedure, camp craft, woodmanship, and crafts. C
- 490-2 to 12 Practicum.** C
- 510-2 to 6 School Camping and Outdoor Education Workshop.** C
- 520-4 Recreation Program Workshop.** C
- 530-4 Organization for Community Recreation.** C
- 540-4 Recreation Surveys and Planning of Facilities.** C
- 550-2 to 6 Field Problems in Community Recreation.** C
- 560-2 to 6 Field Problems.** C

## RELIGION

- 204-3 Introduction to the Bible.** C
- 206-3 Personalities of the Old Testament.** C
- 207-3 Bible—Life of Christ.** C
- 208-3 Bible—Life and Writings of Paul.** C
- 210-3 Survey of Roman Catholic Faith.** C
- 211-3 Divine Claims of Christianity.** C

212-2	Analysis of Divine Belief.	C
214-3	Christian Affirmations.	C
215-3	Christian Apologetics.	C
216-3	Marriage and the Christian Home.	C
225-3	Ministry of Music.	C
226-3	Hymnology.	C
227-3	Practical Church Music.	C
228-1	Chapel Singers.	C
235-3	Basic Christian Ethics.	C
240-3	Introduction to the History of Christianity.	C
243-3	History of Christian Worship.	C
244-3	History of Church of England.	C
245-3	Sixteenth Century Protestant Reformation.	C
252-3	Introduction to Religious Education.	C
253-3	Religious Education in the Church.	C
254-3	Church and Community.	C
305-3	Bible—Genesis Through Numbers.	C
307-3	Bible—The Poetical Books of the Old Testament.	C
308-3	Bible—The Prophets.	C
311-3	Christian Doctrine.	C
313-3	Christianity and Communism.	C
315-2	Theology of the Sacraments.	C
335-3	Basic Christian Ethics.	C
337-3	The Teachings of Jesus.	C
346-3	History of the English Bible.	C
351-3	Religious Education of Youth.	C
352-6	(3,3) Church Administration I.	C
354-3	Christian Principles for Teachers.	C

## SCIENCE AND TECHNOLOGY

390-1 to 15 Science and Technology Honors. Honors work in the biological sciences, chemistry, mathematics, or physics. Entrance to this course is by invitation of the Science and Technology Honors Program Committee. Prerequisite: junior or senior standing. E

## SECONDARY EDUCATION

310-4 History and Principles of Secondary Education. This course presents the nature, objectives, and current practices found in secondary schools throughout America. Prerequisite: Guidance 305 or Psychology 303, completion of 18 or more quarter hours in a declared concentration or consent of instructor. C

315-3 High School Methods. Various types of procedures used for effective classroom teaching constitute the basis of study and discussion. The problem approach and unit method are stressed. Prerequisite: 310. C

315-4 High School Methods. Various types of procedures used for effective classroom teaching constitute the basis of study and discussion. The problem approach and unit method are stressed. Prerequisite: Guidance 305 or consent of instructor. E

352-4 to 16 Secondary Student Teaching. C

352D-8 to 12 Secondary Student Teaching. E

352E-4 to 8 Secondary Student Teaching. Prerequisite: 352D-8. E

375-2 to 3 Readings in Secondary Education. Readings are selected on the basis of each student's background and future plans. C

402-4 Aerospace Education Workshop. Teachers learn about current developments in this area and how to incorporate aerospace information into existing curricula. They study in some detail the social, political, and economic consequences of this era. Prerequisite: consent of instructor. C

407-4 The Junior High School. The place of the junior high school in the organ-

izational pattern, with major emphasis upon the areas of organization, administration, and curriculum.

**440-3 Teaching Reading in High School.** A foundation course in how to teach reading in junior and senior high school: developmental and corrective reading programs; appraisal of reading abilities; methods and materials of instruction. Prerequisite: Guidance 305. C

**450-4 to 16 Field Training in Community Development Methods.** C

**487-4 Teaching the Natural Sciences in Secondary Schools.** Objectives of science education; instruction methods and techniques appropriate for teaching science; desirable equipment, audio-visual aids, and instructional material; development of a course outline and at least one instruction unit. Prerequisite: 315 or consent of instructor. E

**488-3 Teaching Social Studies in Secondary Schools.** Deals with objectives, scope and sequence of curriculum, methods of teaching different courses and age groups, materials and evaluation. Prerequisite: Guidance 305.

**490-4 Workshop in Economics Education.** (See Economics 490.)

**505-4 Improvement of Reading Instruction.**

**507-2 to 4 Readings in Reading.**

**508-4 Seminar: Trends in Selected Areas in Secondary Schools.**

**509-4 to 8 Practicum in Reading.**

**510-4 to 8 Seminar: Problems in Reading.** C

**514-4 Organization and Administration of Reading Programs.**

**516-8 to 12 Internship in Reading.** C

**518-2 Supervision of Student Teachers.**

**521-9 (3,3,3) Diagnosis and Correction of Reading Disabilities.**

**544-9 NDEA Summer Institute for Teachers of German.** C

**550-4 Core Curriculum in the Secondary School.**

**560-1 to 8 New Developments in Technological Education.** C

**562-4 The High School Curriculum.**

**564-4 High School Principalship.**

**570-4 Extra-Class Activities.** E

**575-2 to 4 Individual Research.**

**586-3 The Change Agent in Planned Change.** C

**589-2 Seminar in Community Development.** C

**591-4 Workshop in Current Problems in Secondary Education.**

**596-5 to 9 Independent Investigation.**

**597-1 to 3, 598-1 to 3, 599-1 to 3 Thesis.** C

**600-1 to 48 Dissertation.** C

## SECRETARIAL AND BUSINESS EDUCATION

(See Business Education)

Tests are given during the first week of all shorthand and typewriting courses to insure the correct placement of students in classes.

**201-9 (3,3,3) Typewriting.** Mastery of the keyboard, speed and accuracy in the touch operation of the typewriter, and skill and knowledge needed for vocational and personal uses. Must be taken in a,b,c sequence. (a) May not be taken for credit by students who have had previous high school or other formal instruction in typewriting. (b) Prerequisite: 201a or one semester of other formal instruction in typewriting and the ability to type at least 30 words per minute. (c) Prerequisite: 201b or two semesters of other formal instruction in typewriting and the ability to type at least 40 words per minute and to prepare simple business correspondence, tables, manuscripts and forms.

**221-12 (4,4,4) Shorthand and Transcription.** The Gregg shorthand system and the development of skill and knowledge required in taking dictation and transcribing it on the typewriter. Must be taken in a,b,c sequence. (a) May not be taken for credit by students who have had previous high school or other formal instruction in shorthand. (b) Prerequisite: 221a or one semester of other formal instruction in shorthand-



transcription. (c) Prerequisite: 221b or two semesters of other formal instruction in shorthand-transcription and the ability to take sustained, new-matter dictation at 60 words per minute.

**241-1 (C); 241-2 (E) Duplicating.** Skills and knowledges in (1) the preparation of master copies and stencils and (2) the operation of liquid and stencil duplicating machines. Prerequisite: 201 or equivalent.

**304-3 Advanced Typewriting.** Development of advanced skills in typing business correspondence, manuscripts, forms, and tables; preparation of copy from rough draft materials. Prerequisite: 201-9 or three semesters of other formal instruction in typewriting and the ability to type at least 50 words per minute and to prepare business correspondence, tables and manuscripts.

**324-8 (4,4) Advanced Shorthand and Transcription.** The development of high-level dictation and transcription skills and knowledges. Must be taken in a,b sequence. Prerequisites: (a) 221-9 or three semesters of other formal instruction in shorthand-transcription and the ability to transcribe on the typewriter sustained, new-matter dictation taken at 80 words per minute. (b) 324a or four semesters of other formal instruction in shorthand-transcription and the ability to transcribe on the typewriter sustained, new-matter dictation taken at 100 words per minute.

**326-4 Secretarial Practice.** An advanced course for secretaries, covering such topics as personality and human relationships, office mail, office equipment, travel, sources of information, communications, and business reports. Prerequisite: 304, 324. C

**327-4 Office Theories and Practices.** A study of office efficiency, techniques, filing procedures, financial and legal responsibilities, and other office activities. Opportunities to explore reference sources, to prepare for and participate in interviews, to make self evaluations, and to pursue areas of special interest. Operation of dictating and transcribing equipment. Prerequisite: 1 year of typewriting. E

**341-4 Calculating Machines.** Operation of basic types of office calculating machines, emphasizing the characteristic uses of each kind of machine in the office. Laboratory practice required.

**351-4 Foundations of Business Education.** The role of the business teacher in the secondary school. An analysis of objectives as related to secondary education; a study of business education courses, scope, and guidance. A survey of trends and external influences. For undergraduate upperclassmen only. E

**403-3 Teaching Typewriting.** Methods of instruction, skill-building principles and techniques, selection and preparation of instructional materials, standards of achievement, and evaluation of pupil performance. Prerequisite: 201c or equivalent.

**404-3 Teaching Shorthand and Transcription.** Methods of instruction, skill-building principles and techniques, selection and preparation of instructional materials, standards of achievement, and evaluation of pupil performance. Prerequisite: 324a or equivalent.

**405-3 (C); 405-3 to 4 (E) Teaching General (Basic) Business Subjects.** Instructional methods and materials for, and the evaluation of pupil progress in, such basic business subjects as general business, consumer education, economic geography, business law. (E) Preparation of teaching units.

**406-4 Teaching Office Practice and Office Machines.** Instructional methods and materials for, and the evaluation of pupil performance in, office practice and office machines. Prerequisite: 341 or equivalent.

**407-4 Office Management.** The principles of management as applied to office problems. Emphasis on the role of the office in business management; office organization; physical facilities and layout of the office; office services, procedures, standards, and controls.

**408-3 Teaching Bookkeeping and Accounting.** Instructional methods and materials for, and the evaluation of pupil progress in, bookkeeping and accounting. Prerequisite: Accounting 251b or equivalent.

**427-4 Records Administration.** The development of records management from its inception, and the recognition of the need for paper work management. Stress on the use of information management techniques in support of organization manage-

ment, control and evaluation. The course includes each phase of the life of records from creation to disposal or permanent retention. The capabilities of data processing, microphotography, and new developments in information handling equipment stressed throughout.

**428-4 Systems and Procedures.** A problems approach to the office systems-procedures function in the modern business firm; seminar and laboratory work on improvement of systems and procedures, administrative information and paperwork engineering; theory of office-systems design; systems administration and work simplification. Prerequisite: 407 or equivalent. E

**500-2 to 5 Readings in Business Education.**

**501-2 to 5 Individual Research in Business Education.**

**502-4 Research in Business Education.**

**503-4 Tests and Measurements in Business Education.**

**505-1 to 6 Workshop in Business Education.**

**506-4 Principles and Problems of Business Education.**

**507-4 Application and Fundamentals of Data Processing in Business Education.** E

**508-4 Administration and Supervision in Business Education.** E

**509-4 Improvement of Instruction in General (Basic) Business Subjects.**

**510-4 Improvement of Instruction in Secretarial Subjects.**

**599-1 to 9 Thesis.**

## SOCIOLOGY

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 Social Disorganization and Deviance
- 70-79 Special Fields
- 80-89 Applied Fields

**241-4 Marriage and Parenthood.** E

**301-4 Principles of Sociology.** The structure and functions of social relationship systems, both simple and complex. Analysis of processes of social differentiation, integration, and disorganization. Prerequisite: junior standing.

**302-4 Contemporary Social Problems.** Discussion and analysis of selected contemporary social problems with consideration of alternative courses of action. Prerequisite: 301.

**305-4 Social Institutions.** Concepts of institutions; origins, development, and variability of institutions; institutional lag and change. Prerequisite: GSB 201b. C

**306-4 Social Control.** The means and principles of social controls; social institutions as factors in control; techniques of directing social action. Prerequisite: GSB 201b or 301.

**308-3 Statistics for Social Science.** Methods and application of statistics in the social sciences. Statistical methods in demography, ecology, testing and guidance, social problems. Examination of empirical studies in these and related areas. Prerequisite: junior standing or consent of instructor. E

**312-4 Elements of Sociological Research.** Types of research. Principles and steps in research procedure. Selected techniques. Prerequisite: GSD 108-9 or Mathematics 220-4 (C); GSD 114d-3 or 308 (E).

**320-4 Race and Minority Relations.** Racial and cultural contacts and conflicts, causes of prejudice; status and participation of minority groups; national and international aspects of minority problems. E

**321-4 Socialization of the Individual.** The process of socialization in infancy, child-



hood, and adolescence; development of habits; attitudes, sentiments; emergence of the self; integration of the individual and society. Prerequisite: 301, or GSB 201b. E

**GSB 321-3 Socialization of the Individual.** C

**322-4 Propaganda and Public Opinion.** Techniques and characteristics of propaganda; methods of measuring public opinion. Prerequisite: 301, or GSB 201b.

**GSB 325-3 Race and Minority Relations.** C

**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: 301. E

**333-4 Community Organization.** Factors involved in community organization; types, aims, and objectives; community diagnosis; individual case study of specific community. Prerequisite: 301 or GSB 201b.

**335-4 Urban Sociology.** The rise, development, structure, culture, planning, and problems in early and modern cities. Prerequisite: 301 or GSB 201b.

**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: GSB 201b, or 301. C

**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: GSB 201b or 301.

**340-4 The Family.** The family in historic and contemporary society; evolution of the modern family; changes in family functions, structures, and roles. Prerequisite: GSB 201b or 301.

**GSB 341-3 Marriage.**

**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: GSB 201b or 301.

**GSB 359-6 Society and State: Social and Political Theories.** E

**371-4 Population and Migration.** Characteristics of population, problems of growth, composition, distribution differential fertility, international and internal migration. Prerequisite: 301 or consent of instructor.

**372-4 Criminology.** The nature of crime; criminal statistics; causal factors; theories and procedures in prevention and treatment. Prerequisite: consent of instructor (E); GSB 201b or 301 (C).

**373-4 Juvenile Delinquency.** Nature of juvenile delinquency; factors contributing to delinquent behavior; treatment and prevention. Prerequisite: GSB 201b or 301 (C); none (E).

**374-4 Sociology of Education.** Methods, principles, and data of sociology applied to the school situation; relation of the school to other institutions and groups. Prerequisite: consent of instructor, or GSB 201b or 301.

**375-4 Social Welfare as a Social Institution.** Interdependence of social, cultural, political and economic factors in the history, theory and practice of social welfare, with special reference to development of the social work profession in response to welfare problems. Prerequisite: GSB 201b or 301.

**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: GSB 201b or c, or 301.

**388-3 Workshop in Inter-Group Relations.** Designed to provide theoretical and practical understanding of the cultural, social, and psychological factors associated with inter-group tension. Participants concentrate their efforts on problem-solving activities related to their occupational, professional, or civic interests. Resource and consultative staff from the academic areas of education, psychology, sociology, and social work. Prerequisite: consent of instructor. E

**396-1 to 5 Readings in Sociology.** Supervised reading in selected subjects. Prerequisite: consent of division head. E



**405-4 Current Sociology.** A survey of important trends in contemporary social thought. Students read, report on, and evaluate content of leading sociological journals. Prerequisite: consent of instructor.

**406-4 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: GSB 201b or 301.

**407-4 Integrated Sociology.** 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. E

**412-4 Sociological Research.** Application of the scientific method to sociological problems. The role of theory. Principles of good research design, measurement, sampling and analysis. Prerequisite: Graduate status or consent of instructor.

**415-3 Logic of the Social Sciences.** (See Philosophy 415.) C

**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 family, religion, politics, etc. Prerequisite: GSB 201b, or 301.

**438-4 Sociology of Occupations and Professions.** Natural history and institutional aspects of occupations in our society, cultural context of occupations in both primitive and modern society, preparation for jobs, human values in work, promotion and discharge, mobility, retirement. Prerequisite: GSB 201b, or 301.

**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: GSB 201b or 301. C

**450-4 Social Thought I: Before 1800.** The ideological basis of Western society. The classical foundations. Trends of thought from the Renaissance to the Enlightenment. Prerequisite: consent of instructor.

**451-4 Social Thought II: The Sociological Movement.** From Romanticism to Realism; rise and development of scientific social thought. Prerequisite: consent of instructor.

**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: GSB 201b or 301.

**470c-4 Urban Planning.** (See Government 470.) E

**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. Prerequisites: consent of instructor. C

**472-4 The American Correctional System.** 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 or consent of instructor.

**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. C

**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: 375 or consent of instructor.

**482-3 (C); 482-4 (E) 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.

**483-3 Current Problems in Corrections.** An exploration of contemporary problems in the control and treatment of sentenced offenders. Prerequisite: consent of instructor.

**484-4 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: GSB 341, and consent of instructor.

**485-6 Community Programs for the Prevention of Juvenile Delinquency.** Analysis of delinquency prevention in community programs administered by various agencies. A critique of existing programs and development of experimental programs. The roles of professional workers pertinent to such programs is delineated with special reference to the public school administration, counselor, the social workers, the court, probation officers, and police. Prerequisite: consent of instructor. E

**486-1 to 5 Independent Study in Community Development.** Individual study and projects designed to fit the needs of each student. Prerequisite: consent of instructor. C

**487-7 (4,3) Community Development.** (a) 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. (b) Principles and procedures applicable to solving social problems in the context of a community development program. Laboratory period for field trips. Must be taken in a,b sequence. Prerequisite: 4 hours of sociology or equivalent. C

**489A-3 The American Correctional System.** A survey of the correctional field covering probation, institutions, and parole; their historical development, organizational structure, program content, and current problems.

**489B-4 Probation, Classification, and Parole.** An introduction to the structure and function of those elements of the correctional process primarily concerned with the evaluation, treatment, and control of offenders with particular attention to the case-work components of the process. Prerequisite: 481 or consent of instructor.

**489D-3 Problems in Correctional Research.** The problems of designing and conducting research in correctional institutions and agencies, a review of research trends in corrections. Prerequisite: 483 or consent of instructor. C

**489E-2 to 4 Independent Study in Corrections.** Supervised readings or independent investigative projects in the various correctional aspects of crime control, institutional management, and specific correctional programs. Prerequisite: consent of instructor. C

**501-4 Survey of Sociological Theory.**

**502-4 Seminar in European Sociological Theory: 1800-1910.** C

**503-4 Seminar in European Sociological Theory: 1910 to the Present.** C

**504-4 Seminar in American Sociology.**

**506-4 Seminar in Contemporary Sociological Theory.**

**519-4 Methodological Foundations of the Social Sciences.**

**521-4 Seminar in Social Psychology.**

**526-4 Quantitative Methods in Sociology I.** C

**527-4 Quantitative Methods in Sociology II.** C

**528-4 Quantitative Methods in Sociology III.** C

**529-4 Sociological Measurement.** C



530-4 Research Design.	C
531-4 Research Analysis.	C
533-4 Ecology of Human Communities.	C
534-4 Seminar in Intergroup Relations.	
535-4 Race and Education in American Society.	C
537-4 Sociology of Law.	C
538-4 Seminar in Industrial Sociology.	
539-4 Sociology of Bureaucracy.	C
542-4 Seminar on the Family.	
543-4 Seminar in Family Variability.	C
544-4 Seminar in Family Research.	C
545-4 The Family and Social Change.	C
561-4 Alcohol and Society.	C
562-4 Deviance and Disorganization.	C
563-4 Research Problems in Deviance and Disorganization.	C
564-4 Social Factors in Mental Disorders.	C
566-4 Community Organization and Disorganization.	C
572-3 Seminar in Criminology.	C
582-4 Criminal Law and the Correctional Process.	C
583-4 to 12 Supervised Field Work in Corrections.	C
584-4 Seminar in Correctional Program Management.	C
586-3 The Change Agent in Planned Change.	C
587-2 to 8 Individual Research in Community Development.	C
591-2 to 6 Individual Research.	C
596-2 to 12 Readings in Sociology.	
599-2 to 9 Thesis.	
600-1 to 48 Dissertation.	C

## SPECIAL EDUCATION

200-2 Orientation to the Education of Exceptional Children. A survey of exceptional children. Program modification by regular classroom teachers is stressed.	C
351D-8 Elementary Student Teaching.	E
406-4 Techniques and Interpretation of Hearing Tests. (See Speech Correction 406.)	C
409-4 Problems and Characteristics of the Emotionally Disturbed Child.	E
410A-4 Problems and Characteristics of the Emotionally Disturbed Child. Diagnosis, screening, classroom management, placement considerations, goals and the effective use of ancillary services. Emphasis on the understanding of maladaptive behavior through principles of learning and behavior dynamics.	E
410-4 Problems and Characteristics of the Mentally Retarded. Objectives, curriculum, methods, and materials of instruction for slow learners. Emphasis upon the principles of learning as they can be applied to this group. Observations. Prerequisite: Guidance 305 or Psychology 301 or 303.	C
411-4 Education of the Partially Sighted and Blind. A study of the objectives, curriculum, methods, and techniques of instruction of classes for the partially sighted. Special emphasis on sight conservation in the regular classroom, special equipment, and observation of sight-saving classes. Prerequisites: Guidance 305, Psychology 301 or 303.	C
412-4 Education of Gifted Children. Designed to help teachers in the identification of and programming for gifted and talented children. Prerequisite: Guidance 305 or Psychology 301 or 303.	
413A-4 Directed Observation of the Emotionally Disturbed. Taken concurrently with Special Education 410A, provides student observation and participation in the individual work with emotionally disturbed children. Prerequisite: consent of instructor.	E
413-4 Directed Observation of the Educable Mentally Handicapped. Taken concurrently with Special Education 410, provides student observation and participa-	



tion in individual work with the educable mentally handicapped children. Prerequisite: consent of instructor. C

**414-4 The Exceptional Child.** Physical, mental, emotional, and social traits of all types of exceptional children. Effects of handicaps in learning situations. Methods of differentiation and techniques for rehabilitation. Individual case studies used; observations and field trips. Prerequisites: Guidance 305, Psychology 301 or 303.

**415-4 Education of the Deaf and Hard of Hearing.** Methods of teaching reading and developing language sense in the deaf and hard of hearing. Tactile, visual, and kinesthetic experiences; hearing aids and other special equipment presented in terms of their educational application. Observations. Prerequisites: Guidance 305, Psychology 301 or 303, Speech 105 and 212, or equivalent. C

**416-4 Education of Orthopedic Children.** Objectives, curriculum, methods, and techniques of instruction of classes for orthopedic children. Emphasis given to program organization, special types of equipment, and observation of classes for the orthopedic. Prerequisite: same as 410. C

**417-4 The Atypical Child and Social Agencies.** A survey of social agencies contributing to the welfare and care of exceptional children. Emphasis given to services rendered and to methods of contact and cost. Visits made to agencies and institutions: specialists invited to appear before the class. Prerequisites: Guidance 305 or Psychology 301 or 303, and Sociology 101. C

**418-4 Workshop in Special Education.** Designed to promote better understanding of the psychological and educational problems of atypical children. Specialists used as consultants. Open to seniors and graduate students majoring in education, guidance, or special education.

**419-4 Communication Problems of the Deaf and Hard of Hearing.** (Same as Speech Correction 419.) Objectives and techniques for the teaching of lip reading, speech conservation, and auditory training. Prerequisite: 406 or consent of instructor. C

**420a-4 Methods and Materials in the Education of the Emotionally Disturbed.** Offered in conjunction with practice teaching, dealing with methods and materials needed in teaching emotionally disturbed children. E

**420-4 Methods and Materials in the Education of the Educable Mentally Handicapped.** Offered in conjunction with practice teaching, dealing with methods and materials needed in teaching educable mentally handicapped children. C

**428-4 Speech Correction for the Classroom Teacher.** (Same as Speech Correction 428.) Etiology and therapy of common speech defects. Open to in-service teachers, seniors, and graduate students in education.

**481a-4 Seminar: Emotionally Disturbed.** E

**481b-4 Seminar: Educable Mentally Handicapped.** E

**481c-4 Seminar: Gifted.** E

**481-4 Seminar.** C

**501-4 Special Research Problem.**

**513-4 Organization, Administration, and Supervision of Special Classes.**

**570-2 Seminar: Vocational Guidance of the Handicapped.** C

**571-2, 572-2 Special Problems of the Handicapped I, II.** C

**573-3 to 4 Psychodiagnostics for Special Populations.** C

**574-1 to 12 Supervised Experience in Rehabilitation.** C

**577-4 to 12 Practicum in Special Education.**

**580-8 (4,4) Seminar: Exceptional Children.** C

**590-12 (4,4,4) Seminar: Mental Retardation.** C

**596-5 to 9 Independent Investigation.** C

**599-2 to 9 Thesis.** C

## S P E E C H

General Speech: 408-4, 429-4, 440-4, 449-4, 450-12 (4,4,4), 520-3, 530-1 to 4, 532-4, 599-2 to 9, 600-3 to 48.

Oral Interpretation of Poetry: 423-4, 424-4, 434-4, 523-3, 530-1 to 4, 599-2 to 9.

Rhetoric and Public Address: 407-8 (4,4), 417-4, 418-4, 425-3, 500-4, 504-3, 505-4, 508-4, 510-4, 524-3, 530-1 to 4, 599-2 to 9.

Speech Education: 402-4, 410-4, 427-4, 511-3, 525-4, 530-1 to 4, 599-2 to 9.

**102-4 Public Speaking.** Analysis of audience motives and reactions stressed in the approach to speech preparation for typical public speaking situations. Prerequisite: GSD 103-3.

**104-4 Training the Speaking Voice.** Designed for those students who desire to improve their voice and articulation. Prerequisite: GSD 103.

**108-6 (0 to 3, 0 to 3) Speech for the Foreign Born.** Designed to facilitate the learning of American English. May be substituted by foreign-speaking students with consent of chairman. C

**200-4 Phonetics.** Instruction on the use of phonetic symbols to record the speech sounds of midland American English, with emphasis on ear training, and a description of place and manner of production of these sounds. C

**201-2 Parliamentary Law.** How to conduct a meeting. Study and practice of the rules of parliamentary procedure. C

**202-3 Principles of Discussion.** Principles and methods of group discussion. Current problems used as materials for discussion.

**205-3 Principles of Argumentation and Debate.** Principles of argument, analysis, evidence, reasoning, fallacies, briefing, and delivery.

**209-1 Forensic Activities.** Not more than three hours of credit, and no more than two each year, to be secured for participating in forensic activities. Note: A maximum of five hours of 209 and 309 may be applied on a major in speech. A maximum of eight hours of 209 and 309 may be applied toward graduation. Prerequisite: Consent of instructor.

**300-4 Phonetics of American English.** Study of the phonetics of American English with particular emphasis in the major American dialects. Course designed especially for concentrations in speech, theater, and radio-TV. Prerequisite: 200 or consent of instructor and department chairman. C

**301-4 Persuasion.** Psychological principles involved in influencing individuals and groups.

**303-4 Business and Professional Speaking.** Speaking needs of business and professional people. Technical reports and lighter types of speaking included in the types studied. Primarily for adult and extension classes.

**304-3 Great Speeches in American and British History.** Speakers as they deal with historic issues in America and Britain. C

**309-1 Forensic Activities.** Not more than four hours of credit, and no more than two each year, to be secured for participation in forensic activities. Note: A maximum of five hours of 209 and 309 may be applied on a major in speech. A maximum of eight hours of 209 and 309 may be applied toward graduation. Prerequisite: junior standing and consent of instructor.

**313-4 Speech Composition.** Rhetorical techniques of public address. One major speech prepared, with every possible refinement. Prerequisite: 102. C

**323-4 Oral Interpretation II.** A basic course in the oral interpretation of literature with emphasis on vocal techniques in relation to literary analysis. Prerequisite: GSC 200 or consent of instructor. C

**406-4 Teaching Speech in Secondary Schools.** Philosophy of speech education, and effective teaching of speech through curricular and extra-curricular work. Prerequisite: 16 hours of speech.

**407-8 (4,4) American Public Address.** Critical studies of American speakers; selected speakers and speeches which reflect the dominant social and political ideas in American history. A lecture, reading, and discussion course. Parts may be taken independently.

**408-4 Psychology of Speech.** Nature and development of speech, its basic psychology, and the part speech plays in personality development.

**417-4 Contemporary Public Address.** A critical study of speakers and speeches selected to present the characteristic ideas of leading social and political developments



in national and international affairs since 1918. A lecture, reading, and discussion course. C

**418-4 British Public Address.** Critical study of British speakers to c. 1920. Selection of material will be governed both by men and the issues that moved men throughout British history. C

**422-4 Oral Interpretation of Prose.** The study of reading of prose literature emphasizing the specific problems posed for the oral reader by this form. Prerequisite: GSD 200, 323, or consent of instructor. C

**423-4 Oral Interpretation of Poetry.** The reading of poetry and the interpretation of the thought and emotional content of the poetry to the audience. Prerequisite: GSD 200, 323. C

**424-4 Oral Interpretation of Dramatic Literature.** Reading, selecting, cutting, and presenting various types of dramatic literature. Each student gives a final recital program of readings. Prerequisites: GSD 200, 323. C

**425-3 Techniques of Discussion Leadership.** Studies in the field of group discussion designed to clarify the functions and concepts of the leader in democratic society. C

**427-4 Secondary School Forensic Program.** Coaching and organizational methods for extracurricular and curricular forensic programs in the secondary schools. C

**429-4 Experimental Studies in Oral Communication.** A survey, analysis, and criticism of experimental approaches to the study of oral communication, with practice in planning and conducting experimental studies. C

**434-4 Lecture and Lecture-Recital.** Study of professional work on the public platform which is climaxed by a lecture or recital of a professional nature. Prerequisite: 12 hours of public speaking, interpretation, or theater. C

**440-4 Advanced Phonetics.** Phonetic theory. Materials and methods of linguistic geography. Prerequisite: 200. C

**441-4 Teaching Speech in Elementary Schools.** Study of oral language development in children, analysis of their speech needs, and methods of teaching speech in elementary schools with emphasis on speech improvement and development of basic speech skills. C

**449-4 General Semantics.** Means of changing implications so that language, in spoken or written form, describes the life facts. C

**450-12 (4,4,4) Laboratory in Interpersonal Communication.** Communication viewed as a process of relating and evaluating. Applications of general semantics and related philosophy, methodology, and research to the functioning of the class itself through various speech activities. The course encompasses the common core of communication behaviors relevant to the chief communication specialties. C

**500-4 Survey of Classical Rhetoric.** C

**504-3 Medieval Rhetorical Theory.** C

**505-4 Modern Rhetorical Theory.** C

**508-4 Seminar: Studies in Discussion.** C

**510-4 Seminar: Persuasion and Social Control.** C

**511-3 Teaching the College Speech Course.** C

**520-3 Philosophical Foundations of Speech.** C

**523-3 Seminar: Problems in Interpretation.** C

**524-3 Problems in Rhetoric and Public Address.** C

**525-4 Seminar: Speech Education.** C

**530-1 to 4 Research Problems.** C

**532-4 Areas and Techniques of Research in Speech.** C

**599-2 to 9 Thesis.** C

**600-1 to 48 Dissertation.** C

## SPEECH CORRECTION

**100-0 to 2 Speech Clinic.** For students with speech and hearing deviations who need individual help.

**104-4 Training the Speaking Voice.** For those students who desire to improve their voice and articulation. C



- 108-6 (0 to 3, 0 to 3) Speech for the Foreign Born.** Designed to facilitate the learning of American English. May be substituted by foreign-speaking students for Speech 101, with permission of department chairman. C
- 200-4 Phonetics.** Instruction in the use of phonetic symbols to record the speech sounds of midland American English, with emphasis on ear training, and a description of place and manner of production of these sounds.
- 203-4 Introduction to Speech Science.** An introduction to the science of general speech including the history of research in the field and significant experimental trends in the future. Open to all students.
- 212-4 Articulatory Problems and Delayed Speech.** Designed to acquaint the student with articulatory speech defects. Diagnostic and therapeutic techniques stressed. Prerequisite: 200 or concurrent.
- 318-4 Voice and Cleft Palate.** Voice disorders including cleft palate. Prerequisite: Speech Correction 212, or consent of the instructor.
- 319-4 Stuttering.** Deals with diagnostic and therapeutic techniques for the understanding and treatment of stuttering. Prerequisite: Speech Correction 212, or consent of the instructor.
- 400-1 to 4 Independent Study in Speech Correction and Audiology.** Activities involved shall be investigative, creative, or clinical in character. Must be arranged in advance with instructor. May be repeated up to six hours of credit. C
- 405-12 (4,4,4) Practicum in Speech and Hearing Therapy.** Clinical and school procedures in speech correction and audiology. One hour of class per week, and two hours of clinical activity or work on clinically related projects for each hour of credit. Prerequisite: Junior Standing in Department. 405A (fall) emphasizes therapeutic procedures. 405B (winter) emphasizes diagnostic techniques. 405C (spring, summer) emphasizes the utilization of forms and the preparation of reports. Students may have up to twelve hours total credit in this course. Need not be taken in sequence.
- 406-4 Techniques and Interpretation of Hearing Tests.** Principles and techniques of testing the hearing and interpreting those tests in terms of the individual's needs.
- 409-4 Research Techniques in Speech Science.** A presentation of the research techniques used in speech science with particular emphasis on equipment, experimental design, and study of significant research contributions to the field. Open to advanced students in speech or those with consent of the instructor. C
- 412-4 Cerebral Palsy.** An investigation of the etiology, problems, and therapy of cerebral palsy. Prerequisite: 212 or consent of instructor. C
- 414-4 Anatomy and Physiology of Speech and Hearing Mechanisms.** (See Physiology 414.) C
- 415-4 Aphasia.** An investigation of the etiology, problems, and therapy of aphasia. Prerequisite: 412 or consent of instructor. C
- 416-4 Hearing.** Designed to acquaint the student with the theories and facts concerned with the functions of the hearing mechanism. Prerequisite: 406 or consent of instructor. C
- 419-4 Communication Problems of the Deaf and Hard of Hearing.** (Same as Special Education 419.) Objectives and techniques for the teaching of lip reading, speech conservation, and auditory training. Prerequisite: 406 or consent of instructor. C
- 420-4 Advanced Clinical Audiometry.** Principles and procedures for advanced audiometric testing. Prerequisite: 406 or consent of instructor. C
- 428-4 Speech Correction for the Classroom Teacher.** (Same as Special Education 428.) Etiology and therapy of common speech defects. Open to in-service teachers, seniors, and graduate students in education.
- 515-1 to 4 Readings in Speech Pathology.** C
- 516-1 to 4 Seminar in Residual Hearing.** C
- 520-1 to 4 Seminar in Hearing.** C
- 521-1 to 4 Seminar in Articulation and Delayed Speech.** C
- 522-16 (4,4,4,4) Seminar in Organic Speech Problems.** C
- 529-12 (4,4,4) Seminar in Stuttering Behavior.** C

530-1 to 4 Research Problems in Speech Correction.	C
531-1 to 4 Seminar in Experimental Phonetics.	C
533-1 to 4 Seminar in Speech Science.	C
534-1 to 4 Seminar in Instrumentation.	C
536-1 to 4 Seminar in Administration of Speech and Hearing Programs.	C
599-2 to 9 Thesis.	C
600-1 to 48 Dissertation.	C

## TECHNOLOGY

101-9 (3,3,3) Graphics. (a) Basic principles of graphic communications, orthographic projection, sections and conventions, dimensioning, pictorial drawing. (b) Graphic solutions of problems involving the spatial relationships of points, lines, and planes. (c) Intersections and developments, conventional practices, charts and graphs. Laboratory. 101a is prerequisite for b or c.	C
259-3 to 60 Shop and Drafting Subjects. This is a designation for shop or drawing credit earned, or for trade proficiency, when credit is to be established for work above the high school level. Credit in this course will be established by departmental evaluation. Prerequisite: junior standing.	C
300-9 (3,3,3) Application of Fundamental Physical Principles. A general coverage of applied science and the physical principles and systems which control man's exploitation of scientific discovery. (a) Applied mechanics, heat and wave motion. (b) Principles of electricity, magnetism, geometrical optics and quantum physics. (c) Introduction and analysis of the various technological and industrial systems, subsystems and components with special emphasis upon the design process, problem formulation, analysis, and decision phase.	C
319-3 to 24 (3 per quarter) Industrial Internship. Industrial experience includes job skills, manufacturing processes, technical information, and labor-management relationships with supervised instruction, conferences and examinations. Prerequisite: consent of coordinator.	C
421-2 to 8 Practicum in Technology. Experiences in the industrial applications of technological knowledge. Cooperative arrangements with selected corporations and professional organizations provide opportunity to study technical problems in the industrial environment under the direction of specialists. Prerequisite: 12 hours in technical subjects. Consent of coordinator.	C
430-2 to 8 Special Problems in Industry and Technology. Special opportunity for students to obtain assistance and guidance in the investigation and solution of selected technical problems. Prerequisite: consent of coordinator.	C
570-2 to 6 Special Investigations.	C
580-3 to 9 Seminar.	C
599-1 to 9 Thesis.	C
600-1 to 48 Dissertation.	C

## THEATER

111-9 (3,3,3) Staging Techniques. All phases of dramatic production in connection with departmental public presentations. Lectures and laboratory.	
204-4 Acting. Basic techniques of acting in all dramatic media. Emphasis on expression through bodily action and movement.	
207-4 Fundamentals of Theatrical Design. A basic course employing graphic media and workshop exercises designed to acquaint theater majors with the problems encountered by the director, scene designer, costumer, and lighting director in providing a suitable environment, by visual means, for the actor.	
208-1 to 3 Dramatic Activities. Credit to be earned by participation in public performances.	
305-2 Stage Make-up. Theory and technique of various types of make-ups.	C
308-1 to 3 Dramatic Activities. Same as 208.	
311-4 Introduction to Playwriting. The preparation of a one-act play from germinal	



idea to completed script. Those scripts indicating a certain level of artistry and technical control to be produced in a laboratory theater program. Course includes the analysis of dramaturgical technique and theory through the study of selected plays and criticism. Prerequisite: one course in dramatic literature and consent of instructor.

**314-4 Advanced Acting.** Theory and practice of acting in dramatic productions. C  
**322-2 to 12 Practicum in Theater.** Practical experience in acting, directing, and associated theater work in area tours and summer stock. Credit may be earned for the course both on tour and in stock. C

**GSC 354-6 (3,3) History of the Theater.**

**402-8 (4,4) Play Directing.** (a) The principles and procedures of play direction including play selection, interpretation, and the patterning of auditory and visual stimuli. (b) Continuation of 402a emphasizing rehearsal procedures, control of tempo and mood, styles of presentation and performance, and other techniques in the direction of plays.

**403-4 Aesthetics of the Drama and the Theater.** Principles and practice of modern dramatic production in the light of modern aesthetic theory. A course attempting to formulate an aesthetic judgment of the theater. C

**404-4 Theater Management.** Theater operational procedure, including both fundamental structuring and house management. The former aspect includes administration, purchasing, and accounting practices, ticket sales, publicity, promotion, and public relations. The latter aspect covers the management of box-office and ushering. C

**405-8 (4,4) The Scenic Imagination.** (a) A study of the purely creative side of stage production. It includes an analysis of the script and its meaning for an audience; a poetic evaluation of the setting, costumes, and lighting; and the blocking out of the stage action. (b) Theater research and documentation; an approach to sketches and models; a review of the historic forms of staging, with emphasis on the modern styles from naturalism to epic theater. C

**406-1 American Professional Theater Procedures and Practices.** An introduction to the everyday realities of a professional stage career, including problems of survival, professional ethics and protocol, personal relations, and the function of stage unions. C

**409-4 High School Theater and Its Production Problems.** C

**410-3 Children's Theater.** Creative dramatics; dramatization of children's literature; play production for elementary schools. Recommended for education concentrations.

**411-4 Playwriting.** The writing of a full-length play, a children's play, or a historical pageant-drama forms the basis of the course. Students may elect to write two one-act plays. Individual conferences supplement the class discussion and analysis of student writing. Prerequisite for graduate students: consent of instructor. C

**412-4 Stage Design.** The design of settings for the stage and other dramatic media. Prerequisite: 207. C

**414-4 Costume Design.** C

**415-4 Advanced Costume Design.** C

**432-4 Stage Lighting.** Instruments and control equipment; principles and techniques of lighting dramatic productions. C

**438-4 Contemporary Developments in the Theater.** Critical study of theory and practice in acting, directing, production, and architecture in the modern theater. The rise and development of the film, radio, and television as dramatic media.

**502-4 Advanced Directing.** C

**503-4 Advanced Technical Problems.** C

**504-4 The Comic Theater.** C

**505-4 The Tragic Theater.** C

**506-4 The American Theater.** C

**509-4 The High School Theater and its Production Problems.** C

**518-4 Theater Audience.** C

**519-1 to 12 Theater Practicum.** C

**526-3 Seminar in Theater Arts.** C



530-1 to 4 Research Problems in Theater.

C

599-1 to 9 Thesis.

C

**ZOOLOGY**

100-5 Principles of Animal Biology.

E

102-5 General Invertebrate Zoology. Studies of representatives of the various kinds of invertebrate animals. Relationships, structure, and natural history are emphasized. Prerequisite: GSA 201c (C); GSA 201a (E).

103-5 General Vertebrate Zoology. Studies of representatives of the various kinds of vertebrate animals. Evolutionary development, structure, and natural history are emphasized. Prerequisite: GSA 201c (C); GSA 201a (E).

202-5 Comparative Anatomy. Comparative studies of the organ systems of vertebrate animals, with emphasis on the phylogeny and evolution of these organs. Two lecture and six laboratory hours per week. Prerequisite: 103.

300-5 Vertebrate Embryology. Development of the individual with the frog, chick, and pig as types. Two lectures and six laboratory hours per week. Prerequisite: 202.

303-4 General Ornithology. Classification and recognition of birds and the study of their songs, nests, migratory habits, and other behavior. Cost of field trips may be \$5 to \$10 per student. Two lecture and four laboratory hours per week. Prerequisite: GSA 201c (C); GSA 201b (E).

306-4 Entomology. Principles of the structure, classification, and life histories of insects. Prerequisite: 102.

310-5 Animal Ecology. Habitats, communities, and population dynamics of animals. Cost of field trips may be \$5-\$25 per student. Three lecture and four laboratory hours per week. Prerequisite: 102, 103.

GSA 312-3 Conservation of Natural Resources.

C

GSA 313-3 Evolution.

C

313-3 Evolution. Principles, processes, and evidence for evolution in living organisms. Prerequisite: one year of biological science.

E

GSA 314-3 Man's Genetic Heritage.

C

314-4 Heredity and Eugenics. Principles of heredity in relation to man. Prerequisite: 100 or Botany 101 or GSA 201b or c.

E

GSA 315-3 History of Biology.

C

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 concentration in zoology.) Prerequisite: GSA 201c.

C

321-5 Histological Technique in Zoology. Methods of preparing material for microscopic study. Two lecture and six laboratory hours per week. 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 or faculty. (Credit may not be used toward a secondary concentration in zoology.)

335-4 Field Zoology. Taxonomy, natural history, and distribution of local animals. Cost of field trips may be \$10-\$25 per student. Prerequisites: 102, 103.

E

382-1.5 (1/2, 1/2, 1/2) Zoology Seminar for Seniors. Required each term of seniors concentrating in zoology. Prerequisite: senior standing.

400-2 (C); 400-3 (E) Animal Taxonomy. The concepts of taxonomy and their use in zoology. Prerequisite: one year of biology or consent of instructor.

401-5 Genetics. Principles of inheritance, including genetic mechanisms, mutation, and selection. Prerequisite: 15 quarter hours of biological science and consent of instructor.

402-4 Natural History of Invertebrates. Observation, identification, and life histories. Designed for teachers. Not for students specializing in invertebrate zoology. Prerequisite: one year of zoology including 102.

403-4 Natural History of Vertebrates. Observation, identification, and life histories. Designed for teachers. Not for students specializing in vertebrate zoology. Prerequisite: one year of zoology including 103.

**404-2 to 8 Zoology Field Studies.** A trip of four to eight weeks to acquaint students with animals in various environments and/or with methods of field study, collection, and preservation. Arrangements made in advance of term. Cost per individual will be approximately \$25 per week. (Only 4 hours may be used for credit.) Prerequisite: consent of department.

**406-4 Protozoology.** Taxonomy, cytology, reproduction, and physiology of unicellular animals. Laboratory methods of culturing and studying. Prerequisite: one year of zoology including 102 or consent of instructor.

**407-5 Parasitology.** Principles, collection, identification, morphology, life histories, and control measures. Prerequisite: one year of zoology including 102.

**408-4 Herpetology.** Taxonomic groups, identification, morphology, and natural history of amphibians and reptiles. Prerequisite: one year of zoology, including 103.

**409-5 Histology of Organs.** Microscopic structure of organs and tissues with emphasis on mammalian forms. Prerequisite: 202. C

**410-5 Vertebrate Paleontology.** History of vertebrate animals in terms of their morphological change, geological succession, and ecological relationships. Prerequisite: one year of zoology including 202 or Geology 221. C

**412-4 Advanced Entomology.** Morphology, physiology, systematics, and distribution of insects. Prerequisite: one basic course in entomology.

**413-5 The Invertebrates.** Structure, development, and natural history of invertebrates, except insects and parasites. Prerequisite: one year of zoology, including 102. C

**414-4 Freshwater Invertebrates.** Taxonomic groups, identification, and natural history of the regional fauna. Prerequisite: one year of zoology, including 102.

**441-4 Developmental Biology.** Principles of development and organization. Prerequisite: 300 and one course in cellular physiology, or consent of instructor.

**459-4 Game Birds.** Natural history and management. Prerequisite: one year of zoology including 103. C

**461-4 Mammalogy.** Taxonomic groups, identification, and natural history of mammals. Prerequisite: one year of zoology including 103.

**463-4 Game Management.** General survey of management techniques. Prerequisite: 15 hours of biological science, consent of instructor. C

**465-4 Ichthyology.** Taxonomic groups, identification, and natural history of fishes. Prerequisite: one year of zoology, including 103.

**466-4 Fish Management.** Sampling, dynamics, and manipulation of fish populations, age and growth of fishes, and habitat improvement. Prerequisites: 15 hours of biological science, consent of instructor. C

**480-3 Zoogeography.** Concepts and principles relating to patterns of animal distribution on a continental and world-wide basis. Prerequisite: 103 or consent of instructor. E

**501-4 Animal Biology For High School Teachers of Biology.**

**502-2 Recent Developments in Biological Sciences.**

**507-8 BSCS—High School Biology.**

**508-4 Helminthology.** C

**509-8 (2,2,2,2) Topics in Biology.** E

**510-4 Bio-ecology.** C

**511-4 Limnology.**

**512-3 Animal Geography.** C

**513-3 Advanced Ornithology.** C

**520-5 Advanced Invertebrates.**

**521-4 Advanced Limnology.** C

**525-5 Cytology.** C

**540-3 Factors in Animal Reproduction.** C

**560-3 Advanced Game Management.** C

**561-4 Game Mammals.** C

**566-4 Fish Culture.** C

**578-4 Population Genetics.**

**579-4 Animal Behavior.** C

**580-4 Advanced Systematics.** C

**581-3 Readings in Current Zoological Literature.**

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582-1.5 (.5,.5,.5) Graduate Zoology Seminar.

583-3 (1,1,1) The Teaching of Zoology in College.

C

584-3 (1,1,1) Protozoology Seminar.

C

596-3 to 12 Special Research.

599-2 to 9 Research and Thesis.

600-3 to 48 Research and Dissertation.

C



# Faculty : 10

## CARBONDALE CAMPUS

### COLLEGE OF LIBERAL ARTS AND SCIENCES

#### ANTHROPOLOGY

**Professors** Philip Dark, Ph.D. (Chairman); J. Charles Kelley, Ph.D.; Charles H. Lange, Ph.D.; Walter W. Taylor, Ph.D.

**Associate Professors** Pedro Armillas, B.S.; Melvin L. Fowler, Ph.D.; Carroll L. Riley, Ph.D.

**Assistant Professors** Jerome S. Handler, Ph.D.; Bruce B. MacLachlan, Ph.D.

**Instructors** Rodger Heglar; Joel Maring.

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**Visiting Professor** Adrian A. Gerbrands, Ph.D.

#### BOTANY

**Professors** William D. Gray, Ph.D.; Leslie V. Olah, Ph.D.; Jacob Verduin, Ph.D.; John W. Voigt, Ph.D.; Walter B. Welch, Ph.D.

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