

1979

1979-1980 Southern Illinois University Bulletin Carbondale Campus (Undergraduate Catalog)

Southern Illinois University Carbondale

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Southern Illinois University at Carbondale

Bulletin

1979-1980 Undergraduate Catalog



Southern Illinois University at Carbondale is required to comply with the provisions of Title IX of the Education Amendments of 1972 and Section 504 of the Rehabilitation Act of 1973. Title IX mandates that no person shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving federal financial assistance. Section 504 provides that no otherwise qualified handicapped individual shall, solely by reason of the handicap, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance. Inquiries concerning the application of Title IX or Section 504 regulations may be directed to Dr. Mary Gasser or Mr. Richard C. Hayes, University Affirmative Action Office, Anthony Hall, Room 104, telephone 536-6618.

This publication provides information about Southern Illinois University at Carbondale. Primary attention is given to its academic program, rules and regulations, and procedures. Students starting their collegiate training during the period of time covered by this catalog (summer 1979 through spring 1980) are subject to the curricular requirements as specified herein. Should these requirements subsequently be changed by the University, students are assured that necessary adjustments will be made so that no additional time is required of them, because of these changes in meeting their educational objectives. Where programs include requirements established by agencies external to the University, every effort will be made to follow this same principle so far as possible. Should subsequent curricular requirements changes work to the students' advantage, they may elect to meet the new requirements rather than those contained herein. This curricular requirement arrangement will extend for a seven calendar year period from date of entry for baccalaureate programs and three years for associate programs. If the students have not met their undergraduate educational objectives by that time, they will then become subject to current curricular requirements. Should the University find it necessary to discontinue an academic program, the effective date, unless otherwise dictated, will be such that the last regularly admitted class will be able to complete the program in regular time sequence. This means four years for baccalaureate and two years for associate programs. The University reserves the right to change information contained herein on matters other than curricular requirements without regard as to their date of entry into college.



**Southern
Illinois
University
at Carbondale
Bulletin**

**1979-1980
Undergraduate
Catalog**

**Southern Illinois University
at Carbondale Bulletin (SIUB 506080)**

Volume 20, Number 4, October 1978

**Second-class postage paid at
Carbondale, Illinois 62901.
Published by
Southern Illinois University
at Carbondale,
Illinois 62901, five
times per year, in June, July,
August, October, and November.**

This Catalog

The Undergraduate Catalog covers in detail questions concerning the undergraduate program of Southern Illinois University at Carbondale for the period from summer, 1979 through spring, 1980. It supersedes Volume 19, Number 6.

The following publications, may be obtained free from University Graphics, Southern Illinois University at Carbondale, Carbondale, Illinois 62901.

Graduate Catalog

Undergraduate Catalog

School of Law Catalog

Schedule of Classes. Please specify session (fall, spring, or summer).

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Board of Trustees and Officers of Administration

Board of Trustees of Southern Illinois University

	Term Expires
Harris Rowe, <i>Chairman</i> , Jacksonville	1983
William R. Norwood, <i>Vice-Chairman</i> , Elk Grove Village	1983
Margaret Blackshere, <i>Secretary</i> , Springfield	1979
Ivan A. Elliott, Jr., Carmi	1979
Wayne Heberer, Belleville	1981
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Carol Kimmel, Rock Island	1983
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A. D. Van Meter, Jr., Springfield	1981
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Arthur Sussman, *University Legal Counsel*

University Calendar

Summer Session, 1979

Eight-Week Session Begins
Independence Day Holiday
Final Examinations
Commencement

Monday, June 11, 7:30 A.M.
Wednesday, July 4
Thursday and Friday, August 2-3
Saturday, August 4

Fall Semester, 1979

Semester Classes Begin
Labor Day Holiday
Thanksgiving Day Holiday

Final Examinations

Monday, August 27, 8:00 A.M.
Monday, September 3
Saturday, November 17, 12:00 NOON—
Monday, November 26, 8:00 A.M.
Monday, December 17—Friday,
December 21

Spring Semester, 1980

Semester Classes Begin
Lincoln's Birthday Holiday
Spring Vacation

Good Friday
Final Examinations
Commencement

Monday, January 21, 8:00 A.M.
Monday, February 11
Saturday, March 15, 12:00 NOON—
Monday, March 24, 8:00 A.M.
Friday, April 14
Monday, May 12—Friday, May 16
Saturday, May 17



1 General Information

The University

History

Chartered in 1869 with instruction initiated in 1874, Southern Illinois University at Carbondale has entered its second hundred years in operation. Established in 1869 as Southern Illinois Normal University, the school acquired the name, Southern Illinois University, in 1947 by legislative action. At the outset of the 1970's, Southern Illinois University became a single state system with two universities: Southern Illinois University at Carbondale and Southern Illinois University at Edwardsville. Southern Illinois University at Carbondale also has a medical school campus at Springfield. The institution first operated as a two-year normal school but in 1907 became a four-year, degree-granting institution although continuing its two-year course into the 1930's. It was in 1943 that the school was transformed from a teacher-training institution into a university, thus giving official recognition to the area's demand for diversified training and service. Graduate work was instituted in 1943, with the first Ph.D. degrees granted in 1955. There has been diversification of programs at the undergraduate level with the establishment of the Colleges of Communications and Fine Arts, Education, Business and Administration, Human Resources, Liberal Arts, and Science and the Schools of Agriculture, Engineering and Technology, Technical Careers, and programs in University Studies. In addition to expansion of programs within the Graduate School, professional schools have been established in medicine and law.

In keeping with the state's master plan, the University's objective is to provide a comprehensive educational program meeting as many individual student needs as possible. While providing excellent instruction in a broad range of traditional programs, it also helps individual students design special programs when their interests are directed toward more individualized curricula. The university comprises a faculty and the facilities to offer general and professional training ranging from two-year associate degrees to doctoral programs, as well as certificate and non-degree programs meeting the needs of persons not interested in degree education.

Location

The city of Carbondale is approximately 100 miles southeast of Saint Louis, Missouri, in Jackson County, the western border of which is the Mississippi River. Immediately south of Carbondale begins some of the most rugged and picturesque terrain in Illinois. Sixty miles to the south is the 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 region immediately surrounding Carbondale is noted for its large peach and apple orchards.

Within ten miles of the campus are located two state parks and four lakes and much of the area is a part of the Shawnee National Forest.

Campus

Immediately south of the city of Carbondale, the University campus, comprising more than 3,290 acres, has developed a 981 acre portion with woods and a lake as a site for its academic buildings and residence halls. The buildings are located in wooded tracts along two circular shaped campus drives, named for Lincoln and Douglas. Two beautiful features that are located near the center of the campus complex are a wooded tract, preserved in the tradition of the native forests of Southern Illinois, and several buildings surrounding the site which formed the original campus a century ago. Approximately seventy large permanent buildings and several hundred small temporary buildings are located on the campus. Additional buildings now under construction or recently completed include the Recreation Building and the School of Technical Careers Building.

In addition to the numerous recreational facilities in the area, the University's own Lake-on-the-Campus offers facilities for swimming, boating, fishing, and picnicking within the confines of the campus. Some of the facilities for the School of Technical Careers remain at a site ten miles east of Carbondale although current plans call for their replacement by permanent instructional facilities on the Carbondale Campus. The part of its program related to aircraft technologies is located adjacent to the Southern Illinois Airport. The Touch of Nature Environmental Center, a 6,500-acre complex on the shores of picturesque Little Grassy Lake, provides opportunity for outdoor learning experiences.

Accreditations and Affiliations

- | | |
|---|--|
| North Central Association of Colleges and Secondary Schools | American Institute of Architects (Architectural Technology program)* |
| National Council for Accreditation of Teacher Education | American Medical Association and American Association of Medical Colleges |
| Accrediting Council of the American Assembly of Collegiate Schools of Business (undergraduate and master's level programs) | American Physical Therapy Association (Physical Therapist Assistant program) |
| American Association for Accreditation of Laboratory Animal Care | American Psychological Association |
| American Association of Museums | American Speech and Hearing Association by American Board of Examiners in Speech and Hearing |
| American Bar Association (provisional accreditation) | Council on Rehabilitation Education |
| Commission of Schools of American Board of Funeral Service Education (Mortuary Science program) | Council on Social Work Education |
| American Chemical Society* | Engineer's Council for Professional Development (B.S. program in Engineering and B.S. program in Engineering Technology) |
| American Council on Education for Journalism | Federal Aviation Administration (Aviation Technology program) |
| Commission of Accreditation of Dental and Dental Auxiliary Educational Programs of the American Dental Association (Dental Hygiene and Dental Laboratory Technology programs) | Foundation for Interior Design Education Research |
| Commission on Accreditation of Rehabilitation Facilities | Illinois Office of Education |
| American Dietetic Association (programs meet standards for traditional baccalaureate programs in field of nutrition or dietetics) | Superintendent of Education |
| | State Teacher Certification Board |
| | State Board of Education |
| | Vocational Home Economics programs |
| | State Plan for Administration of Vocational and Technical Education in Illinois |

General Information

Illinois Department of Registration
and Education (Associate Degree
Nursing program)*

National Association of Industrial
Technology (B.S. program in Indus-
trial Technology)

National Association of Schools of
Music

Accreditation and Affiliations / 3

Society of American Foresters
National Shorthand Reporters Associ-
ation (court reporter training pro-
gram)*

Association of University Programs in
Health Administration

*Program approved and/or annual report submitted.



Faculty

The University faculty is dedicated to excellence in teaching and to the advancement of knowledge in a wide variety of disciplines and professions. Many faculty members are well known both nationally and internationally for their many varied research contributions. The Undergraduate Catalog lists the numerous programs offered by the faculty and, in addition, in Chapter 5 of this catalog the faculty members are listed by departments within the University in which they are appointed.

Curricula

The undergraduate majors and minors offered by Southern Illinois University at Carbondale are listed below in alphabetical order. Also indicated is whether a major, a minor, or both are offered. The academic unit which offers the major is listed as is the degree the student would expect to receive upon graduation. If a major may be completed in more than one academic unit, the other units are listed on additional lines. For example, the biological sciences major is offered through the College of Science. Students planning to teach biological sciences may also complete the major in the College of Education. The requirements for each of the programs listed below are explained in Chapter 4 of this bulletin. The degree abbreviations used are: A.A., Associate in Art; A.A.S., Associate in Applied Science; B.A., Bachelor of Arts; B.Mus., Bachelor of Music; B.Mus.Ed., Bachelor of Music Education; and B.S., Bachelor of Science.

In addition to the majors and minors listed, preprofessional programs may be completed in dentistry, law, medical technology, medicine, nursing, occupational therapy, pharmacy, physical therapy, public health, theology, and veterinary science.

SUBJECT	MAJOR	MINOR	ACADEMIC UNIT	DEGREE
Accounting	X		College of Business and Administration	B.S.
Administration of Justice	X	X	College of Human Resources	B.S.
Administrative Sciences	X		College of Business and Administration	B.S.
African Studies		X		
Agricultural Education	X		School of Agriculture	B.S.
			College of Education	B.S.
Agricultural Industries	X	X	School of Agriculture	B.S.
Agriculture, General	X	X	School of Agriculture	B.S.
Allied Health Careers Specialties	X		School of Technical Careers	A.A.S.
Animal Industries	X	X	School of Agriculture	B.S.
Anthropology	X	X	College of Liberal Arts	B.A.
Architectural Technology	X		School of Technical Careers	A.A.S.
Art	X	X	College of Communications and Fine Arts	B.A.
			College of Education	B.S.
Asian Studies		X		
Athletic Training		X		
Automotive Technology	X		School of Technical Careers	A.A.S.
Aviation Technology	X		School of Technical Careers	A.A.S.

SUBJECT	MAJOR	MINOR	ACADEMIC UNIT	DEGREE
Avionics Technology	X		School of Technical Careers	A.A.S.
Biological Sciences	X	X	College of Science College of Education	B.A. B.S.
Black American Studies		X		
Botany	X	X	College of Science College of Education	B.A. B.S.
Business and Administration	X		College of Business and Administration	B.S.
Business Economics	X		College of Business and Administration	B.S.
Business Education ⁶	X	X	College of Education	B.S.
Chemistry	X	X	College of Science College of Education	B.A., B.S. B.S.
Child and Family	X		College of Human Resources	B.S.
Chinese ¹		X		
Cinema and Photography	X		College of Communications and Fine Arts	B.A.
Classical Civilization ¹		X		
Classical Studies ¹	X	X	College of Liberal Arts College of Education	B.A. B.S.
Clothing and Textiles	X	X	College of Human Resources	B.S.
Commercial Graphics—Design	X		School of Technical Careers	A.A.
Commercial Graphics—Production	X		School of Technical Careers	A.A.
Community Development		X		
Comparative Literature		X		
Computer Science	X	X	College of Liberal Arts	B.A.
Construction Technology—Building	X		School of Technical Careers	A.A.S.
Construction Technology—Civil	X		School of Technical Careers	A.A.S.
Consumer Studies ²		X		
Correctional Services	X		School of Technical Careers	A.A.
Dance ³		X		
Dental Hygiene	X		School of Technical Careers	A.A.
Dental Laboratory Technology	X		School of Technical Careers	A.A.
Design	X		College of Human Resources	B.A.
Early Childhood Education ⁴	X		College of Education	B.S.
Earth Science		X		
East Asian Civilizations ¹		X		
Economics	X	X	College of Liberal Arts College of Education	B.A. B.S.
Educational Media ⁴		X		
Electronic Data Processing	X		School of Technical Careers	A.A.S.

SUBJECT	MAJOR	MINOR	ACADEMIC UNIT	DEGREE
Electronics Technology	X		School of Technical Careers	A.A.S.
Elementary Education ⁴	X		College of Education	B.S.
Engineering	X		School of Engineering and Technology	B.S.
Engineering Biophysics	X		College of Science	B.S.
Engineering Technology	X		School of Engineering and Technology	B.S.
English	X	X	College of Liberal Arts	B.A.
			College of Education	B.S.
Family Economics and Management	X		College of Human Resources	B.S.
Finance	X		College of Business and Administration	B.S.
Food and Nutrition	X		College of Human Resources	B.S.
Forestry	X		School of Agriculture	B.S.
French ¹	X	X	College of Liberal Arts	B.A.
			College of Education	B.S.
Geography	X	X	College of Liberal Arts	B.A., B.S.
			College of Education	B.S.
Geology	X	X	College of Science	B.A., B.S.
German ¹	X	X	College of Liberal Arts	B.A.
			College of Education	B.S.
Greek ¹		X		
Health Education	X		College of Education	B.S.
History	X	X	College of Liberal Arts	B.A.
			College of Education	B.S.
Home Economics Education ⁶	X		College of Education	B.S.
Industrial Technology	X		School of Engineering and Technology	B.S.
Interior Design	X		College of Human Resources	B.S.
Japanese ¹		X		
Journalism	X	X	College of Communications and Fine Arts	B.S.
			College of Education	B.S.
Language Arts and Social Studies	X		College of Education	B.S.
Latin ¹		X		
Latin American Studies	X		College of Liberal Arts	B.A.
Law Enforcement	X		School of Technical Careers	A.A.
Linguistics	X	X	College of Liberal Arts	B.A.
Marketing	X		College of Business and Administration	B.S.
Mathematics	X	X	College of Liberal Arts	B.A.
			College of Education	B.S.
			College of Science	B.S.
Microbiology	X	X	College of Science	B.A.
Mortuary Science and Funeral Services	X		School of Technical Careers	A.A.
Museum Studies		X		

SUBJECT	MAJOR	MINOR	ACADEMIC UNIT	DEGREE
Music	X	X	College of Communica- tions and Fine Arts	B.Mus.
			College of Education	B.Mus.Ed.
			College of Liberal Arts	B.A.
Nursing	X		School of Technical Careers	A.A.
Occupational Education ⁶	X		College of Education	B.S.
Philosophy	X	X	College of Liberal Arts	B.A.
Photographic and Audio- Visual Technology	X		School of Technical Careers	A.A.
Physical Education for Men	X	X	College of Education	B.S.
Physical Education for Women	X	X	College of Education	B.S.
Physical Therapist Assistant	X		School of Technical Careers	A.A.
Physics	X	X	College of Science	B.S.
			College of Education	B.S.
Physiology	X	X	College of Science	B.A.
Plant and Soil Science	X	X	School of Agriculture	B.S.
Political Science	X	X	College of Liberal Arts	B.A.
			College of Education	B.S.
Psychology	X	X	College of Liberal Arts	B.A.
Radio-Television	X		College of Communica- tions and Fine Arts	B.S.
Recreation	X	X	College of Education	B.S.
Religious Studies	X	X	College of Liberal Arts	B.A.
Russian ¹	X	X	College of Liberal Arts	B.A.
			College of Education	B.S.
Secretarial and Office Specialties	X	X	School of Technical Careers	A.A.
Social Studies	X		College of Education	B.S.
Social Welfare	X		College of Human Resources	B.S.
Sociology	X	X	College of Liberal Arts	B.A.
Spanish ¹	X	X	College of Liberal Arts	B.A.
			College of Education	B.S.
Special Major ⁷	X			B.A., B.S.
Special Education	X		College of Education	B.S.
Speech Communication	X	X	College of Communica- tions and Fine Arts	B.S.
			College of Education	B.S.
			College of Liberal Arts	B.A.
Speech Pathology and Audiology	X		College of Communica- tions and Fine Arts	B.S.
			College of Education	B.S.
Technical Careers	X		School of Technical Careers	B.S.
Theater	X	X	College of Communica- tions and Fine Arts	B.A.
Tool and Manufacturing Technology (Numerical Control)	X		School of Technical Careers	A.A.S.
Uncommon Languages ⁵		X		

SUBJECT	MAJOR	MINOR	ACADEMIC UNIT	DEGREE
University Studies	X			B.A., B.S.
Zoology	X	X	College of Science College of Education	B.A., B.S. B.S.

¹Described under Foreign Languages and Literatures

²Described under Family Economics and Management

³Described under Physical Education

⁴Described under Curriculum, Instruction, and Media

⁵Described under Linguistics

⁶Described under Vocational Education Studies

⁷A special major may be completed in any academic unit.

Visits to Campus

Southern Illinois University at Carbondale welcomes the opportunity to visit with prospective students. Mondays through Fridays, 8 A.M. to 4:30 P.M., admissions counselors are available to discuss admissions requirements and procedures, the various programs offered at Southern Illinois University at Carbondale, the procedures for applying for housing and financial aid, as well as general information about the University and community. The counselors can also arrange guided tours of the campus and meetings with representatives of appropriate departments or offices. In order to benefit most from the visit to Southern Illinois University at Carbondale, it is advisable to arrive before 2 P.M.

Arrangements for a campus visit can be made by writing School/College Relations, Office of Admissions and Records, Southern Illinois University at Carbondale, Carbondale, Illinois 62901, or by calling a toll free number in Illinois (800-642-3531) or the direct number (618-453-4381). Arrangements should be made at least two weeks in advance of the day requested. Groups desiring to visit the campus are urged to give a month's advance notice, specifying the number to attend, day and time of arrival, and special interests or requests.

Applying for Admission

Request application from the Office of Admissions and Records, Southern Illinois University at Carbondale, Carbondale, Illinois 62901, or call toll free in Illinois 800-642-3531. For admissions requirements see Chapter 2.

Campus Life

Student Activities

More than 300 student organizations operate on campus under the direction of the Student Activities Center, located in the Student Center, third floor. Foremost among these are Student Government and Graduate Student Council which are the official representative student organizations for their respective constituencies. It is the initial responsibility of these two groups to represent students in university affairs which determines student life on campus. The Student Government Activities Council is the activity programming branch of Student Government created to satisfy the social, educational, cultural, recreational, and co-curricular needs of students. The council is responsible for initiating, planning, and developing an activities program which is sensitive to the contemporary needs of students. This group is student staffed and is responsible for a large percentage of all activities on campus. The Black Affairs Council is the coordinating and governmental body for the eighteen black student organizations of the university. The Council takes a major responsibility for programming of social, cultural, and educational programs for blacks. The Inter-Greek Council is the activity coordinating council for the university's eighteen social fraternities and eight social sororities. This council provides activities which create responsibility for and awareness of the academic community as well as the Carbondale community. The remainder of the vast number of student organiza-

tions consists of a varied list of special and public interest groups, religious groups, scholastic and professional honoraries, and departmental organization. A year-round student voluntary program, Mobilization of Volunteer Effort, is also operated from this office.

The professional staff of the Student Activities Center aids students and student organizations in fiscal management, organizational matters, and helps these organizations to better understand and utilize the policies and procedures of the university relating to student activities and governance. Homecoming, Parent's Day, Spring Festival, Activities Fair, and many other exciting events are also planned and developed by the staff of the Student Activities Center.

Student Center

The Student Center is the community center of the University for all students, faculty, administration, alumni, and guests. It is not just a building — it is an organization and a program. Together they represent a well-considered plan for the community life of the University.

As a community center it performs four important missions. It supplies support services which compliment the academic mission of the university through the bookstore, food service, information services, and meeting facilities. It is part of the educational program of the college and serves as a laboratory of citizenship and leadership through participation in its various boards and committees that provide a campus-wide social, cultural, and recreational program. It is an extension of the classroom which allows practicum students and graduate assistants and interns the opportunity to develop on-the-job expertise in their field of learning. It serves as a unifying force in the university, cultivating interactions on a common ground between students, faculty, staff, alumni, and friends. It is a focal point that alumni and students can relate to when returning to campus.

The Student Center covers almost eight acres of floor space and is open approximately 16 hours a day, seven days a week. The University Bookstore sells new and used textbooks and school and personal supplies. A variety of food services are offered in the cafeteria, fast foods snack bar, pizza parlor, restaurant, and catering service. Other facilities and services are automated post office, ticket sales for most campus events, bowling lanes, billiard room, craft shop, art exhibit and display case areas, television and video lounges, and several general lounges for study and relaxation.

Other available facilities include ballrooms, an auditorium, and several private meeting and dining rooms. Offices in the Student Center are the Student Center Administrative Office, the Student Activities Office, and the student organization and student government offices.

SIU Arena

The SIU Arena is designed to accommodate athletic events, meetings, musical programs, stage performances, and similar activities that demand a large indoor participant area or facilities to accommodate large audiences. The facilities and staff are available to help meet the requirements of the educational program, the needs of the intercollegiate athletics program, and the needs of the intramural and recreation program, as well as those of Area Services, the Division of Continuing Education and Student Activities. The SIU Arena also provides a popular entertainment series to help fulfill the educational, cultural, social, and entertainment needs of the University community.

Shryock Auditorium

Shryock Auditorium, located amid "old campus" of Southern Illinois University at Carbondale, stands as one of the fine and performing arts centers of Southern Illinois. The auditorium is equipped to handle almost any type of event, from the performing arts on a grand scale such as opera and ballet, to large group meet-

ings and conferences. The auditorium, seating over 1,200 guests, includes a dressing room complex capable of accommodating up to 70 performers, lighting and sound reinforcement systems incorporating some of the most advanced designs, and an enlarged stage area. Air conditioned throughout the guest areas, the facilities provide the utmost in audience comfort.

Campus Communications Media

WSIU TELEVISION AND RADIO

The SIU Broadcasting Service operates two maximum power, full-color television stations and one regional FM stereo radio station. The two television stations, WSIU-TV, Channel 8 in Carbondale, and WUSI-TV, Channel 16 in Olney, are affiliated with the Public Broadcasting Service and have a potential audience of more than 1,500,000 in their coverage area of fifty-one counties. WSIU(FM) a 50,000 watt stereo station at 91.9 FM, is affiliated with National Public Radio and serves a potential audience of over 1,250,000 in its broadcast reach of forty-five counties. Its programming is wide-ranging, from popular and classical music to information, and a heavy schedule of locally-produced newscasts.

NEWSPAPER

The *Daily Egyptian*, campus newspaper, is issued Monday through Friday each week on campus and in nearby campus locations. The newspaper is a laboratory newspaper for students in the School of Journalism, produced under professional supervision, using a student editor and staff. Students working on the staff are paid, but volunteers may also work on the paper. Students work at production, advertising, and distribution jobs on the newspaper, making the total paid staff more than 100 students.

Men's Intercollegiate Athletics

Southern Illinois University at Carbondale has one of the finest all-around men's athletic programs in the country, fielding varsity teams in eleven sports: football and cross country in the fall; basketball, indoor track, gymnastics, swimming, and wrestling in the winter; and baseball, outdoor track, tennis, and golf in the spring.

During the school year, the Salukis are favored to win conference championships in indoor and outdoor track, baseball, and possibly once again, win the All-Sports trophy for the Missouri Valley Conference. Also the Saluki football team should field one of the better football teams in the Missouri Valley Conference.

Women's Intercollegiate Athletics

The Women's Intercollegiate Athletic Program provides women with intercollegiate competition in eleven sports: badminton, basketball, cross country, field hockey, golf, gymnastics, softball, swimming, tennis, track and field, and volleyball. Three separate competitive seasons, fall, winter, and spring, allow athletes to participate in three different sports during the school year. Women's intercollegiate athletics has a winning 37-year history, which includes one national golf championship and three national gymnastics championships. Women's intercollegiate athletics seeks to serve the entire University community by providing top athletic competition for viewing. Women's intercollegiate athletics is affiliated with the state, regional, and national Association for Intercollegiate Athletics for Women.

Intramural-Recreational Sports

All intramural and recreational sports activities for the University community are programmed in the Student Recreation Center, located on the northeast

corner of the campus. Seven basic programs encompass the overall intramural-recreational sports areas: men's intramurals, women's intramurals, co-rec intramurals, informal recreation, sports clubs, recreation for special populations, and Lake-on-the-Campus. A handbook and brochures with basic information about the various programs may be obtained by contacting the Office of Intramural-Recreational Sports.

Campus Services

Library Affairs

Morris Library contains approximately 1,500,000 volumes, 19,000 current periodicals and serials, 1,500,000 units of microforms, and collections of documents, textbooks, newspapers, maps, films, framed art works and phonograph records. With the exception of those in the rare book room, all books and journals are arranged on open shelves and assessable for browsing.

Recognizing the importance of libraries in a college education, the University has given special attention to both quantity and quality of library development. More than 54,700 volumes were added to the collections during the past year. Reference librarians are available throughout the library to assist in locating and using materials. Handouts on library use can be had for the asking. Those wishing further instruction may enroll in a course on library research methods listed under General Studies in Chapter 4.

Morris Library houses four subject libraries (education, humanities, science, and social studies), a reserve books facility, the Learning Resources Service, and an undergraduate library. 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 are charged out from a central circulation desk, using an automated charging system. Inexpensive coin operated photocopying equipment is available to patrons on every floor.

An undergraduate library was opened for service the fall of 1971. Located on the first floor, the new facility has a collection of over 71,000 volumes that are considered basic to the undergraduate curriculum. There is a professional staff to give special attention to the needs of undergraduate students and spare them some of the frustrations of finding what they want in a universe of books as large and complex as a research library, although they are welcome to use it when their wants cannot be satisfied by the smaller collection.

Within the library system, the Learning Resources Service makes films available to the instructional faculty for individuals and small groups of students. The service supports the full range of instructional activity with the design, development, and utilization of instructional media.

The browsing room, prominently located on the first floor opposite the circulation desk, displays recent books of a popular nature to provide recreational and avocational reading. Within Library Affairs, the Learning Resources Service makes films available to the instructional faculty for individuals and small groups of students. The service supports the full range of instructional activity with the design, development, and utilization of instructional media.

One facility of the Learning Resources Service is the Self Instruction Center. This center provides slides, audio and video tapes, cassettes, four PLATO terminals, and combinations of these kinds of materials for scheduled classes and enrichment studies. Typewriters are provided for student use for a nominal fee.

Another facility is the Student Media Design Laboratory, open to students who need to produce instructional media for classes, projects, and the student teaching experience. Materials are made available at cost and professional assistance is provided for both design and production of the media.

Student Health Program

Southern Illinois University at Carbondale provides an extensive health benefits plan through the Student Health Program. Student input to the plan is provided through the Student Health Policy Board. Interested students may contact the chairman of the Student Health Policy Board in the Student Government office, 536-3381.

AREAS OF SERVICE

The Student Health Program offers the following interrelated programs.

Prevention Programs. Prevention programs sponsors five services. The programs are geared to provide students with the skills necessary to assume responsibility for their own health. Opportunities are offered to students who wish to maintain and improve their general level of health. Lifestyling is a program which advocates taking an active part in healthful living in order to maximize the potential for experiencing satisfaction with life. Emphasis is placed on nutritional behavior, exercise, stress reduction, and environmental living. Services offered include positive health groups, workshops, credit courses, and lifestyle dancing. Human Sexuality Services provides education, information, and counseling pertaining to human sexuality in order to foster a positive concept of sexuality, self, and relationships. Services include sex awareness workshops, pregnancy and birth control counseling, VD rap sessions, and sexual dissatisfaction counseling. Medical Self-Help is a patient activation program concerned with developing self-responsibility for health care. Synergy is an alternative service providing 24-hour drug crisis intervention, a referral service, and peer counseling. Alcohol Education Program is in response to alcohol use being the number one drug problem among college students.

On-Campus Outpatient Care. This care or primary care is similar to that offered by private general physicians. The Health Service is staffed by the equivalent of seven full-time physicians, a full-time psychiatrist, 64 support staff, and student workers. The student benefits include all routine office care and a wide range of diagnostic tests, including laboratory procedures. The benefit does not cover pharmacy charges and Pap tests, which are provided at cost, and a basic \$5.00 x-ray charge. While a walk-in clinic is open during regular hours, students should make appointments to see physicians by calling 536-2391.

On-Campus Infirmary. On-campus infirmary or intermediate care is provided in a twelve-bed inpatient setting on the second floor of the Health Service. Intermediate care is provided for illness when medical and skilled nursing care is required but the student is not in need of hospitalization. Admission to the infirmary must be authorized by a Health Service physician or by an emergency room physician during the hours when the Health Service is closed. Students are entitled to room and board, diagnostic laboratory, and physician visits at no charge. Medications are charged on a replacement cost basis and a basic \$5.00 charge for x-rays will be billed to the student.

Specialty Care. Special care is available through contractual arrangements with local health care agencies. Students must be referred by a Health Service physician or a Memorial Hospital of Carbondale emergency room physician to receive this benefit. The specialty areas are dermatology, general surgery, gynecology, internal medicine, orthopedics, pathology, radiology, urology, and ear, nose, and throat.

Hospitalization. Hospitalization or secondary care is provided at Memorial Hos-

pital of Carbondale. Students must be admitted by a Health Service physician, an emergency room physician, or a physician to whom they have been referred by either of the above. Hospitalization and all necessary treatment is provided at no cost for up to 31 days per illness. For information on limitations or exclusions, contact the Student Health Program, 453-3311.

Emergency Services. Emergency services are provided at the Health Service during the hours it is open. Through a contract with Memorial Hospital of Carbondale, the Student Health Program offers emergency services to students when the Health Service is closed. Medical trauma is always handled at the emergency room of Memorial Hospital of Carbondale. All emergency services are covered, except a \$10.00 users fee. This charge will be billed to the students and must be paid during the semester the charge is incurred. An arrangement has also been made with Jackson County Ambulance Service to allow students with medical emergencies to use the ambulance to get to the Health Service or emergency room at no cost. Students should use the health service during regular hours, Memorial Hospital of Carbondale emergency room when the Health Service is closed, and the Jackson County Ambulance Service, 529-2121, for medical emergencies.

Out-of-the-Area Benefits. Out-of-the-area-benefits or extended/supplemental care is provided to students for medical services that are not provided in the Carbondale area or are needed for acute or emergent care when the student is out-of-the area. Through special arrangements with an insurance company, the following reasonable medical expenses incurred will be paid: (1) If hospitalized the student must pay the first \$25.00. The insurance company will pay the next \$500 of hospital, x-rays, and laboratory fee expenses. (2) The plan has a coinsurance provision which provides for payment of 75% of hospital expenses over the initial \$500; reasonable and customary surgical in-hospital doctor calls, emergency room services; and ambulance service. The plan carries an overall maximum payable of \$5,000 for incurred expenses. The fee information is subject to change because it is bid with insurance companies on a periodic basis.

Dental Service. Dental service is provided through contractual arrangements with the School of Technical Careers dental hygiene program to offer students routine dental cleaning and x-rays at no charge. The emergency dental program is also available to resolve emergency dental disorders. For appointments or information, call 549-5651.

The services of the Student Health Program are available in several locations. The outpatient clinic, infirmary, and diagnostic services are located in 115 Small Group Housing, 453-3311, or 536-2391, for appointments with a physician. The pharmacy, administrative offices, and prevention programs are located at 112 Small Group Housing, 453-3311. The dental services are located at the School of Technical Careers, 549-5651. Synergy is located at 905 South Illinois Avenue, 549-3333. Memorial Hospital of Carbondale is located at 404 West Main Street, 549-0721. The Carbondale Clinic is at 2601 West Main Street, 549-5361.

ELIGIBILITY

Any student who is enrolled at Southern Illinois University at Carbondale and has paid the student medical benefit fee is eligible for services. If a refund has been issued for parts of the fee, as explained below, the student is still eligible for service in the areas not refunded. Eligibility for the program extends from the first day of the enrollment period for which fees have been paid to two weeks after the last day of that semester. However, students are covered through all break periods when enrollment is continuous from semester to semester. An optional summer plan is available to provide students with medical benefits over

the summer vacation. Dependents of students or staff members of the university are not eligible for Student Health Program benefits. However, a family plan for dependents is available to students through the local insurance agent. For more information on eligibility and the summer plan, call 543-3311.

FEES

The \$45.00 student medical benefit fee is distributed to the programs as explained below. A student who receives a refund of any portion of the fee is not eligible for the benefits of that program but would continue to be eligible for benefits of any programs for which the fees have been paid.

\$ 3.00	Prevention Programs
25.00	On-Campus Outpatient Program
2.00	Infirmary On-Campus
3.50	Specialty Care
4.00	Hospitalization, Memorial Hospital of Carbondale
3.50	Emergency Services, Memorial Hospital of Carbondale
1.00	Emergency Services, Jackson County Ambulance Service
1.00	Out-of-the-Area Benefits
2.00	Emergency Dental Program

\$45.00 Total

Students who carry their own medical insurance or are covered under their parents' policy may be eligible for a refund of portions of the student medical benefit fee. Refunds of the fee are made on the basis of comparable or duplicate coverage for each area of service. Students who think they may qualify for a refund may apply no later than the end of the third week of each semester by contacting the insurance claims officer of the Student Health Program. When applying, students should provide their fee statement and a copy of their insurance policy. The insurance department is located in Room 118 of 112 Small Group Housing, 453-3311.

The limits of the Student Health Program benefits are (1) \$15,000 of services provided on campus or through contractual arrangements within the Carbondale area and (2) \$5,000 of services as provided through the out-of-the-area benefit.

CONFIDENTIALITY OF INFORMATION

All visits to any division of the Student Health Programs are confidential. Medical information may be released when authorized by the student. Medical information may also be released without authorization from the student to a court when subpoenaed, to the University legal counsel when the university is being sued and the medical information would be pertinent, and to the public health department as required by law when a student is suffering from a reportable communicable disease. In addition, cases involving firearms and criminal offenses must be reported to the police.

Women's Programs

Women's Programs, an office of Student Services, was designed to meet the special needs of women students. The office provides information and support for women making educational, vocational, and personal decisions; referral to services helpful to women; information and resources about women and changing sex roles; workshops, seminars, and discussions focusing on women's interests and needs; speakers for groups on topics related to women, and a listing of women's studies courses.

Career Planning and Placement Center

The Career Planning and Placement Center provides students with the opportunity to explore careers, to prepare for entry into the working world, and as a

regional test center, to take most national examinations for admission, certification and credit by examination. These tests include high school equivalency (GED), proficiency examinations, including CLEP, graduate and professional examinations (GRE, Law, SAT, Dental, and Miller Analogies Test), and certification programs in actuarial, insurance, real estate, nursing and allied health.

Students who have not chosen a major, or who wish to examine work values and assess their abilities, can talk with professional career counselors on a one-to-one basis. They will be assisted in clarifying their ideas about themselves and in identifying possible occupational alternatives. The career counselors also administer and interpret tests and surveys to determine an individual's aptitude, interest, achievement and personality factors. A career information library is maintained by the Career Planning and Placement Center and provides students with written and taped materials about career fields, specific job opportunities, and job search techniques.

Placement consultants are available to assist students and alumni with all aspects of the job search including resume writing, interviewing techniques, letters of application, and information about career opportunities in their field. The Career Planning and Placement Center is visited annually by over 400 recruiters, representing 175 businesses, government agencies, schools, and service organizations, who interview students for available positions with their organizations. Lifetime credential service is available to all students at the Career Planning and Placement Center. Students may establish a file containing their resume and letters of recommendation, which will be sent upon request to any employer seeking to fill a vacancy or to any graduate school of the student's choice.

The Cooperative Education Program is administered by the Career Planning and Placement Center. Students in any field of study may seek assistance in arranging a career-related work experience or internship. The intermixing of academic study and professional practice provides the student with an opportunity for increasing career awareness, personal growth, dollar income, and ultimate employment success.

Counseling Center

The Counseling Center is staffed with professional counselors qualified to assist students with personal development and resolution of problems. Personal problems, marital adjustment difficulties, social skill development, parental conflict, and sex role awareness development are areas of frequent concern to students. Both group and individual counseling are provided within an atmosphere of confidentiality and trust.

Specialized Student Services

The University maintains a commitment to make appropriate services, programs, and facilities available to students with physical handicaps. Numerous services are provided to handicapped students through the Specialized Student Services Office and other departments in order that this student population may obtain the maximum academic, social and cultural benefits within the University community. Available services and programs within the University include pre-admission planning, orientation and mobility training, adapted van transportation, wheelchair repair, attendant recruitment and referral, adapted recreation, physical therapy and speech therapy, specialized materials and equipment for visually handicapped students, reader recruitment and referral, proctoring academic examinations, career development and placement services, liaison with academic departments and other University offices, and liaison with agencies such as the Illinois Division of Vocational Rehabilitation.

The campus is quite accessible and usable by the student who is wheelchair confined, visually handicapped, or otherwise limited in mobility. The University

Housing Office also provides modified housing facilities in the Thompson Point Residence Halls and in the family housing areas. The Housing Office and Specialized Student Services Office work with the student to ensure the acquisition of appropriate housing.

Office of the University Ombudsperson

The Office of the University Ombudsperson provides service to members of the University community who seek assistance with conflict resolution and management. Fair and equitable settlements are sought through explanation, investigation, negotiation, and mediation between parties. In its operation, the office is independent of academic, administrative, and business units of the University.

The office has established simple, orderly procedures for receiving requests for assistance and grievances by students and members of the faculty and staff. The ombudsperson and the office staff advise complainants whether their complaints lack merit or whether they should seek resolution before another office or body of the University. When appropriate, the Ombudsperson may assist the complaining individual in obtaining an informal settlement of the problem.

The ombudsperson has broad investigatory powers and access to all University records except medical files, as well as having direct access to all university officials including those at the presidential and vice presidential levels.

Beyond assisting with individual problems, the ombudsperson works toward change of those policies and procedures which have inequitably affected individuals, particularly when inequities have been noted in numerous cases.

All inquiries and records are kept confidential.

Clinical Center

The Clinical Center is staffed by professional personnel and supervised student diagnosticians, therapists, and counselors. It offers diagnostic and treatment services to faculty, staff, University students, and other individuals in the community. Cooperating in this clinic are the Departments of Curriculum, Instruction, and Media; Guidance and Educational Psychology; Psychology; Social Welfare; Special Education; Speech Pathology and Audiology; Physical Therapy and the Rehabilitation Institute.

Diagnostic services include assessment of psychological, speech, hearing, reading, and general education problems. Therapy services include various forms of counseling and behavior modification, clinical social work, speech and audiological therapies, physical therapy, and educational remediation.

Consultant services are also available to professional persons and organizations.

Alumni Services

Alumni Services serves as a liaison between the University and its alumni. It maintains records on all graduates and provides necessary information to the academic units for various surveys and reports. It serves as a base for the SIU Alumni Association (a separate not-for-profit corporation) and carries the University message to thousands of alumni throughout the world through its publications and alumni club meetings. It conducts programs such as the "Great Teacher" award, and grants scholarships, provides for student loans, and the funding of selected faculty research projects.

University Museum and Art Galleries

The University Museum and Art Galleries serves the campus community and surrounding area in many ways, most visibly in its active program of both permanent and changing exhibits and educational service to the local schools. The permanent exhibits are housed in the north wing of Faner Hall and are designed to give visitors an authentic glimpse of the area's past. There are dioramas

depicting pioneer life from schoolroom to public house as well as walk-through displays of such essential early activities as blacksmithing, broom-making, and weaving, all furnished from the large permanent research collection.

Temporary exhibits are displayed in a gallery in the north wing of Faner Hall and in Mitchell Gallery in Eileen E. Quigley Hall. These exhibits change often and include each spring and summer a series of thesis exhibits of the Master of Fine Arts degree, a requirement of all candidates for that degree in art, as well as faculty art and photography exhibits, art exhibits drawn from the permanent collection, and exhibits designed around a particular theme. In addition to these formal exhibits, works of art from the permanent collection are displayed in many other campus locations.

The University Museum and Art Galleries provides a community service through a school loan program, a classroom enrichment series, and works with many area groups to provide a meaningful time for leisure activities.

The University Museum and Art Galleries also serves students in more specific ways, by providing on-the-job training, courses, and an opportunity for staging practicum exhibits to those who see their future jobs or graduate school training in the growing field of museology. Through these avenues, students are able to draw on the extensive collections which include approximately 1400 works of art, and thousands of ethnographic items from many areas of the world.

Campus Living

On-Campus Housing for Single Students

Southern Illinois University at Carbondale offers a variety of living experiences through the on-campus residence halls for single students. These halls provide not only the usual room and board but also have special opportunities for participation in recreational and academic activities. Two distinct advantages of living on campus are the ready access to all facilities of the campus, such as the library, and the absence of a need for special transportation since all campus activities are within easy walking distance. Meal service in all areas except Small Group Housing provides 20 meals a week; three meals each day six days a week and breakfast and noon dinner on Sunday. Unlimited second helpings are offered, and a new feature is a special diet table for students with special problems. Co-ed living is available in all housing areas except to first semester freshmen students. All rooms are equipped with twin-sized beds, closet space, chest of drawers, desks, study chairs, and draperies. Linen service provides two sheets and one pillowcase weekly. Study lamps, towels, pillows, and other bedding materials must be provided by the student.

Freshmen under the age of 21, not living with parents or guardians, are required to live in on-campus residence halls, or similar privately-owned residence halls. The privately-owned residence halls must provide facilities, food service, and supervision comparable to on-campus housing. Sophomores under the age of 21, not living with parents or guardians, are required to live in on-campus residence halls or University approved off-campus housing. Sophomore approved off-campus housing includes rooming houses and residence hall apartments. There are no university regulations for junior, senior, graduate, married students or those students 21 years of age or over. Housing contracts are for the fall and spring semesters or the school year with summer contracts being issued separately. University housing closes during breaks and official university vacations.

Thompson Point Residential Area. The Thompson Point residential area consists of eleven halls, each housing approximately 120 students. Lentz Hall serves as the commons unit for food service and such services as a library, post office, snack bar, recreation center, and game rooms. The halls are located on the shores

of Lake-On-The-Campus and provide unique opportunities at the lake for activities such as swimming, boating, fishing, and hiking. Also included in the Thompson Point residential area are special features for handicapped students.

University Park Residential Area. The University Park residential area consists of Neely Hall, a 17-story, air-conditioned residence hall, and Allen, Boomer, and Wright Halls, 4-story men's triad buildings. Trueblood Hall serves as the commons unit providing the cafeteria, snack bar, game room, and post office. University Park is connected to the campus by an overpass which reaches from Trueblood Hall over the streets to the center of campus.

Brush Towers. Brush Towers consists of two 17-story, air-conditioned halls, Mae Smith Hall for men and women and Schneider Hall for men. The commons unit is Grinnell Hall which provides the cafeteria, snack bar, and game room.

Small Group Housing Area. The Small Group Housing area provides housing for recognized sororities and fraternities. Each building houses about fifty students and includes lounge and dining area, kitchen, and snack bar. Assignment of students to this area is by invitation from the fraternal organization.

For the 1977-1978 academic year, the costs for on-campus housing for an academic year are \$1,520, except that for men in University Park the costs are \$1,470. The total contract may be paid in advance, by semester, or in monthly installments. However, an advance payment is due at the time the contract is signed and returned.

More information or application forms may be obtained by writing the supervisor of contracts, University Housing.

Housing for Married Students

There are 576 apartments both furnished and unfurnished, available for married students. The costs are from \$125 to \$166 a month with all utilities furnished.

Off-Campus Facilities

University Housing seeks continually to influence both the availability and quality of off-campus housing for students in terms of meeting as fully as possible the educational, physical, social, and economic needs of students living off campus as these needs relate to the objectives of the University. Numerous accepted living centers for freshmen and sophomore students off campus aid in the relationship between the student's living environment and progress toward the attainment of the educational goals. The cost for off-campus housing ranges from \$155 to \$400 a month. Information may be obtained by writing directly to the supervisor of Off-Campus Housing, Building B, Washington Square. It is not considered wise to contract for an off-campus living facility, sight unseen.

Student Work and Financial Assistance

A variety of financial aid programs including scholarships, grants, loans, and part-time employment are administered and coordinated by the Office of Student Work and Financial Assistance.

Application for Financial Assistance

It is necessary that students and their parents complete and submit an American College Testing Program Family Financial Statement (ACT/FFS) each year in order to be considered for most types of financial assistance. This need analysis service is used as a means for selection of recipients for certain local financial aid awards. In addition, the student can apply to the Basic Educational Opportunity

Grant Program as part of the application process to the American College Testing Program Family Financial Statement. Additionally, all students are encouraged to apply to the Illinois State Scholarship Commission to be considered for a monetary award to cover part or all of their tuition and fees.

Students wishing primary consideration for financial aid must submit all applications by May 1, 1979.

A student work and financial assistance brochure has been prepared which summarizes the various financial aid programs available, including eligibility requirements, amount of assistance, and where to apply. This brochure, as well as individual counseling with staff members, is available from the Office of Student Work and Financial Assistance, Woody Hall, 3rd Floor-B Wing, Southern Illinois University at Carbondale, Carbondale, Illinois 62901. The telephone number is Area Code 618, 453-4334.

Major Types of Assistance

Scholarships. All interested Illinois resident undergraduate students should apply for the Illinois State Scholarship Commission (ISSC) Monetary Award. This award could provide tuition and fees and is based upon financial need.

Grants. Every interested undergraduate student should apply for the Basic Educational Opportunity Grant. This award is based upon financial need and funds are to be used for any educational expense. The Supplemental Educational Opportunity Grant is available for undergraduate students displaying exceptional financial need. A current needs analysis form must be on file.

Loans. The loan programs include the National Direct Student Loan (NDSL), the Illinois Guaranteed Loan (IGLP), and the Federally-Insured Student Loan (FISL).

Part-time Employment. Work consists of an on-campus work program in which more than six thousand students work each year in one of more than two hundred student worker classifications, as well as more than three thousand students employed in off-campus jobs.

Other. Veterans, Social Security, Railroad Retirement, and Civil Service Retirement benefits are also available to those who qualify.

Academic Progress Standards for Financial Assistance

As a result of the federal legislative amendments of 1976 to the Higher Education Act of 1965, Southern Illinois University at Carbondale has instituted a policy regarding satisfactory progress in a course of study in order to receive financial aid. A student must maintain academic progress according to these guidelines for the continuing eligibility for receiving financial aid awards. The policy requires that a student meet the academic standards as prescribed in the current bulletin. Each student must also satisfactorily complete a minimum of 12 semester hours for full-time students and six semester hours for half-time students during each semester the student qualifies for and receives financial aid. A student who fails to attain the minimal standards set forth in the policy shall be sent a letter indicating the student is being placed on financial aid warning for the next semester or summer session attended. A student shall be placed on financial aid termination when the student is not eligible to enroll for academic reasons or when the student is deficient by more than 18 hours for a full-time student in the expected number of hours passed. Students who are on financial aid termination status cannot have their aid reinstated until such time as they are readmitted and their total number of hours passed is within six hours for full-time of the expected hours to be completed. The financial assistance status of

those students receiving financial aid shall be evaluated at the completion of each semester or summer session. The decision to impose a financial aid warning or termination on a particular student who has failed to meet the minimum standards shall be the responsibility of the director of Student Work and Financial Assistance in consultation with the student's academic dean.

A copy of the complete guidelines for satisfactory academic progress for financial aid may be obtained by writing the Student Work and Financial Assistance office.

Division of Continuing Education

The Division of Continuing Education is responsible for expanding the University's educational mission beyond regular course offerings and campus boundaries. Through off-campus credit programs, adult education non-credit courses and conferences, programs for the military, the Labor Institute and the Touch of Nature Environmental Center, the division offers the University's resources to groups and areas in need of a particular educational program.

Off-Campus Credit

Faculty, materials, and course work for off-campus credit programs are of the same quality as those offered in courses that are part of the regular University curriculum. Off-campus courses are scheduled in the areas served by Southern Illinois University at Carbondale when a community or group demonstrates a need or desire for a course. Graduate programs in agriculture, education, engineering, and rehabilitation administration, as well as undergraduate programs in university studies, industrial technology, occupational education and bachelor's degree programs in the School of Technical Careers are provided at approved sites.

The University accepts a maximum of 30 semester hours of credit earned through correspondence programs toward a bachelor's degree. Southern Illinois University at Carbondale does not operate a correspondence program. Correspondence work is accepted when completed at institutions that are regionally accredited if the grade is of C quality or better.

The University offers off-campus courses whenever (1) it is apparent that there is a need and potential enrollment to justify scheduling; (2) it is possible to obtain a faculty member to instruct the course; and (3) adequate laboratory and library facilities are available.

Persons may enroll for off-campus work on an audit basis provided facilities are available. They must receive the instructor's permission to do so, and are required to pay the same tuition fee as though they were registering for credit.

In addition, the division's popular travel-study program offers a number of credit courses at national and international locations where students can learn directly about the area being studied and can have access to facilities and materials unavailable elsewhere. Past travel-study courses have temporarily transferred the classroom from the Carbondale campus to Denmark, Mexico, Western Europe, the Pacific Ocean, and the Rocky Mountains.

Adult Education Conference and Short Courses

Adult education non-credit courses feature instruction by University faculty, as well as carefully selected specialists from business, industry, and other professions. Courses in a wide range of vocational, technical, and general education fields are designed to provide a spectrum of educational opportunities for adults in Southern Illinois.

Conferences, workshops, seminars, and symposia in virtually every field are conducted either on or off campus, at the most convenient site for participants.

Traditionally, most conferences have been for local groups, but in recent years there has been a substantial growth in the number of state and national conferences hosted by the University. From original brainstorming sessions to completion of the conference, workshop, seminar, or symposia, the division is equipped with the staff, expertise, and materials to conduct a wide range of activities.

The Community Listener's Permit Program, a special non-credit program, enables people in the community to sit in on courses which are offered as part of the regular University credit curriculum. Almost all undergraduate University courses are open to participants in the Community Listener's Permit Program.

Office of Military Programs

The Office of Military Programs is a coordinating office working with the College of Education, the School of Technical Careers, and the School of Engineering and Technology which offer the final two years of degree programs at military bases. Principal functions are to establish uniform policies regarding registration, program changes, billings to and collections from students, processing of veterans benefits documents, changes in enrollments, and refunds. The office serves as the principal point of contact and represents the University with external agencies in matters pertaining to educational programs at military bases. For additional information refer to the academic unit information in chapters 3 and 4.

Labor Institute

The Labor Institute's objectives are: (1) to facilitate regular University instruction in the disciplines related to the labor field; (2) to encourage research in the labor area; and (3) to organize and promote programs of education in the labor field designed to serve workers, employers and the public.

Touch of Nature Environmental Center

The 6,500 acre Touch of Nature Environmental Center provides the opportunity for outdoor learning experiences through programs designed for all age groups. The programs include underway, a challenge camping experience, the handicapped programs for children and adults, the trailriding program, and the environmental workshops for high school students.

Facilities are available for use by school and other groups for educational programs and conferences. The center is located ten miles southeast of Carbondale on Little Grassy Lake, adjacent to Giant City State Park.

International Education and International Student and Faculty Affairs

The International Student and Faculty Affairs section of the Office of International Education is a service unit whose mission is to bring all of the resources of Southern Illinois University at Carbondale and of the community to bear on the education of foreign students and to facilitate the exchange of ideas and understanding between American and foreign students. The program also provides educative, legal/contractual, and supportive services to foreign students. The International Student and Faculty Affairs section maintains relationships with foundations, government agencies, and other organizations interested in sponsoring international student exchange programs and administers the senior Fulbright-Hays program.

Aerospace Studies — Air Force ROTC

Aerospace Studies offers a two-year and a four-year program which are open to both men and women, leading to a commission in the United States Air Force. The four-year program is divided into the General Military Course (GMC), covering the freshman and sophomore years, and the Professional Officer Course (POC), covering the last two years. Students qualify to enter the two-year program at the POC level by attending a six-week field training course during the preceding summer.

The GMC prepares students for the POC and provides them with an education for space age citizenship of long range value whether they remain civilians or become officers in the U.S. Air Force. The courses of the POC are designed to provide the basic knowledge, understandings, and experiences which are required to become an effective junior officer in the modern air force. The student learns about the wide range of USAF career specialties open and has an opportunity to request duty in those fields where qualified. Those qualified as pilots, who do not already fly, receive 25 hours of flying training plus ground school instruction during their final year before graduation.

Freshman and sophomore students enrolled in the four-year program are eligible to compete for full scholarships for their remaining years at the University. In addition to full tuition and fees, the scholarship provides a monthly tax-free subsistence allowance. Also, two-year AFROTC and State of Illinois (Senate Bill 381) scholarships are available on a competitive basis.

In addition to the courses offered for academic credit, Aerospace Studies sponsors related extracurricular activities. The Aerospace Club is open to all members of the student body. The Arnold Air Society, a national honorary service organization, is open to selected AFROTC cadets. Membership in the Angel Flight, an auxiliary of the Arnold Air Society, is open to selected undergraduate women. Angel Flight assists with community and campus service-oriented projects. The wives of married cadets are eligible for the Cadet Ladies Club which prepares wives and fiancées for participation in military family life.

Further information may be obtained from Aerospace Studies, 807 South University Avenue.



Admission Policies, Requirements, Procedures

In order to attend classes at Southern Illinois University at Carbondale, students must gain official admission to the University and must complete the enrollment process, which includes advisement, registration, and payment of fees.

Applications for admission to the University are accepted anytime during the calendar year but should be submitted at least thirty days prior to the beginning of classes.

All beginning freshmen applicants, except those who are twenty-one years of age or older, must submit entrance examination scores. Transfer students are also required to submit entrance examination scores if they are less than twenty-one years of age and have fewer than twenty-six semester hours (thirty-nine quarter hours) of acceptable transfer work. Currently the ACT (American College Test) is the required entrance examination.

Admission of Freshmen

To be eligible for admission, applicants must be graduates of recognized high schools. Graduates of non-recognized high schools may be admitted to the University by demonstrating high potential for success on an entrance examination, or must have passed the General Educational Development Test. Persons who have not completed high school may also qualify for admission by completing the GED test provided they meet the requirements to write this examination.

All admissions granted students while in high school are subject to the completion of high school work, the graduation from high school, and the maintenance of rank upon which the admission was made.

Students entering the University as freshmen are admitted in the schools or colleges within the University that offer the academic programs they indicate they plan to pursue. Students who are undecided as to the course of study they want to follow are admitted to the General Academic Programs unit in pre-major advisement or to selected other units with an undecided major.

Students who are admitted as beginning freshmen but enroll at another college or university prior to their enrollment at Southern Illinois University at Carbondale will automatically void their admission as beginning freshmen. It will be necessary for the student whose admission is voided to reapply for admission and be considered for admission accordingly.

While beginning freshmen are considered for admission on the basis of a combination of class rank and test scores, it is strongly recommended that students will have completed in high school a comprehensive academic program. Recent studies have indicated a number of deficiencies among students in such basic skills as reading, writing, and mathematics. Therefore, students should attempt

to complete as many courses as possible in English, mathematics, science, etc., before entering college.

ADMISSION OF FRESHMEN TO BACCALAUREATE PROGRAMS

High school graduates who: (1) have an entrance examination score at the fiftieth percentile or higher or (2) have an entrance examination score at the thirty-third percentile or higher and rank in the upper half of their graduating class based on class rank are eligible for admission to any semester. Those students who qualify for admission to any semester will be considered for admission after completion of their junior year in high school.

High school graduates who do not meet the admission requirements above are urged to submit applications for admission to the University. If they demonstrate potential for academic success, they may be considered for admission through the Special Admissions Program. Students admitted through the Special Admissions Program are admitted in good standing for fall semester. They are required to participate in academic assistance activities including tutorials and courses designed to teach basic skills which are designed to enhance their opportunities for success.

High school graduates who do not meet the requirements above but who rank above the thirty-third percentile by either class rank or entrance examination scores are admissible for the spring semester on a conditional basis. The conditions are (1) that the student must enroll for a minimum of twelve semester hours and complete at least ten semester hours of graded work and (2) that the student is admitted on probation and must meet the scholastic requirements for probationary students. Students who fail to meet either condition may not continue in attendance subsequent semesters unless approved for readmission by the dean of the school or college. Ordinarily, the student will not be considered for readmission for at least one academic year. Students who have been admitted or who qualify to be admitted on condition may earn transfer credit at another college or university prior to their spring semester matriculation, provided they earn a C average or above for any transfer work completed. If they do not earn a C average for transfer work, their admission will be considered withdrawn. Students who present twenty-six semester hours or more of transfer work should refer to the section of the bulletin which explains admission of transfer students.

Students who are less than twenty-one years of age and have completed satisfactorily the General Educational Development Test can qualify for admission by achieving an entrance examination score above the thirty-third percentile.

ADMISSION OF FRESHMEN TO ASSOCIATE DEGREE PROGRAMS

High school graduates who rank in the upper two-thirds of their graduating classes based upon class rank or by score on the University entrance examinations are eligible for admission to any semester. Students who have passed the General Educational Development Test are also eligible for admission for any semester. Graduates who rank in the lower one-third of their graduating classes based upon class rank are admissible to the spring semester on a conditional basis. The conditions are: (1) that the student must enroll for a minimum of twelve semester hours and complete at least ten semester hours of graded work and (2) that the student is admitted on probation and must meet the scholastic requirements for probationary students. Students who fail to meet either condition may not continue in attendance subsequent semesters unless approved for readmission by the dean of the School of Technical Careers. Ordinarily, the student will not be considered for readmission for at least one academic year.

Students who did not meet the University baccalaureate admission requirements to enter as freshmen from high school during the regular academic year and elect to enter an associate degree program in the School of Technical Careers

will not be considered for admission to a four-year program until they have completed 26 semester hours and have an overall *C* average.

Because a number of courses are offered on a sequential basis in the School of Technical Careers, some programs begin only in the fall. Applicants should review the admission documents to determine when selected programs will allow students to enter the School of Technical Careers.

Admission of Transfer Students

A student who has attended another college, university, or postsecondary institution is required to submit an official transcript from each institution attended. All transcripts become the official property of Southern Illinois University at Carbondale and will not be returned nor issued to another institution.

Even though a student has attended another college or university, the student is required to have graduated from a recognized high school or completed satisfactorily the General Educational Development Test.

A student who has completed any college work will be required to submit an official transcript of that work for admission purposes. Students who have fewer than twenty-six semester hours of transfer credit and do not meet beginning freshmen baccalaureate requirements may be considered for spring semester admission on a conditional basis.

In the event transfer students' grade point averages cannot be determined, their admission may require, in addition to a review of their college performance, standardized examinations and secondary school records.

Transfer students who have been suspended for any reason other than academic failure must be cleared by the Student Relations Office before admission will be granted by the director of admissions.

Transfer students will be admitted directly to the school or college in which their major fields of study are offered. Students who are undecided about their major fields of study will be admitted to the General Academic Programs unit in pre-major advisement or to selected other units with an undecided major.

Transfer students from non-baccalaureate programs will ordinarily be placed in the upper division unit in which they plan to continue their studies. Students admitted to associate degree programs of the School of Technical Careers will be enrolled in that academic unit.

Transfer students who have completed a minimum of one year of work can be considered for admission one year in advance of their date of matriculation if they plan to transfer without interruption. Students who have completed less than one year of study may initiate the admission process after the completion of one semester or one quarter of work. Students who are enrolled in a collegiate program for the first time and wish to transfer upon completion of their first term may do so if they meet the University's admission requirements for beginning freshmen. Admission may also be granted one year in advance for selected programs to students who are in their first term of a collegiate program provided they qualify for admission as beginning freshmen. Admission granted to a student on partial or incomplete records is granted with the condition that the student will have an overall *C* average and be eligible to continue at the last school attended at the time of matriculation. Students whose final transcripts indicate a grade point average or scholastic standing less than that required for unconditional admission will have their initial admission withdrawn.

ADMISSION OF TRANSFER STUDENTS TO BACCALAUREATE PROGRAMS

Students who have an overall *C* average, 2.0 on a 4.0 scale (all institutions), and are eligible to continue their enrollment at the last institution of attendance will be eligible for admission to any semester. If a student is seeking admission with fewer than twenty-six semester hours, the applicant will be required to meet the

admission requirements of a beginning freshman as well as a transfer student for unconditional acceptance.

Students who do not meet the University's transfer admission requirements will have their applications reviewed thoroughly. Those students who submit evidence of scholastic aptitude can be considered for admission on a probationary basis. Students who have been placed on scholastic probation or academic suspension from another college or university will be considered for admission by the Office of Admissions and Records only if an interruption of education has occurred and there is tangible evidence that additional education can be completed successfully. Tangible evidence might include: (1) an interruption of schooling for one or more years, (2) military experience, (3) work experience, and (4) previous academic performance.

Students who have graduated with an associate degree in a baccalaureate-oriented program from a two-year institution may enter Southern Illinois University at Carbondale in good academic standing any semester provided they have not taken additional college work since their graduation. If they have, their admission will be considered on the basis of their conformity to the University's regular transfer admission standards.

Students applying for admission to the University who are transferring from programs which are not baccalaureate-oriented will be considered for admission as follows: (1) a student who has been enrolled in an institution which is accredited by one of the regional accrediting associations or is in candidacy status with one of the regional accrediting associations will be considered for admission on the basis of the regular transfer admission standards and (2) a student who has completed a two-year or equivalent program with a *C* average in an institution which is not accredited by one of the regional accrediting associations will be admitted if the institution is one recognized by NATTS, AMA, ECPD, or similar accrediting bodies recognized by the National Commission on Accrediting or the United States Office of Education. Students who have not completed two-year or equivalent programs or have less than a *C* average will be considered for admission as entering freshmen.

Students who are transferring from programs which are not baccalaureate-oriented should refer to the section titled evaluation of transfer credit for additional information.

ADMISSION OF TRANSFER STUDENTS TO ASSOCIATE DEGREE PROGRAMS

Students who have an overall *C* average, 2.0 on a 4.0 scale (all institutions), and are eligible to continue their enrollment at the last institution attended are eligible to be considered for admission for any semester. If a student is seeking admission with fewer than twenty-six semester hours, the applicant will be required to meet the admission requirements of a beginning freshman as well as transfer students for unconditional acceptance.

Students who do not meet the University's transfer admission requirements will have their applications reviewed thoroughly. Those students who submit evidence of scholastic aptitude can be considered for admission on scholastic probation. Students who have been placed on scholastic probation or academic suspension from another college or university will be considered for admission by the Office of Admissions and Records only if an interruption of education has occurred and there is tangible evidence that additional education can be completed successfully. Tangible evidence might include: (1) an interruption of schooling for one or more years, (2) military experience, (3) work experience, or (4) previous academic performance.

A student who is admitted to an associate degree program as a transfer student and then decides at a later date to enter a four-year program must meet the University's baccalaureate admission requirements at the time of transfer.

New students may be admitted only for the fall semester to select majors in

the School of Technical Careers. Please consult the admission application guide to determine when new students can be admitted to two-year programs in the School of Technical Careers.

TRANSFER CREDIT

Transfer credit for students admitted to baccalaureate programs from baccalaureate programs is evaluated for acceptance toward University and General Studies requirements by the Office of Admissions and Records after the admission decision has been made. In general, students may expect to receive full credit for courses which were considered to be college level at the institution where they were taken. Courses which are remedial or developmental will probably not be accepted by transfer. While the Office of Admissions and Records will determine the acceptance of credit and its applicability toward completion of General Studies requirements, the evaluation toward satisfaction of specific curriculum requirements is done by the department or agency directing the specific curriculum.

Transfer of credit which is considered to be vocational, occupational, technical, or terminal is subject to evaluation by the major department or academic unit. The decision will be made depending upon the program the student has completed and the program entered at Southern Illinois University at Carbondale. A student should not expect to receive credit if the transfer work was taken at an institution which is not accredited by one of the regional accrediting associations and the student earned less than an associate degree or equivalent or earned less than a C average.

General principles governing acceptance of transfer credit are as follows:

1. Completion of an associate degree in a baccalaureate-oriented program in an accredited two-year institution provides that the student will: (a) be accepted with junior standing and (b) be considered to have completed the General Studies requirements.

2. Credit from an accredited two-year institution is limited only by the provision that students must earn at least 60 semester hours of work at Southern Illinois University at Carbondale or at any other approved four-year institution and must complete the residence requirements for a degree from the University.

Further information on the application of transfer work toward satisfying General Studies and graduation requirements may be found elsewhere in this catalog.

Transfer credit for students admitted to associate degree programs in the School of Technical Careers is evaluated by the chairman in charge of the program the student plans to follow at the school.

Admission of International Students

In general, international students must meet the same academic standards for admission as those required of native students. As there is considerable variation between educational systems throughout the world, precise comparative standards are not always available. Therefore, international students are selected upon the basis of their former academic work, English proficiency, and evidence of adequate financial resources.

In addition to submitting copies of secondary school records and, when applicable, college transcripts, international students must also submit scores from TOEFL examination (Test of English as a Foreign Language). TOEFL scores are required of all international students who (1) have completed their secondary education in a country where English is not the native language, (2) have completed fewer than two years study in a United States high school, (3) have completed fewer than two years (60 semester hours) of collegiate training in an accredited United States college or university. Students who have completed their secondary education in a country where English is the native language are required to

submit scores from either the American College Test or the Scholastic Aptitude Test.

Students who have acquired immigrant status are also required to demonstrate English proficiency. English proficiency can be demonstrated by successful completion of the TOEFL examination or a special English examination administered by the Center for English as a Second Language. Immigrants who have completed at least two years of study in a United States high school, have earned sixty semester hours in a United States college or university, or have completed their secondary education in a country in which English is the native language are not required to submit TOEFL scores or write a special English examination.

International students whose secondary school and college records are acceptable for admission purposes must also receive high enough TOEFL scores for unconditional admission. Students with a TOEFL score of 525 or higher will be granted unconditional admission. Applicants whose TOEFL score is between 475 and 524 will be admitted contingent upon completion of an English re-test administered by the Center for English as a Second Language. Students who fail to submit TOEFL scores, or who do not submit acceptable TOEFL scores, will be required to attend courses at the Center for English as a Second Language.

International students interested in making application to Southern Illinois University at Carbondale should address their inquiries to the Office of Admissions and Records, Southern Illinois University at Carbondale, Carbondale, Illinois 62901.

Admission of Former Students

Former students who have attended another institution since their previous enrollment at Southern Illinois University at Carbondale must submit an official transcript from that institution before they can be considered for re-admission. In addition, a student who has a financial obligation to the University must clear this hold before being considered for re-admission. Students who were suspended for scholastic or disciplinary reasons during their previous enrollment at the University must be approved for re-admission by the appropriate academic or student services dean before they can be re-admitted to the University.

It is advisable for former students to initiate the re-admission process with the Office of Admissions and Records early so that all inquiries may be answered and the applicants can find time to complete any special requirements that may be imposed upon them. (See Scholastic Probation and Suspension System elsewhere in this catalog for further information.)

Admission of Special Categories of Students

Several types of students are given special consideration when seeking admission to the University. These are described below:

ADMISSION OF VETERANS

Veterans seeking admission or re-admission to the University are admitted in good standing regardless of their previous academic record provided that either (a) no additional education has been attempted or (b) such additional education has been of C quality or better. Prior academic work of an admitted reentering veteran is counted together with all subsequent work after admission. Veterans are required to submit all required admission credentials before their applications can be processed. This includes high school transcripts or GED scores and official transcripts from each college or university previously attended.

EARLY ADMISSION POLICY FOR FRESHMEN

Exceptionally capable high school students who (a) have completed their junior year, (b) are recommended by their high school principals, and (c) are approved by

the director of admissions of the University will be permitted to enroll for University courses to be taken concurrently with their senior year of high school work. Such students will also be permitted to enroll for University courses offered during the summer session between their junior and senior years of high school, without being concurrently enrolled in the secondary school. Enrollment during the summer for students participating in this early admission program is limited to eight semester hours.

It is expected that high school principals will judge each case on its individual merits, and that in making their selections and recommendations they will consider such things as:

- a. the rank held by the students in their high school classes;
- b. the results of any standardized test which the students may have taken;
- c. the opinion of the students' teachers regarding their aptitude for college level work; and
- d. the opinion of the students' teachers regarding the students' having attained sufficient maturity to adjust to the social and emotional interactions involved.

ADMISSION OF ADULTS AS UNCLASSIFIED STUDENTS

Adults who have graduated from high school or who have passed the GED tests can be considered for admission as unclassified students. Students in this special category are non-degree students and are not required to submit all records normally required for admission to degree programs.

Applying for Admission

High school students are urged to initiate the admission process during the seventh semester in high school. Transfer students who have completed a minimum of one year of work can be considered for admission one year in advance of their date of matriculation if they plan to transfer without interruption. Transfer students who have not completed one year of study may initiate the admission process after the completion of one semester or one quarter of work. Students who delay their admission processing until near the start of the semester which they wish to enter may find that they are unable to do so because all necessary documents required before the admission decision will be made have not been received. It is particularly important for transfer students to initiate the admission application process well before the starting date of the semester. Otherwise, delay in getting started, undesirable class schedules, or inability to attend the desired semester may result. Documents required in the admission process are listed below.

The admission process is initiated by writing the Office of Admissions and Records, Southern Illinois University at Carbondale, Carbondale, Illinois 62901, indicating a desire to apply and requesting admission materials. The materials that are sent include the application and related forms that need to be completed along with procedural instructions. Information is also included relative to housing and financial assistance.

DOCUMENTS REQUIRED FOR ADMISSION

Among the items required by the University before an admission decision is made are the following:

1. The completed application form from the students.
2. Transcripts of previous educational experience. For high school students the request is for two copies of the high school transcript or a copy of the General Educational Development Test scores. Transfer students must submit to the Office of Admissions and Records an official transcript from each institution previously attended. In addition, transfer students presenting fewer than 26 semester hours (39 quarter hours) of completed work must provide to the Univer-

sity a copy of their high school transcript or General Educational Development Test scores. Transfer students who have attended an institution which is not accredited by a regional accreditation association and have completed less than an associate degree or the equivalent or have less than a C average must also submit copies of their high school transcripts and ACT scores.

3. University entrance examination scores. All students who are less than twenty-one years of age applying for admission directly from high school and all transfer students who have completed fewer than 26 semester hours (39 quarter hours) must have their official ACT scores sent to the University from the American College Testing Program, Box 451, Iowa City, Iowa 52240.

Applications for housing and financial assistance are separate from the admission process and directions relating thereto are contained in the brochures on these subjects which the students receive as part of the admissions process.

Orientation, Advisement, Registration

Through a carefully designed system of orientation, academic advisement, and registration the University attempts to assure entering students an efficient and effective introduction to the University prior to the time they start class attendance. A more extensive program is provided for those students entering during the fall semester while abbreviated activities are in operation for the other semesters.

The University conducts an advance registration system. All continuing and new students have the opportunity and are expected to complete advisement and registration for a semester before its actual start.

During the summer several weeks are set aside for new freshman and transfer students admitted for fall semester to complete orientation, advisement, and registration. Students are invited to have their parents accompany them so they too may obtain a better understanding of the University than might otherwise be the case. The orientation program on these days is of necessity an introductory type in which questions about admission, housing, financial assistance, etc., can be answered. Later, at the start of the fall semester new students participate in additional orientation activities during which time they receive further introduction to university life.

Starting in May and extending through June the University notifies new students admitted for the fall semester when they are to come to the campus for advisement and registration. Through this process only the number of students that can be efficiently handled are involved each day. Students who cannot come to the campus during the summer or who delay applying for admission beyond the advance registration period may register at the start of the fall semester but are required to come to campus a few days before those who have registered during the summer period.

Similar procedures are followed at the start of the other semesters. Admitted students are kept informed of orientation, advisement, registration procedures, and the times when they occur by the Office of Admissions and Records in cooperation with the Student Activities Office.

Academic Advisement

Academic advisement is administered by the academic units. Each unit employs a selected group of trained advisers devoting part-time directly to this function. They operate under the supervision of a chief adviser who is responsible to the dean of the academic unit.

The University accepts the importance of the academic advisement function. Insistence on receipt of transcripts and ACT scores prior to admission serves not only to determine admission but later provides suitable educational information

to the advisers upon which decisions can be made relative to the proper courses to advise the students to take. On the basis of this information the advisers can make intelligent decisions relative to students who should receive advanced standing in courses or who should be urged to take proficiency examinations in courses about which they appear to be already well informed.

Registration

Registration for any session of the University is contingent upon being eligible for registration. Thus advance registrations, including the payment of tuition and fees, are considered to be invalid if the students are later declared to be ineligible to register due to scholastic reasons. Students may also be considered ineligible to register because of financial or disciplinary reasons if this is certified to the Office of Admissions and Records by the appropriate University office.

Detailed information about the dates and procedures for advisement and registration appears in each semester's Schedule of Classes, which is available from the Office of Admissions and Records.

Students should be familiar with the following general points about registration.

1. Students initiate registration with the advisement center of their colleges or schools.
2. The course request forms and program change forms must be processed through the Registration Center, Office of Admissions and Records.
3. Mere attendance does not constitute registration in a class, nor will attendance in a class for which a student is not registered be a basis for asking that a program change be approved permitting registration in that class. Students should complete the registration process before classes begin.
4. Enrollment changes to classes can only be made through the processing of an official program change form.
5. Tuition and fees are payable in advance and no student shall be enrolled in any educational unit until tuition and fees have been paid or officially deferred.
6. Students may not drop a course merely by stopping attendance. (See the Withdrawal from Courses and from the University section of this chapter.)
7. There is a terminal date near the end of each semester or session after which withdrawal from the University cannot be processed prior to the assignment of grades. As a result withdrawal will be allowed only in unusual circumstances. This date is usually one week before final examinations start. The specific date appears in each appropriate Schedule of Classes.



Tuition and Fees and Other Financial Information

It is difficult to indicate the specific cost of attending the University because of the differences in personal spending habits. However, the following information may be helpful.

Tuition and Fees

Tuition and fees charged students are established by the Board of Trustees and are subject to change whenever conditions necessitate. All assessments are on a per-hour basis, with 12 hours considered full time. Students will be assessed the following tuition and fees each term:

ON-CAMPUS UNDERGRADUATE TUITION AND FEE SCHEDULES

Semester Hours Enrolled	Illinois Residents			Non-Illinois Residents		
	Tuition	Student Fees ¹	Total	Tuition	Student Fees ¹	Total
1	\$ 22.00	\$ 56.34	\$ 78.34	\$ 66.00	\$ 56.34	\$122.34
2	44.00	59.42	103.42	132.00	59.42	191.42
3	66.00	64.75	130.75	198.00	64.75	262.75
4	88.00	70.25	158.25	264.00	70.25	334.25
5	110.00	75.75	185.75	330.00	75.75	405.75
6	132.00	81.25	213.25	396.00	81.25	477.25
7	154.00	86.75	240.75	462.00	86.75	548.75
8	176.00	92.25	268.25	528.00	92.25	620.25
9	198.00	97.75	295.75	594.00	97.75	691.75
10	220.00	103.25	323.25	660.00	103.25	763.25
11	242.00	108.75	350.75	726.00	108.75	834.75
12 or more	262.00	114.25	376.25	786.00	114.25	900.25

¹Information concerning student fees and their distribution is given below.

The fees which have been established by the Board of Trustees are payable by all students unless they are specifically exempted by the Board of Trustees. All fees are considered to be institutional in nature and require payment regardless of whether or not the student receives direct benefits or is in a location which permits access to such benefits.

STUDENT FEE DISTRIBUTION

Semester Hours Enrolled	STS Grant (1)	Student Attorney (2)	Student Center (3)	Student Activity (4)	SWRF (5)	Athletic (6)	Medical (7)
1	\$2.25	\$1.00	\$ 5.00	\$.44	\$.98	\$ 1.67	\$45.00
2	2.25	1.00	5.00	.88	1.96	3.33	45.00
3	2.25	1.00	7.25	1.31	2.94	5.00	45.00
4	2.25	1.00	9.67	1.75	3.91	6.67	45.00
5	2.25	1.00	12.08	2.19	4.90	8.33	45.00
6	2.25	1.00	14.50	2.62	5.88	10.00	45.00
7	2.25	1.00	16.92	3.06	6.85	11.67	45.00
8	2.25	1.00	19.33	3.50	7.84	13.33	45.00
9	2.25	1.00	21.75	3.94	8.81	15.00	45.00
10	2.25	1.00	24.17	4.38	9.78	16.67	45.00
11	2.25	1.00	26.58	4.81	10.78	18.33	45.00
12 or more	2.25	1.00	29.00	5.25	11.75	20.00	45.00

STUDENT FEES INCLUDE

1. The Student-to-Student (STS) Grant Program Fee provides funding of a student grant program. The fee is payable by undergraduate students only. Undergraduate students who do not wish to participate in the program may seek a refund of the fee by contacting the Office of Admissions and Records within ten days of the date of payment of fees.

2. The Students' Attorney Fee provides funding for a legal service program. The fee is payable by all students. Students who do not wish to participate in the program may seek a refund by contacting the Office of Admissions and Records within ten days of the date of payment of fees.

3. The Student Center Fee provides funding for operation of the Student Center.

4. The Student Activity Fee provides funding for student organizations and activities on campus.

5. The Student Welfare and Recreation Fund (SWRF) Fee provides funding for construction and operation of physical facilities for student recreation and intramural programs.

6. The Athletic Fund Fee provides partial funding of the University's intercollegiate programs for men and women.

7. The Student Medical Benefit (SMB) Fee provides funding for a comprehensive health program including on-campus out-patient care, infirmary care on campus, emergency services, hospitalization, specialty care, emergency dental care, out-of-the area benefits, and prevention programs. Students who pay the fee are entitled to full medical benefits at the Student Health Program. Students who have comparable coverage may seek a refund of the fee within the first three weeks of each semester by contacting the insurance department of the Student Health Program. Additional information may be found in Chapter 1.

ADDITIONAL FEE INFORMATION

1. Students should refer to the Schedule of Classes for more specific fee information.

2. Graduate, medical, and law students are not required to pay the student-to-student grant program fee so their student fees will be \$2.25 less than the amount listed in the appropriate column above.

3. Permanent full-time or permanent part-time employees may be eligible for waiver of tuition and waiver of a portion of the student fees. Approval by the department head and the director of the Personnel Office must be given prior to enrolling for courses. Employees who are approved are required to pay the Student Center fee as listed in the table above.

5. In addition to the above fees, there is a graduation fee. For further information contact the Office of Admissions and Records.

6. Students holding valid state scholarships are exempt from the above tuition and fees to the extent provided by the terms of the specific scholarship held. An Illinois State Scholarship may cover all tuition and student fees or the scholarship may be a partial award. Also, honorary scholarships, which have no monetary value, may be awarded. An Illinois State Teachers Education Scholarship, Illinois Military Scholarship, or Illinois General Assembly Scholarship exempts the student from paying the tuition, the student activity fee, and the graduation fee. An Illinois Scholarship for Dependents of Prisoners of War or an Illinois Bilingual Scholarship exempts the student from paying tuition and all mandatory non-refundable fees.

7. Adult education course fees are computed on the basis of approximately sixty cents per contact hour.

8. Other charges which students may incur are those for departmental field trips, library fines, and excess breakage. Also, students taking a course involving

use of materials, as distinct from equipment, will ordinarily pay for such materials.

9. Students registering for courses on an audit basis pay the same tuition and fees as though they were registering for the courses for credit.

10. Out-of-state students will find the official University regulations governing determination of residency status for assessment of tuition later in Chapter 2.

11. Medical students are not required to pay Student-to-Student Grant Program Fee. In addition, medical students in Springfield are not required to pay Student Center, Athletic Fee, or the Student Welfare and Recreation Trust Fund Fee.

12. Students enrolled in public service courses pay only tuition and \$3.00 per hour fee. The fees are divided equally between Student Center and Student Medical Benefit Fees. Students who combine enrollment in public service courses and regular on-campus courses pay tuition and fees for the combined total of hours enrolled.

13. Students enrolling in off-campus courses pay tuition only.

PAYMENT AND REFUNDING OF TUITION AND FEES

Tuition and fees are payable each semester during the academic year. Students who register in advance receive a tuition and fee statement and may pay either by mail or in person at the Bursar's Office, by the deadline date, in accordance with instructions accompanying the tuition and fee statement. Otherwise their advance registration is cancelled and they must register again later. Students who register at the start of a semester must pay tuition and fees at the time of registration.

Students who process a program change which places them in a different tuition and fee category than the one for which they originally registered will be billed additional tuition and fees when appropriate. If the change places them in a smaller tuition and fee category and if they have processed the program change within the first three weeks of the semester, they should make application for a refund at the Office of Admissions and Records. Mail requests for a refund will be honored.

A refund of tuition and fees will be made to students who officially withdraw from school by the specific withdrawal deadlines.

DEADLINES FOR WITHDRAWING FROM SCHOOL TO RECEIVE A REFUND

If Classes Meet for	Deadline for Withdrawal to receive Refund
13-16 weeks	3rd week
9-12 weeks	2nd week
7 or 8 weeks	2nd week
4-6 weeks	1st week
2 or 3 weeks	1st week
less than 2 weeks	2nd day

If the students withdraw in person, they will receive an immediate cash refund. If they withdraw by mail, they will receive a refund check in approximately four weeks after the withdrawal has been received by the Office of Admissions and Records. No refunding of tuition and fees is made for a withdrawal occurring after the deadlines, except as described in the next paragraph.

Special consideration is extended to individuals who leave school for extended military service (6 months or longer). Students will be refunded full tuition and fees paid if they enter military service during the first five weeks of school. If students withdraw during the sixth through tenth weeks of school, they will be refunded half of the paid tuition and fees, and they will receive one-half credit

without letter grades for the courses in which they were receiving a passing grade at the time of withdrawal. When the withdrawal occurs after the tenth week, students will receive no refund, but will receive both grades and credit hours for the courses in which they are passing. In all instances, a copy of the military orders or a letter from the commanding officer is required for verification of impending military service. To be eligible for these benefits students must remain in school to within ten days of their military reporting date.

DEFERMENT OF TUITION AND FEES

Special fee deferments are available to students who (1) can demonstrate financial need, (2) meet minimal requirements, and (3) can provide written verification of the ability to pay. Information on fee deferments is publicized each term in the Student Relations Office, the Office of Admissions and Records, Bursar's Office, Student Work and Financial Assistance Office, and the *Daily Egyptian*. Guidelines may vary from term to term and year to year and students are advised to seek out the accurate information rather than assume they qualify for deferment.

Students applying for a fee deferment must complete registration to the point of receipt of a fee statement. The fee statement and written verification from the source of funds to be used to pay tuition and fees must be presented to the Student Relations Office to obtain an application. Applications are processed one week prior to the first week of classes. Recipients of fee deferments will not be allowed to register for any future semester until payment is made. Additional information on deferments is available in the Student Relations Office. Phone or mail requests for deferments will not be accepted.

If approval for a deferment is granted, tuition and fees will be placed on a special fee code for the term and the student will be obligated to pay by the approved deferred date. Failure to pay deferred fees will result in withholding of permission to register for succeeding terms and withholding of transcripts.

Grading, Scholastic Regulations, and Credit

Grading System

GRADE SYMBOL	DEFINITION	GRADE POINTS PER HOUR
A,	Excellent.	4
B,	Good	3
C,	Satisfactory	2
D,	Poor.	1
F,	Failure.	0
P,	Pass. Used only in Pass/Fail system. See Grading System Explanation below.	
W,	Authorized withdrawal. See Grading System Explanation below.	
INC,	Incomplete. See Grading System Explanation below.	
AU,	Audit. No grade or credit earned. See Grading System Explanation below.	

GRADING SYSTEM EXPLANATION

The grades of *A*, *B*, *C*, *D*, and *F*, are included in determining student grade point averages.

An *INC* is assigned when, for reasons beyond their control, students *engaged in passing work* are unable to complete all class assignments. An *INC* must be changed to a completed grade within a time period designated by the instructor but not to exceed one year from the close of the term in which the course was taken, or *graduation*, whichever occurs first. Should the student fail to complete

the course within the time period designated, not to exceed one year, or graduation, which ever occurs first, the incomplete will be converted to a grade of *F* and the grade will be computed in the student's grade point average. Students should not re-register for courses in which an *INC* has been assigned with the intent of changing the *INC* grade. Re-registration will not prevent the *INC* from being changed to an *F*.

The Pass/Fail Grading System is explained further under a separate section below. For *mandatory* Pass/Fail courses, the grades of *P*, when the student's work is satisfactory, or *F*, when the student's work is unsatisfactory, may be recorded. For a *P*, the hours apply toward graduation but the grade does not affect the grade point average. For an *F*, the hours do not apply toward graduation but the grade does count in the grade point average. For *elective* Pass/Fail courses, the instructor of the class will assign regular letter grades of *A*, *B*, *C*, *D*, *F*, or may assign an Incomplete if the work is not finished. The grade of *A* will be recorded as an *A* and will be counted in the grade point average. Grades of *B*, *C*, or *D* will be recorded as *P* and will not be counted in the grade point average although the hours will be counted toward graduation. The grade of *F* will be counted in the grade point average but the hours will not apply toward graduation. If a student receives an *INC* in a Pass/Fail course, the same regulations apply for completion of the work as apply for all other grades of *INC*, as explained above. Students enrolling in *elective* Pass/Fail courses must designate their intent to enroll on a Pass/Fail basis at the time of registration or prior to the first day of classes. Students registering for short courses must register for Pass/Fail prior to the beginning of those classes.

Students enrolling for an *Audit* must designate their intent to enroll on an *Audit* basis at the time of registration or prior to the first day of classes. Students registering for short courses must register for *Audit* prior to the beginning of those classes. No grade or credit is earned for the *Audit*.

WITHDRAWAL FROM COURSES AND FROM THE UNIVERSITY

Students who officially register for a session may not withdraw merely by the stopping of attendance. They need to process an official withdrawal form. Outlined below are the procedures to be followed by students when withdrawing from courses and when withdrawing from the University (all courses for which registered).

If Classes Meet for	Deadline for Withdrawal to Receive Refund	Deadline to Withdraw*
13-16 weeks	3rd week	8th week
9-12 weeks	2nd week	6th week
7 or 8 weeks	2nd week	4th week
4-6 weeks	1st week	3rd week
2 or 3 weeks	1st week	1st week
less than 2 weeks	2nd day	2nd day

*In each instance, one day beyond the time listed will be allowed for processing of the withdrawal. Also, refer to the section on withdrawal from the University for a special provision concerning withdrawal from school beyond the 8th week.

Course Withdrawals. Students officially withdraw from courses through the program change process. This process starts with the academic adviser and is completed at the Registration Center. Official course withdrawals during the first three weeks of the semester result in no entry being made on the student's record. Periods prior to withdrawal deadlines for shorter sessions are correspondingly shorter. Unless a student has processed an authorized withdrawal from a

course by the deadline in the schedule above, the student will not be allowed to withdraw from the course. It is the student's responsibility to ensure that the withdrawal process is officially completed. It is probable that a student who does not withdraw by the deadlines, but stops attending during the second half of the semester, will receive a grade of *F*.

Withdrawal from the University. The dean of the student's academic unit may authorize a complete withdrawal from the University at any time during the semester prior to the assignment of grades. Students who withdraw from all classes will have a statement of withdrawal from the University and the week of withdrawal entered on their records.

Students who find it necessary to withdraw from the University after school has started and who are on campus should contact the Office of Student Relations to initiate the withdrawal process. Approval to withdrawal should then be obtained from the student's academic dean. If they are unable to come to campus, they may write the Office of Student Relations asking that a withdrawal be processed through the academic dean.

Students who advance register, and pay their tuition and fees, and who then find they cannot attend school must process an official withdrawal the same as do those who withdraw after classes begin. In this case the process is the same as outlined in the paragraph above. Students who advance register but do not clear tuition and fees by the announced deadline date should have their registration cancelled by the University and need not withdraw.

PASS/FAIL GRADING SYSTEM

The purpose of the Pass/Fail grading system is to encourage students to broaden their education by undertaking intellectual exploration in elective courses outside their area of specialization without having to engage in grade competition with students specializing in those courses.

The Pass/Fail grading system for undergraduate students in good academic standing is governed by the conditions listed below:

1. There are two types of Pass/Fail courses: *mandatory* Pass/Fail courses, in which all students will receive either a *P* or an *F*; and *elective* Pass/Fail courses, in which students can elect either the traditional grading system or the Pass/Fail option.

2. No course is available under the Pass/Fail option without prior designation by the department or program in which the course is offered.

3. The Pass/Fail grade is *mandatory* in courses in which, in the judgment of the department or program, the traditional grading system is inappropriate.

4. The Pass/Fail grade is *mandatory* for all proficiency examinations.

5. The number of *elective* Pass/Fail credits is limited to sixteen semester hours overall, and to six semester hours in any General Studies area.

6. Formal permission of the major department or program is required before students are permitted to elect Pass/Fail for a major or minor requirement.

7. Students who earn an *A* in an *elective* Pass/Fail course will have the *A* recorded and counted in the grade point average.

8. The grade of *P* is not computed in the grade point average but the hours earned apply toward graduation. The grade of *F* is computed in the grade point average as a failure but no hours of credit are earned.

9. Instructors who teach *elective* Pass/Fail courses are not informed which students are taking these courses on a Pass/Fail basis.

10. A grade of *D* or higher is required for students to receive a *P*.

11. Students enrolling in elective Pass/Fail courses must designate their intent to enroll on a Pass/Fail basis at the time of registration or prior to the first day of classes.

12. Only the grades of *A* or *F* earned in Pass/Fail courses are to be included in computing grade point averages for Deans' List.

CHANGING OF GRADES

Grades given at the end of a course are final and may not be changed by additional work or submitting additional materials. When work is completed for a course in which an *INC* grade has been given, instructors notify the Office of Admission and Records of that fact, along with the final grade to be given, by completing a Grade Change Card.

Occasionally, students may wish to question grades given, either for accuracy or for removal of grades in situations when they were unable to perform some required step for reasons beyond their control. Only the assigned instructor for a course has the authority to change a grade except in the instance when the instructor is no longer employed by Southern Illinois University at Carbondale. Extenuating circumstances which transcend faculty judgment of the instructor may be appealed through procedures established by the instructor's school or college. Matters related to faculty judgment in grading may not be appealed. Any change of grade, except for changing an *INC* to a final grade within the time period designated, must be signed not only by the instructor but also by the departmental chairperson and the dean of the academic unit.

Scholastic Standing

The matter of scholastic standing is quite often of importance to students both while in school and later when they present a transcript of their educational record in support of their application for employment or additional schooling.

At the end of each semester or session of attendance a grade report is prepared for each student showing, in addition to the grades earned that semester or session, the scholastic standing and the grade point average for that semester or session and for the over-all record at Southern Illinois University at Carbondale. It is important that students understand the University's system for computing grade point averages and the various grade point average requirements.

Transferred grades are not to be used in determining students' calculated grade point average, except that transfer students who are admitted on probationary status will be required to earn a 2.0 average semester by semester until a total of 12 semester hours has been earned, before they can be removed from probation.

The significance of the above should be clearly understood by transfer students when studying the general baccalaureate degree requirements. A 2.00 (*C*) average is required for the work taken at this University.

In computing students' grade point averages all grades of *A*, *B*, *C*, *D*, and *F* are included in determining the number of *calculated* hours. Each hour of these grades (1 hour of *A* is worth 4 grade points) is given its numerical grade points, and the total number of calculated hours is then divided into the total number of grade points to determine the student's grade point average.

Effective with the 1971 summer quarter all earned grades carrying grade point values are considered when computing students' grade point averages, including each earned grade in a repeated course that is taken during the 1971 summer quarter and thereafter. When computing averages through 1971 spring quarter the policy contained in the 1970-71 Undergraduate Catalog is followed.

Transfer from One School or College to Another. Students with less than a *C* (2.0) grade point average who desire to change from one school or college to another will be admitted to the new academic unit only if approved by the dean of that unit.

Scholastic Probation and Suspension System

Students are expected to make satisfactory progress toward a degree, certificate

or other approved objective. To ensure that students are making progress their records are checked against the regulations below.

SCHOLASTIC PROBATION

When a student's cumulative semester average and the cumulative Southern Illinois University at Carbondale average fall below a *C* average (2.0), the student will be placed on scholastic probation. A student on scholastic probation may continue enrollment at Southern Illinois University at Carbondale provided the student does not accumulate six negative points. The student with more than six negative points will not be suspended so long as the term average is *C* (2.0) or above. A student will remain in the category of scholastic probation until the cumulative Southern Illinois University at Carbondale average is *C* (2.0) or higher.

While on scholastic probation students may not enroll for more than 14 hours per semester unless approved to do so by the dean of their academic unit. Other limitations may be established by the academic unit within which the students are enrolled.

CONDITIONAL STATUS

Students admitted on condition are on scholastic probation for the term admitted. In addition, they must enroll for a minimum of twelve semester hours and complete ten semester hours of graded work (*A, B, C, D, F*). Students admitted on condition who meet the hour requirements will be placed in good standing when they earn a *C* (2.0) average or higher. They will remain on scholastic probation if they earn less than a *C* average but six or fewer negative points. Students who earn more than six negative points will be scholastically suspended.

TRANSFER STUDENTS ADMITTED ON PROBATION

Transfer students admitted on scholastic probation will remain in that status until they have earned a minimum of 12 semester hours of credit with at least a *C* average at Southern Illinois University at Carbondale. If they earn below a *C* for any session while on scholastic probation, they will be placed on scholastic suspension.

SCHOLASTIC SUSPENSION

Students will be scholastically suspended from Southern Illinois University at Carbondale if they fail to meet the requirements of their conditional or probational status. Students placed on Scholastic Suspension may seek reinstatement after a minimum of two semesters' interruption but must furnish tangible evidence that additional education can be successfully undertaken.

POSITIVE AND NEGATIVE GRADE POINTS

Positive and negative grade points are assigned to grades above or below a *C*. There are two methods to figure points depending upon the information which is available.

Grade Slip Available. The grade slip printed at the end of each semester lists the hours used in calculating the average and the grade points earned. Since *C* has a value of two grade points on a 4 point scale, grade points equalling a *C* average are exactly twice the number of hours calculated. All grade points over that amount are positive grade points. All grade points under the amount are negative grade points.

For example:

<i>Hours Calculated</i>	<i>Grade Points</i>	<i>Grade Point Average</i>
60	120	(<i>C</i>) 2.0

Twice the hours calculated equals 120 grade points. This is a *C* (2.0) average. A

student with 60 calculated hours and only 115 grade points would have 5 negative points (1.92 average). A student with 30 calculated hours and 55 grade points would have 5 negative points (1.83) average.

Grades and Hours of Credit Available. Whenever all grades and hours of credit are known and grade points have not been assigned as on the grade slip, a simple method is to assign positive and negative points as follows:

- A = 2 positive points per hour
- B = 1 positive point per hour
- C = 0
- D = 1 negative point per hour
- E = 2 negative points per hour

For example:

- 3 hours of A \times 2 positive points = 6 positive points
- 3 hours of B \times 1 positive point = 3 positive points
- 3 hours of C \times 0 points = 0
- 2 hours of D \times 1 negative point = 2 negative points
- 4 hours of E \times 2 negative points = 8 negative points

The ten negative points are balanced by only nine positive points so the sample has one negative point.

Negative points are also used to easily determine exactly what grades must be earned to raise the average to C. For example, a student with eight negative points could raise the average to C by earning four hours of A grade or eight hours of B grade, assuming all other grades earned are C.

Credit

UNIT OF CREDIT

Southern Illinois University of Carbondale is on the early semester calendar. All references to hours of credit in this catalog are to semester hours unless otherwise specified. One semester hour of credit is equivalent to one and one-half quarter hours. One semester hour of credit represents the work done by a student in a lecture course attended fifty minutes per week for one semester and, in the case of laboratory and activity courses, the stated additional time.

CLASS STANDING

Southern Illinois University at Carbondale requires students to earn at least 120 semester hours of acceptable credit in order to receive a baccalaureate degree. For academic classification purposes a freshman is a student who has completed fewer than 26 hours; a sophomore, from 26 through 55; a junior, from 56 through 85; and a senior 86 or more.

ACADEMIC LOAD

The University considers 12 hours as the minimum number to constitute full-time attendance. This is the figure used for enrollment reporting purposes, by the Illinois State Scholarship Commission, and for Public Law 358 on the undergraduate level. Students attending school under some type of scholarship or assistance program that requires them to be enrolled as full-time students should check with the University office administering the program on this point. Further information on Public Law 358 is available at the Student Work and Financial Assistance Office.

Academic load guidelines are as follows:

LOAD	REGULAR SEMESTER	8-WEEK SUMMER SESSION
Minimum load for full time	12	6
Average load	15-16	7-8

Maximum load without dean's approval	18	9
Maximum load ⁵	21	11

⁵This maximum may be exceeded by very special action of the respective academic dean, and rarely more than once in the student's degree program.

Students on scholastic probation may not take more than 14 hours without approval of the dean of their academic unit. Students employed full-time may not register for more than eight hours.

EXTENSION (OFF-CAMPUS) AND CORRESPONDENCE CREDIT

The University accepts credit earned through extension, off-campus, or correspondence programs toward the bachelor's degree. Not more than 30 semester hours may be taken in correspondence work.

Southern Illinois University at Carbondale does not operate a correspondence program. Correspondence work is accepted when taken from institutions which are regionally accredited if the grade is of C quality or better.

The University offers off-campus courses whenever (1) it is apparent there is a need and potential enrollment to justify scheduling, (2) it is possible to obtain a faculty member to instruct the class, and (3) adequate laboratory and library facilities are available. Tuition is \$22.00 per semester hour of credit.

Persons may enroll for off-campus work on an audit basis provided facilities are available. They must receive permission of the instructor to do so, and they must pay the same tuition as though they were registering for credit.

Further information may be obtained from the Division of Continuing Education.

CREDIT FOR MILITARY EXPERIENCE

Students who have served one year or more of active duty and who have received an honorable discharge may receive two hours of aerospace studies credit, two hours of physical education credit, and two hours of health education credit. Service of six months to one year may result in two hours of freshman aerospace studies credit; less than six months of active service allows no college credit.

Credit will be accepted for DANTES courses within the limitations enforced for extension and correspondence work. No credit is allowed for college-level GED 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 U.S. Government bulletin, *Guide to the Evaluation of Educational Experiences in the Armed Forces*, are followed.

In order to receive credit for military service veterans must present a copy of discharge or separation papers to the Office of Admissions and Records.

Graduation Procedures

The academic requirements for the various baccalaureate degrees are listed in Chapter 3. Presented here are the procedures students expecting to graduate must follow.

Graduation ceremonies are held each year at the end of the spring semester and the summer session. Degree candidates must apply for graduation with the Office of Admissions and Records by not later than the end of the first week of the semester in attendance before the expected graduation date. Candidates who plan to complete requirements at the end of the fall semester should apply for graduation during the first week of the fall semester. Although there is no ceremony at that time, degree candidates who complete requirements will have that fact indicated on their academic records. Application forms are available in the

Office of Admissions and Records and may be obtained by mail by writing that office.

A \$10 graduation fee is established for all persons receiving degrees. The fee is payable at the time of application. The fee does not cover the rental fee for the cap and gown or the cost of the invitations. Both of these items are ordered through the University Book Store in the Student Center. Questions regarding the cap and gown and the invitations should be referred to the University Book Store.

In addition to completing the steps for application for graduation, students are responsible for determining that they are meeting all graduation requirements and have no outstanding financial obligation to the University. To assure that students are meeting the academic requirements, each academic unit provides a graduation check-up service through its academic advisement process, through which the satisfying of academic requirements can be verified. Even though the University does provide an academic check on graduating students, this is done primarily to be sure that it is graduating students who have met the requirements. The advising of individual students as to their progress is a service provided them and does not relieve students of their responsibility to make certain they are meeting the requirements. Students should check with their academic advisers as to the procedures they should follow in this matter as they approach graduation.

Attendance at commencement is not compulsory. If you do not plan to attend, notification must be sent to the Office of Admissions and Records. This information is needed for seating arrangements and for mailing purposes.

The University has a Graduation Appeals Committee whose function it is to hear students' petitions to be permitted to graduate even though they have not satisfied all University graduation requirements. The committee hears only those cases involving University requirements for a baccalaureate degree. Appeal relative to a major or academic unit requirement is through the appropriate administrative official. Ordinarily, the Graduation Appeals Committee will give consideration to an appeal only if there is tangible evidence that the matter at issue is of an unusual nature and that it has resulted due to conditions beyond control of the student. Appeal is initiated through the Office of Admissions and Records.

University Recognition of High Scholastic Achievement

A Scholastic Honors Day convocation is held each spring to honor students exhibiting high scholastic achievement. Candidates for a bachelor's degree in May or August who have maintained a grade point average of 3.50 or higher for all of their work through the fall semester of their senior year receive special honor. All other students having a 3.50 average are also honored at the convocation. The 3.50 average is required for all work taken at Southern Illinois University at Carbondale. Transfer students must also have a 3.50 average including work taken at other institutions and Southern Illinois University at Carbondale. Except in the case of graduating students, students must be attending full time to be eligible.

A variety of professional, departmental, and fraternal honorary organizations offer recognition and membership based upon scholastic achievement. Election or selection to most honoraries is noted at the Scholastic Honors Day convocation.

Graduating students with scholastic averages of 3.90 or higher receive University highest honors; those with 3.75–3.89 averages receive University high

honors; and those with 3.50—3.74 receive University honors. This is recorded on the students' academic record cards and on their diplomas. The averages are required for the work taken at Southern Illinois University at Carbondale. Transfer students must also have a 3.50 average including work taken at other institutions and Southern Illinois University at Carbondale.

Successful participants in all-campus honors programs which require maintenance of appropriate minimal scholastic standards, such as the President's Scholar Program receive recognition by notation on their academic records and on their diplomas. Honors courses, individual honors work, and honors curricula, all designed to serve students with high scholastic potential, are offered by departments in the School of Agriculture, the home economics departments in the College of Human Resources, the College of Liberal Arts, and the College of Science. A departmental or unit honors program consists of no fewer than six nor more than fourteen semester hours in research or independent study which is counted toward the students' majors. Some honors programs require a comprehensive examination at the end of the junior year and again at the end of the senior year. Grades may be deferred at the end of the first semester, but not from one school year to the next.

At the end of each semester, a dean's list is prepared. The criteria for inclusion on the dean's list is established by each of the academic units. To be recognized as being on the dean's list, the student must have been in attendance full-time (12 semester hours or more) and must have earned the average for the semester which has been specified by the academic unit. If the student has met the criteria established, a notation will appear on the grade slip at the end of the semester.

Program Flexibility for the Student

Southern Illinois University at Carbondale offers students a wide variety of programs on all higher educational levels. Chapter 4 lists specialized programs available on the associate and baccalaureate levels. In addition, the University gives constant attention to methods whereby it might better serve present day educational needs. Described below are opportunities provided students to either (1) earn credit through means other than the traditional classroom method or (2) develop programs better suited to individual student needs than are the already established programs described in Chapter 4. While greater flexibility is the goal, the University exercises appropriate supervision to ensure that flexibility is accompanied by educational soundness.

Credit by Means other than Classroom Attendance

Several methods are provided for students to earn credit by means other than the traditional classroom method. The methods currently available are described below.

HIGH SCHOOL ADVANCED PLACEMENT PROGRAM

Through the High School Advanced Placement Program high school students who are qualified through registration in an advanced placement course in their high schools or through other special educational experiences 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, students must earn a grade of 3, 4, or 5. Interested high school students should write the Office of Admissions and Records 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 fifteen hours. It is nonresident credit, does not carry a grade, and is not

used in computing the students' averages. Credit granted at another accredited college or university under this plan is transferable to this University up to a maximum of fifteen hours. Students may appeal to academic deans to be granted more than fifteen hours.

COLLEGE LEVEL EXAMINATION PROGRAM

Through the General Examinations of the College Level Examination Program (CLEP), students may apply for credit which will substitute for General Studies courses. With a score of 480 or higher on the appropriate examination, it is possible for students to receive six semester hours of credit in each of the three fields of natural sciences, social sciences and history, and humanities. The mathematics test requires a score of 580. With a score of 480 or higher on the English examination, students are permitted the opportunity of taking GSD 120 (three semester hours) instead of taking GSD 101 and GSD 117 (five semester hours). The credit received equates to 100-level General Studies credit. The amount of credit actually received through CLEP will be reduced by whatever 100-level General Studies course work, or its equivalent in the case of transfer students, is taken either prior or subsequent to the taking of the CLEP examinations. In the case of mathematics, a reduction in CLEP credit will occur for course work taken below calculus. An exception to this reduction of credit is permitted for the taking of elementary foreign languages on the 100-level.

CLEP examinations should be taken at one of the national testing centers and the results sent to the local CLEP coordinator. The results are then forwarded to the Office of Admissions and Records for evaluation.

PROFICIENCY EXAMINATIONS

Through its proficiency examination program the University recognizes the importance of providing encouragement for academically talented students. Such students are permitted to make application to demonstrate the mastery of certain courses through proficiency examinations. Application forms are available at the departmental offices.

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

1. Students who believe they are qualified to take a proficiency examination should check with the department offering the course to determine their eligibility to do so; students scoring in the top ten percent of ACT are particularly encouraged to avail themselves of this opportunity.
2. Credit not to exceed thirty hours (fifteen hours toward an associate degree), including credit through the College Entrance Examination Board, Advanced Placement Program, and the College Level Examination Program may be earned through proficiency examinations. Credit will be nonresident. (A combined total of 40 hours may be earned through proficiency examinations and credit for work experience.)
3. Upon passing proficiency examinations students are granted course credit and receive a *Pass* grade. Their records will show the name of the course, the hours of credit granted, and a notation "credit granted by proficiency examination." Students who fail a proficiency examination receive a *Fail* grade. This results in no penalty to the students. They will not receive credit and their records will show nothing regarding the proficiency examination. However, the proficiency examination grade report form will be filed in the students' folders for reference purposes.
4. Students may not take proficiency examinations for the same course more than one time. Neither may they take a proficiency examination in a course in which they have previously received a grade.
5. No credit granted by proficiency examinations will be recorded until the student has earned at least 12 hours of credit of *C* grade or above in residence at Southern Illinois University at Carbondale.

CREDIT FOR WORK EXPERIENCE

Southern Illinois University at Carbondale recognizes that there might well be a number of undergraduate programs for which work experience has a meaningful relationship. It, therefore, permits those undergraduate programs to grant credit for work experience that relates to students' areas of specialization. The credit granted is to apply to the major program and is awarded only upon approval by the major departments. Credit earned by work experience is limited to 30 hours and any combination of credit for proficiency examinations and credit for work experience is limited to 40 hours. Credit granted for work experience is considered nonresident credit when granted for work that is not part of a regular instructional course. Students should consult with their major departments to see whether they approve credit for work experience.

Three-Year Baccalaureate Degree Program

It is possible for students to complete the regular four-year baccalaureate degree program in three years by utilizing proficiency examinations. The equivalent of one year of credit (30 semester hours) may be earned by this method. Students who desire to follow the three-year program should make that fact known to their academic advisers at the earliest possible date so their eligibility can be determined. A combination of programs may be employed to accumulate these 30 hours as described above in the section on Credit by Means Other than Classroom Attendance.

Cooperative Education Program

The Cooperative Education Program, included in the Career Planning and Placement Center, is an optional educational pattern that provides an opportunity for students to alternate periods of academic study with periods of off-campus employment related to the student's academic majors or career goals. Periods should be of sufficient duration to provide meaningful classroom and off-campus experiences. Cooperative education provides students an opportunity to earn funds that may be needed to support and complete their education, while it gives them off-campus experiences that are closely integrated with and that enrich their total education. The University assumes the responsibility of placing students in work experiences that will meet these goals. Co-op, the experience that pays, is available to students in essentially all academic areas and without geographical limitations.

President's Degree Program

The President's Degree Program is responsible for working with the colleges and their departments to provide a distinctive educational experience for those students of high motivation and talent who are interested in pursuing interdisciplinary studies on the undergraduate level. The basic objective of this program is to provide the opportunity to create the learning environment which optimally suits such students' needs and talents.

To help accomplish the above objective two special provisions are made for students admitted to the program. Upon submission of the College Level Examination Program General Examinations (with scores consistent with the University's acceptance of CLEP credit) all General Studies requirements will be waived. Also, program members will choose an appropriate faculty adviser to help them plan logical and challenging curricula enabling them to attain their personal academic goals. Students may remain in the program as long as they are able to (a) show they are receiving some benefit from membership consistent with the objectives of the program, and (b) maintain a 3.0 grade point average. Degrees will be awarded through the regular degree granting units.

Those students who are in the top seven percent on national test scores and

rank in the top ten percent of their high school classes are eligible to apply for admission as freshmen. Continuing and transfer students should have a 3.5 grade point average to warrant serious consideration for membership.

Inquiries about the President's Degree Program should be addressed to the dean, General Academic Programs.

Technical Careers Degree Program

The University provides an opportunity to continue educational pursuits toward a baccalaureate degree for students possessing an occupational, technical, or other similarly connotated educational background. The School of Technical Careers offers a Bachelor of Science degree program in technical careers for such students. Individually designed programs are developed to meet the individual needs of the students. Programs do not duplicate baccalaureate programs already offered by other academic units.

The regular University baccalaureate admission and other academic requirements and regulations are followed in the technical careers program. Persons interested in further information about this program should contact the chairman, division of baccalaureate studies, School of Technical Careers, Southern Illinois University at Carbondale, Carbondale, Illinois 62901. (See also School of Technical Careers in Chapter 3.)

University Studies Degree Program

The University Studies degree program permits students an additional option toward the baccalaureate degree. The program is intended for the student seeking a broad, general education and who does not wish to specialize on the undergraduate level. Students may work toward either a Bachelor of Arts or Bachelor of Science degree in University Studies.

Students interested in the University Studies program should consult with the dean of General Academic Programs for more information. See the description in Chapter 4.

Special Major Program

Individual students with academic needs not met in any of the existing majors within the University may arrange a program of courses more suited to their special requirements. See the description of the Special Major in Chapter 4.

Capstone Program

The Capstone Program has been developed for students who completed a vocational or technical program and then change their educational goals to include the pursuit of a baccalaureate degree. The program attempts to plan an individualized course of study for each student which will allow completion of a bachelor's degree with two additional years of credit beyond an associate degree. Chapter 3 includes information about provisions of the Capstone Program, admission requirements, and those academic units and majors which participate in the Capstone Program.

Opportunities for Study Abroad

There are five alternatives available to Southern Illinois University at Carbondale students for studying abroad.

1. A student may enroll in a Southern Illinois University study/travel program. These programs include academic courses where regular University credit is awarded to students every summer with varied opportunities available. Announcements concerning the coming summer programs are usually available in the Division of Continuing Education about the first of each year.

2. A student may study abroad through an experiment in international living/

SIU cooperative program. The Experiment in International Living is an accredited educational institution located in Brattleboro, Vermont.

3. A student may travel and study abroad on an independent basis. Prior arrangements can be made through departments to enroll in study abroad courses available in selected departments or in the course, University 388.

4. A student may enroll in a study/travel program conducted by another United States institution and transfer the credit to this institution. Information concerning programs offered by United States institutions can be obtained from the coordinator for international travel and study in the Division of Continuing Education.

5. A student may enroll in either a foreign institution or an independent location of a foreign institution. The student should check with the Office of Admissions and Records before registering since many foreign institutions are not accredited.

Determination of Residency Status

The following is a direct quotation from the Board of Trustees' "Regulations Governing the Determination of Residency Status for Admission and Assessment of Student Tuition."

For the purpose of these regulations an *adult* is considered to be a student eighteen years of age or over; a *minor* student is a student under eighteen years of age. The words *he* or *his* also apply to a female unless otherwise stated or clearly indicated. The term *the State* means the State of Illinois. Except for those exceptions clearly indicated in these regulations, in all cases where records establish that the person does not meet the requirements for Resident status as defined in these regulations the nonresident status shall be assigned.

Residency Determination

Evidence for determination of residence status of each applicant for admission to the University shall be submitted to the Director of Admissions at the time of application for admission. A student may be reclassified at any time by the University upon the basis of additional or changed information. However, if the University has erroneously classified the student as a Resident, the change in tuition shall be applicable beginning with the term following the reclassification; if the University has erroneously classified the student as a nonresident, the change in tuition shall be applicable to the term on which the reclassification occurs, provided the student has filed a written request for review in accordance with these regulations. If the University has classified a student as a Resident based on false or falsified documents, the reclassification to nonresident status shall be retroactive to the first term during which residency status was based on the false or falsified documents.

Adult Student

An adult, to be considered a Resident, must have been a bona fide resident of the State for a period of at least three consecutive months immediately preceding the beginning of any term for which he registers at the University, and must continue to maintain a bona fide residency in the State, except that an adult student whose parents (or one of them if only one parent is living or the parents are separated or divorced) have established and are maintaining a bona fide residence in the State and who resides with them (or the one residing in the State) or elsewhere in the State will be regarded as a Resident student.

Minor Student

The residence of a minor shall be considered to be, and to change with and follow:

- a. That of his parents, if they are living together, or living parent, if one is dead; or
- b. If the parents are separated or divorced, that of the parent to whom the custody of the person has been awarded by court decree or order, or, in the absence of a court decree or order, that of the parent with which the person has continuously resided for a period of at least three consecutive months immediately preceding his registration at the University; or
- c. That of the adoptive parents, if the person has been legally adopted and, in the event the adoptive parents become divorced or separated, that of the adoptive parent whose residence would govern under the foregoing rules if that parent had been a natural parent; or
- d. That of the legally appointed guardian of the person; or
- e. That of the *natural* guardian, such as a grandparent, adult brother or adult sister, adult uncle or aunt, or other adult relative with whom the person has resided and by whom he has been supported for a period of at least three consecutive months immediately preceding his registration at the University for any term, if the person's parents are dead or have abandoned him and if no legal guardian of the person has been appointed and qualified.

Parent or Guardian

No parent or legal or natural guardian will be considered a resident of the State unless he (a) maintains a bona fide and permanent place of abode within the State, and (b) lives, except when temporarily absent from the State with no intention of changing his legal residence to some other State or country, within the State.

Emancipated Minor

If a minor has been emancipated, is completely self-supporting, and actually resides in the State, he shall be considered to be a Resident even though his parents or guardian may reside outside the State. An emancipated minor who is completely self-supporting shall be considered to actually reside in the State of Illinois if he has maintained a dwelling place within the state uninterruptedly for a period of at least three consecutive months immediately preceding the beginning of any term for which he registers at the University. Marriage or active military service shall be regarded as effecting the emancipation of minors, whether male or female, for the purposes of this regulation. An emancipated minor whose parents (or one of them if only one parent is living or the parents are separated or divorced) have established and are maintaining a bona fide residence in the State and who resides with them (or the one residing in the State) or elsewhere in the State will be regarded as a Resident student.

Married Student

A nonresident student, whether male or female, or a minor or adult, or a citizen or noncitizen of the United States, who is married to a resident of the State, may be classified as a Resident so long as he continues to reside in the State; however, a spouse through which a student claims residency must demonstrate his or her own residency in compliance with the requirements applicable to students seeking Resident status.

Persons Without United States Citizenship

A person who is not a citizen of the United States of America, to be considered a Resident, must have permanent residence status with the United States Immigration and Naturalization Service and must also meet and comply with all the other applicable requirements of these regulations to establish Resident status.

Armed Forces Personnel

A person who is actively serving in one of the Armed Forces of the United States and who is stationed and present in the State in connection with that service and submits evidence of such service and station, shall be treated as a Resident as long as the person remains stationed and present in Illinois. If the spouse or dependent children of such member of the Armed Forces also live in the State, similar treatment shall be granted to them.

A person who is actively serving in one of the Armed Forces of the United States and who is stationed outside the State may be considered a Resident only if he was a resident of the State at the time he entered military service.

A person who is separated from active military service will be considered a Resident of Illinois immediately upon separation providing he: (a) was a resident of the State at the time he entered military service, (b) became treated as a Resident while in the military by attending school at Southern Illinois University while stationed within the State, or (c) has resided within the State for a period of three months after his separation.

State and Federal Penitentiary

A person who is incarcerated in a State or Federal place of detention within the State of Illinois will be treated as a Resident for tuition assessment purposes as long as he remains in that place of detention. If bona fide residence is established in Illinois upon release from detention, the duration of residence shall be deemed to include the prior period of detention.

Minor Children of Parents Transferred Outside the United States

The minor children of persons who have resided in the State for at least three consecutive months immediately prior to a transfer by their employers to some location outside the United States shall be considered Residents. However, this shall apply only when the minor children of such parents enroll in the University within five years from the time their parents are transferred by their employer to some location outside the United States.

Dependents of University Employees

The spouses and dependent children of all staff members (academic, administrative, non-academic) on appointment with the University shall be considered as Resident students for purposes of tuition assessment.

Definition of Terminology

To the extent that the terms *bona fide residence*, *independent*, *dependent*, and *emancipation* are not defined in these regulations, definitions shall be determined by according due consideration to all of the facts pertinent and material to the question and to the applicable laws and court decisions of the State of Illinois.

A bona fide resident is a domicile of an individual which is his true, fixed, and permanent home and place to which, whenever he is absent, he has the intention of returning. Criteria to determine this intention include but are not limited to year around residence, voter registration, place of filing tax returns (home state indicated on federal tax return for purposes of revenue sharing), property ownership, driver's license, car registration, vacations, and employment.

Procedure for Review of Residency Status or Tuition Assessment

A student who takes exception to the residency status assigned or tuition assessed shall pay the tuition assessed but may file a claim in writing to the appropriate official for a reconsideration of residency status and an adjustment of the tuition assessed. The written claim must be filed within 30 school days from the date of assessment of tuition or the date designated in the official

University calendar as that upon which instruction begins for the academic period for which the tuition is payable, whichever is later, or the student loses all rights to a change of status and adjustment of the tuition assessed for the term in question. If the student is dissatisfied with the ruling in response to the written claim made within said period, he may appeal the ruling to the Legal Counsel by filing with the appropriate official within twenty days of the notice of the ruling a written request.

Policy on the Release of Student Information and Access to Student Records at Southern Illinois University at Carbondale

I. Purpose

Southern Illinois University at Carbondale, hereinafter referred to as the University, maintains individual records and information about students for the purpose of providing educational, vocational, and personal services to the student. For the purpose of complying with federal regulations regarding the maintenance of confidentiality of student educational records, as required by the Family Educational Rights and Privacy Act of 1974, the following policy has been enacted.

II. Definitions

- A. "Student" is defined as a person who is or has been enrolled at Southern Illinois University in a course of study either on campus or off campus. Solely for purpose of this policy, any student attending Southern Illinois University will be considered to be an adult and to have sole control over the release of his/her information except as provided in this policy. The term "enrolled" is defined as having registered and paid fees into a course of study.
- B. "Education records" means those records which are directly related to a student, and are maintained by Southern Illinois University or any subunit or by any party acting for Southern Illinois University. The term does *not* include
 1. personal records of instructional, supervisory, and administrative personnel which are not revealed to other individuals,
 2. records of a law enforcement unit of an educational institution which are maintained apart from the education records, maintained solely for law enforcement purposes, and are not disclosed to individuals other than law enforcement officials of the same jurisdiction.

For purposes of this policy, the Southern Illinois University Security Office will be treated as an outside agency and will therefore be required to comply with all regulations relating to the disclosure of information from students' educational records, as set forth in the policy.
 3. employment records, so long as they are maintained separately from any educational record.
 4. records of a physician, psychologist, or other recognized professional or paraprofessional acting in his or her professional capacity which are used only in connection with treatment and are not disclosed to individuals other than those providing the treatment; *Provided*, that these records can be personally reviewed by a physician or other appropriate professional of the student's choice.
 5. records which contain only information relating to a person after that person was no longer a student at Southern Illinois University, such as alumni files.

- C. "Student Information" means any information contained in an educational record as defined in II. B.
- D. "Personally identifiable information" includes:
 - 1. The name of a student, the student's parent, student's spouse, or other family member.
 - 2. The address of the student.
 - 3. A personal identifier such as the student's social security number or student number.
 - 4. A list of personal characteristics which would make the student's identity easily traceable.
 - 5. Other information that would make the student's identity easily traceable.
- E. "Directory information" includes:
 - 1. Student name
 - 2. Student local address and telephone number.
 - 3. Student home address and telephone number.
 - 4. Current term hours carried.
 - 5. Classification (freshman, sophomore, etc.)
 - 6. Academic unit.
 - 7. Major
 - 8. Dates of attendance
 - 9. Degrees and honors earned and dates.
 - 10. The most previous educational agency or institution attended prior to enrollment at Southern Illinois University.
 - 11. Participation in officially recognized activity or sport.
 - 12. Weight, height, and pictures of members of athletic teams.
 - 13. Date of birth.
 - 14. Picture.

III. Basic Policy Regarding Disclosure of Information from Educational Records

A. Disclosure not requiring prior consent

- 1. The appropriate recordkeeping office shall obtain the written consent of the student before disclosing personally identifiable information from the records of a student, except in the case of directory information or disclosures to:
 - a. The student himself/herself.
 - b. University personnel who have a legitimate educational need to permit their functioning or research. The sufficiency of the need will be determined by the head of the unit from which the records are sought.

Student information supplied to any Southern Illinois University personnel or unit is provided on the basis that it is needed to permit their necessary functioning. All members of the faculty, administration, and clerical staff must respect confidential information about students which they require in the course of their work. They are bound by the conditions outlined in this policy statement relative to the release of student information. All institutional personnel should be alert to refer promptly to the appropriate office requests for transcripts, certifications, or other information which that office typically provides. They should restrict their responses to acknowledging, when appropriate, the receipt of requests for student information germane to their sphere of responsibility.
- c. Officials of other schools or school systems in which the student seeks or intends to enroll, if there is a legitimate need. The sufficiency of the need will be determined by the head of the unit from which the records

are sought. A copy of any information sent will be provided to the student upon request.

- d. Faculty or students conducting student characteristic research providing the research project has written approval of the academic unit executive officer sponsoring the research and providing guarantees are made that no personally identifiable information will be published or released.
- e. Certain state and federal representatives specified by law for the sole purpose of evaluation and auditing of governmentally funded programs in which the University participates, with the guarantee that the identity of the students will be protected.
- f. State and local officials as directed by the State Statute adopted prior to November 19, 1974, as approved by University Legal Counsel.
- g. Organizations conducting studies for, or on behalf of, state or federal educational agencies or institutions for the purpose of developing, validating, or administering predictive tests, administering student aid programs, and improving instruction, with the guarantee that the identity of the student shall be protected.
- h. In connection with financial aid for which the student has applied or received.
- i. Accrediting organizations to carry out their accrediting function, with the guarantee that the identity of the student shall be protected.
- j. Appropriate persons in connection with an emergency, if knowledge of such information is necessary to protect the health or safety of a student or other persons.
- k. Comply with a judicial order or subpoena, but the University should make a reasonable effort to notify the student first. The sufficiency of the order or subpoena will be determined by University Legal Counsel and that office shall send the required notice to the student.

B. Disclosure Requiring Prior Consent

1. Except as listed in A above, all requests for student information other than directory information must be accompanied by a written consent of the student.
2. The written consent required by this section must be signed and dated by the student giving the consent and shall include (a) a specification of the records to be disclosed, and (b) the party or parties to whom the disclosure may be made.
3. When the disclosure is made pursuant to this section, the appropriate recordkeeping office shall, upon request, provide a copy of the records which are disclosed to the student.
4. Student information will not be released to parents of students without the student's permission.

C. Disclosure of Directory Information

Directory information pertaining to students may be released by the University at any time provided that it publish the definition at least once each academic year in the campus student newspaper or other designated publication with wide circulation, and the individual student is given a reasonable period of time to inform the University in writing, through the Office of Admissions and Records, that he/she does not wish such information concerning himself/herself to be released without his/her prior consent. The Office of Admissions and Records will be responsible for identifying or deleting all information which the student desires not to be released outside the University and for informing all University recipients of that information that such information is not to be released. The student must request deletion of information each year.

The procedural requirements of this section do not apply to the disclosure of directory information from the education records of an individual who is no longer in attendance at the University. Thus, the University (or appropriate recordkeeping office) is not required to give public notice of the above to former students.

All recipients of student information will be bound by this policy. Lists of student information are never knowingly provided to any requesting party for a commercial or political purpose. If a student directory is published, it shall be equally available to all.

D. Records of Disclosure Made

Records of disclosure are not required to be kept in the record of a student when the disclosure is initiated by the student himself/herself.

The University may disclose personally identifiable information from the education records of a student only on the condition that the party to whom the disclosure is made will not further disclose the information without the student's written consent, except in the case of disclosure of directory information.

The University shall, except for the disclosure of directory information, inform the party to whom disclosure is made of the obligation to receive the student's consent before further disclosure to other parties.

E. Waiver of Right to Inspect and Review Education Records

1. The student may waive his/her right to inspect and review education records. The waiver, in order to be valid, must be in writing and signed by the student. The University (or each appropriate recordkeeping office) may not require a waiver of rights but it may request such a waiver.
2. If a student has waived his/her right to see confidential letters of recommendation placed in his/her record after January 1, 1975, the waiver will be effective only if: (a) the applicant or student is, upon request, notified of the names of all individuals providing the letters or statements; (b) the letters or statements are used only for the purpose for which they were originally intended, and (c) such waiver is not required by the University as a condition of admission to or receipt of any other service or benefit from the University.
3. A waiver may be revoked, but the revocation must be in writing and signed by the student. Revocation of waiver will affect only documents received after its execution.

IV. Identification and Description of Student Information

A. Academic Records

The Office of Admissions and Records retains the official academic record of a student. It is a cumulative history of a student's admission, registration, and academic participation and performance. Certain biographic and demographic information is also kept for identification for enrollment and research-related purposes. For information concerning these records contact the Director of Admissions and Records.

Academic records may also be maintained in academic units, departments and divisions. For information concerning these records contact the head of the academic unit, department, or division in question. The Office of Institutional Research also maintains some academic records.

B. Financial Records

Offices within the Business area maintain certain financial records which relate to the payment and accounting of tuition, fees, and other charges. They also maintain records which record student loans and grants. For information concerning these records, contact the Bursar's Office.

For billing purposes, the Office of Admissions and Records maintains a record of financial aid received and tuition and fees paid. For information

concerning these records, contact the director of Admissions and Records.

The Office of Student Work and Financial Assistance maintains records of students receiving loans, grants, and aid along with scholarship information and some academic information. It also maintains records pertinent to student employment including the family financial statement. For information concerning these records, contact the Director of Student Work and Financial Assistance.

The Housing Office maintains records of housing accounts. For information concerning these records, contact the Director of Housing.

C. Medical/Counseling/Clinical Center Records.

The University Health Service maintains medical records of students who have required medical assistances through the student health program. Only information pertinent to the health of the individual is contained therein. For information concerning these records, contact either the administrative director or the medical director of Student Health.

The University Counseling Center maintains records pertinent to services rendered by that office. For information concerning these records, contact the director of Counseling Center.

The University Clinical Center maintains records pertinent to services rendered by that office. For information concerning these records, contact the director of the Clinical Center.

D. Disciplinary Records

The Office of Student Affairs maintains records of disciplinary action which has been taken against a student with documentation pertaining thereto. That office also maintains only the academic information necessary to permit its functioning. For information concerning these records, contact the dean of Student Life.

E. Placement Records

The Office of Career Planning and Placement creates a record for those persons who wish to avail themselves of its services, with student's voluntary participation. This information is distributed to potential employees. It consists of self-completed resumes and various personal references. For information concerning these records, contact the director of Career Planning and Placement.

V. Access to Records

A. Right to Inspect or Review Educational Records

1. The student has the right to physically review his records in the presence of a designated University representative.
2. Requests for review may be required to be submitted in writing to the appropriate office.
3. That office shall comply with the request within a reasonable time, but in any case, compliance shall be no more than thirty (30) days after the receipt of the request.
4. Where necessary, interpretation of the record shall be provided by qualified University personnel.
5. Original records cannot be removed from University premises. A copy will be provided if requested, but only if not providing a copy would preclude review of the educational records by the student.
6. Copies of transcripts from other educational institutions will be provided only if the original source of those transcripts is no longer available or going to the original source would cause undue hardship as determined by this University.

B. Limitations on Right to Inspect or Review

1. The student may not inspect the following records:
 - a. Financial records and statements of their parents.

- b. Confidential letters or materials placed in records before January 1, 1975 so long as they were solicited with an understanding of confidentiality and are used only for the purpose for which they were written.
 - c. Confidential letters of recommendation and confidential statements of recommendation placed in the education records of the student after January 1, 1975, are subject to the student's right to inspect and review unless the student has signed a written waiver.
2. Reports that involve two or more persons may be censored to protect the identity of the other person(s).

C. Administrative Hold on University Records

On occasion it is necessary for a University to place an administrative hold on a student's ability to request a transcript, to register for a subsequent term, to reenter the University after a period of attendance interruption, or to be officially graduated.

In cases where an administrative hold has been placed on a student's record, the student may view such records but will not be able to obtain a copy of said record until the administrative hold is removed through the appropriate University channels.

VI. Challenging Contents of a Student's Educational Record

A. Purpose

A student has the right to challenge the content of a record on the ground that he/she believes it is inaccurate, misleading, or otherwise in violation of his/her privacy or other rights and to have inserted in the record his/her written explanation of its contents. Academic grade review procedures are covered in the University Catalog and/or such particular academic unit, department or division and not by this policy.

B. Procedure

To initiate such a challenge, the student shall, within sixty (60) days after he/she has inspected and reviewed the record in question for the first time, file with the University office responsible for maintaining such record a written request for correction, on a form specified by the University. Within thirty (30) days following receipt of such request, the head of such office, or his/her representative, shall review the record in question with the student and either order the correction or deletion of such alleged inaccurate, misleading, or otherwise inappropriate data as specified in the request or notify the student of the right to a hearing at which the student and other persons directly involved in the establishment of the record shall have an opportunity to present evidence to support or refute the contention that the data specified in the request are inaccurate, misleading, or otherwise inappropriate.

C. Hearing

The student shall be given written notice sent to his/her last known address of the time and place of such hearing not less than ten (10) days in advance. The hearing will be conducted by a University representative who does not have a direct interest in the outcome. The student might well challenge the hearing officer. Any disagreement regarding the hearing officer will be resolved by the appropriate Vice President.

The student shall have the right to attend the hearing, to be advised by an individual of his/her choice at his/her own expense, including an attorney, and to call witnesses in his/her behalf. The student shall be notified in writing of the decision within ten (10) days following the hearing or within five (5) days of a decision without a hearing. Such decision is final. The decision reached shall be based solely upon the evidence presented at the hearing and shall include a summary of the evidence and reasons for the decision.

(Note: A hearing may not be requested by a student to contest the assignment of a grade; however, a hearing may be requested to contest whether or not the assigned grade was recorded accurately in the education records of the student.)

VII. Destruction of Records.

- A. The University may destroy education records when they are no longer necessary, with the following limitations:
 - 1. Education records may not be destroyed if there is an outstanding request to inspect and review them.
 - 2. Explanations placed in the record by the student and the record of disclosure of information must be maintained as long as the education record to which it pertains is maintained.

VIII. Right to File Complaints

- A. If the student thinks his or her rights have been violated, he or she should first file a complaint with the head of the office which maintains the records in question.
- B. After exhausting all the internal remedies available within the University, if the student still thinks his or her rights have been violated, written complaints can be filed with:

The Family Educational Rights and Privacy Act Office
Department of Health, Education, and Welfare
330 Independence Avenue S. W.
Washington, D.C. 20201

The office shall notify the complainant and the University of the receipt of the complaint and an investigation will follow.

Issuance of Transcripts

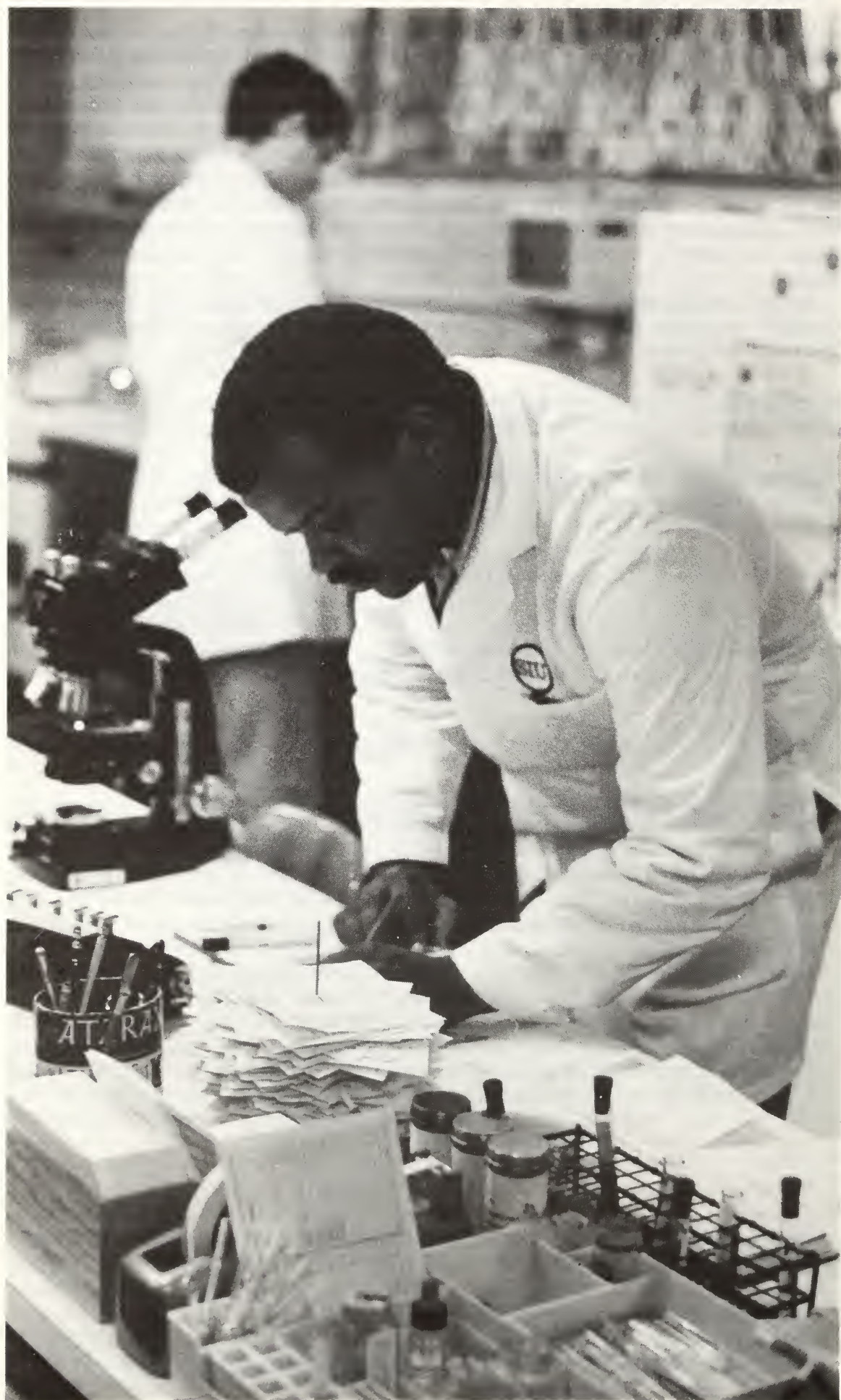
A transcript of the student's official educational record is issued by the Office of Admissions and Records under the following conditions: A transcript is sent, issued, or released only upon a student's request or with the student's explicit permission, except that such permission is not required when University faculty and administrative official or other educational institutions request transcripts for official purposes. In addition, requests will be honored from a philanthropic organization financially supporting a student and from a recognized research organization conducting educational research provided the confidential character of the transcript is protected. One transcript will be issued directly to a student upon request. The transcript will have the statement, Issued to the Student, stamped on its face. Transcripts will be sent without charge to recipients other than the student as requested by the student. A transcript will not be sent, issued, or released if a student owes money to the University as verified by the Bursar's Office or the Housing Business Services Office.

Student Conduct Code

The University, through the Student Conduct Code, provides protections which promote and strengthen the learning process. The code is designed to create and maintain an environment conducive to the educational mission of the University. As an educational tool, the code identifies rights and responsibilities of students. Sanctions, when used, are designed for educational growth rather than punitive effect. The administrative responsibility for implementing, enforcing, and evaluating the code is assigned to the Student Relations Office.

Each student is expected to know the code which is published in the *Daily Egyptian* and available in brochure form in the Student Relations Office. All charges are filed by the Student Relations Office on behalf of the reporting party or victim and charges may be dropped only by the Student Relations Office. All students charged with a violation of the code have a choice between a judicial board hearing and an administrative hearing. This choice exists at all levels of adjudication. Initial jurisdiction hearings are held at the residence hall level on all incidents occurring within the living area, regardless of where the student lives. Initial jurisdiction hearings are held at the campus level for all other incidents. An appeal procedure is available to handle requests for appellate consideration.

Special details about the code and judicial procedures are made available to charged students. Students may visit the Student Relations Office, Building T-40, for additional information.



3

Academic Programs

Degrees Offered

Southern Illinois University at Carbondale grants the following degrees:

ASSOCIATE

Associate in Applied Science
Associate in Art

BACCALAUREATE

Bachelor of Arts
Bachelor of Music
Bachelor of Music Education
Bachelor of Science

ADVANCED

Master of Accountancy
Master of Arts
Master of Business Administration
Master of Fine Arts
Master of Music
Master of Music Education
Master of Public Affairs
Master of Science
Master of Science in Education
Specialist Degree
Doctor of Philosophy

In addition to the above degrees, Southern Illinois University at Carbondale offers undergraduate courses in preprofessional areas.

The School of Law and the School of Medicine offer professional degrees. Information about the School of Law may be obtained by writing the dean, School of Law, Southern Illinois University at Carbondale, Carbondale, Illinois 62901. Information about the School of Medicine may be obtained by writing the dean, Southern Illinois University School of Medicine, P.O. Box 3296, Springfield, Illinois 62708.

For information concerning academic programs on the advanced degree level, refer to the Graduate Catalog or write the dean, Graduate School, Southern Illinois University at Carbondale, Carbondale, Illinois 62901.

Degree Requirements

Associate Degree

Each candidate for an associate degree must complete a minimum of 60 hours of credit in approved courses. Each student must maintain a *C* average. In addition to the technical courses each program requires certain General Studies courses to be taken. The degree granting unit for the associate degree is the School of Technical Careers.

Baccalaureate Degree

Each candidate for a bachelor's degree must complete the requirements listed below.

Hour Requirements. Each student must have earned a minimum of 120 semester hours of credit, although some programs may require more. Of the 120 hours, at least 60 must be earned at a senior-level institution. All credit granted may be applied toward the 60-hour requirement unless the credit has specifically been designated as being from a community college. Credit for work experience, CLEP, military credit, and proficiency examination credit awarded by an accredited senior-level institution are counted toward the 60-hour requirement.

Residence Requirements. Each student must complete the residence requirement by taking the last year, which is defined as 30 semester hours, or by having three years of credit, which is defined as 90 semester hours at Southern Illinois University at Carbondale. Only credit for those courses for which the student has registered and for which a satisfactory grade has been recorded at Southern Illinois University at Carbondale may be applied toward the residence requirement hours.

Average Requirements. Each student must have a *C* average for all work taken at Southern Illinois University at Carbondale and a *C* average for all major work taken at Southern Illinois University at Carbondale.

The University has adopted a policy for students whose only graduation problem concerns the *C* average for all work taken at Southern Illinois University at Carbondale. Such students may ask that the average be computed by one of the following methods: (1) by excluding from calculation of the grade point average a maximum of ten semester hours of *D* or *E* grade earned outside the major which was taken prior to the last 60 semester hours of completed work at Southern Illinois University at Carbondale or, (2) by earning a grade point average of 2.10 or higher for the last 60 semester hours of work completed at Southern Illinois University at Carbondale. The student will be graduated if the average meets either of the two alternatives. It should be noted that the two alternatives are offered as a means of computing the grade point average for graduation only and may not be used for any other purpose.

Course Requirements. Each student must meet the University requirements and the requirements of the academic unit, the major, and the minor, if required. The General Studies requirements which are explained later in this chapter total 45 semester hours of credit although there are methods available to reduce the number for certain students. The requirements of each academic unit are also

listed in this chapter, while the requirements for the specific major and minor programs are explained in Chapter 4.

Second Bachelor’s Degree

A student may earn a second bachelor’s degree upon completion of a minimum of 30 hours, making a total of 150 hours minimum, provided the student fulfills the requirements of the department and college or school for the second bachelor’s degree. Students pursuing a second baccalaureate degree must meet the General Studies requirements of 45 semester hours if the department or school or college so requires. Students may, however, complete a second bachelor’s degree under the Capstone Program if the department offers this option for the first baccalaureate degree. If a student’s first bachelor’s degree is from another university, 30 hours in residence is required to fulfill the requirements for the second bachelor’s degree. If the first bachelor’s degree was earned at Southern Illinois University at Carbondale, a minimum of 10 semester hours of the 30 required must be taken in residence at the University.

Preprofessional Programs

Preprofessional students may, subject to certain conditions, obtain a bachelor’s degree after three years’ work (90 semester hours) at Southern Illinois University at Carbondale and one or more year’s work in a professional school. During their three years of residence at Southern Illinois University at Carbondale, they need to have completed all requirements other than elective hours for the bachelor’s degree which they are seeking.

In some cases the completion of major 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 school with acceptable grades in an approved medical school, an approved dental school, an approved veterinary school, an approved law school, an accredited physical therapy or medical technology school, a hospital plan approved by the University or an accredited school of osteopathy. In all cases, all University graduation requirements must be met. It is advisable for a student interested in this program to make the decision to seek a bachelor’s degree before entering the professional school so that any questions may be clarified at an early date.

The 3/2 program of the College of Business and Administration is available to qualified transfer students and students majoring in areas other than business. The program permits a student to devote a part or all of the fourth year of study to fulfilling requirements for the Master of Business Administration degree. For details, contact the associate dean for graduate studies in business administration.

General Studies Requirements

The General Studies requirements are the general educational requirements for all the baccalaureate programs of the University. The General Studies curriculum is divided into five major areas; the number of semester hours required in each area is listed below.

Area A Man’s Physical Environment and Biological Inheritance	9
Area B Man’s Social Inheritance and Social Responsibilities	9
Area C Man’s Insights and Appreciations	9
Additional course work from Areas A, B, or C	3
Area D Organization and Communication of Ideas	11
Area E Human Health and Well Being	4
<hr/> Total	45

Students must complete a total of 30 semester hours in Areas A, B, and C.

Within each Area they must complete a minimum of 9 semester hours, and they must include course work from at least 3 different disciplines in each Area. The remaining 3 semester hours may include coursework from any one of Areas A, B, or C, or from any combination of these three Areas.

Within Area D, the following are required: 5 semester hours of English composition; 4 semester hours of mathematics; and 2 semester hours of speech or other oral communications as offered in Area D. Some programs and upper division academic units have specific requirements for demonstration of competence in English composition. A student may determine which programs or units have this requirement by referring to program requirements listed in Chapter 4.

In Area E the courses taken must include more than one activity or subject. Prospective teachers should also check the section of this chapter titled Teacher Education Program.

MEETING GENERAL STUDIES REQUIREMENTS

These requirements may be met by any of the following, subject to the rules and limitations appropriate to each means.

- 1. Completion of appropriate General Studies courses (listed at the beginning of the next chapter) with a passing grade;
- 2. Proficiency credit by examination for General Studies courses or approved substitute courses.
- 3. Proficiency credit via General Examinations of the College Level Examination Program or CEEB Advanced Placement Program (See Program Flexibility in Chapter 2);
- 4. Transfer credit for courses evaluated as equivalent to General Studies courses or approved substitute courses; and
- 5. Completion of departmental courses listed as substitutions for General Studies courses. (See List of Approved Substitutions below.)

General Studies courses are offered at the 100, 200, and 300 levels. Few of these courses have specific prerequisites, and a student may decide when to enter a given level. Academic advisers can provide the student with appropriate information about individual General Studies courses.

Beginning students are not restricted to enrolling in only General Studies courses; the student who has selected a major is assisted in determining the proper courses to take by consulting curriculum guides obtained from an academic adviser.

List of Approved Substitutions. The departmental courses which have been approved as substitutions for General Studies courses are listed below. In no case does the departmental course substitute for more credit hours than the credit hours allowed in the comparable General Studies course.

GENERAL STUDIES COURSE	APPROVED SUBSTITUTES
GSA101-3	One of: Physics 203, 204, 205, 253, 254, 255, or 3 semester hours of technical physics. (The substitution of Physics 253, 254, or 255 is limited to one semester hour.)
GSA 106-3 and 107-1	One of: Chemistry 115, 140, 222, 224, 225, or 4 semester hours of technical chemistry
GSA 110-3	Geology 220
GSA 115-3	One of: Biology 306, 308, 309; Botany 200; Zoology 118
GSA 202-3	One of: Physics 203b, 204b, or 205b
GSA 208-1 and 209-3	Physiology 210, Animal Industries 331, or Military credit for physiology
GSA 240-3	Biology 307

GSA 314-2	Biology 305
GSA 330-3	Military credit for meteorology
GSA unassigned-1 to 12	One to 12 semester hours from President's Scholars 251a and/or 351a
GSB 103-3	Geography 300
GSB 211-3	One of: Agricultural Industries 204; Economics 214, 215
GSB unassigned-1 to 12	One to 12 semester hours from President's Scholars 251b and/or 351b
GSC 100-2	Music 101, 102, or 2 hours of 013, 014, 017, 020, 021, 022
GSC 101-3	Art 100
GSC 204-3	Art 207
GSC 206-3	Music 105a
GSC Foreign Language	Foreign Language
(Note: A student may substitute on an hour-for-hour basis to a maximum of four hours, provided the student has taken GSC courses totaling five hours in two other disciplines. Any additional hours of foreign language may be counted toward the three hours of additional course work required in areas A/B/C).	
GSC unassigned-1 to 12	One to 12 semester hours from President's Scholars 251c and/or 351c
GSD 101-3	Linguistics 101
GSD 107-4	One of: Mathematics 110, 111, 114, 116, 117, 139, 140, 150, 151, 159, 250, 259, 282, or 4 semester hours of technical mathematics
GSD 117-2	Linguistics 102
GSD 118-2	One of: Administrative Sciences 302, Linguistics 103, or 2 semester hours of technical writing
GSE 101-114-4	Four semester hours from: Physical Education 115, 116, 117, 118, 119, 120, 170
GSE unassigned-1 to 4	One to 4 semester hours from President's Scholars 251e and/or 351e

A maximum of 15 semester hours of comparable technical coursework can be substituted for General Studies requirements. Some of these substitutions are listed above; others may be possible on an individual request to the Dean of General Academic Programs.

Flexibility and Other Features. The University believes in a strong, well-rounded general education program but does not accept the idea that every student must take the same courses or program in meeting the objective. Therefore, considerable latitude is permitted the student in meeting the objectives; alternate routes are provided within the General Studies framework.

Accommodations to differences in student background, interest, and aspirations include:

1. Substitutions of approved departmental courses can be made for General Studies courses as previously outlined;
2. Proficiency examinations are offered regularly for some General Studies courses; students should consult with their academic advisers for information concerning these examinations
3. A University Studies Program (See Chapter 4) allows the student to design a broad undergraduate education.

The Transfer Student and General Studies. A transfer student who expects to graduate from Southern Illinois University at Carbondale with a baccalaureate degree must meet the General Studies requirements as outlined previously. All

work done at other institutions will be evaluated and comparable courses will be applied toward the General Studies requirements.

A student who graduates with an associate degree in a baccalaureate-oriented program from a Class I Illinois two-year institution, or one regionally accredited, will be considered as having junior standing and as having met all General Studies requirements.

Additional information concerning admission of a transfer student and the evaluation of transfer credit can be found in the sections of this catalog pertaining to those specific subjects.

Capstone Program

The Capstone Program is a program for the transfer student, with an Associate in Applied Science degree or equivalent certification, whose needs can be met within one of the participating departments. It is a two-year program that gives maximum credit for previous academic and work experiences in the student's occupational field. The purpose of a Capstone Program is to provide an opportunity for students to add to the marketable occupational skills and competencies which they have already acquired.

Key features of the Capstone Program are: (1) It is for selected occupational students who have changed their educational and occupational goals; (2) It is an alternative baccalaureate degree program involving no more than two additional years of college at a four-year institution; (3) It seeks to recognize similar objectives in both two-year occupational programs and four-year baccalaureate degree programs; (4) It seeks to recognize similar objectives in certain work experiences and in four-year baccalaureate degree programs; and (5) It provides a unique opportunity for developing secondary and post-secondary occupational teachers who possess strong work experience and training in a variety of technical specialties and sub-specialties.

The Capstone Program at Southern Illinois University at Carbondale can lead to the Bachelor of Science degree in any of the following areas:

School of Agriculture

- Agricultural Education
- Agricultural Industries
- Agriculture, General
- Animal Industries
- Plant and Soil Science

College of Education

- Business Teacher Education
- Home Economics Education
- Occupational Education

College of Human Resources

- Administration of Justice
- Child and Family
- Clothing and Textiles
- Food and Nutrition

School of Engineering and Technology

- Industrial Technology

School of Technical Careers

Baccalaureate degree programs — individualized programs

The listing of majors which participate in the Capstone Program may change from time to time.

REQUIREMENTS FOR THE BACHELOR OF SCIENCE DEGREE THROUGH CAPSTONE

A student completing the degree through the Capstone Program must complete the hour requirements, residence requirements, and average requirements as are required for all bachelor's degrees. These requirements are explained near the

beginning of this chapter. The course requirements for the Capstone Program are explained below.

The following General Studies requirements must be satisfied:

Science	6 semester hours
Social Science	6 semester hours
Humanities	6 semester hours
Health and Physical Education	3 semester hours
English Composition	one course
Mathematics	one course
Speech	one course
Minimum Total	30 semester hours

In addition to the General Studies requirements, the student must complete the requirements specified in a contract to be developed between the student and the academic unit or department representative. The contract will list the remaining requirements for the baccalaureate degree.

PROCEDURES FOR APPLYING TO THE CAPSTONE PROGRAM

To be considered for the Capstone Program, the following conditions must be met:

1. Admission to the University and to the department offering the capstone option must be completed. An application to the Capstone program cannot be considered prior to official admission into the University.
2. The applicant must complete an associate degree program or its equivalent certification.
3. The applicant must have a minimum grade point average of 2.25 (4.0 grading scale) as computed by Southern Illinois University at Carbondale and according to regular University grading policies and procedures.
4. The applicant must file the application to the Capstone Program no earlier than one term prior to the intended entry into the program and no later than the completion of the first term of attendance at Southern Illinois University at Carbondale. Southern Illinois University at Carbondale students need to submit the application during the term preceding or just following completion of associate degree requirements.

If advance approval is granted to pursue a Bachelor of Science degree through the Capstone Program and the minimum requirements of points 2 and 3 are not met, the approval for admission to the program will be withdrawn.

Academic Units and Programs Offered

School of Agriculture

GILBERT H. KROENING, *Dean*
Departments: Agricultural Industries; Animal Industries; Forestry; Plant and Soil Science

The School of Agriculture offers the following majors leading to the Bachelor of Science degree.

Agricultural Education	Animal Industries
Agricultural Industries	Forestry
Agriculture, General	Plant and Soil Science

It is recommended that high school students who are planning to pursue one of the above majors include the following in their high school programs: four units of English, two to four units of mathematics (algebra, geometry, advanced math-

ematics); two to three units of science (biology, chemistry, physics); and two to three units of social studies. Remaining units might well include agriculture.

For transfer students wishing to pursue a major in one of the agricultural or forestry areas, courses taken prior to entering Southern Illinois University at Carbondale should include a distribution in the physical and biological sciences, social sciences, and humanities. In addition a course in speech and appropriate sequences in English composition and college algebra should be included. A potential transfer student who has already identified a major for the bachelor's degree may select with greater precision the courses which will be transferred by consulting the curriculum for that major in Chapter 4.

A student planning to take preprofessional courses in veterinary science should register in the School of Agriculture's four-year curriculum in animal industries.

The School of Agriculture has no school-wide requirements other than the University requirements.

Qualified candidates for the Capstone Program are accepted with majors in agricultural education, agricultural industries, animal industries, general agriculture, and plant and soil science. The Capstone Program is described earlier in this chapter.

Of the recent graduates of the School of Agriculture, about 35% have been employed in private industry, about 20% have entered farming or farm management and about 15% have been employed in each of: government (federal, state, county, and city); education or extension; graduate study or professional schooling.

In addition to preparing students for employment in the traditional agricultural and agriculturally related occupations, the School of Agriculture is increasing its emphasis on the currently important areas of environmental studies and ecology.

School of Agriculture students come from both rural and urban homes, and a rapidly increasing number of agriculture and forestry students are women. Students who elect any one of the six majors in the School of Agriculture are counseled and advised for registration in the school. Graduates receive the Bachelor of Science degree.

The Agriculture Building houses the offices, classrooms, and laboratories of the school. Other research and teaching facilities include over one-third acre of greenhouses plus 2000 acres of farm and timber land.

College of Business and Administration

JOHN R. DARLING, *Dean*

Departments: Accountancy; Administrative Sciences; Finance; Marketing

The College of Business and Administration aims to prepare students to perform successfully in business and other organizations functioning within a changing social, economic, and political environment. Study provides the student with fundamental principles and practices of organizational behavior and allows the mastering of knowledge and skills for effective management. The curriculum provides a broad base for understanding business while simultaneously allowing in-depth study within an area of concentration. Students find that the professional education they receive in the college is desired by business, governmental units, and other public institutions. The advanced curriculum and related programs provide students not only with a meaningful education but with a means of relating that education to organizations and commerce.

The College of Business and Administration offers the following majors leading to the Bachelor of Science degree.

Accounting	Business Economics
Administrative Sciences	Finance
Business and Administration	Marketing

Any student, whose personal and professional goals cannot be met by any of the majors listed above, may design a special major in accordance with the University guidelines which are fully described in Chapter 4 of this catalog.

While minors are not offered, academic advisers of the college will assist and counsel those students enrolled in other units of the University having an interest in electing business courses.

All programs offered in the College of Business and Administration are accredited by the American Assembly of Collegiate Schools of Business.

The College of Business and Administration offices are located in the General Classroom Building, and the classes are conducted in various buildings throughout the campus.

Pre-College Preparation. High School and preparatory school students are urged to follow a program which includes at least three units of both English and mathematics, with a substantial portion of the remainder of their study programs devoted to such academic subject areas as humanities, the sciences, and social studies.

Transferred Credits in Business Courses. Subject to the University's policies regarding acceptance of transferred credits, the college accepts college-year credit earned in business and economics courses from accredited two- or four-year institutions of higher education and counts such credit toward the 120 semester hours required for graduation. However, if such courses are offered at the lower division (freshman and sophomore) level at the institution where completed, only those courses shown below will be treated as equivalencies to college- or department-required courses.

<i>Subject</i>	<i>Hours</i>
Principles of accounting	6
Cost accounting	3
Economic principles	6
Business economics statistics	3
(where college algebra is a prerequisite)	
Basic computer courses ¹	3

¹Computer coursework completed at other universities and colleges will be accepted as transfer credit for the College of Business and Administration core computer requirement if that course is designed to teach one and only one of the following languages: FORTRAN, BASIC, COBOL, RPG, PL1, or ALGOL courses that survey numerous languages are not acceptable. Further, coursework with emphasis on unit record or data processing equipment will not be considered equivalent to the college's computing requirement. Acceptable coursework should have a one-language base and present the student with advanced programming concepts, e.g., loops, arrays, etc.

Additionally, three semester hours of introduction to business and three semester hours of business law (contracts and agency) completed at the lower division level are acceptable in satisfaction of department requirements, in those programs where these courses are required.

Students also have the opportunity of validating additional course work and nothing in the above statement abridges a student's right to satisfy graduation requirements by proficiency (or competency) examinations. Such examinations are treated as a student right by the college and are available for most courses.

Grade Point Average Requirement. Graduation from the College of Business and Administration requires achievement of a 2.000 grade point average in all business-prefix (ACCT, ADSC, ECON, FIN, MKTG) courses offered at Southern Illinois University at Carbondale. Accounting majors are subject to the additional requirement of achieving a 2.000 grade point average in accounting-prefix (ACCT) courses completed at Southern Illinois University at Carbondale.

Pass/Fail Policy of the College. Business majors may not register on a Pass/Fail basis for courses used to satisfy requirements of the professional business core.

Course Sequencing. It is of the utmost importance that required courses be sequenced properly. Sequencing guides are available from the college's academic advisement center and are published in the College of Business and Administration's *Student Information Manual*. Courses on the 300 to 400 levels are reserved for juniors and seniors.

Forty Percent Rule. At least 40% of the course work of all business majors must be devoted to courses offered outside the College of Business and Administration; at least 40%, to courses offered by the College of Business and Administration.

Multiple Majors in Business. Business majors may choose to complete two or more of the six majors offered by the college. While all requirements of each major must be satisfied, this can usually be accomplished through judicious use of electives without extending anticipated graduation dates beyond one semester. All majors will be noted on the diploma issued on completion of the Bachelor of Science degree.

Special Majors. Students with special interests or needs which cannot be met by any of the majors offered by the college may participate in designing their own programs under the special major program. Examples of such programs include those designed to prepare graduates for careers such as managers of airports, hospital administrators, and business consultants. To support a growing trend among students to utilize the special major to prepare themselves for careers in small business management, the college has added to its offerings such courses as Administrative Sciences 350, Finance 350, and Marketing 350. Special major programs must be coherent and unified and have as a sponsor a member of the teaching faculty of the college. All Southern Illinois University at Carbondale and college requirements must be met.

General Studies Courses Prescribed for Business Majors

Area A: None

Area B: GSB 202 and Economics 214 (an approved General Studies substitute)

Area C: None

Area D: Mathematics 139 or 116 (approved General Studies substitutes) and GSD 152 or 153. (Administrative Sciences 302, an approved substitute in Area D, may be substituted for GSD 118.)

Area E: None

These hours count toward partial fulfillment of General Studies Requirements of 45 semester hours.

Professional Business Core. The professional business core, required of all College of Business and Administration students, is comprised of the following courses:

Courses	Semester Hours
Accounting 221, 222.....	6
Administrative Sciences 208, 304, 318, 481	13
Computer Science 212 or Electronic Data Processing 217.....	3
Economics 215	3
Finance 320, 370 ¹	6
Marketing 304, 305	6
Mathematics 140 or 117 ²	4-5
Business-prefix (ACCT, ADSC, ECON, FIN, OR MKTG) courses outside the major.	6
Total	47-48

¹The combination of Finance 271 and 372 may be substituted for 370.
²Mathematics 150 may be substituted for 140 or 117.

College of Communications and Fine Arts

C. B. HUNT, JR., *Dean*
Departments: Cinema and Photography; Radio-Television; Speech Communica-
tion; Speech Pathology and Audiology; Theater
Schools: Art; Journalism; Music

The College of Communications and Fine Arts offers the following majors lead-
ing to the Bachelor of Science degree:

- Journalism
- Radio-Television
- Speech Communication
- Speech Pathology and Audiology

A student with special personal and professional goals, which cannot be met by
one of these traditional majors, is encouraged to design a special major. The
requirements for the various majors and for special majors are listed in the next
chapter.

In the communications fields listed above a *C* average in GSD 101 or an
approved equivalent is required.

The Bachelor of Arts degree is offered for a major in the School of Art, in
cinema and photography and in theater. The Bachelor of Music degree is offered
for a major in the School of Music.

There are specific requirements for admission to the major in the School of Art.
Students considering enrolling in the school should make appointments with the
chief academic adviser to determine eligibility for the studio and studio crafts
specializations for the designated major.

Faculty of the college are engaged in research in communications and fine arts
and provide consulting and other services to area schools, newspapers, and radio
and television stations. A number of special events are presented each year,
including lectures by noted artists, musical ensembles, dance recitals, dramatic
presentations, and art exhibitions.

The Broadcasting Service operates WSIU (FM), a public radio station, WSIU-
TV, Channel 8, a public television station, both in Carbondale, and a second
public television station, WUSI-TV, Channel 16, at Olney. The Broadcasting
Service also operates a Radio Tape Network, distributing programs to radio
stations.

Administrative offices of the college are located in the Communications Build-
ing, which includes the newest theater on campus along with broadcasting facili-
ties, film production facilities, and the office of the *Daily Egyptian*.

College of Education

ELMER J. CLARK, *Dean*

Departments: Curriculum, Instruction, and Media; Educational Leadership; Guidance and Educational Psychology; Health Education; Higher Education; Physical Education; Recreation; Special Education; Vocational Education Studies

The College of Education offers the following programs¹ leading to the Bachelor of Science degree:

Agricultural Education	Journalism
Art	Language Arts and Social Studies
Biological Sciences	Mathematics
Botany	Music
Business Education	Occupational Education
Chemistry	Physical Education for Men
Classical Studies (To teach Latin)	Physical Education for Women
Early Childhood Education	Physics
Economics	Political Science
Elementary Education	Recreation
English	Russian
French	Secondary Education ²
Geography	Social Studies
German	Spanish
Health Education	Special Education
History	Speech Communication
Home Economics Education	Speech Pathology and Audiology
	Zoology

¹In addition to programs offered almost entirely within the College of Education, certain programs are offered in cooperation with the College of Liberal Arts (e.g., mathematics, economics) or with the College of Communications and Fine Arts (e.g., art, music), School of Agriculture (agricultural education), and the College of Science (e.g., biological sciences, chemistry).

²This is not an academic major. Persons planning to teach in secondary schools should refer to the curriculum, instruction, and media section of this catalog for a listing of academic majors and minors.

The College of Education also grants the Bachelor of Music Education degree.

Preparation of teachers at all levels and in all areas of instruction in the public schools from preschool education through high school is the special function of the College of Education. In its graduate offerings the efforts of the College of Education include professional work for prospective college teachers and administrators and several specializations in elementary and secondary 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 student teaching, will be taken in the College of Education. Graduates of the College of Education receive the Bachelor of Science or the Bachelor of Music Education degree.

Students who wish to become principals or supervisors in the public schools take graduate work in the Department of Educational Leadership. The department's major emphasis is on graduate work, but it also participates in providing background for elementary and high school teachers. Likewise, students wishing to pursue a career in teaching or administration in colleges and

universities take graduate work in the Department of Higher Education. The department does not offer an undergraduate major in higher education, but it provides courses for undergraduate credit providing a broad background in higher education for elementary and high school teachers.

The College of Education, housed in the Wham Education Building, is the oldest unit of the University, which was originally chartered as Southern Illinois Normal University.

Teacher Education Program

Southern Illinois University at Carbondale is fully accredited by the National Council for Accreditation in Teacher Education (NCATE) and by the State Teacher Certification Board, Springfield. The teacher education program is an all-university function administered by the dean of the College of Education. An advisory committee composed of faculty and students serves in a recommending capacity to the dean.

Teacher education programs, approved by the State Teacher Certification Board, are offered in elementary education, early childhood education, early childhood-preschool education, special education, and in secondary education majors and minors. The special education major offers specializations in education of the behaviorally disordered, education of the mentally retarded, and education of the learning disabled.

Only those students who complete an approved teacher education program are recommended for certification and may receive a teaching certificate through the entitlement process. Further information and procedures for receiving the certificate are explained below under Certification.

ADMISSION TO THE TEACHER EDUCATION PROGRAM

Admission to the College of Education does not guarantee admission to the teacher education program. Admission is granted only after specific criteria have been met. A student is eligible to make formal application to the program with a minimum of 30 semester hours of completed work including Education 201, an approved teaching major, and an overall grade point average of at least 2.15 (4.0 scale). Applications must be submitted in person and must be accompanied by verification that all prerequisites have been met. Applications received through the mail will not be considered. Application forms, as well as information about the teacher education program, are available in the office of the coordinator of teacher education services in the Wham Education Building, room 108. Students are encouraged to investigate the feasibility of applying for a particular teaching field early in their undergraduate careers by contacting their adviser or the department in which they wish to specialize.

If a student's application is approved after being reviewed by the coordinator of teacher education services, the student is issued a membership card which entitles the student to begin work in the basic professional education courses which are prerequisite to the professional semester of student teaching. At the end of the first semester of membership, the department offering the student's major is requested to submit a recommendation as to whether or not the student should be retained in the program. Failure to obtain approval prohibits the student from continuing with the professional education courses and could lead to suspension from the program. In order to remain in the program and complete the requirements for graduation and teacher certification, they must attain an overall grade point average of at least 2.25 (4.0 scale) and receive departmental approval. Both of these requirements must be met before final clearance can be given for a student teaching assignment.

Students who are not able to meet the criteria of the teacher education program or their major department will be counseled about alternative programs.

DEGREE REQUIREMENTS

In addition to general studies and major requirements, each degree candidate in a teacher education program must complete the course requirements listed below:

1. Four semester hours in health and physical education by taking GSE 201 and two hours of GSE 100-114. These courses should be selected as a part of the general studies requirements.
 2. A course in American history or government (GSB 212 or 300 recommended.)
 3. The United States and State of Illinois constitution examinations requirement. This requirement for continuing certification in Illinois may be met by taking GSB 212, 300 or 301; by taking a course in American history or political science other than GSB 212, 300 or 301 and passing the constitution test administered by the University; or by presenting written notification from another institution that a course in American history or government has been passed and that the tests have been passed on the constitutions of the United States and the State of Illinois.
 4. GSB 202 as a prerequisite for Education 301 in the professional education sequence. GSB 202 should be selected as a part of the general studies requirements.
 5. GSD 101 and GSD 117, 118, or 119, and one additional English course (GSC or English department) with a grade of C or better in each of the last two courses completed. This requirement is a prerequisite to admission to the professional semester.
 6. The professional education sequence listed below. Each of the courses which are part of the program prior to the professional semester must be completed with a grade C or better as a prerequisite to admission to the professional semester. Education 201 must be completed prior to admission to the teacher education program.
- | | |
|--|----|
| <i>Professional Education Sequence</i> | 24 |
| Decision Component | |
| Education 201 | 1 |
| Basic Professional Block | |
| Education 301 | 2 |
| Education 302 | 2 |
| Education 303 | 2 |
| Education 304a, b, c, d, e, f, g, h | 2 |
| Professional Semester ¹ | |
| Education 350 | 3 |
| Education 400 | 4 |
| Education 401 | 8 |
7. Illinois State Teacher Certification Board general education course distributions in: language arts, science, mathematics, social science, humanities, health, and physical education. Students having questions concerning whether their programs meet certification board requirements should discuss their concerns with their academic advisers.

¹Concurrent registration in Education 350, 400, and 401 is required during the professional semester.

Certification

A student who is nearing completion of the teacher education program (usually during the last semester) can obtain the forms to make application for entitlement to certification for the State of Illinois from the dean's office of the College of Education, Wham Education Building, Room 115. Upon completion of the application forms by the student and payment of the certification board fee, the

dean's office staff will process the forms with the State Teacher Certification Board and entitlement cards will be sent to the dean's office. When the student's program, including graduation clearance, is completed, the office will mail the cards to the student's permanent address for use in applying for certification through the student's future educational service region superintendent.

The State of Illinois issues through the entitlement process the Standard Elementary Certificate, Standard High School Certificate, Standard Special Certificate, or Early Childhood-Preschool Certificate to students who graduate from an approved teacher education program at Southern Illinois University at Carbondale.

Standard Elementary Certificate. Students planning to teach on the elementary level in the public schools of Illinois register in the College of Education. Requirements for entitlement to the State of Illinois standard elementary certificate may be through the completion of the early childhood (K-3) education program or the elementary education (K-9) program. For further information concerning these programs, see the sections of this catalog titled curriculum, instruction, and media and professional education experiences in Chapter 4.

Standard High School Certificate. Requirements for entitlement to the State of Illinois standard high school certificate and for entitlement to the standard special certificate may be met as explained in the section of this catalog titled curriculum, instruction, and media in Chapter 4. A listing of majors, minors, and other programs approved for certification entitlement purposes at Southern Illinois University at Carbondale is presented there. It is possible for a student to be registered in one of the colleges or schools other than the College of Education and to meet the state requirements for the standard high school certificate or the standard special certificate by using as electives certain prescribed professional education requirements in the College of Education.

Standard Special Certificate. Teaching all grades, kindergarten through grade 12, requires the standard special certificate. As noted above, requirements for entitlement to the standard special certificate may be met in the manner outlined in the section of this catalog titled curriculum, instruction, and media in Chapter 4. Teaching fields for which the standard special certificate is issued include physical education, special education, music, art, and speech pathology and audiology.

Early Childhood-Preschool Certificate. Students planning to teach at the pre-school level in public schools or other settings in Illinois register in the College of Education or in the College of Human Resources. The early childhood-preschool program was specifically designed to prepare future teachers of prekindergarten children. For further information concerning the program, see the section of the catalog titled curriculum, instruction, and media in Chapter 4.

School of Engineering and Technology

PHILIP DAVIS, *Acting Dean*

Departments: Electrical Sciences and Systems Engineering; Engineering Mechanics and Materials; Technology; Thermal and Environmental Engineering

The School of Engineering and Technology offers the following majors leading to the Bachelor of Science degree.

- Engineering
- Engineering Technology
- Industrial Technology

Specific requirements are listed for the various majors offered by the school in the next chapter.

Qualified candidates for the capstone program are accepted with majors in industrial technology. The Capstone Program is described earlier in this chapter.

The School of Engineering and Technology provides instruction over a broad spectrum of engineering and technology. Through instruction, research, and consultative services, it services Southern Illinois, the state, and the nation.

Baccalaureate and master's degree in engineering are offered through the cooperative efforts of the three engineering departments. The Department of Technology has responsibility for baccalaureate degree programs of study in engineering technology and industrial technology.

The application of transfer credit from senior institutions to program requirements in the School of Engineering and Technology must be approved by the dean or a designated representative.

Administrative offices of the school are located in the Technology Building near Lake-on-the Campus.

General Academic Programs

General Academic Programs includes the following:

General Studies

University Studies

Center for Basic Skills

President's Scholars

Special Majors

President's Degree Program

Talent Search

Pre-Major Advisement Center

Special Supportive Services

Generally concerned with the freshman and sophomore years, General Academic Programs offers academic support programs designed to enhance the possibility of success for all its students. The University Studies program offers B.S. or B.A. degrees. Students interested in General Academic Programs should contact the Dean of General Academic Programs

Center for Basic Skills

The Center for Basic Skills is designed to enhance the success factor for students deficient in basic skills but who demonstrate the potential for college work and to offer services to students interested in improving their reading, writing, and mathematics skills. The center offers courses in the basic skill areas of reading, writing and mathematics. It also offers individualized instruction and tutoring in these areas. Diagnostic testing is available to assist students in analyzing their basic skills competency. Interested students should direct their inquiries to the director of the Center for Basic Skills.

General Studies

The General Studies Program coordinates the many and varied courses which comprise the general education requirements for all majors in the University. General Studies is intended to provide graduates of Southern Illinois University at Carbondale with the broad foundation of knowledge necessary for both personal development and for informed action as a member of society. The number and variety of courses in the program allows for adaptation to individual needs.

The General Studies Advisory Council, composed of faculty and student representatives, advises the dean of General Academic Programs on matters of policy and curriculum which determine the direction and development of the program.

Pre-Major Advisement Center

The Pre-Major Advisement Center is the academic home of students who have not declared a major. The advisers have a wide acquaintance with the many

programs offered by the University and are ready to help students to select a suitable area of specialization.

President's Scholar Program

The President's Scholar Program is designed to enable academically talented students to profit from an association with each other; to achieve maximum flexibility within the framework of the general University curriculum; and to take fullest advantage of the talents and resources of the University. The President's Degree Program, an option available to students interested in pursuing interdisciplinary studies, is also important for maximizing curricular flexibility (see Program Flexibility, Chapter 2).

The staff assists the scholars individually and in groups to obtain the best curricular and extra-curricular conditions for excellent and rewarding academic work. The program has no set format or curriculum; it is intended to provide opportunities for the individually styled education particularly appropriate to superior students.

Test scores and high school standing provide the basis for inviting entering freshmen to participate in the program. Invitations to other students result from superior academic performance at Southern Illinois University at Carbondale. Participants retain the prerogatives of membership throughout their undergraduate years as long as they meet minimum standards of academic performance and fulfill other limited conditions. Participation in the President's Scholar Program is inscribed in the student's official record.

Inquiries about the program should be addressed to the dean, General Academic Programs.

Special Major

Individual students with academic needs not met in any of the existing majors within the University may arrange a program of courses more suitable to their special requirements. See the description of the special major in Chapter 4.

Special Supportive Services

This program is designed for students with academic potential who are from indigent or culturally different backgrounds and to provide an academic support system that will maximize their success. The identification process focuses on modified admissions criteria that emphasizes motivation and requires a personal interview to be admitted. The specialized services offered through this program include but are not limited to providing: (1) personal and career counseling and guidance; (2) curricular and instructional methods in special classes that will enable the participants to complete required and prerequisite courses in a reasonable period of time; (3) a comprehensive tutorial program that will afford program participants an opportunity to compete with sufficient skills at Southern Illinois University at Carbondale; and (4) other special services that are consistent with the goal of recruiting, retaining, and graduating the target population.

Eligible participants must be citizens of the United States and conform economically to federal low-income standards unless they are physically handicapped or speak limited English.

Talent Search

The mission of Talent Search is to encourage full utilization of educational talents in Southern Illinois. It endeavors to find qualified, high-need, out-of-school students and assist them in continuing or renewing their educational efforts.

Inquiries about the program should be addressed to the director.

University Studies Program

The University Studies degree option is intended for those students who want a

broad, general education and do not wish to specialize on the undergraduate level. Both the Bachelor of Arts and Bachelor of Science degrees are offered.

Graduate School

JOHN C. GUYON, *Associate Vice President for Research and Dean of the Graduate School*

The Graduate School was organized in 1944. Under the leadership of a graduate faculty of over 900 individuals, research and study by graduate students is promoted through a wide variety of scholarly activities.

It offers the following degrees: Master of Accountancy, Master of Arts, Master of Business Administration, Master of Fine Arts, Master of Music, Master of Music Education, Master of Public Affairs, Master of Science, Master of Science in Education, the Specialist Degree, and the Doctor of Philosophy degree.

The Graduate School is fully accredited by the North Central Association of Colleges and Secondary Schools; its various academic components have been accredited by appropriate state and national accrediting associations. There are sixty-six programs leading to the master's degree. The specialist degree (sixth year) is offered in four areas within education. There are twenty programs leading to the Ph.D. degree. In addition, the Ph.D. program in education has thirteen different concentrations.

A separate catalog describing admission and graduation requirements for the various programs in the Graduate School may be had by writing to the Graduate School, Southern Illinois University at Carbondale, Carbondale, Illinois 62901. An application for admission to graduate study may also be requested from the Graduate School.

College of Human Resources

SEYMOUR L. BRYSON, *Acting Dean*

Divisions: Comprehensive Planning and Design with academic programs in Clothing and Textiles, Interior Design and Design; Human Development with academic programs in Child and Family, Family Economics and Management and Food and Nutrition; Social and Community Services with academic programs in Black American Studies, Community Development and Social Welfare; Center for the Study of Crime, Delinquency, and Corrections; Rehabilitation Institute

The College of Human Resources offers the following majors leading to the Bachelor of Science degree:

Administration of Justice	Food and Nutrition
Child and Family	Interior Design
Clothing and Textiles	Social Welfare
Family Economics and Management	

It also offers a major leading to the Bachelor of Arts degree in design.

The specific requirements for each of these majors are listed in the next chapter.

Qualified candidates for the Capstone Program are accepted with majors in administration of justice, child and family, clothing and textiles, family economics and management, and food and nutrition. The Capstone Program is described earlier in this chapter.

Minors are offered in administration of justice, black American studies, clothing and textiles, community development, and consumer studies.

School of Law

HIRAM H. LESAR, *Dean*

The school offers a three-year program leading to the Juris Doctor (J.D.) degree. The school received provisional accreditation from the Section on Legal Education of the American Bar Association during its first year of operation, so that all students enrolled are eligible to take state bar examinations required for admission to the bar.

Three buildings have been remodeled to provide classroom, library, and office space for the School of Law pending completion of a permanent building. Other available resources include an adequate law library collection and a broadly-based University with extensive law-related graduate divisions and other academic units. Because of space limitations, the entering class will be limited to approximately 85 students until a permanent building is completed.

The faculty and student body of the school are of the highest quality, and its curriculum is designed to inculcate fundamental legal concepts and skills which every lawyer must have and which are the hallmarks of the profession of law. In addition to the Socratic — casebook method, other teaching methods, including clinical, are utilized as the subject matter requires. The School of Law catalog can be obtained by writing the School of Law.

College of Liberal Arts

LON R. SHELBY, *Dean*

Departments: Anthropology; Computer Science; Economics; English; Foreign Languages and Literatures; Geography; History; Linguistics; Mathematics; Philosophy; Political Science; Psychology; Religious Studies; Sociology

The College of Liberal Arts offers the following majors leading to the Bachelor of Arts and Bachelor of Science degrees. Minors are possible in most of these areas. For exceptions, see next chapter.

African Studies ¹	Classical Civilization ¹	Latin American Studies
Anthropology	Classical Studies	Linguistics
Asian Studies ¹	East Asian Civilizations ¹	Mathematics
Comparative Literature ¹	French	Music ²
Computer Science	German	Philosophy
Earth Science ¹	Greek ¹	Political Science
Economics	Japanese ¹	Psychology
English	Latin ¹	Religious Studies
Foreign Languages	Russian	Sociology
and Literatures	Spanish	Speech Communication ²
Chinese ¹	Geography	Uncommon Languages ¹
	History	

¹Minor only.

²Liberal arts major, not professional major.

The College of Liberal Arts provides (1) instruction in basic subject matter courses of General Studies; (2) opportunity for majors in a variety of subject areas; (3) electives not available in other instructional units of the University; (4) courses offered through the Division of Continuing Education; (5) graduate-level instruction for students pursuing higher degrees than the baccalaureate; (6) pre-professional training needed for admission to specialized schools such as law and theology.

The Bachelor of Arts or Bachelor of Science degree is granted to students who fulfill requirements for graduation from the College of Liberal Arts. The courses of study outlined by the departments determine the degree awarded.

The diversified offerings of the College of Liberal Arts are designed to help the students develop the ability to seek and weigh evidence and to think critically and independently; a fundamental understanding of the ever changing social, political, and physical environment, and a deeper understanding of people, of cultures past and present, and of artistic and literary creations. Although a number of post-college options are open to liberal arts graduates, students in the college may prepare directly for teaching at the secondary level by including in their studies certain professional courses offered by the College of Education.

ACADEMIC REQUIREMENTS

To receive a degree from the College of Liberal Arts students will be expected to fulfill the following requirements:

1. University requirements including those relating to General Studies, residency, total hours completed, and grade point average.
2. College of Liberal Arts students must complete one year of not less than six semester hours of a foreign language. In addition to General Studies requirements, students must complete one course in either mathematics or computer science and one course in English composition. General Studies courses may be used to satisfy the latter requirement only with prior approval of the dean.
3. Successful completion of requirements in an approved major in the College of Liberal Arts.
4. At least 40 hours of course work at the 300- or 400-level.

The above stated requirements leave a large number of elective courses, so that students have maximum flexibility in planning their overall program of study at the University. To assist students in planning their program, the college maintains an academic advisement office in Faner Hall 1229, as well as faculty advisers in each department. Students are urged to consult with these academic advisers on how they can best utilize this elective part of their program to fulfill their intellectual interests and to prepare for particular career opportunities. A carefully planned minor field or second major field opens up many career opportunities for the liberal arts major that might otherwise be missed. These minor fields may be taken within a single department, they may be interdepartmental, or they may be intercollegiate. Students interested in combining a liberal arts degree with vocational or job-oriented specialization fields should inquire about the LibTech program that has been arranged between the College of Liberal Arts and the School of Technical Careers. For further information, please contact or write the dean of the College of Liberal Arts. Students who are planning to attend graduate school or one of the professional schools such as law or medicine should consult with their advisers on how best to plan their undergraduate curriculum with these goals in mind.

PRE-LAW

The pre-law student may choose any major course of study as long as it is intellectually demanding and tests the student's aptitude for analytical thinking.

The College of Liberal Arts has a pre-law advisory committee to help students plan a useful, interesting curriculum aimed at improving the skills important for the study of law. This committee is made up of faculty members of various University units who are lawyers or who have particular expertise in fields important to law and pre-law preparation. The Committee holds a Pre-Law Night each fall, where opportunities are presented for open discussion of undergraduate curriculum and the law school admission process, these discussions being led by students in the Southern Illinois University at Carbondale School of Law. Also, a mock Law School Admission Test (LSAT) is given twice a year free of charge

under regular test conditions and for the full time span required for the official LSAT.

Among courses especially recommended for pre-law students is Liberal Arts College (LAC) 105, Law in American Society, a special interdisciplinary course offered every fall semester. The Department of English regularly offers special pre-law sections of intermediate and advanced expository writing as well as a course which stresses precision in writing. Also recommended are courses in public speaking and accounting.

The staff of the liberal arts advisement center is available to all students who have an interest in pre-law studies and will be glad to discuss with students their interest in law school.

School of Medicine

RICHARD H. MOY, *Dean and Provost*

Southern Illinois University School of Medicine was established in 1970 in response to a need in Illinois for increased opportunities for education in health fields and the more encompassing need for improvements in the health care delivery system. To have the broadest impact possible on health care in central and southern Illinois, the school is deeply engaged in training men and women who will become physicians. It also emphasizes continuing education and is a center of health care planning and expertise.

The first class of forty-eight students was admitted for instruction in June, 1973. Beginning classes will increase in size until the anticipated maximum of 96 students is reached. Preference is given to applicants from central and southern Illinois intending to practice medicine in the state. Inquiries on admission should be addressed to the Committee on Admissions, Southern Illinois University School of Medicine, P.O. Box 3926, Springfield, Illinois 62708.

The curriculum runs twelve months a year for three years. The first year program, conducted on the campus of Southern Illinois University at Carbondale, has primarily a basic science orientation, but with significant clinical input from the beginning. The second year, at Springfield, is about equally divided between laboratory and clinic; and the third year, also at Springfield is almost exclusively clinical.

Carbondale facilities include extensive and well-equipped laboratories at Southern Illinois University at Carbondale, Memorial Hospital of Carbondale, and public and private clinical facilities. In Springfield, St. John's Hospital and Memorial Medical Center, each having about 700 beds, are utilized. The new Medical Instructional Facility in Springfield accommodates 200 medical students.

College of Science

NORMAN J. DOORENBOS, *Dean*

Departments: Botany; Chemistry and Biochemistry; Geology; Microbiology; Physics and Astronomy; Physiology; Zoology

The College of Science offers majors, and in most cases minors, leading to the Bachelor of Arts and Bachelor of Science degrees in the following fields of study:

Biological Sciences

Engineering Biophysics

Botany

Geology

Chemistry

Mathematics

Microbiology

Physiology

Physics

Zoology

A minor in earth science is also offered.

Included in the curriculum of each department are survey courses that provide an introduction to the subject matter of that discipline while fulfilling the General Studies requirements of Southern Illinois University at Carbondale. These courses assist all students to develop an understanding and appreciation of the impact of science on one's daily life. Elementary and advanced courses are provided to prepare students for professional employment or entrance into professional and graduate schools. Graduate training is also provided by each of the science departments leading to the M.S. or Ph.D. degree. The research interests of the faculty are extremely diverse.

Students in the College of Science may prepare for teaching at the secondary level by fulfilling the additional requirements of the College of Education. The Bachelor of Arts or the Bachelor of Science degree is granted to students who fulfill the requirements for graduation as given and the requirements of the departments in which the students declare their majors.

Each department has specific requirements for students to major in the selected field of interest, but the College of Science has some minimum general requirements listed below.

ACADEMIC REQUIREMENTS

None of these general academic requirements may be satisfied by taking the required courses on a Pass/Fail grading basis.

Biological Sciences. Six semester hours in courses offered by the biological sciences departments in the college, with the proviso that this requirement cannot be satisfied in whole or in part by General Studies courses, but may be substituted for the latter in meeting the General Studies requirements.

Foreign Language. The foreign language requirement can be met by one of the following: (a) passing an 8-hour 100-level sequence in one language; (b) by earning 8 hours of 100-level credit in one language by proficiency examination; or (c) completing three years of one language in high school with no grade lower than C. Tests administered during advisement of new students will determine whether proficiency credit is allowable.

A student whose native language is not English may use the native language to satisfy part or all of the science foreign language requirement at Southern Illinois University at Carbondale. If the language is presently taught at Southern Illinois University at Carbondale, academic credit may be earned. If the language is not presently taught at Southern Illinois University at Carbondale, no credit is given, but partial or full satisfaction of the science foreign language requirement may be granted if the student's major department so recommends. A student whose native language is English but who has learned another language not taught at Southern Illinois University at Carbondale may qualify without credit for partial or full satisfaction of the science foreign language requirement under certain circumstances, including formal recommendation by the student's major department and availability of an examiner and examination materials within the Department of Foreign Languages and Literatures. For information, the student should consult the College of Science advisement center.

Mathematics. The mathematics requirement can be met by (a) passing Mathematics 110a, b or 111 or its equivalent or Mathematics 140, or (b) completing three years of high school mathematics with no grade lower than C and achieving a score on the University's Mathematics Placement Test which allows the student to enroll directly in Mathematics 150.

Physical Sciences. Six semester hours in courses offered by the physical science departments of the college, with the proviso that this requirement cannot be

satisfied in whole or in part by General Studies courses, but may be substituted for the latter in meeting the General Studies requirements.

General Requirements. At least 40 hours of the student's 120 hours for graduation must be at the 300 or 400 level. The total may include transfer credit for courses judged by the department involved to be equivalent to its upper division courses. For transfer students submitting only the last year in residence, at least 24 of these must be at the 300 or 400 level.

PREPROFESSIONAL COURSES

A student planning a professional career in any of the following fields should register in the College of Science immediately: dentistry, medical technology, medicine, pharmacy, veterinary science. Preprofessional students should refer to the baccalaureate degree section in this chapter.

School of Technical Careers

ARDEN L. PRATT, *Dean*

The School of Technical Careers is a unit unique to Southern Illinois University at Carbondale among institutions of higher learning. It was created in 1973 to offer a bold new Bachelor of Science degree program tailored for occupationally-oriented students as well as associate degree career and technical programs formerly conducted by the Vocational-Technical Institute.

The educational objectives of the school include:

1. Associate degree programs structured for entry of new students or free flow of students from other institutions or from within other units of the University;
2. Post- or extra-associate offerings in occupational areas related to these programs; and
3. Baccalaureate programs for the student whose career goals are not met by existing or traditional college programs.

Associate degree programs are offered in four general areas: allied health and public services, applied technologies, aviation technologies, and graphic communications.

On the baccalaureate level, the School of Technical Careers has only one Bachelor of Science program, but requirements for that program are as varied as the number of students enrolled because each has an individually tailored course of study. Each student must meet University requirements but, within that framework, is free to build, in consultation with advisers, a program that suits exactly the particular career goals chosen.

Qualified candidates for the Capstone Program are accepted into the baccalaureate program. The Capstone Program is described earlier in this chapter.

Currently, the School of Technical Careers offers majors leading to the Associate in Art or Associate in Applied Science degrees. These are:

Allied Health Career Specialties	Electronic Data Processing
Architectural Technology	Electronics Technology
Automotive Technology	Law Enforcement
Aviation Technology	Mortuary Science and Funeral
Avionics Technology	Service
Commercial Graphics—Design	Nursing
Commercial Graphics—Production	Photographic and Audio-Visual
Construction Technology—Building	Technology
Construction Technology—Civil	Physical Therapist Assistant
Correctional Services	Secretarial and Office Specialties
Dental Hygiene	Tool and Manufacturing Technology
Dental Laboratory Technology	(Numerical Control)

A number of these majors offer third year post-associate specializations to provide the student who holds the associate degree with additional competencies.

Requirements for associate degree programs are listed in Chapter 4 of the Undergraduate Catalog.

Requirements for the baccalaureate program also are discussed in Chapter 4, but since these differ completely among individual students, persons interested should contact the baccalaureate degree adviser in the School of Technical Careers.

Programs in allied health career specialties, dental hygiene, dental laboratory technology, electronics technology, mortuary science and funeral service, secretarial and office specialties, nursing, and the baccalaureate studies division are housed in a new three-story structure near the Arena. Occupied during the 1978-1979 school year, it is the first of two buildings planned to fit the specific laboratory and clinical facilities needs of the School of Technical Careers. Aviation programs are permanently located at the Southern Illinois Airport; other programs are housed in temporary facilities on the Carbondale campus and at the former Vocational-Technical Institute campus near Carterville.

Information on the school, its programs, and course offerings is available through the office of the dean, School of Technical Careers, Carbondale.



4

Undergraduate Curricula and Courses

This chapter contains information about the undergraduate curricula and courses offered by Southern Illinois University at Carbondale. The course descriptions for undergraduate courses are included, but those courses offered for graduate students list only the credit hours and title of the course. The descriptions of graduate level courses are included in the Graduate Catalog. Chapter 1 of this bulletin includes a listing of the undergraduate majors and minors offered. Those majors and minors are included in this chapter with a description of the requirements for their completion. This chapter is arranged in alphabetic order.

Abbreviations Used in this Chapter

Specific courses are identified by three-digit numerals plus, in some cases, a single letter. The first numeral of the three indicates the level of that course. A letter following the three numerals may indicate a *part* of a course (where *a* means first part, *b* means second part, etc.) or may identify the topics or subject areas specified in courses such as readings or special problems. A numeral or numerals separated from the identification number by a dash indicates the number of hours of credit received in the course. For example, Mathematics 110-5 (3,2) indicates a first-level, two-part course of 5 hours in the Department of Mathematics. The two parts of the course may be referred to as Mathematics 110a, b.

The five areas of General Studies are referred to as GSA, GSB, GSC, GSD and GSE. The three-digit numerals following these abbreviations function similarly to those noted above.

In the areas of this chapter which describe course requirements for programs, numerals in parentheses in columns of figures pertain to semester hours which satisfy more than one requirement. They are in parentheses to avoid their being added to the total of the column, which would be a duplication of hours required. For example, under food and nutrition, GSA 115 and 209 satisfy part of the General Studies requirements and contribute 6 hours toward the 45 hours required. The 6 hours is also required for the major in food and nutrition, but does not contribute to the printed total of 53-54 hours.

Course Descriptions

The first entry for each course is a three digit numeral plus, in some cases, a single letter which together with the subject area, serves to identify the course. The first digit indicates that the course is for freshmen, sophomores, juniors, seniors, and graduate students only, depending on whether the digit is 1,2,3,4, or 5 respectively. If the first digit is 0, the course is not properly in the above categories.

Following the identification number are a dash and another number, which indicates credit allowed for the course. The maximum credit may be variable, such as Accounting 390-1 to 4. Variable credit courses which have a number of

credit hours per semester or per topic which is limited, have those limits in parentheses following the total maximum hours of credit. An example of such a course is Administration of Justice 492-2 to 6 (2 to 3 per semester). Where courses are formally divided into parts, such as History 330-6 (3,3), the two or more numerals separated by commas in parentheses indicate the credit allowed for each part of the course.

Next is the title, followed by description of the course. If certain requirements must be satisfied before enrollment in a course, they are listed as prerequisites. If a course is a part of the undergraduate pass/fail system, it is so indicated by the term "Elective Pass/Fail" or "Mandatory Pass/Fail."

Not all of the courses described here are offered every semester or even every year. To determine when and where a course is to be offered, consult the schedule of classes obtainable from University Graphics, Southern Illinois University, Carbondale, Illinois 62901. When requesting a schedule, please specify *semester*.

General Studies Courses

MAN'S PHYSICAL ENVIRONMENT AND BIOLOGICAL INHERITANCE (GSA)

Courses

101-3 Conceptual Insights Into Modern Communication Systems: From Hi-Fi Sound to Laser Beams. The basic laws of nature will be presented in order to understand the functioning of modern communications such as high fidelity sound, televisions, satellites, and laser beams. Strong emphasis on consumer education in the field of home entertainment will be developed in both the lectures and labs.

106-3 Chemistry for Non-Science Majors. Selected discussions of inorganic, organic and biological chemistry and their relationship to our standard of living and quality of our health and environment. Three lectures with one voluntary help session per week.

107-1 Chemistry Laboratory for Non-Science Majors. Techniques of preparation, purification, measurement, and study of elements and compounds that are important in modern living. One three-hour laboratory per week.

110-3 Earth Science. Earth and its major domains with Earth's substances and processes emphasized. Lecture, laboratory. Laboratory manual \$3.00. Elective Pass/Fail.

115-3 Biology. For students with a weak biology background or for students who are non-biology majors but have an interest in gaining general knowledge of our biological inheritance. An introduction to the evolutionary development of our physical and biological environment, to the biological problems and processes of a model living organism, and to the role of biological research in the world of the future. Lecture-laboratory. Laboratory manual \$4. Elective Pass/Fail.

125-3 Systems Nature of Man's World. (Same as GSB 125.) Introduction to the elements of the systems view of the world. The impact of the systems reality on modern man's life and its simplifying power in science will be stressed.

202-3 Space Science—Astronomy. The solar system, our galaxy, and the universe beyond. Fundamental concepts of the physical sciences as applied in astronomy to our space environment. Lectures will be supplemented by demonstrations and by occasional hours of individual or supervised astronomical observations. Not open to students who have had Physics 302 or GSA 102B. Purchase of exercise sheets under \$1.00. Elective Pass/Fail.

208-1 Laboratory Experiences in Physiology. Laboratory course to be taken concurrently with GSA 209. Provides experiences with small animal experimentation and measurements made on the human subject. One two-hour laboratory per week. Prerequisite: concurrent enrollment in GSA 209.

209-3 Principles of Physiology. A comprehensive introductory analysis of the functional machinery of the living body, with emphasis on human physiology. Three lecture hours per week. Not open to students who have taken Physiology 210. Prerequisite: a background in biological science recommended. Elective Pass/Fail.

211-3 Geology of the National Parks. A study of the geologic histories of selected national parks and national monuments. Lectures relate the natural scenic features to geologic processes that have occurred in forming the scenic features. Elective Pass/Fail.

220-3 Survival of Man. (Same as GSB 220.) Topics discussed include the interrelated technological and sociological aspects of the environmental problems concerned with population, food, ecology, water and solid waste. Emphasis is placed on understanding the total context in which environmental problems must be considered. GSA/B 220 and GSA/B/C

221 may be taken independently; if both 220 and 221 are taken, only three hours may be counted in a given area of General Studies, but three hours may be counted for the three additional hours required for areas A, B, and/or C.

221-3 Survival of Man. (Same as GSB 221 and GSC 221.) Topics discussed include the interrelated ethnological, technological, sociological, moral and ethical aspects of the environmental problems concerned with technology, air pollution, urbanization, natural resource utilization, agriculture and aesthetics. Emphasis is placed on understanding the total context in which environmental problems must be considered. GSA/B 220 and GSA/B/C 221 may be taken independently; if both 220 and 221 are taken, only three hours may be counted in a given area of General Studies, but three hours may be counted for the three additional hours required for areas A, B, and/or C.

230-3 Energy and the Future. Lectures on power, energy, and related concepts. Review of current energy resources and use patterns and outlook for changing patterns including overview of new energy conversion technology and environmental impact of energy use. Look at energy from global viewpoint to identify future limits on energy usage. Voluntary class discussions and student paper presentations.

240-3 Ecology and Man. Fundamental biological and ecological processes important in the individual, population, and community life of organisms including man are discussed in the context of ecological systems. Lectures are supplemented by one hour of laboratory, field work, or other student options. Elective Pass/Fail.

302-3 Psychobiology. A survey of the role of biological processes in the behavior of humans and other species. Topics covered include structure and function of the nervous system, behavioral endocrinology, psychopharmacology, sensorimotor functions, sleep and waking, motivation, emotions, reinforcement, psychopathology, learning and memory.

303-3 Ferns, Trees, and Wild Flowers. Field identification and natural history of local plants. One lecture and four hours of field work per week.

312-3 Conservation of Natural Resources. A study of people's use and misuse of natural environment emphasizing the ecological perspective.

313-2 Evolution. Principles and processes of the evolution of living things including people.

314-2 Human Heredity. Principles of heredity as related to humans, with emphasis on the effects of environment on the biological inheritance.

321-3 Fossils: Keys to Ancient Life and Environments. A knowledge of the origin, development, and distribution of Ancient Life, environments and relations of life to environments is gained through the study of fossils and associated rocks. Examples of ancient environments, their fluctuations and changes are compared with fluctuations and changes in modern environments. Elective Pass/Fail.

322-3 Earth's Mineral Resources. Acquaints the nonprofessional with the origin, distribution, character, and value of the common minerals and rocks in the Earth's crust. Purchase of lab manual and student-financed field trips. Elective Pass/Fail.

323-3 Introduction to Gems and Gem Materials. Geologic environments, aesthetic considerations, and economic values of different gems are discussed in lecture. Identifications, evaluation, and preparation of gemstones will be presented in laboratory. Additional charge for materials: \$10.00. Elective Pass/Fail.

324-3 Water: Our Friend and Enemy. A practical treatment of the relationship between water, surface processes and daily living. Case histories demonstrate why water related disasters occur, including flooding, landslides, beach erosion and subsidence. Water supply and its legal and economic problems for individual property owners and communities are examined. Elective Pass/Fail.

330-3 Weather. Introduction to constituents and processes in the Earth's atmospheric environment; major atmospheric variables; major features, characteristics of the atmosphere; elemental principles of forecasting; meteorological causes of atmospheric pollution. Interaction of processes and variables to define climate for various regions of the world. Charges not to exceed \$5 for field trips, \$2 for supplies. Elective Pass/Fail.

356-3 Creativity in Science and Technology. Evolution from need to knowledge, and from analysis to synthesis. The social dimension of science and its role in the advancement of humanity. Evolution of scientific thought and technology.

361-3 Acoustics of Music. A survey of the production, transmission, and reception of sounds with emphasis on musical sounds including the operation and characteristics of all major instruments including the voice. Related areas include respiration; the hearing process; binaural, stereophonic, and quadraphonic sound; disc, tape, and optical recording; sound reproduction systems; architectural acoustics including design, construction, and materials; utilization of sound in other disciplines such as business, agriculture, medicine, the animal kingdom; acoustical laboratory equipment and research procedures; environmental sound pollution. Many guest specialists appear. A term paper or project of the student's choice dealing with sound provides for more intensive study in the primary areas of interest. No special training in music, science, or mathematics is required. Cost of textbook is approximately \$3.

399a-12 Folk Arts, Crafts, and Uses of the Environment—Expressions of Living in the Southern Appalachian Region. (Same as GSB and GSC 399a.) A broad team-taught inter-

disciplinary learning experience designed to place students in direct contact with a unique region and its people in order to expand the student's capacity to make effective decisions in society through the study of the functioning of a different society interacting with its environment. Summer only.

MAN'S SOCIAL INHERITANCE AND SOCIAL RESPONSIBILITIES (GSB)

Courses

103-3 Geography of the Human Environment. Provides students with basic information on the nature and problems associated with the major environments of the world. The geographical distribution of climate and physiographic elements of world environments are described. The problems of economic development, environmental change, and the relation of people to the land in the major regions of the world are investigated. Purchase of materials in the range of \$4.00.

104-3 The Human Experience: Anthropology. The main ideas of the anthropological approach to the study of humans. Anthropology's relevance to the student in today's world shown through examples drawn from the subject matter of the field.

105-3 The Contemporary World. An examination of the fundamental problems of the contemporary era as seen in historical perspective. No credit toward the major in history. Purchase of books and materials in the range of \$7.00. Elective Pass/Fail.

109-3 Introduction to Black America. (Same as GSC 109.) A survey course designed to expose the student to various aspects of the Black experience. Aspects included are history, literature, theology, the arts, etc. The textbook is a collection of essays designed for use especially in this course and is supplemented by guest lecturers and audiovisual materials.

111-3 Economic Development of Western Civilization. Emphasizes the underlying trends and forces that have led to the present economic structure of the developed world. The commercial and industrial revolution as well as the rise of the market system and capitalism are treated in their historical context. Elective Pass/Fail.

112-3 Comparative Economic Systems. Introductory analysis of capitalism, socialism, communism as social systems. Each system is examined in terms of its economic, political and social organization. Elective Pass/Fail.

125-3 Systems Nature of Man's World. (See GSA 125.)

135-3 The Third World: The African Model. A study of the Third World through a focus on Africa as a model; emphasis on the cultural traditions, the impact of the West, and the problems facing Third World nations today.

160-2 Mass Communication in Society. Acquaints non-journalism students with the interrelationships between the mass media and other aspects of American society, examines the operation and potential development of the mass media, as well as the important roles of the mass media in our society.

202-3 Introduction to Psychology. An examination of the variables related to the origins and modifications of human behavior using the viewpoints and techniques of contemporary psychology. Purchase of syllabus (about \$3.00 to \$3.50).

203-4 The Sociological Perspective. An examination of the variables related to the acquisition of human behavior and interaction in social institutions. Elective Pass/Fail.

206-3 Applied Child Development. An interdisciplinary study of the changes that take place in a child from birth to maturity. Purchase of book in the range of \$5.00.

207-3 Contemporary Political Ideologies. A survey of recent political ideologies: Nationalism, Socialism, Communism, Liberal Democracy, Conservatism, Christian Socialism, Fascism, Contemporary Liberation Movements. Elective Pass/Fail.

211-3 Contemporary Economics. A study of the basic economic problems confronting America and the world today. This course gives students a broad latitude in the structuring of topics to be discussed. Problems are discussed from the point of view of public policy as well as theory. Elective Pass/Fail.

212-4 Introduction to American Government and Politics. An introduction to American government including the cultural context, structure and functions of the national political system, and some attention to subnational politics. Elective Pass/Fail.

220-3 Survival of Man. (See GSA 220.)

221-3 Survival of Man. (See GSA 221.)

231-2 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.

250-3 Introduction to Comparative Government and Politics. A general introduction to the comparative study of political systems with focus on selected contemporary states. Elective Pass/Fail.

255-3 Regional Geography of the United States. A survey of environmental, economic, and historical factors and problems in the development of the United States and its regions. Some attention given to the United States in world perspective.

- 270-3 Introduction to International Relations.** A study of world politics. The cause of international conflict and conditions of peace. Elective Pass/Fail.
- 299d-2 The High Price of Food.** Understanding various forces or components affecting food prices; examination of how changes in these components affect quantity and quality of food; discussion of rational consumer action in matters pertaining to food prices. Elective Pass/Fail.
- 299e-3 Values, Systems, and Society.** (Same as GSC 299e.) Values and ethics in evolutionary systems and cultural perspectives will be critically analyzed. A review of the basic problems of survival and further evolution of civilization.
- 300-3 Origins of Modern America, 1492-1877.** A general survey of the political, social, and economic development of the United States from 1492 to 1877. Purchase of books and materials in the range of \$7.00. Elective Pass/Fail.
- 301-3 Modern America from 1877 to the Present.** A general survey of the political, social, and economic development of the United States from 1877 to the present. Purchase of books and materials in the range of \$7.00. Elective Pass/Fail.
- 305-3 Personal Finance.** An introduction to the problems of personal financial asset management, including income and expense budgeting. Emphasis also placed on consumer credit, insurance, investments, home ownership and taxation. Not open to students with majors in the College of Business and Administration. Elective Pass/Fail.
- 310-1 to 6 (1 per semester) Current Events.** Contemporary events in the modern world and their treatment in the newspaper and periodical press. May not be counted toward the journalism major. May be repeated to a maximum of six hours, but only three hours may apply to GSB requirements. Students are required to read Newsweek magazine each week. A reduced-price subscription with special delivery arrangement is usually arranged.
- 321-3 Socialization of the Individual.** A study of the social process in which individual native capacities are shaped and developed through interaction with social groups from childhood to old age. Elective Pass/Fail.
- 325-3 Race and Minority Relations.** An analytical study of the status of racial, ethnic, and religious minorities in the United States. Elective Pass/Fail.
- 330-3 Language and Behavior.** A wide-ranging examination of the implications of language study for people's view of themselves and their place in the world. Topics deal with the pervasiveness of verbal and non-verbal language in various aspects of modern society. Elective Pass/Fail.
- 341-3 Marriage as a Social Institution.** A sociological examination of interpersonal relationships in contemporary American dating, courtship, and marriage, with an historical and cross-cultural perspective. Elective Pass/Fail.
- 346-3 Consumer Choice and Behavior.** Analysis and overview of consumer behavior, historical as well as present day, with identification of theories related to the choices.
- 378-3 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. Elective Pass/Fail.
- 399a-12 Folk Arts, Crafts, and Uses of the Environment—Expressions of Living in the Southern Appalachian Region.** (See GSA 399a.)

MAN'S INSIGHTS AND APPRECIATIONS (GSC)

Courses

- 100-2 Music Understanding.** The aural perception of musical sound events, relationships, and structures. Helps the student to become a more sensitive and perceptive listener. Listening assignments include a wide variety of styles and kinds of music. Not historically oriented. Elective Pass/Fail.
- 101-3 Introduction to Art.** A basic introduction to the theory, meaning, and creation of visual art with emphasis upon interdisciplinary concerns. Two hours lecture and two hours studio per week. Possible incidental fee maximum \$5.00.
- 102-3 Problems in Philosophy.** Introductory survey of some main philosophic problems concerning people, nature, society, and God, as discussed by major Western thinkers. Possible supplementary paperback expense not to exceed \$5. Elective Pass/Fail.
- 104-3 Moral Decision.** 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. Not open to students who have had GSC 102. Elective Pass/Fail.
- 107-2 Man, Leisure, and Recreation.** Introduction to the meaning, challenges, and problems of leisure. Analyzes leisure's relation to work, education, religion, recreation, and the totality of life. An attempt is made to help students develop insights, values, and attitudes for self-realization and individual fulfillment in leisure pursuits. For non-recreation majors only.
- 109-3 Introduction to Black America.** (See GSB 109.)
- 200-3 Oral Interpretation of Literature.** Beginning study of the oral interpretation of literature: appreciation, analysis, performance. Emphasis is upon literature as human experience.

rience and upon the creative role of the reader in engaging the literary text. Incidental costs not to exceed \$2.00. Elective Pass/Fail.

201-3 Introduction to Drama. Students will read and discuss plays of different types and periods. Prerequisite: GSD 120; GSD 101 and GSD 117, 118, or 119, or equivalent. Elective Pass/Fail.

202-3 Introduction to Poetry. Students will read and discuss poems of different types and periods. Prerequisite: GSD 120; GSD 101 and GSD 117, 118, or 119, or equivalent. Elective Pass/Fail.

203-3 Introduction to Theatre. A study of theatre as an art form; its historical development; the relationship with the theatre audience; and understanding of the functions of theatre artists; theatre as a source of enjoyment, perception, and communication.

204-3 Meaning in the Visual Arts. Designed to provide students a broad understanding of the history of art and its relation and implications to contemporary culture. Emphasis is placed on the relation of art to all disciplines, historical and contemporary.

205-3 Innovation for the Contemporary Environment. A variety of factors affecting creative individual and small group problem solving and its relevance to the contemporary environment are explored in theory and in practice. Purchase of book \$4.50. Elective Pass/Fail.

206-3 Music as a Creative Experience. Students experiment with various ways of creating musical sound structures, and engage in active, critical listening, as a means to a better understanding of the nature of musical experience. Not historically oriented. Elective Pass/Fail.

207-2 Aesthetics. The structure and importance of the beautiful in nature, society, personality, and the arts. Elective Pass/Fail.

208-3 Elementary Logic. Study of the basic forms of reasoning, with emphasis on the evaluation of arguments encountered in every-day life. Elective Pass/Fail.

210-3 Introduction to Fiction. Students will read and discuss a variety of American and European short stories and novels. Prerequisite: GSD 120; GSD 101 and GSD 117, 118, or 119, or equivalent. Elective Pass/Fail.

212-3 Oriental Humanities. The literature, music, drama, visual art, and definitive cultural motifs of Asia, with emphasis on China and Japan. Elective Pass/Fail.

214-3 Oriental Philosophies. Examination of world outlooks and life outlooks of major Oriental philosophic traditions: Hinduism, Buddhism, Confucianism, and Taoism. Elective Pass/Fail.

216-3 Types of Eastern Religion. An introductory study of selected African and Eastern religious traditions, emphasizing their meanings for their respective participants, their socio-political contexts, and their contributions to the religious history of civilization. Not open to students who have had GSC 215. Elective Pass/Fail.

217-3 Types of Western Religion. Introductory study of the basic phenomena of religion among American Indians, the ancient Greeks, Jews, Christians, and Moslems, emphasizing socio-political-aesthetic contexts and contemporary relevance. Not open to students who have had GSC 215. Elective Pass/Fail.

218-3 The Epic of Humanity. A world history of human civilizations to the present. Emphasis on the changes and evolutions of societies and cultures leading up to the emerging global village. Prerequisite: sophomore standing.

221-3 Survival of Man. (See GSA 221.)

231-3 Greek Civilization. Women, Men, World: A study of ancient Greeks, their beliefs, values, emotions, literature, history, art, philosophy, against a background of the world they inhabited; i.e., their archaeology and geography. Elective Pass/Fail.

232-3 Roman Civilization. An introduction to the life and culture of ancient Rome by representative readings of Roman drama, history, epic, satire, lyric poetry, epistles, philosophy, against a background of political, social, economic, artistic developments. Elective Pass/Fail.

293-3 to 9 (3 per topic) Studies in Literature. The subjects of this course vary from section to section and from semester to semester. Students should consult the schedule of classes to learn the specific topics for each section each semester. Prerequisite: GSD 120; or 101 and GSD 117, 118, or 119, or equivalent. Elective Pass/Fail.

299e-3 Values, Systems and Society. (See GSB 299e.)

317-3 Recent American Literature. Reading and discussion of American literature since the second World War. Prerequisite: GSD 120; GSD 101 and GSD 117, 118, or 119, or equivalent. Elective Pass/Fail.

325-3 Black American Writers. Poetry, drama, and fiction by Black American writers. Prerequisite: GSD 120; GSD 101 and GSD 117, 118, or 119, or equivalent. Elective Pass/Fail.

330-3 Classical Mythology. An inquiry into the nature of myth and its relevance today while studying selected myths principally of the Greeks and Romans. Elective Pass/Fail.

335-3 The Short Story. Reading and discussion of short stories by American and European authors. Prerequisite: GSD 120; GSD 101 and GSD 117, 118, or 119, or equivalent. Elective Pass/Fail.

349-3 The Cinema. The cinema as a communicative and expressive medium. Study of film

types illustrated by screenings of selected films. Screening fee: \$5.00. Elective Pass/Fail.

363-3 Philosophy of Science. Introductory survey of the nature and significance of scientific method and its applications. Topics include: the role of value judgments in scientific research, the rationality of scientific method, the relation of science to common sense, religious institutions, and technology. Elective Pass/Fail.

365-3 Shakespeare. Reading and discussion of the major plays. Prerequisite: GSD 120; GSD 101 and GSD 117, 118, or 119, or equivalent. Elective Pass/Fail.

371-2 Evolution of Jazz. Stylistic characteristics of jazz at various stages of its evolution. Societies and cultures from which it derived. Orientation is historical, sociological, and stylistic. Elective Pass/Fail.

390-3 Contemporary American Thought. Introductory survey of the main currents of contemporary philosophy in America and their relevance for legal, political, and educational developments. Elective Pass/Fail.

393-3 to 6 Studies in Literature. The subjects of this course vary from section to section and from semester to semester. Students should consult the schedule of classes to learn the specific topics for each section each semester. Prerequisite: GSD 120; GSD 101 and GSD 117, 118, or 119, or equivalent. Elective Pass/Fail.

399a-12 Folk Arts, Crafts, and Uses of the Environment—Expressions of Living in the Southern Appalachian Region. (See GSA 399a.)

ORGANIZATION AND COMMUNICATION OF IDEAS (GSD)

Courses

101-3 English Composition. Basic principles of sentence structure, paragraphing, and organization. Purchase of handbook in the range of \$4.00 to \$5.00.

104-2 Grammar in Language. Description and explanation of the major grammatical categories and structures found in languages, including English. Consideration of the role of grammar in such topics as the nature, origin, acquisition, and variation of language. Course is designed to give students basic concepts of grammar and show the relationship of grammar to language.

106-0 Elementary Algebra. For students with less than one year of high school algebra, this course serves as the prerequisite for the following courses: GSD 107, 112, 113, and Math 116.

107-4 Intermediate Algebra. Properties and operations of the number system. Elementary operations with polynomials and factoring. Elementary operations with algebraic fractions. Exponents, roots, and radicals. First and second degree equations and inequalities. Functions and graphing. Systems of equations and inequalities. Exponential and logarithmic functions. Prerequisite: one year of high school algebra or GSD 106.

110-2 Economic and Business Statistics. The use and general applicability of statistical techniques and thinking in modern life, with emphasis on business and economic applications, through understanding and using the basic elementary statistical methods. Credit cannot be received for both GSD 110 and GSD 112. Elective Pass/Fail.

112-2 Basic Concepts of Statistics. Illustrates basic concepts of statistical theory. Emphasis on concepts rather than computational techniques. Main topics include data reduction, probability sampling, statistical estimation and decision procedures. Credit cannot be received for both GSD 110 and GSD 112. Prerequisite: one year of high school algebra or GSD 106.

113-2 Introduction to Mathematics. The development of some basic concepts of mathematics and their significance for society. Prerequisite: one year of high school algebra or GSD 106.

117-2 Expository Writing. Practice in the writing of the composition, with emphasis on the logic of organization, demonstration, and expression. Prerequisite: GSD 120, GSD 101 or equivalent.

118-2 Technical Report Writing. An introductory course in technical report presentation both written and oral, in library research methods, and in elementary business correspondence. Prerequisite: GSD 120, GSD 101 or equivalent.

119-2 Creative Writing. Practice in the writing of narrative and poetry. Prerequisite GSD 120, GSD 101 or equivalent.

120-3 Freshman Honors Composition. Some important works in the history of thought by writers such as Plato, Dostoevsky, Freud, and Marx will be read and discussed. The intellectual problems which they raise will become the subjects for essays in which students are required to show mastery of various methods of organizing exposition. This course fulfills the University freshman composition requirement. Prerequisite: top ten percent of the English section of ACT or the qualifying score on the CLEP test.

152-2 Interpersonal Communication. Designed to enable students to better understand and exercise the process of thought formation and expression. Includes both theoretical content and performance sessions which are relevant to the interpersonal communication context.

153-3 Public Speaking. Principles of communication as applied to public settings (speaker/audience). Developing research and speaking skills in the preparation and presentation of various types of messages.

199a-1 Library as an Information Source. Designed to expose undergraduate students to the basic concepts and structures of the library. This would enable students to use their knowledge in completing reading and term paper assignments as well as in gaining confidence for independent work in the library.

HUMAN HEALTH AND WELL-BEING (GSE)

Courses

Courses numbered 100-106 are basic or beginning level courses; those numbered 114 are intermediate level. The instructor may have the right to evaluate the skill level of the student at the beginning of the course and reassign the student to the proper level or another activity. Most GSE physical education classes will be offered on a variable credit of one or two semester hours; one-hour courses meet two hours per week or equivalent; two-hour courses meet four hours per week or equivalent. All GSE physical education classes are available Elective Pass/Fail. Students will not be allowed to change from a one-hour to a two-hour section or vice versa after the university drop and add period. Students may not earn one semester hour for attending one-half of the sessions scheduled for a two semester hour course.

Appropriate clothing, as determined by instructor, is required for each class.

100-1 to 4 (1 credit each time) Restricted Physical Education. For physically handicapped students as recommended by Health Service. Elective Pass/Fail.

101-1 to 24 (1 or 2 credits per activity) Aquatics. (a) Beginning Swimming. (b) Intermediate Swimming. Prerequisite: 101a or equivalent. (c) Diving. (d) Skin Diving. Prerequisite: consent of instructor. (e) Scuba Diving. Prerequisite: 101d, special sections fee for field trips. (f) Lifesaving. Prerequisite: pass swim test first day of class, 500 yards, tread water. (g) Canoeing. Prerequisite: pass swim test first day of class, 15 minutes while clothed. (h) Synchronized Swimming. Prerequisite: 101b or equivalent. (i) Aquacises. (j) Water Sports. (k) Kayaking. (l) Sailing. Elective Pass/Fail.

102-1 to 10 (1 or 2 credits per activity) Fitness. (a) Physical Fitness. (b) Relaxation. Prerequisite: consent of instructor. (c) Weight Control. Prerequisite: consent of instructor. (d) Weight Training. (e) Yoga. Prerequisite: consent of instructor. Elective Pass/Fail.

103-1 to 16 (1 or 2 credits per activity) Dance. (a) Square. (b) Folk. (c) Traditional Social. (d) Beginning Contemporary. (e) Intermediate Contemporary. Prerequisite: 103d or equivalent. (f) Ballet. (g) Tap. (h) Current Social. Elective Pass/Fail.

104-1 to 34 (1 or 2 credits per activity) Individual and Dual Activities. (a) Archery. (b) Badminton. (c) Bowling. Lane fee and shoe rental required. (d) Cross Country. (e) Cycling. (f) Fencing. (g) Fly and Bait Casting. Students furnish own rod and reel. (h) Golf. (i) Gymnastics Apparatus. (j) Handball. Glove and ball required. (k) Horseback Riding. Stable fee, own transportation required. (l) Orienteering. (m) Racquetball. Racquet and ball required. (n) Tennis. (o) Track and Field. (p) Stunts and Tumbling. (q) Wrestling. Elective Pass/Fail.

105-1 to 12 (1 or 2 credits per activity) Team Activities. (a) Basketball (Women or Men). (b) Flag Football (Women or Men). (c) Floor Hockey (Women or Men). (d) Soccer (Women or Men or Co-ed). (e) Softball (Women or Men or Co-ed). (f) Volleyball (Women or Men or Co-ed). Elective Pass/Fail.

106-1 to 6 (1 or 2 credits per activity) Martial Arts. (a) Self Defense. (b) Judo. Judo uniform required. (c) Karate. Karate uniform required. Elective Pass/Fail.

114-1 to 4 (1 or 2 per activity) Intermediate Individual and Dual Activity. (c) Bowling. Prerequisite: 104c or equivalent and consent of instructor. (f) Fencing. Prerequisite: 104f or equivalent and consent of instructor. (n) Tennis. Prerequisite: 104n or equivalent and consent of instructor.

201-2 Healthful Living. Personal and community health. Designed to meet general health education needs and to develop wholesome health attitudes and practices in college students. Elective Pass/Fail.

236-2 Nutritional Ecology of Man. Interaction between people and their environment. Emphasis on nutritional implications of our social, biological, and physical surroundings. Purchase of supplies ranging from \$4.00 to \$5.00. Elective Pass/Fail.

240-2 Human Relations Between the Sexes. Explores concepts and issues including development of sexuality, selection of a life partner, premarital sex experience, modern morality

and the development of sexual mores, marriage, family planning, reproduction, varieties of sexual expression, and sex education. Elective Pass/Fail.

*Physical education equipment for men includes the following items: T-shirt, shorts, supporter, socks, gym shoes, lock, towel.

Accountancy (Department)

Accounting is the process of identifying, measuring, and communicating economic information to permit informed judgments and decisions by users of the information. Such information is required and used by parties external to the business and by management within the business.

The curriculum is designed to prepare a student to assume a professional position as a certified public accountant or to join the management team in industry or government. The curriculum provides a basic understanding of all phases of accounting and permits the student to elect courses to prepare for a particular area of interest.

The various state laws prescribe the requirements for certification as a certified public accountant. In general, the accounting curriculum prepares the student educationally to meet these requirements.

Accounting majors, in addition to meeting the College of Business and Administration's graduation requirement of 2.00 grade point average in business-prefix courses taken at Southern Illinois University at Carbondale, must also achieve a 2.00 grade point average in accounting-prefix courses taken at Southern Illinois University at Carbondale.

Accounting (Major, Courses)

Bachelor of Science Degree, College of Business and Administration

<i>General Studies Requirements</i>	45-46
<i>Professional Business Core (see page 66)²</i>	47-48
<i>Requirements for Major in Accounting</i>	(6) ¹ + 21
Accounting 321, 322, 341, 365, 486	15
Accounting 432, 442, 453, (choose at least one)	3
Accounting 405, 419, 475, 477 (choose one unless two are chosen above)	3
Economics 315 or Finance 325	(3) ¹
Finance 372	(3) ¹
<i>Electives</i>	5-7
<i>Total</i>	120

¹Hours shown in parentheses are already included in total hours shown for professional business core.
²Accounting majors should substitute the combination of Finance 271 and 372 for Finance 370.

Courses

- 110-3 Applied Accounting for Technical Careers.** An individualized program of instruction designed to acquaint students enrolled in the various technical programs of the School of Technical Careers with accounting applications and procedures common to their area of specialization. Students will be able to demonstrate a basic working knowledge of the standard documents and procedures related to their specific area through the use of business working papers and practice set. Open only to students in the School of Technical Careers. Lecture 2 hours. Laboratory 2 hours.
- 120-3 Applied Accounting for Technical Careers.** A continuation of Accounting 110 for selected curriculum areas. Emphasis in this course will be the continued development of knowledge and skills typically involved in small business management, ownership, partner-

ships, and cooperations. New areas of study will include automated data processing, cost estimating, and payroll tax procedures through the use of business working papers and a practice set. Lecture 3 hours. Prerequisite: 110.

210-3 Accounting Principles and Control. Prevalent accounting principles and practices employed in business organizations. Accumulation of data and usefulness of reports are considered. Tax implications of business studied. Not open to students with a major in the College of Business and Administration. No credit given for 210 if credit is claimed for 221. Elective Pass/Fail.

219-3 Business Information Laboratory. Laboratory exercises in the uses of computers to solve business problems. Extensive use will be made of on-line real-time terminals as well as batch processing techniques. Construction, manipulation, and maintenance of data files will be stressed. Introduction to manufacturer supplied business and statistics software packages. Prerequisite: 222 or concurrent enrollment, and completion of General Studies mathematics requirement.

221-3 Accounting I. Basic concepts, principles, and techniques used in the generation of accounting data for financial statement preparation and interpretation. Asset liability and owners' equity valuation and their relationship to income determination. No credit given for 221 if credit is claimed for 210. Prerequisite: sophomore standing.

222-3 Accounting II. A continuation of Accounting I with emphasis on the analysis and interpretation of accounting reports including ratios and funds flow analysis. The use of accounting information for managerial planning, control, and decision making through budgeting, cost and variance analyses, and responsibility accounting. Prerequisite: 221.

301-3 Management Accounting. Emphasizes the use of accounting information for planning, control, and decision making through budgeting models, cost-volume-profit analysis, responsibility accounting, relevant costing procedures and quantitative techniques. Prerequisite: two semesters of accounting and consent of department.

309-2 Individual Income Tax. Preparation of income tax returns. Federal income tax law as applied to individuals. Not open to those with a major in accounting. Elective Pass/Fail.

311-1 Corporate Federal Income Taxes. A review of corporate income taxes to include not only rates and dollar amounts but also an appreciation of the different tax impacts possible from similar economic transactions. Not open to accounting majors. Prerequisite: 222. Elective Pass/Fail.

319-3 Computers in Accounting. Electronic data processing techniques and their business applications. Includes functions and limitations of EDP hardware and software, batch versus real time processing, use and structure of files, file maintenance, and an introduction to computer languages used in business. Cost to student of handout materials and supplies used in course \$3. Prerequisite: 222 and knowledge of one computer language.

321-3 Intermediate Accounting I. Current accounting principles and procedures relating to elements of financial reporting. Particular emphasis on current and fixed asset valuation. Prerequisite: 222 and junior standing or consent of department.

322-3 Intermediate Accounting II. Continuation of the study of accounting principles and procedures with emphasis on liabilities, corporate capital, and income determination. Preparation and use of special statements; analysis and interpretation of statements. Prerequisite: 321.

341-3 Cost Accounting. Interpretation and managerial implications of material, labor, and overhead for job order, process and standard cost systems, cost-volume-profit relationships, direct costing, and budgeting. Accounting for complex process production flows, joint and by-products, spoilage, and scrap. Responsibility accounting and reporting. Prerequisite: 222 and junior standing or consent of department.

365-3 Introduction to Taxation. Background, principles, and procedures for the determination of taxable income as a basis for federal income tax. Particular attention is given those aspects which are at variance with usual accounting treatment in the determination of net income. Includes practice in the methodology of tax solutions. Prerequisite: 222 and junior standing or consent of department.

390-1 to 4 Independent Study in Accountancy. Independent study of specialized aspects of accountancy not available through regularly scheduled courses. Prerequisite: 322, 341, 365, and consent of department.

405-3 Accounting for Public Organizations. Financial and managerial accounting concepts peculiar to the planning and administration of public and quasi-public organizations, such as governmental units, institutions, and charitable organizations. Includes the conventional budgetary-appropriation process, as well as some of the more recent accounting developments related to public decision making. Prerequisite: 222.

419-3 Accounting Information Systems. Accounting systems design and installation. The study of accounting information systems, including computer-oriented systems, with emphasis on the information and control functions of the management decision-making process. Prerequisite: 322, 341, Computer Science 212.

432-3 Advanced Tax. Study of income tax problems which arise from sole proprietorship, partnership, corporation, estate, and trust types of organization. Brief study of social security, federal and state estate tax and gift tax. Student does research in source materials in arriving at solutions of complicated problems. Prerequisite: 365.

- 442-3 Advanced Cost Accounting.** Managerial decision making; profit planning and control through relevant costing, return on investment and transfer pricing, determination of cost behavior patterns, analysis of variances, capital budgeting, inventory models, probabilities, statistical methods, and operations research. Prerequisite: 341.
- 453-3 Advanced Accounting.** Accounting principles and procedures relating to specialized topics, including partnership equity, installment and consignment sales, fiduciaries, international operations, branches, and business combinations. Prerequisite: 322.
- 475-3 Budgeting and Systems.** A study of the application of mathematics, statistics, and the computer to specific budgetary and accounting problems. Includes concepts, methods, and tools used in accounting system for planning, coordinating, and controlling business activities. Prerequisite: 341, Computer Science 212.
- 477-3 Current Developments in Accounting Theory.** Critical analysis of current developments in accounting theory, especially as reflected in the publications of major accounting associations. Prerequisite: 322.
- 486-3 Auditing.** Standards, objectives, and procedures involved in examining and reporting on financial statements of business organizations. Prerequisite: 322, 341, 365.
- 495-3 Internship.** Supervised work experience in professional accounting. Not for graduate credit. Prerequisite: outstanding record in accounting and recommendation of the departmental committee on internship. Mandatory Pass/Fail.

Administration of Justice (Major, Courses)

The Bachelor of Science degree with a major in administration of justice meets the career objectives of students interested in law enforcement, corrections, juvenile services, and other roles in social and criminal justice.

Four areas of specialization—law enforcement, correctional program services, correctional management, and juvenile justice and delinquency prevention—have been delineated to give a range of choices suitable for most students preparing for careers in a field of criminal justice. The policy, however, is to fit course requirements to the student’s career objectives if none of these specialization are appropriate. In such situations, the student will be required to take the core courses and, under the supervision of the adviser, develop an appropriate battery of courses in lieu of one of the four areas of specialization.

Qualified students may be admitted to the Capstone Program with a major in Administration of Justice. The Capstone Program is explained in Chapter 3.

Field internship placement is an important element in the program and internships are encouraged for qualified students.

Bachelor of Science Degree,
College of Human Resources

ADMINISTRATION OF JUSTICE MAJOR—LAW ENFORCEMENT SPECIALIZATION	
<i>General Studies Requirements</i>	45
<i>Requirements for Major in Administration of Justice</i>	42
Core Requirements: 200, 201, 305, 316, 399	15
Law Enforcement Specialization Requirements: 15 hours	
selected from 301, 302, 303, 304, 403b, 407b.	15
Law Enforcement Specialization Electives: 12 hours	
selected from 202, 403a, 403c, 407a, 415, 492	12
<i>Minor</i>	18
<i>Electives</i>	15
Administration of Justice 390, 395, 490 recommended.	
<hr/>	
<i>Total</i>	120
ADMINISTRATION OF JUSTICE MAJOR—JUVENILE JUSTICE AND DELINQUENCY PREVENTION SPECIALIZATION	
<i>General Studies Requirements</i>	45
<i>Requirements for Major in Administration of Justice</i>	36
Core Requirements: 200, 201, 305, 316, 399	15

Juvenile Justice and Delinquency Prevention Specialization	
Requirements: 15 hours selected from 300, 301, 344, 348, 471, 473, 485a, 485b	
	15
Juvenile Justice and Delinquency Prevention Specialization	
Electives: 6 hours selected from 304, 390, 395, 407a, 415, 470, 472, 490, 492	
	6
Minor	18
Electives	21
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Total	120

ADMINISTRATION OF JUSTICE—CORRECTIONAL PROGRAM SERVICES SPECIALIZATION	
General Studies Requirements	
	45
Requirements for Major in Administration of Justice	
	36
Core Requirements: 200, 201, 305, 316, 399	
	15
Correctional Program Services Specialization	
Requirements: 15 hours selected from 300, 301, 344, 348, 471, 473, 485a, 485b	
	15
Correctional Program Services Specialization	
Electives: 6 hours selected from 390, 395, 407b, 472, 490, 492	
	6
Minor	18
Electives	21
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Total	120

ADMINISTRATION OF JUSTICE MAJOR—CORRECTIONAL MANAGEMENT SPECIALIZATION	
General Studies Requirements	
	45
Requirements for Major in Administration of Justice	
	36
Core Requirements: 200, 201, 305, 316, 399	
	15
Correctional Management Specialization Requirements:	
15 hours selected from 407b, 471, 472, 485a, 485b	
	15
Correctional Management Specialization Electives:	
6 hours selected from 390, 395, 407c, 470, 490, 492	
	6
Minor	18
Electives	21
<hr/>	
Total	120

Not more than three hours of 395 may be counted toward the major.

Minor

A minor in administration of justice consists of 200 and 201 plus any combination of administration of justice courses to reach a total of 18 semester hours.

Courses

- 200-3 Introduction to Criminal Behavior. Multidisciplinary study of the etiology and patterning of offender behavior.
- 201-3 Introduction to Criminal Justice System. Survey of the agencies and processes involved in the administration of criminal justice: The history of English law; the criminal justice process and system, including underlying ideologies, procedures, fundamental legal concepts, and the roles and functions of police, courts, and correctional services.
- 202-3 Introduction to Enforcement Administration. An introduction to the principles of administration and organization of enforcement agencies including police, security, conservation, and investigation. Prerequisite: 201.
- 300-3 Assessment of Offenders. Introduction to the procedures and issues of identifying and evaluating individual differences in offenders and among classes of offenders; analysis of typical diagnostic methods. Prerequisite: 200 and 201 or consent of instructor.
- 301-3 Human Relations in Criminal Justice. Delineation of major interactive patterns

among staff members, between staff and clients, and among clients of probation and parole agencies and correctional agencies; introduction to problems of communication, bureaucracy, and leadership. Prerequisite: 200 and 201 or consent of instructor.

302-3 Law Enforcement Services. An overview of the services provided by law enforcement agencies. Emphasis will be placed on the nature, scope, and functions of various agency work units in their provision of services to prevent crime, detect and apprehend offenders, provide regulatory services, and provide specialized community centered services.

303-3 Behavioral Aspects of Investigation. Principles of behavioral science are applied to the recurrent patterns of criminal investigation as a social and fact-finding process; survey of criminalistics. Prerequisite: 302.

304-3 Law Violation, Law Enforcement, and the Community. Examination of behavioral and social control within the local community; problems raised by social change, assessment of particular issues: traffic control, civil disturbances, vice control, and crime prevention. Prerequisite: 302.

305-3 Criminal Law — Introduction to Procedural Aspects and Police Powers. An introduction to the procedural aspects of criminal law as pertaining to police powers in connection with the laws of arrest, search and seizure, the exclusionary rule, civil liberties, eavesdropping, confessions, and related decision-making factors. Prerequisite: 200 and 201 or consent of instructor.

316-3 Introduction to Criminal Justice Research. A basic introduction to the scientific perspective, relationship of research and theory, research design, data collection, data analysis, reporting of research and program evaluation. Emphasis on problems peculiar to criminological research. Individual research projects. Prerequisite: 200 and 201 or consent of instructor.

344-2 Drug Use. Types of drugs, drug impact on the American culture, legal and illegal uses of drugs, offenses related to drug use, reaction of the criminal justice system to drugs and drug users, and the treatment and prevention programs coping with drug use. Prerequisite: 200 and 201 or consent of instructor.

348-3 Treatment Modalities. Various treatment methods used throughout the criminal justice system. Explanation and evaluation of various treatment techniques; e.g., behavior modification, transactional analysis and other individual and group therapies. Prerequisite: 200 and 201 or consent of instructor.

390-1 to 4 Readings in the Administration of Justice. In-depth, introductory and advanced readings in areas not covered in other Administration of Justice courses. The student must submit a statement describing the topic and relevant reading materials to the faculty member sponsoring the student's readings. Prerequisite: 200 and 201 and consent of faculty sponsor.

395-3 to 15 Supervised Field Experiences in the Administration of Justice. Familiarization and direct experience in applied settings. Under supervision of faculty and adjunct staff, the student assumes a student-participant role in the criminal justice agency. Student must submit internship application during the first thirty days of the preceding spring or fall semester. Prerequisite: 200, 201, 12 hours of Administration of Justice courses and consent of department. Mandatory Pass/Fail.

399-3 Senior Seminar. An evaluation of agency policy and practices observed during the student's field experiences, and synthesis with classroom experiences. Emphasis will also be given to planning a professional career. Prerequisite: 395.

403-3 to 9 (3 per topic) Enforcement Operations. (a) Advanced investigation; (b) Enforcement management; (c) Enforcement discretion. This course offering provides a broad coverage of law enforcement activities from detailed investigative work through specialized management techniques required. Some sections of the course may be offered only every other year. Prerequisite: (a) 303 or graduate status; (b) 202 or graduate status or consent of instructor.

407-3 to 9 (3 per topic) Selected Topics in Criminal Law. (a) Substantive legal aspects; (b) Case preparation and prosecution; (c) Jurisprudence and procedures. Provides the framework for the understanding of basic substantive law and jurisprudence. Prerequisite: (a) 305 or graduate status; (b) 305, 407a, or graduate status.

415-3 Prevention of Crime and Delinquency. Multidisciplinary analysis of the functions, goals, and effectiveness of measures to forestall delinquency and crime. Etiology of delinquent behaviors as related to community institutions such as police, courts, corrections, mental health clinics, schools, churches, and citizen groups. Prerequisite: 200 and 201 or consent of instructor.

416-3 Methods of Criminal Justice Research. The principles of scientific inquiry as applied to the study of the criminal justice system. Overview and examples of project design, evaluative research, methodology and statistical techniques appropriate to criminal justice research. Strongly recommended for students who plan to conduct empirical research in fulfillment of master's thesis requirement. Prerequisite: 200 and 201 or consent of instructor.

417-3 Research Practicum in the Administration of Justice. Application of the principles set forth in 416. Experience in the various phases of an actual research project, including

project design, data collection and analysis, and effective communication of results via written reports. Prerequisite: 200 and 201 and 416 or consent of instructor.

470-3 Critical Theory of Criminal Justice. Selected key ideas of law enforcement, courts and corrections, collectively and severally, are established as the foundation for a frank evaluation of the merits of contemporary policies and practices. Prerequisite: 200 and 201 or consent of instructor.

471-3 Principles of Management in the Administration of Justice. Basic principles and techniques of management in law enforcement, correctional, and other criminal justice agencies. Prerequisite: 200 and 201 or consent of instructor.

472-3 The American Correctional System. (Same as Sociology 472.) A survey of the correctional field, covering probation, institutional treatment, and parole. Historical development, organizational structure, program content, and current problems. Prerequisite: 200 and 201 or consent of instructor.

473-4 Juvenile Delinquency. (See Sociology 473.) Prerequisite: 200 and 201 or consent of instructor.

485-3 to 6 (3 per topic) Selected Topics in Correctional Program Services. (a) Correctional case management. Prepares students to become practitioners, supervisors, and administrators in probation, parole, correctional institutions, and community-based programs in roles traditionally assigned to probation and parole officers, correctional counselors, social workers, and similar titles. Recognizes the importance of the case manager as a planner, mobilizer of resources, advocate, and community organizer. (b) Corrections and the community. Traditional correctional functions are redefined to emphasize development of resources of community at large, diversion of convicted offenders from institutions and direct involvement of correctional programs in community affairs. Prerequisite: three administration of justice courses or consent of instructor.

490-1 to 3 Independent Study in the Administration of Justice. Supervised readings or independent investigative projects in the various aspects of crime control, treatment of offenders; and management of programs of law enforcement, courts, and correctional agencies. May be repeated up to a maximum of three credit hours. Prerequisite: 200 and 201 or consent of instructor.

492-2 to 6 (2 to 3 per semester) Contemporary Issues in Administration of Justice. A forum for focusing on special interest topics depending on the availability of staff, visiting professors, and other selected instructional resources to cover a contemporary issue of concern to students and the faculty. May re-enroll for a maximum of six credits. Prerequisite: 200 and 201 or consent of instructor.

500-3 History and Philosophy of Criminal Justice System.

504-3 Criminological Theory.

562-3 Fundamental Legal Systems in Criminal Justice.

571-3 Correctional Systems in Criminal Justice.

572-4 Seminar in Criminology.

578-1 to 4 Seminar in Correctional Rehabilitation Counseling.

580-3 Planning for Change in the Administration of Justice.

582-3 Criminal Law and the Correctional Process.

584-3 Seminar in Criminological Program Management.

587-3 Seminar in Law Enforcement.

588-3 to 9 (3 per topic) Selected Topics in Law Enforcement.

590-1 to 3 Supervised Readings in Selected Subjects.

591-3 to 6 Individual Research.

592-3 Advanced Seminar in Administration of Justice.

595A-3 or 6 Supervised Field Work (Internship).

595B-3 or 6 Supervised Field Work (Internship).

599-3 to 6 Thesis.

Administrative Sciences (Department, Major, Courses)

The Department of Administrative Sciences is concerned with decision making in the allocation of resources toward the achievement of an organization's objectives. The setting of the organization may be government, business, health, or education, but of greater concern is the administrative process itself regardless of where it takes place.

Students are provided with a curriculum drawing on a variety of disciplines each of which contributes certain conceptual tools and techniques useful in improving the decision making performance of the administrator. Beyond the fundamental departmental requirements and those of the College of Business and Administration, a choice of two specialty programs is available.

Management. Administrators make and implement decisions through and with people working together toward the achievement of common societal, organizational, and personal goals. Understanding the organizational and environmental factors that influence individuals and groups, particularly in work settings, is critical to the success of managers and other employees. By choosing appropriate electives from a wide variety of courses, students can emphasize various administration areas, such as general business, health, personnel, organization behavior, organization theory, or small business. Students learn the concepts needed to effectively manage these organizations.

Decision Sciences. The decision sciences rely upon analytical problem-solving approaches to establish resource allocation policies and decisions that will enhance the organization’s effectiveness and efficiency. This specialization includes areas of production-operations management, management information systems, and quantitative analysis. By choosing appropriate electives, students can concentrate their preparation in one or more of these areas. Students with a decision science specialization are prepared to enter a wide variety of private or public organizations in either direct management or staff positions.

Bachelor of Science Degree, College of Business and Administration

<i>General Studies Requirements</i>	45-46
<i>Professional Business Core (see page 66)</i>	47-48
<i>Requirements for Major in Administrative Sciences</i>	24-25
Administrative Sciences 341, 361, 352	9
Specializations (Choose one)	

Management.

Administrative Sciences 385 or 485 and 431 or 474	6
Choose at least 9 hours from the following (at least 3 hours must be selected from Administrative Sciences courses): Administrative Sciences 345, 350, 385, 431, 456, 457, 474, 479, 485, 489a, Accounting 341, 405, 419, 475, Economics 310, 333, 340, 341, 375, 429, 436, 442, 479, 481, English 291, Finance 421, 475, 476, 480, Geography 306, Geology 478, Industrial Technology 382, 465, 466, Marketing 439, 452, Philosophy 342, 415, Political Science 324, 441, Psychology 307, 309, 421, 461, Sociology 332, 426, 475, Speech Communication 326, 362, 380, 480. Political Science 442, Psychology 323, 323 may also be selected but only if Administrative Sciences 385 is not taken for credit	9

Decision Sciences.

Administrative Sciences 345, 453 and 456 or 483	9
Choose at least 6 hours from the following: Administrative Sciences 385, 456, 457, 483, 489b, Accounting 341, Computer Science 312 or 314f, Finance 475, Marketing 452, Economics 467, Mathematics 486, 488	6

<i>Electives</i>	1-4
<i>Total</i>	120

¹Hours shown in parentheses are already included in total of hours shown for professional business core.

Courses

170-3 Introduction to Business Administration. Survey of business. General knowledge of the modern business world, the composition and functions of the business organization, as well as business as a social institution. Open only to freshmen and sophomores. Does not satisfy a College of Business and Administration requirement. Elective Pass/Fail.

208-4 Interpretation of Business Data. Uses of business data in policy formulation are discussed. Emphasis is placed on the conversion of raw information into statistics which are useful to the decision maker. Problems stress solution to questions typically raised in businesses. Prerequisite: Mathematics 116 or 139 or equivalent. Elective Pass/Fail.

300-3 Internship in Administrative Sciences. Supervised work experience that relates to the student's academic program and career objectives. Not repeatable for credit. Prerequisite: junior standing and consent of department. Mandatory Pass/Fail.

301-3 Management and Supervision. Functions of management and the requisites for effective supervision are emphasized by way of application to practical situations. For non-business majors who expect to assume supervisory responsibility where successful allocation and evaluation of human resources is necessary. Not open to students enrolled in the College of Business and Administration. Credit not available for both 301 and 304. Prerequisite: GSB 202, junior standing or consent of department. Elective Pass/Fail.

302-3 Administrative Communications. Creating and managing interpersonal administrative communications including the analysis, planning, and practice of composing different types of internal and external communications in various administrative and business contexts.

304-3 Organization Administration. Basic concepts of the administrative process are considered with emphasis on executive action to develop policy, direction, and control based on traditional and behavioral science approaches to decision making. Prerequisite: GSB 202 or equivalent and junior standing or consent of department. Elective Pass/Fail.

318-3 Production-Operations Management. An introduction to the design, operation, and control of systems or processes by which materials, labor, and capital are combined in an organized way with the objective of producing goods or services. Topical coverage includes the systems concept, planning, forecasting, job design, location, layout, logistics, scheduling, and production, inventory, quality, labor, and cost control. Prerequisite: 208, Mathematics 117 or 140, Computer Science 212 or Electronic Data Processing 217 or equivalent, junior standing or consent of department. Elective Pass/Fail.

341-3 Organizational Behavior I. The study of human problems in administration including the analyses of individual, group, and inter-group relations under a broad range of organizational settings. Theory and case analyses. Prerequisite: 208, and 304 and junior standing or consent of department. Elective Pass/Fail.

345-3 Introduction to Management Systems. Integrates topics of management and organization, information, computers, and the systems approach. Emphasizes planning, design, and implementation of information systems to aid management decision making. Application of computer techniques to develop, manipulate, and analyze system models. Prerequisite: 318, Computer Science 212 or Electronic Data Processing 217 or equivalent, and junior standing or consent of department. Elective Pass/Fail.

350-3 Managing the Small Business. Identification of small business, its importance and relationship to the United States economy and the opportunities and requirements unique to operation and management. Personal characteristics, interpersonal relationships, organizational systems, and decision-making processes are examined for their contribution to the success or failure of the firm. Prerequisite: 304 or consent of department. Elective Pass/Fail.

352-3 Management Science I. An introduction to mathematical model building in organizations and the solution techniques commonly used to solve such models. Topical coverage includes decision theory, mathematical programming, inventory models, queueing models and simulation. Prerequisite: 208, Mathematics 117 or 140 or equivalent and Computer Science 212 or equivalent, junior standing or consent of department.

361-3 Research Methods in Administration. Design of research to assist managerial decision making. Concepts, tools, sources, and methods of research. Planning, collecting, organizing, evaluating, and presenting research data. Prerequisite: 304, 208, GSD 101 and junior standing or consent of department. Elective Pass/Fail.

385-3 Personnel Management. An introduction to the development, application, and evaluation of policies, procedures, and programs for the recruitment, selection, development, and utilization of human resources in an organization. Prerequisite: 304 or equivalent, introductory statistics, and junior standing or consent of department. Elective Pass/Fail.

402-1 Strategies for Seeking Employment. The job placement process and the work environment from the viewpoint of the applicant. Emphasis on career planning, manpower analysis, placement and interviewing techniques with a stress on the transition from the academic community to the business and professional environment. Not offered for graduate credit. Prerequisite: senior standing or consent of department. Mandatory Pass/Fail.

431-3 Organizational Behavior II. The study of modern theories of complex organizations. Particular emphasis is placed on open-systems perspectives of administrative theory and the adaption of the organization to a changing environment. Prerequisite: 341 and junior standing or consent of department. Elective Pass/Fail.

453-3 Management Science II. A continuation of 352. Mathematical model building in organizations and solution techniques commonly used to solve such models. An extension of topics in deterministic and probabilistic modeling introduced in 352. Prerequisite: 352, junior standing or consent of department.

456-3 Management Systems Applications. Investigation of selected systems and computer based methods for aiding management decision-making. Topics include systems analysis applications, simulation, and decision models. Prerequisite: 345, 352 or 452 and junior standing or consent of department. Elective Pass/Fail.

457-3 Advanced Management Systems. Survey of systems theory and models related to management and administration of a variety of organizations. Topics include systems analysis, diagnosis, and synthesis; hierarchies; information and control; and general systems theory. Prerequisite: 345, 352 or 452, 341, junior standing or consent of department. Elective Pass/Fail.

474-3 Management Responsibility in Society. Analysis of the cultural, social, political, economic, and immediate environment of the organization. Particular emphasis is given to the manner in which the manager adapts to and is influenced by the environment and its conflicting demands. Prerequisite: senior standing or consent of department. Elective Pass/Fail.

479-3 Problems in Business and Economics. (Same as Economics 479.) Application of economic theory and tools of analysis to practical business problems. Cost and demand functions, and forecasting and analyzed from a policy standpoint. Prerequisite: 208 or Economics 308, Economics 215, Marketing 304, and junior standing or consent of department. Elective Pass/Fail.

481-3 Administrative Policy. Development of organizational strategies and policies within environmental and resource limitations. Emphasis upon the application and integration of basic principles from all areas of business by case problem analysis, simulation exercises, and group participation. Not for graduate credit. Prerequisite: senior standing, 304, 318, Finance 320, Marketing 304, or equivalent. Elective Pass/Fail.

483-3 Advanced Production-Operations 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. Cost of field trips (\$5) must be incurred by the student. Prerequisite: 318, 352 or 452, junior standing or consent of department. Elective Pass/Fail.

485-3 Organizational Development. Analysis of problems in personnel management with emphasis on current trends and techniques. Case problems, special reports, and experiential approaches are used as a basis for examining ways of using an organization's human resources to best advantage. Prerequisite: 341, junior standing or consent of department. Elective Pass/Fail.

489-6 (3, 3) Seminar in Administrative Sciences. Investigation of selected special or advanced topics in seminar format. Topics may include, but not limited to: management responsibility in society, wage and salary administration, health services administration, data processing management, current issues in management, etc. (a) Management, (b) Decision Sciences. May be taken singly. Prerequisite: consent of department chairperson and instructor. Elective Pass/Fail.

491-1 to 6 Special Topics in Administration. Utilizes special faculty resources to enable individually, the exploration of an advanced area of study through research by means of data analysis and/or literature search. Prerequisite: consent of department chairperson and instructor.

Aerospace Studies (Department, Courses)

Aerospace Studies is a voluntary course sequence leading to a commission as an officer in the United States Air Force. When commissioned, all officers must have at least a baccalaureate degree; hence completion of the program is contingent upon maintaining satisfactory progress toward graduation. Enrollment in the first two years (general military course) is unrestricted and no military obligation is incurred. Special students who do not intend to obtain a commission are welcome.

Acceptance into the last two years (professional officer course—300 level) is competitive and requires qualification on the Air Force Officer Qualifying Test

and a physical examination. For some officer candidates, the field of concentration must be related to an officer career specialty in the air force. Students in the professional officer course do incur a military obligation. They are paid a monthly tax-free subsistence allowance. Graduate students who have two years remaining at the University, not counting summers, are eligible.

Qualified students may enter directly at the 300 level without completing the general military course by attending a six-week field training course during the summer prior to entrance. Four year students attend a four-week field training course. Field training is conducted at air force bases and students are paid while attending.

Courses

100-0 (0, 0) Leadership Laboratory I. (a) Supervised laboratory taken concurrently with 101, (b) Taken with 102. Student develops leadership potential by participating in practical leadership situations. Emphasis is on the role of customs and courtesies in working with other people in a large organization. Required of regular students.

101-1 United States Air Force. Evolution of modern aerospace power and concepts on which it was developed. Introduction to aerospace support forces. Includes airlift, research and development, logistics, and education and training.

102-1 Aerospace Offensive and Defensive Forces. Introduction to U.S. general purpose and strategic offense forces, and the constraints involved in the use of modern weapons. Introduction to concepts, organization, equipment, and procedures involved in strategic defense of the United States.

200-0 (0, 0) Leadership Laboratory II. (a) Concurrent with 201, (b) Concurrent with 202. Student continues to develop leadership potential by leading small group activities. Prerequisite: 100.

201-1 The Development of Air Power I. History of manned flight from pre-aircraft to end of World War II. Develops the themes of doctrine, technology and evolution of aircraft, and U.S. Air Force.

202-1 The Development of Air Power II. History of United States Air Force from separate military department status into early 1970's. Highlights the versatility of air power and the changing role of machines, people, and tactics in air warfare.

258-4 GMC Equivalency. Work experience credit for 101, 102, 201, and 202. This credit will be evaluated by the head of the Aerospace Studies Department. Prerequisite: satisfactory completion of the academic phase of the six-week field training course for AFROTC two-year applicants.

300-0 (0, 0) Leadership Laboratory III. (a) Concurrent with 303, (b) Concurrent with 304. Student continues to develop leadership potential by assuming command and staff responsibility. Prerequisite: completion of 200 or GMC equivalency.

305-3 Management and Leadership I. Student relates current management and leadership theory to problems faced by middle managers in a large bureaucracy, the United States Air Force. Examines individual motivation, organization dynamics, performance appraisal, and decision making. Practices writing and speaking styles appropriate to a large organization. Prerequisite: satisfactory completion of the GMC, six weeks field training, or consent of instructor. Non AFROTC members may enroll with instructor consent and may elect Pass/Fail.

306-3 Management and Leadership II. Continuation of 305. Students examine traditional and modern theories of leadership to define their own roles as leaders. Examine value conflict and conflict resolution for the middle manager. Prerequisite: 305 or consent of instructor. Non AFROTC members may enroll with instructor consent and may elect Pass/Fail.

340-0 (0, 0) Leadership Laboratory IV. (a) Concurrent with 355, (b) Concurrent with 356. Students are responsible for developing and implementing the goals and objectives of leadership laboratory. Includes a study of the facilities, service and benefits available to junior officers to insure an orderly transition to military life.

355-3 Formulation of Defense Policy. Student explores the dynamics of formulating and implementing American defense policy. Examines international political trends, fundamental causes of inter-state conflict, and domestic and international constraints which restrict the options available to American defense policy makers. Prerequisite: 306 or consent of instructor. Non AFROTC members may enroll with instructor consent and may elect Pass/Fail.

356-3 Civil-Military Relations. Student analyzes crucial questions about the role and functions of the military officer. Study military law and the law of armed conflict as they apply to the junior officer. Examines contemporary issues including social values and attitudes toward the military. Prerequisite: 355 or consent of instructor. Non AFROTC members may enroll with instructor consent and may elect Pass/Fail.

African Studies (Minor)

African area studies is available through an interdisciplinary minor, involving courses in anthropology, Black American studies, geography, history, linguistics, political science, and religious studies. Each of these departments has one or more faculty who specialize in Africa and who are interested in assisting students wanting to study about Africa. The requirements for the African studies minor are listed below.

Minor

The African studies minor consists of 15 hours with 9 hours in required core courses and 6 hours of electives.

Required Core Courses: 9 hours selected from Anthropology 310G, Black American Studies 225, 314a,b, History 387a,b, Political Science 465.

Electives: 6 hours selected from any courses not used as part of the core or Anthropology 420-3 (only when an African language is studied), Geography 365, Linguistics 450-3 (only when African languages are studied), Religious Studies 333, or 2-3 hours of reading courses on Africa sponsored by any of the departments listed above or below.

Suggested related courses which do not count toward the minor are: Agricultural Industries 442, 443, Anthropology 310H, 410H, Black American Studies 311a,b, Economics 322, History 362a, b, or Political Science 352.

Agricultural Education (Major)

In this program a student will receive the technical and professional training needed to teach applied biological and agricultural occupations in secondary schools, serve in extension, or be employed in industry. A student majoring in agricultural education may specialize in one of the following areas: agricultural production, agricultural supplies and services, agricultural mechanics, agricultural products, ornamental horticulture, agricultural resources, forestry, and other areas of agriculture in specially designed curricula.

Bachelor of Science Degree, College of Education or School of Agriculture

AGRICULTURAL EDUCATION MAJOR—SECONDARY TEACHING CERTIFICATE

<i>General Studies Requirements</i>	46-47
GSA 106, 115	6
GSB 212 or 300, and 202.	6-7
GSD 101, 107, 118, 153	12
GSE 201 and two hours of physical education activity courses	4
<i>Requirements for Major in Agricultural Education</i>	40
Agricultural Industries (agricultural economics).	3
Agricultural Industries (agricultural mechanization)	4
Agricultural Industries 311 and one of the following: Agricultural Industries 411, 414, Vocational Education Studies 360, 364.	6
Animal Industries	3
Plant and Soil Science	3
Specialty in Agriculture and agriculture electives.	21
<i>Professional Education Requirements</i>	24
See Teacher Education Program, page 71.	

<i>Electives</i>	9-10
<i>Total</i>	120

Agricultural Industries (Department, Major, Courses)

Work is offered in agricultural industries in two major specializations, (a) agricultural economics and (b) agricultural mechanization. In agricultural economics, there are two options: 40 hours in agriculture and 32 hours in agriculture. The 40-hour option provides a broad training in agriculture. The 32-hour option provides additional work in economics or business.

In agricultural economics, courses are offered in the following fields: farm management, agri-business, management, agricultural credit, agricultural prices, agricultural marketing, cooperatives, and agricultural policy.

In agricultural mechanization, courses are offered in six areas: basic construction processes, agricultural power and machinery, agricultural electrification, agricultural structures, soil and water conservation, and agricultural materials handling and processing.

For a number of courses taught in the department, there will be an additional charge for field trips, laboratory manuals, or supplies.

Bachelor of Science Degree, School of Agriculture

AGRICULTURAL INDUSTRIES MAJOR—AGRICULTURAL ECONOMICS SPECIALIZATION

	<i>Options</i>	
	40 Hours	32 Hours
<i>General Studies Requirements</i>	46	46
GSA 106 and 115 or equivalent	6	6
GSD 101, 107 ¹ , 118, 153	12	12
<i>Requirements for Major in Agricultural Industries</i> ..	54	54
Agriculture Requirements	(40)	(32)
Agricultural Industries 204	3 ²	3 ²
Agricultural Industries 350 or 360, 351, 362, 450 or 461	12	12
Other Agricultural Industries	8	8
Animal Industries	3	3
Plant and Soil Science	3	3
Electives in Agriculture	11	3
Business and Economics Requirements	(14)	(22)
Economics 214, 215	6	6
Accounting and Quantitative Methods	8 ³	8 ³
Other business and economic courses	0	8
<i>Electives</i>	20	20
<i>Total</i>	120	120

¹Mathematics 110a, b or Mathematics 111 or highly recommended.
²Agricultural Industries 204 substitutes for GSB 211.
³Courses in accounting, computer science, and statistics or equivalent, in two fields.

AGRICULTURAL INDUSTRIES MAJOR—AGRICULTURAL MECHANIZATION SPECIALIZATION

<i>General Studies Requirements</i>	46-47
GSA 115, 106 or School of Technical Careers 107-4, or equivalent	9-10
GSD 101, 118, 107 or trigonometry, 153	12

Requirements for Major in Agricultural Industries	52
Agricultural Industries 373, 376, 377, 378, 379, 472, 473, 474, 475, Plant and Soil Science 346, plus three additional elective hours in agricultural industries	28
Animal Industries	3
Plant and Soil Science or Forestry	6
Agricultural electives	15
Electives	21-22
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Total	120

Minor

A minor in agricultural industries is offered. A total of 16 hours within the department is required. A counselor within the department must be consulted before selecting this field as a minor.

Courses

- 204-3 Introduction to Agricultural Economics. Agriculture in local and national economy; distribution; size and organization of the farm business units; policies affecting agriculture. Elective Pass/Fail.
- 257-1 to 10 Work Experience. Credit for on-campus work experience through a cooperative program developed between the department and the Office of Student Work and Financial Assistance. Prerequisite: consent of chairperson. Mandatory Pass/Fail.
- 258-1 to 30 Past Work Experience. Credit for career related employment based on the evaluation of the documentation of this experience by the Department of Agricultural Industries. No grade for past work experience. Prerequisite: consent of chairperson.
- 302-2 Country Living Management and Information. Managing a small acreage as an avocation. Types of decision problems and sources of information.
- 311-3 Agricultural Education Programs. Nature and scope of the different programs involved in teaching agricultural occupations and methods of developing them.
- 340-3 Economic Analysis of Food and Rural Development Policies. An economic analysis of the structure, problems, and alternative public policies of the food production industry. The dimensions and causes of rural poverty and alternatives for rural development. Prerequisite: 204 or consent of instructor. Elective Pass/Fail.
- 350-3 Farm Management. Efficient organization and management of a farming operation. Emphasis on crop and livestock selection, management of farm resources, farm budgets and records analysis, and farm leases. Student will incur field trip expenses not to exceed \$5.00. Prerequisite: 204 or one course in economics. Elective Pass/Fail.
- 351-3 Financial Management in Agriculture. Analysis of the capital structure of agriculture and sources of capital. Credit analysis of agribusiness firms using financial statements, firm growth, capital budgeting, and tax considerations. Prerequisite: 204 or equivalent. Elective Pass/Fail.
- 359-1 to 6 Intern Program. Supervised work experience program in either an agricultural agency of the government or agri-business. Prerequisite: junior standing or consent of instructor. Mandatory Pass/Fail.
- 360-3 Cooperatives and Agri-Business Management. Problems and practices in agribusiness operations including forms of organization, alternative organization and structure impacts on decision making, tools of decision making, financial analysis and methods of improving the effectiveness of the marketing system. Prerequisite: 204 or equivalent. Elective Pass/Fail.
- 361-2 Distribution in Agri-Business. The nature of agri-business distribution, opportunities to improve the effectiveness of the distribution system through an understanding of the function involved. Prerequisite: 204 or equivalent. Elective Pass/Fail.
- 362-3 Marketing and Pricing Agricultural Products. Institutional arrangements in marketing agricultural products. Market structure, marketing costs, and alternative methods of pricing agricultural products are also examined. Prerequisite: 204 or equivalent. Elective Pass/Fail.
- 371-2 Skills in Home Maintenance and Repair. Common home related maintenance and repair activities. Units include safety and developing the home shop; construction skills related to masonry, concrete, plumbing and painting; basic electricity and practical home wiring; and lawn, garden and recreational equipment maintenance and operation.
- 373-3 Agricultural Production Machinery. Selection, application, operation, maintenance, adjustments, calibration, and repair of agricultural production machinery.
- 376-2 Applied Graphics. Fundamentals of interpreting graphic illustrations, sketching, drawing and lettering in agriculture, forestry, and landscape design.

- 377-2 Surveying and Planning.** Surveying, mapping, land measurement, contouring, planning waterways and terraces and other water control structures used in the development and conservation of forests and agricultural land.
- 378-3 Construction Processes in Agriculture.** Principles of shop organization; tool and equipment utilization and application; safety as related to woodworking; concrete construction; welding and metal fabrication; and plumbing.
- 379-3 Basic Mechanical Processes in Agriculture.** Tool usage, instrumentation and principles in electricity, soil and water, and small engines.
- 381-1 to 4 (1, 1, 1, 1) Agricultural Seminar.** Discussion of special topics and/or problems in the fields of agricultural industries. Prerequisite: junior standing and consent of department.
- 388-1 to 16 (1 to 8 per semester) International Studies.** Course work undertaken as part of an approved University residential study program abroad. May be taken for a maximum of eight semester hours per semester and may be repeated for a maximum of 16 semester hours. Prerequisite: major department or program approval.
- 390-1 to 4 Special Studies in Agricultural Industries.** Assignments involving research and individual problems. Field trips. Prerequisite: consent of chairperson. Elective Pass/Fail.
- 391-1 to 4 Honors in Agricultural Industries.** Completion of honors paper or comparable project under the supervision of one or more faculty members. Subject matter depends upon the needs and interests of the student. Prerequisite: junior, GPA 3.0 with 3.25 in major; approval of staff member, department chairperson. Elective Pass/Fail.
- 401-3 Agricultural Law.** Relations of common-law principles and statutory law to land tenure, farm tenancy, farm labor, farm management, taxation, and other problems involving agriculture. Prerequisite: junior standing or consent of instructor. Elective Pass/Fail.
- 402-1 to 18 (1 to 6 per topic) Problems in Agricultural Industries.** (a) Agriculture Economics. (b) Agriculture Education. (c) Agriculture Mechanization. Designed to improve the techniques of agriculture industries workers through discussion, assignment, and special workshops on problems related to their field. Emphasis will be placed on new innovative and currently developed techniques for the field. A limit of six hours will be counted toward graduation in a master's degree program. Prerequisite: consent of chairperson.
- 411-3 Program Development in Agricultural Extension.** Principles and procedures in developing extension programs with emphasis on program determination and methods. Prerequisite: junior standing.
- 412-2 Principles of Agriculture Mechanization.** Theory and use of educational materials and devices adaptable to the needs and interests of educators involved in agricultural mechanization laboratories.
- 414-3 Adult Education Procedures, Methods, and Techniques.** Determining adult education needs and interests of the community. Securing and organizing the information needed for adult education programs and planning teaching activities.
- 415-3 Beginning Teacher Seminar.** The application, in the professional field setting of principles and philosophies of the education system. Includes application of principles of curricula construction, programming student and community needs. Prerequisite: consent of instructor.
- 440-3 Land Resource Economics.** (Same as Economics 471.) The use of land as an economic variable in production of goods and services; land markets; group versus individual conflicts; and land utilization as related to institutional arrangements. Prerequisite: 204, GSB 211 or consent of instructor. Elective Pass/Fail.
- 442-2 Agricultural Development in Emerging Countries.** Principles and practices in improving agriculture in areas with limited capital and low levels of technology. Prerequisite: 204 or GSB 211. Elective Pass/Fail.
- 443-2 Marketing Practices and Problems in Developing Countries.** Types of markets, assembly of products, storage, transportation, quality determination, and pricing practices which are peculiar to the developing countries. Market organization and practices for the major export products and the principal domestic foods and fibers in such countries. Methods of progressively improving such markets. Prerequisite: 204 or equivalent. Elective Pass/Fail.
- 450-3 Advanced Farm Management.** The role of the farm manager in credit institutions, professional farm management service, and the self-employed farmer will be emphasized. The concepts of farm marketing, farm finance and decision making as integrated in the management process will be central. Field trips not to exceed \$25. Prerequisite: 350 or equivalent. Elective Pass/Fail.
- 451-2 Farm Real Estate Appraisal.** Principles and practices of farm real estate appraisal. Application of capitalization, market, and cost approaches for estimating market value. Understanding of special valuation methods used for buildings, insurance, assessments, loans, and condemnation. Field trips not to exceed \$10. Prerequisite: 350 or consent of instructor. Elective Pass/Fail.
- 453-3 Advanced Farm Planning Techniques.** Application of linear programming to farm planning including enterprise selection, resource allocation, and least cost ration formulation. Farm decision making under uncertainty and analysis of farm expansion alternatives. Prerequisite: 350 or consent of instructor. Elective Pass/Fail.

460-3 Agricultural Prices. Measurement and interpretation of factors affecting agricultural prices. Construction of index numbers, trend analysis, seasonal and cyclical price movements and the measurement of relationships between price and other variables. Prerequisite: 362 or equivalent.

461-3 Agriculture Business Management. Function of top management in agri-business, such as: determining objectives, developing sound and consistent policies for achieving objectives; organizing the administrative personnel to carry out the plans; guiding and maintaining the administrative organization. Prerequisite: 360.

462A-1 Agricultural Marketing Problems and Practices—Livestock. Problems and their solutions in marketing livestock. Prerequisite: 362. Elective Pass/Fail.

462B-1 Agricultural Marketing Problems and Practices—Field Crops. Problems and their solutions in marketing field crops. Prerequisite: 362. Elective Pass/Fail.

462C-1 Agricultural Marketing Problems and Practices—Dairy and Poultry. Problems and their solutions in marketing dairy and poultry products. Prerequisite: 362. Elective Pass/Fail.

462D-1 Agricultural Marketing Problems and Practices—Horticultural Crops. Problems and their solutions in marketing horticultural crops. Field trips cost \$5.00. Prerequisite: 362. Elective Pass/Fail.

463-2 Commodity Futures Market. The mechanics of futures market trading, commodity charting, technical and fundamental trading approaches, hedging, and risks in commodity speculation will be emphasized. The history, development, and importance of the commodity future market will be reviewed and the role of participants and supporting institutions will be presented. Prerequisite: junior or senior standing. Elective Pass/Fail.

472-3 Agricultural Tractors and Engines. The principles of operation, selection, mechanics, maintenance, tune-up, and testing of multi-cylinder farm type internal combustion engines. Prerequisite: 379 or equivalent, or concurrent enrollment or consent of instructor.

473-2 Advanced Agricultural Electricity. Application of electricity to agricultural problems. An emphasis on principles of electrical distribution on the farm and the agri-business operation. Planning the efficient usage of electrical machinery and a study of components parts to increase productivity and save labor. Prerequisite: 379 or equivalent.

474-2 Advanced Agricultural Structures. A discussion and study of design characteristics applicable to farm structures. Consideration of economics, costs, environment, arrangements, materials and type of structures. Plans and drawing of farmstead layout, service buildings, and rural residential buildings made. Prerequisite: 378 or equivalent.

475-3 Agricultural Materials Handling, Processing, and Storage. Arrangement of systems for animal waste disposal, feed handling and processing, and storage of agricultural products. Prerequisite: 378 or 379 or 473 or 474.

500-4 (2, 2) Agricultural Industries Research Methodology.

551-3 Resource Allocation in the Agri-Business Firm.

552-3 Problems and Policies of the Agricultural Sector.

571-3 Current Problems and Research in Agricultural Power and Machinery.

581-1 to 12 (1 to 4 per topic). Seminar.

588-1 to 8 International Graduate Studies.

590-1 to 4 Readings.

593-1 to 4 Individual Research.

595-1 to 4 Agricultural Occupation Internship.

599-1 to 6 Thesis.

Agriculture (Courses)

Courses

259-2 to 40 Technology in Agriculture. For credit earned in technical or occupational proficiency above the high school level (by departmental evaluation).

333-2 Agriculture and Forestry Environmental Problems. An overview course directed at the environmental problems of food, fiber and forest products, production and processing and their potential solutions. A team taught course within the School of Agriculture.

388-1 to 16 (1 to 8 per semester) International Studies in Agriculture. Course work undertaken as a part of an approved University residential study program abroad. May be taken for a maximum of eight semester hours per semester and may be repeated for a maximum of 16 semester hours. Prerequisite: School of Agriculture or department within the school approval.

401-3 Fundamentals of Environmental Education. (Same as Forestry 401 and Recreation 401.) A survey course designed to help education majors develop an understanding of environmental problems and an awareness of how these types of problems can be handled both inside and outside the classroom. Prerequisite: ten hours of biological science, or ten hours of recreation and/or education, or consent of instructor.

423-3 Environmental Interpretation. (Same as Forestry 423 and Recreation 423.) Princi-

ples and techniques of natural and cultural interpretation. Two hours lecture, three hours laboratory. Approximately \$10 cost for field trips. Prerequisite: ten hours biological science or ten hours of recreation.

Agriculture, General (Major)

General agriculture is an excellent choice of agricultural major for the students who wish a flexible program which permits them ample selection of courses to satisfy their interests and abilities, as well as to attain their educational and professional goals. The minimum requirements give students a broad background in agriculture; the unusual freedom in selecting courses to fulfill these minimum requirements as well as the large number of free electives permit students to individualize their educational experience.

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. Two specializations within the general agriculture major, environmental studies and country living, are designed to reflect current emphases and interest in agriculture.

Production Agriculture Specialization. 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. For students whose interest is production agriculture, typical courses which are used to fulfill the minimum course distribution among the three departments in which work is required are Agricultural Industries 204, 350 and 373, Animal Industries 121, 122, 215, and 315, Plant and Soil Science 200, 240, and 300a.

Environmental Studies Specialization. In addition to serving as preparation for entry into the traditional agricultural and agricultural related occupations, students now find that the general agriculture major, with the study of soils, crops, forests, animals and their interrelatedness, is an excellent and practical way to study environmental and ecological problems. Choosing their agriculture and elective courses with this emphasis in mind permits students to specialize in environmental studies within the major, general agriculture. For this specialization, the general agriculture requirements remain the same; however, to fulfill the requirements, students must complete as agriculture or elective courses, thirty hours from among Agriculture 333, 401, 423; Agricultural Industries 440; Animal Industries 455; Forestry 301, 312, 331, 409, 430, 453; Plant and Soil Science 328A, 346, 420, 468; Economics 333; Thermal and Environmental Engineering 314; Political Science 325. Substitute courses may be approved through the office of the dean of the School of Agriculture.

Country Living Specialization. This specialization is available in the general agriculture major. This area of study provides the student with a background to more effectively manage and enjoy an acreage in the country. Suggested courses are Agricultural Industries 302, 371; Animal Industries 121, 201, 319; Forestry 341; Plant and Soil Science 238, 325, 328, 346. The selection of these courses or others in the School of Agriculture should be made by the student jointly with a staff member in the school.

Bachelor of Science Degree, School of Agriculture

<i>General Studies Requirements</i>	47
GSA 106 or chemistry substitute	3

Botany 200 and Zoology 118	7
GSB 211 or Agricultural Industries 204	3
Elective GSB ¹	6
GSC ¹	9
GSD 101, 107, 153.	10
Additional GSA, GSB or GSC	3
GSD 117, 118, or 119.	2
GSE	4
<i>Requirements for Major in General Agriculture</i>	40
Animal Industries.	8
Agricultural Industries	8
Plant and Soil Science.	8
Agricultural and Forestry Electives	16
<i>Electives</i>	33
<i>Total</i>	120

¹For environmental studies specialization, GSB 220 and GSB/C 221 are required.

Minor

A minor in general agriculture with either an environmental studies or a country living specialization requires 16 hours in the respective area from the courses listed above for the specialization.

Allied Health Careers
Specialties (Program, Specialized Major)

Individualized courses of study leading to specialties in allied health career fields are offered by the School of Technical Careers through programs which combine clinical experience with appropriate courses from throughout the University, from community colleges, and from other educational institutions.

Each student works with an adviser to design a core curriculum and clinical experience in an appropriate clinical setting. The student may study in such fields as medical laboratory technology, radiologic technology, respiratory therapy.

Because programs are individually designed, prospective students must consult with the faculty about course and program requirements. Persons interested in the allied health careers specialties program should contact the chairperson of the Division of Allied Health and Public Services

The program is intended to accommodate the non-traditional student. Enrollment is limited by the availability of clinical facilities and supervising faculty; prospective students are urged to begin the admission and advisement process well in advance of the semester in which they wish to begin their studies.

Additional expenses required to cover cost of uniforms, liability insurance, and other items will be \$60.00.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Applied Science Degree, School of Technical Careers

<i>Requirements for Major in Allied Health Careers Specialties</i>	
Allied Health Careers 125	4
School of Technical Careers 102, 103, 115a, 141, 153a, 210a	13

Clinical Phase	48
The clinical phase of the curriculum requires the selection of two allied health career specialty areas for a total of forty-eight semester hours.	
Clinical Laboratory Technique: Allied Health Careers 101, 151, 201	(24)
Clinical Radiology Technique: Allied Health Careers 102, 152, 202	(24)
Clinical Respiratory Therapy Technique: Allied Health Careers 103, 203	(24)
Total	65

Courses

101-1 to 4 Introduction to the Clinical Laboratory Technology. Introduces the student to the field of medical technology and the basic concepts of the clinical laboratory. By utilizing principles from the sciences and applying to a clinical situation, the student will develop skills, safety awareness, and interpersonal relationships. Prerequisite: consent of program adviser.

102-1 to 4 Introduction to the Clinical Radiologic Technology. The student is introduced to the field of radiologic technology, the personnel assigned to that department and the radiology department's interaction with the total hospital operation. The student is taught the methods of utilizing the tools of the sciences in the clinical situation. Prerequisite: consent of program adviser.

103-1 to 12 Clinical Respiratory Therapy. Introduces the student to basic principles and practice of respiratory therapy. Utilizing guided audio visual instruction, applied structured lab and clinical practice, which includes the following: oxygen and related equipment, oxygen delivery modes, humidifiers and nebulizers, intermittent positive pressure breathing, care of the patient on volume ventilation, understanding psychosocial problems of the chronic respiratory patient. Prerequisite: consent of program adviser.

125-1 to 4 Survey of Allied Health Related Sciences. Emphasizes the concept of health and the basic needs of people, both in a state of health and as altered by illness. This includes the principles of the physical, biological and behavioral sciences and the knowledge basic to the proper understanding of various allied health procedures. Prerequisite: consent of the program adviser.

151-1 to 10 Clinical Laboratory Techniques. Specific tasks in the areas of urinalysis, coagulation, hematology, and serology are taught. Emphasis is on the development of background information, clinical knowledge, and clinical skills. Clinical information obtained through the performance of tasks is evaluated and related to its function in the clinical setting. Methods of data gathering and problem solving are developed. Prerequisite: consent of program adviser.

152-1 to 10 Clinical Radiologic Techniques. Basic radiographic anatomy and positioning of the extremities, chest abdomen, techniques and practice in specialized radiographic procedures will be taught. Emphasis is placed on patient handling, radiation safety, darkroom procedures, and application of electrical and radiation physics. Clinical skills, clinical knowledge and clinical information obtained through the performance of tasks are validated and related to their function in the clinical setting. Prerequisite: consent of program adviser.

201-1 to 10 Clinical Laboratory Techniques. Specific tasks in the areas of blood banking, clinical bacteriology, and clinical chemistry are taught. Emphasis is on the development of background information, clinical knowledge, and clinical skills. Clinical information obtained through the performance of tasks is evaluated and related to its function in the clinical setting. Methods for data gathering and problem solving are developed. Prerequisite: consent of program adviser.

202-1 to 10 Clinical Radiologic Techniques. Basic radiographic anatomy and positioning of the upper thorax, spinal column, skull, and facial bones, plus special areas of interest will be taught. Procedures requiring contrast media are covered as they relate to the particular anatomy being studied. Emphasis is placed on the practical aspects of radiation safety, physics, darkroom chemistry, technique charts, and special radiographic accessories. Clinical skills and information obtained through the performance of tasks are evaluated and related to their function in the clinical setting. Methods of data gathering and problem solving are developed. Prerequisite: consent of program adviser.

203-1 to 12 Clinical Respiratory Therapy. A continuation of materials covered in 103 with more in depth approach in a variety of clinical situations so that students will be able to develop skills needed in utilizing more complex respiratory therapy equipment and clinical judgments. Care of the patient in acute respiratory failure, cardiopulmonary resuscitation, important procedures in asepsis, airway care and suctioning, medications, basic procedures

in pulmonary function testing, and postural drainage. Prerequisite: consent of program adviser.

Animal Industries (Department, Major, Courses)

Instruction, research, demonstration, and consultation are provided in dairy, horse, livestock and poultry production, meats, pets, and animal hygiene. Courses are offered in all phases of animal production and management.

The student has opportunity to select courses in other areas of agriculture or related fields, such as business, biology, or physical sciences. This selection allows students to include in their studies the agronomic, agricultural economic, and agricultural engineering phases of agriculture or business as related to animal production.

In addition to the production, and the science and pre-veterinary medicine options, the department also offers a two-year and a three-year curriculum in pre-veterinary medicine. These allow qualified students to transfer to accredited colleges of veterinary medicine prior to receiving the Bachelor of Science degree in animal industries.

A major in animal industries may not take a departmental course on an elective Pass/Fail basis if the credits are to be applied toward the required thirty hours in animal industries courses. Majors may take departmental courses beyond the thirty hour requirement on an elective Pass/Fail basis.

There may be extra expenses for field trips, manuals, or supplies in some courses.

Bachelor of Science Degree, School of Agriculture

ANIMAL INDUSTRIES MAJOR—PRODUCTION OPTION

<i>General Studies and Substitutes</i>	49-50
Substitute Chemistry 140a, b or equivalent for GSA 106, 107	8
GSD 153 recommended	3
Substitute Biology 306, 308, 309, Botany 200 or Zoology 118 for GSA 115	3-4
Substitute Physiology 210 for GSA 208, 209	4
<i>Requirements for Major in Animal Industries</i>	42
Animal Industries 121, 122, 211, 215, 310 or 311a, 315, 332, and 381	17-18
Animal Industries electives including a minimum of two 400-level courses	12-13
Agriculture electives excluding Animal Industries	8
Microbiology 301	4
<i>Electives</i>	28-29
<i>Total</i>	120

ANIMAL INDUSTRIES MAJOR—SCIENCE AND PRE-VETERINARY OPTION

<i>General Studies and Substitutes</i>	63
Substitute Chemistry 222a,b or equivalent for GSA 106, 107	8
Substitute Physics 203a,b and 253a,b for GSA 101	8
Substitute Mathematics 110a,b for GSD 107	5
Biology	8
Substitute Physiology 210 for GSA 208, 209	4
GSD 153 recommended	3
<i>Requirements for Major in Animal Industries</i>	53
Chemistry 344, 345, 346, and 347	11

Microbiology 301	4
Animal Industries 121, 122, 211, 215, 310 or 311a, 315, 332, and 381	17-18
Animal Industries electives including a minimum of two 400-level courses	12-13
Agriculture electives excluding Animal Industries	8
<i>Electives</i>	4
<i>Total</i>	120

Minor

A minor in animal industries is available to those interested in livestock production and care of companion animals. A total of 16 hours within the department is required. Courses may be selected from the areas of nutrition, hygiene, breeding and genetics, reproductive physiology, behavior, meats, and livestock production, including horses and pets. An adviser within the department must be consulted before selecting this field as a minor.

Courses

121-3 Science of Animals that Serve Mankind. A general overview of dairy, meat animals (swine, beef, sheep), poultry, and horse industries with emphasis on how meat, milk, and poultry products are produced and distributed. The general application of genetic, physiologic, and nutrition principles for the improvement of animal production to further serve mankind. Prerequisite: concurrent enrollment in 122.

122-1 Production and Processing Practices of the Animal Industry. Livestock facilities, demonstration of management practices of animals for human use and the processing of animal products. Can be taken without concurrent enrollment in 121. Elective Pass/Fail.

123-1 Practicum in Animal Production. Laboratory in basic orientation, terminology, and practical experience in animal production. Designed for majors in agriculture who are from a non-farm background or have limited livestock experience. Enrollment limited. Prerequisite: consent of chairperson. Mandatory Pass/Fail.

201-3 Care and Management of Pets. Principles and practices of proper selection, feeding, and care of companion animals. Emphasis is placed on the dog and cat but other species are considered. Nutrition, health care, behavior, training, and reproduction are discussed. Elective Pass/Fail.

211-2 Anatomy, Growth, and Development. Anatomy (gross and microscopic) and development processes of bone, muscle, and fat tissue of meat animals and the factors which influence their relative rates of formation during the growth process and thus alter body composition and product quality. Prerequisite: 121 recommended.

215-2 Introduction to Animal Nutrition. An up-to-date study of basic principles of animal nutrition including classification of nutrients (physical and chemical properties) and their uses in order to provide the student a working knowledge of livestock nutrition in today's animal environment. Prerequisite: GSA chemistry or equivalent. Elective Pass/Fail.

220-2 Equitation. Equitation as related to horse training and management. For students who have completed 319, have limited riding experience, and need equitation training to enter 419. Field trip. Enrollment limited. Additional costs \$15. Prerequisite: consent of instructor. Mandatory Pass/Fail.

257-1 to 10 Work Experience. Credit given for on-campus work experience related to the student's major area of specialization as developed through the department and the Office of Student Work and Financial Assistance. Only 10 hours of credit may be taken in 257, or in any combination with 258. Prerequisite: consent of chairperson. Mandatory Pass/Fail.

258-1 to 10 Prior Work Experience. Credit given for work experience related to the student's major area of specialization prior to University entrance. Only 10 hours of credit may be taken in 258, or in any combination with 257. No grade for prior work experience. Prerequisite: consent of chairperson.

310-3 Meat, Poultry, and Milk Products as Related to the Consumer. Processing and distribution including inspection, grading, processing methods and merchandising as well as selection and preparation including pricing, storage or preservation, cooking, serving, and the contribution to a well-balanced diet of meat, poultry, and milk products. Field trip. Elective Pass/Fail.

311-4 (2, 2) Breeds, Classes, Grades, and Selection of Farm Animals and Poultry. (a) Discussion of breeds and classes of livestock, dairy and poultry; grading and selection of breeding and market animals and their carcasses or products. (b) Competitive judging and selection of livestock, dairy, or poultry. Field trips required. Participation on S.I.U. judging team is

not a required part of this course. Must be taken in a,b sequence. Prerequisite: 121 recommended. Elective Pass/Fail.

315-3 Feeds and Feeding. Principles of applied animal nutrition. Ration formulation to meet specific nutrient needs of all classes of livestock. Feedstuff evaluation, including cost will be discussed.

319-3 Horses. An introductory course designed for students with interest in horses regardless of their major or background. Lectures, demonstrations, and laboratory work with horses provide basic information and terminology as well as principles and practices of proper selection, use, care, and management of horses. Field trip. Elective Pass/Fail.

331-3 Functions of Animal Systems. A course in the physiology of domestic animals. Various functions of mammalian organisms are discussed using the organ system approach. Human physiology is used as a basis to present the systemic functions of domestic animals. Differences in the functions of monogastric, ruminant, and avian species are presented.

332-3 Animal Breeding and Genetics. The application of basic principles of genetics and breeding systems to the improvement of farm animals and poultry. Prerequisite: 121 or biology. Elective Pass/Fail.

337-3 Animal Hygiene. Principles of prevention and control of infectious, nutritional, and parasitic disease of farm animals. Elective Pass/Fail.

359-2 to 6 (2 to 3, 2 to 3) Intern Program. Work experience program in animal production units and agricultural agencies of the government or agri-businesses. Prerequisite: junior standing and consent of chairperson. Mandatory Pass/Fail.

380-1 to 6 Field Studies in Foreign and Domestic Animal Agriculture. A travel course to observe and study the operation and management of farms, ranches, and feedlots as well as agri-business firms supporting animal production such as food processors, feed manufacturers, and housing or equipment companies in either the United States or foreign countries. A written report is required. The travel fee charged to the student will depend on the nature and the length of the course. Elective Pass/Fail.

381-1 Animal Science Seminar. Discussion of problems and recent development in animal science. Prerequisite: junior-senior standing.

390-1 to 4 Special Studies Animal Industries. Assignments involving research and individual problems. Prerequisite: juniors and seniors only and consent of chairperson. Mandatory Pass/Fail.

414-2 Animal Feed Quality Control. Laboratory procedures for nutrient determinations used in animal feed quality control. Prerequisite: course in chemistry recommended.

415-3 Monogastric Nutrition. Advanced principles and practices involved in meeting nutrient requirements of monogastric animals. Prerequisite: 215 and 315 recommended.

416-3 Ruminant Nutrition. Practical knowledge gained of problems associated with digestion, absorption, and metabolism of nutrients as related to domestic ruminants, horses and other pseudoruminants. Prerequisite: 215 and 315 recommended.

419-3 Stable Management and Horsemanship. Laboratory experience in routines of horse care, training, and management. Field trips. Additional costs \$5. Prerequisite: 319.

420-4 Commercial Poultry Production. Principles and practices of management of broilers, layers, and turkeys as adapted to commercial operations. Field trip. Prerequisite: 315 or consent of instructor.

421-2 International Animal Production. A study of world animal production practices with emphasis on the developing countries. Adaptability of animals to environmental extremes and management practices employed to improve productivity. Prerequisite: junior standing plus 121 or one year of biological science. Elective Pass/Fail.

430-4 Dairy Cattle Management. Application of the principles of breeding, nutrition, physiology, and economics to management of a profitable dairy herd. Breeds of dairy cattle, housing, milking practices, and quality milk production. Field trip. Students enrolled will incur field trip expenses of approximately \$25. Prerequisite: 315, 332.

431-4 Reproductive Physiology of Domestic Animals. Comparative anatomy and physiology of the male and female reproductive system of domestic animals; hormones, reproductive cycles; mating behavior; gestation and parturition; sperm physiology; collection and processing of semen; artificial insemination, pregnancy tests; diseases. Prerequisite: 121 or a course in physiology.

432-2 Quantitative Inheritance of Farm Animals. A review of the genetic principles underlying changes in animal breeding population; interpretations of gene frequency, heritability, and genetic correlations; application of selection and breeding systems in farm animals. Prerequisite: 332. Elective Pass/Fail.

434-2 Physiology of Lactation. Anatomy and physiology of milk secretion; endocrine control; milk precursors and synthesis; milk composition; physiology and mechanics of milking, mastitis. Prerequisite: course in physiology.

455-2 Animal Waste Management. Acquaints the student with the scope and problems involved with animal waste management, current regulations and laws on environmental protection. Principles covering waste management technology and current livestock waste management systems are presented. Field trips will be scheduled. Prerequisite: junior standing.

- 465-4 Swine Production.** Swine production systems and management techniques including breeding and selection, reproduction, nutrition, herd health and disease prevention, housing and waste management, marketing, production costs and enterprise analysis. Field trip. Prerequisite: 315 and 332 or consent of instructor.
- 480-3 Sheep Production.** Breeding, feeding, and management of sheep. Field trip. Prerequisite: 315.
- 485-4 Beef Production.** Beef cattle production systems and management, breeding and selection, reproduction, nutrition, and herd health with emphasis on the most economical and efficient systems. Field trip. Students enrolled will incur field trip expenses of approximately \$5. Prerequisite: 315 and 332 or consent of instructor.
- 500-3 Research Methods in Agricultural Science.**
- 502-2 Surgical Research Techniques in Farm Animals.**
- 506-3 Instrumentation Methods in Agricultural Science.**
- 515-3 Energy and Protein Utilization.**
- 516-3 Minerals and Vitamins in Animal Nutrition.**
- 531-2 Livestock Management for Reproductive Efficiency.**
- 581-1 to 2 (1, 1) Seminar.**
- 588-1 to 8 International Graduate Studies.**
- 590-1 to 3 Readings in Animal Industries.**
- 593-1 to 3 Individual Research.**
- 599-1 to 6 Thesis.**

Anthropology (Department, Major, Courses)

Anthropology is the study of humans and their cultures in terms of universal features, variability, and development through time. The major subdivisions are socio-cultural anthropology, linguistics, archaeology, and physical anthropology. The student is expected to gain a broad background in all subfields, after which the options of further general study or specialization are available. Students are encouraged to supplement their anthropological studies with work in other social sciences, and where appropriate in biology, earth sciences, humanities, mathematics, or other areas.

Most professional anthropologists find employment as teachers and researchers in colleges and universities. However, a major in anthropology provides the student with a unique liberal arts background bridging the humanities, social, earth, and biological sciences, which leads to many other professional opportunities outside of teaching and research.

An anthropology major is required to take Anthropology 300A, B, C, D, and an additional nine hours of 400-level course work in anthropology. Six hours of 200-level anthropology coursework may be applied toward the major. Those students interested in advanced degrees will be advised to take Anthropology 400A, B, C, D (total 12 hours) with the remainder of the hours as electives. It will also be made clear that graduate departments normally require at least one foreign language and some mathematical background. Those students not interested in advanced study will be advised on an individual basis reflecting their own particular interests and aspirations.

Students with exceptional scholarly promise may be invited into the departmental honors program, which includes an honors seminar and the writing of an honors thesis under the direction of a departmental faculty member.

Bachelor of Arts Degree, College of Liberal Arts

<i>General Studies Requirements</i>	45
<i>Supplementary College Requirements (See page 78)</i>	(4) + 8-14
<i>Requirements for Major in Anthropology</i>	32
Anthropology 300A, 300B, 300C, and 300D required, and an additional nine hours of 400-level course work in anthropology.	
<i>Electives</i>	29-35
<i>Total</i>	120

Minor

A minor in anthropology consists of at least 15 hours including at least two of the four courses: 300A, 300B, 300C, 300D, and a minimum of three of the remaining nine hours at the 400 level.

A minor in anthropology for students interested in museum studies may be earned by taking a designated series of museum-oriented courses offered by the Departments of Anthropology, Geology, History, and the School of Art. Required courses for the minor are drawn from the following: Anthropology 450a,b; Art 207, 447; Geology 445; and History 497, 498.

Courses

221-3 The Anthropology of Sexual Behavior. Introduces the student to general primate ethology where sexual behaviors are seen to be a function of band needs. Patterns of sexuality are then examined on a cross-cultural basis where attitudinal and cultural distinctions between men and women are related to socio-cultural needs and pressures. The course will conclude with an examination of modern western sexism.

225-3 Separate Realities. The focus of this course is on an anthropological approach to other realities. The works of Castaneda and Bourguignon, among others, are considered, and the functions of these states in societies, including our own, are dealt with.

231-3 Folklore and Modern Life. The folklore of a culture influences both the unconscious and conscious actions of people in subtle ways and each study helps to account for both the good and the bad which we see in ourselves and in others. The course introduces the student to the study of folklore and serves to emphasize the importance of the study of folk beliefs and their role in understanding our and other contemporary societies.

241-3 Slaves and Slavery in New World Societies. Focuses on slavery and slave systems in New World societies from a comparative historical and social anthropological/sociological perspective.

251-3 Anthropology and Science Fiction. An examination of the basic concepts of anthropology viewed through the prism of science fiction literature.

300A-3 Introduction to Physical Anthropology. An introduction to the study of human evolution. Topics include: evolutionary theory and its history, human genetics, nonhuman primates, the human fossil record, and the origins of races. No prerequisites.

300B-3 Introduction to Linguistic Anthropology. Introduces the concept of culture as revealed through human language. Provides both theory and methodology basic to linguistics and non-linguistic specialists within anthropology.

300C-3 Introduction to Archaeology. Theory and method of anthropological archaeology for non-majors and majors.

300D-3 Introduction to Social-Cultural Anthropology. Ways in which humans organize themselves for action. Emphasis will be on the social anthropological approaches to problem definition and theory. Comparative and functional analysis of kinship, economic, political, religious, and legal systems of non-Western cultures.

303-3 Humans before History: Old World Archaeology. A survey of human social and cultural development from earliest times to the beginnings of civilization. Areas covered are Africa, Europe, and Asia, including the Near East.

304-3 Origins of Civilization. A study of complex environmental and cultural factors that led to a rise and fall of early high-cultures. The course will concentrate in alternate years on the Old World (Africa and Euro-Asia) and the New World (North, Middle, and South America).

320-3 Human Growth, Development, and Adaptation. The effect of environmental and genetic factors on human development will be examined. Certain classical problems will be studied as they relate to human adaptation, e.g. the physiology of high altitude adaptation, and human thermoregulatory adaptations. Prerequisite: 300A or consent of instructor.

376-2 to 8 Independent Study in Classics Program. (See Classics 496.) Elective Pass/Fail.

400A-3 Current Problems in Physical Anthropology. The collection, analysis and interpretation of data on human populations. Problems in the study of human populations, including inbreeding, natural selection, fertility, drift and migration. Prerequisite: 300A for undergraduates or consent of instructor.

400B-3 Current Problems in Linguistic Anthropology. Presentation and discussion of ongoing developments in theory and methodology in linguistic anthropology. Prerequisite: 300B for undergraduates or consent of instructor.

400C-3 Current Problems in Archaeology. Detailed consideration of various aspects of current directions in archaeological method and theory. Prerequisite: 300C for undergraduates or consent of instructor.

400D-3 Current Problems in Social-Cultural Anthropology. A survey of current problems in the description and analysis of non-Western social systems. Prerequisite: 300D for undergraduates or consent of instructor.

401-3 Language and Culture. Linguistics and the study of culture in relation to animal communication, language acquisition, linguistic typology and universals, ethnosemantics and sociolinguistics. Prerequisite: 300B for undergraduates or consent of instructor.

402-3 People and Culture. Offered primarily for non-anthropology majors. Focuses on the nature of culture, cultural processes, and culture change with emphasis on social, political, economic, artistic, religious, and linguistic behavior of humans as individuals and in cultural groups.

404-3 Art and Technology in Anthropology. An introduction to the basic ways in which people utilize the natural resources of their habitat to meet various needs, such as food, shelter, transportation, and artistic expression. The nature of art, its locus in culture, and its integration into technological society will be considered.

406-3 Conservation Archaeology. The method and theory of archaeology in relationship to local, state, and federal laws regarding the protection and excavation of antiquities. Emphasis is on problem-oriented survey and excavation, as well as the preparation of archaeological contracts and the writing of reports to satisfy statutes involving environmental concerns. Prerequisite: 300C or 400C or consent of instructor.

409-3 History of Anthropology. The development of anthropological thought from the Age of Discovery to the present. The emphasis will be on the intellectual and social milieu which fostered general and specific conceptual views and methods. Considered are developments in the several major subfields of anthropology including archaeology, anthropological linguistics, human biology, and cultural anthropology. Required for all anthropology graduate students. Prerequisite: None. 300D recommended for undergraduates; 400D or equivalent recommended for graduate students.

410A-3 Applied Anthropology. The practical applications of theoretical social anthropology. Problems of directed culture change are examined from an anthropological perspective as they apply to the work of the educator, social worker, extension agent, administrator and others who are attempting to guide change in the life ways of others in Western culture and the third world. Prerequisite: none. 300D recommended for undergraduates.

410B-3 Educational Anthropology. An examination of the cultural processes of formal and informal education, the use of anthropological premises in educational program design, bicultural-bilingual education programs, comparative American-non-American systems, and the teaching of anthropology. Prerequisite: none. 300D recommended for undergraduates.

410C-3 Economic Anthropology. The study of non-Western economic systems. Prerequisite: none. 300D recommended for undergraduates.

410D-3 Anthropology of Folklore. A comparative study of the role of folklore in various cultures of the world, with emphasis upon nonliterate societies. Analysis of motifs, tale-types, themes and other elements; comparisons between nonliterate and literate groups. Prerequisite: none. 300D recommended for undergraduates.

410E-3 Anthropology of Law. Anthropological thought on imperative norms, morality, social control, conflict resolution and justice in the context of particular societies, preliterate and civilized. Law of selected societies is compared to illustrate important varieties. Prerequisite: none. 300D recommended for undergraduates.

410F-3 Anthropology of Religion. A comparative study of (religious) belief systems, with emphasis upon those of non-literate societies. Examination of basic premises and elements of these belief systems, normally excluded from discussions of the "Great Religions". Prerequisite: none. 300D recommended for undergraduates.

410G-3 Psychological Anthropology. Similarities and differences in personality structures cross-culturally including the historical development of this as an anthropological subdiscipline. Prerequisite: none. 300D recommended for undergraduates.

410H-3 Ethnomusicology of Oceania, Asia and Africa. A survey of theory, method, structure, organology, and cultural context of the ethnomusicology of Oceania, Asia and Africa.

410I-3 Ethnomusicology of Middle East, Europe and the New World. A survey of theory, method, structure, organology, and cultural context of the ethnomusicology of Europe and the New World.

410J-3 Kinship and Social Organization. Universal features of non-Western systems of kinship terminology and social organization. Topics include the structure and functioning of kinship systems, lineages, clans, sibs, phratries, moieties, and tribal units. Prerequisite: none. 300D recommended for undergraduates.

420-3 to 9 Advanced Studies in Languages of the World. Attention given to language families, focusing on studies of linguistic history, genetic relationships, and typological classification. Any one semester will concentrate on language of a major geographical area. Prerequisite: 300B or 400B or consent of instructor.

425-3 Cognitive Anthropology. The theory of culture as cognitive organization is explored. Among the topics are: Formal analysis of lexical domains, folk classifications and strategies, the problem of psychological validity, linguistic determinism and relativity, biogenetic and psycholinguistic bases of cognition, and the "new ethnography".

430A-3 Archaeology of North America. Detailed study of the early cultures of North America. Emphasis on the evolutionary cultural development of North America. Prerequisite: 300C or 400C or consent of instructor.

- 430B-3 Archaeology of Meso-America.** Detailed study of the early cultures of Meso-America with emphasis on the evolutionary cultural development of Meso-America. Prerequisite: 300C or 400C or consent of instructor.
- 430C-3 Archaeology of the Southwest.** Detailed study of the early cultures of the Southwest with emphasis on the evolutionary cultural development of the area. Prerequisite: 300C or 400C or consent of instructor.
- 430D-3 Archaeology of the Old World.** Detailed study of the early cultures of the Old World with emphasis on the evolutionary cultural development of the area. Prerequisite: 300C or 400C or consent of instructor.
- 440A-3 Human Evolution.** An advanced consideration of the fossil evidence for human evolution and evaluation of the various theories regarding the course of human evolution. Prerequisite: 300A or consent of instructor.
- 440B-3 Race and Human Variation.** A consideration of the range, meaning and significance of contemporary human biological variation, including evolutionary and adaptive implications and the utility of the race concept. Prerequisite: 300A or consent of instructor.
- 441-3 Laboratory Analysis in Archaeology.** Methods of analysis of archaeological data in a laboratory setting.
- 444-3 Human Genetics and Demography.** A course in human genetics with an emphasis on population genetics and demography of modern and ancient human populations. Prerequisite: 300A, 400A or consent of instructor.
- 450-6 (3, 3) Museum Studies.** A detailed study of museum operation to include (a) methodology and display and (b) administration, curation, and visits to or field work with area museums. Practical museum work will be stressed in both (a) and (b) and (a) must be taken before (b).
- 460-1 to 12 Individual Study in Anthropology.** Guided research on anthropological problems. The academic work may be done on campus or in conjunction with approved off-campus (normally field research) activities.
- 470-3 to 24 People and Cultures.** A survey of the prehistory, cultural history and contemporary cultures of the area in question. Topical emphasis may vary from course to course and year to year. (a) Africa, (b) Asia, (c) Caribbean, (d) Europe, (e) Latin America, (f) Near East and North Africa, (g) North America, (h) Oceania. Prerequisite: a basic acquaintance with geography and history of the area.
- 480-3 Honors Seminar.** Topics to be arranged by agreement of participating faculty and students. Not open to graduate students. Prerequisite: consent of department. Elective Pass/Fail.
- 495-6 to 8 Summer Ethnographic Field School.** An eight-week field research training program in Southern Illinois communities. Students will attend seminars on campus and in the field, but the greater part of the time will be spent engaging in continuous team research under the direction of the faculty members involved in the program. Some form of cooperative living arrangement in the field will be organized. The program is open to advanced undergraduate and graduate students. Prerequisite: consent of instructor.
- 496-1 to 8 Field School in Archaeology.** Apprentice training in the field in archaeological method and theory. Students will be expected to be in full-time residence at the field school headquarters off campus. Prerequisite: consent of instructor.
- 499-3 Honors Thesis.** Directed reading and field or library research. The student will write a thesis paper based on original research. Not open to graduate students. Prerequisite: consent of department. Elective Pass/Fail.
- 510-2 to 6 (2 to 3 per topic) Seminar in New World Archaeology.**
- 511-2 to 6 (2 to 3 per topic) Seminar in Meso-American Archaeology.**
- 512-2 to 6 (2 to 3 per topic) Seminar in Old World Archaeology.**
- 513-2 to 6 (2 to 3 per topic) Seminar in Archaeology.**
- 515A-3 Seminar in Social-Cultural Anthropology.**
- 515B-3 Seminar in Social-Cultural Anthropology.**
- 520-2 to 6 (2 to 3 per topic) Seminar in New World Ethnology.**
- 521-2 to 6 (2 to 3 per topic) Seminar in Ethnology of Latin America.**
- 522-2 to 6 (2 to 3 per topic) Seminar in the Anthropology of Oceania.**
- 523-2 to 6 (2 to 3 per topic) Seminar in Anthropology of Africa.**
- 530-2 to 6 (2 to 3 per topic) Seminar in Physical Anthropology.**
- 545-2 to 6 (2 to 3 per topic) Seminar in Anthropological Linguistics.**
- 560-2 to 6 (2 to 3 per topic) Seminar in Comparative Social Organization.**
- 562-2 to 6 (2 to 3 per topic) Seminar in the Anthropology of Contemporary Peoples.**
- 565-2 to 6 (2 to 3 per topic) Seminar in Culture Change and Development.**
- 567-2 to 6 (2 to 3 per topic) Seminar in Anthropological Theory and Method.**
- 571-2 to 6 (2 to 3 per topic) Visual Anthropology.**
- 576-2 to 6 (2 to 3 per topic) Seminar in Anthropological Research Design.**
- 581-2 to 6 (2 to 3 per topic) Seminar in Anthropology.**
- 585-1 to 12 (1 to 3 per semester) Readings in Anthropology.**
- 590-1 to 12 Internship in Conservation Archaeology.**
- 595-4 (2, 2) Field Methods in Ethnology.**

596-4 (2, 2) Field Methods in Archaeology.
597-1 to 12 Fieldwork in Anthropology.
599-1 to 6 Thesis.
600-1 to 32 (1 to 12 per semester) Dissertation.

Architectural Technology (Program, Major, Courses)

The continuing growth of the architectural profession requires large numbers of technicians whose training has provided a firm foundation for supporting roles in today's profession and the basis for skill development in emerging activities. The architectural technology program offers this training in a curriculum designed to produce the skills in highest demand in the market for newcomers to the profession. Appropriate general studies and field trips to architects' offices and projects supplement the technical offerings.

The intelligent, motivated student with mathematical, artistic, or manual skill will be most successful in the program. They should be prepared to spend about \$200.00 for equipment, supplies, and field trips.

Architects who hold professional degrees and have many years of professional and teaching experience constitute the faculty. The program has the official approval of the American Institute of Architects.

An advisory committee whose members are practicing architects chosen for their understanding of today's needs in the profession and their interest in education assists the faculty in maintaining a current curriculum. Members currently serving on the advisory committee are: Edward F. Bartz, Jr., FAIA, Hellmuth-Obata and Kassabaum, Belleville, William E. Gramley, AIA, Phillips-Swager Associates, Peoria, Frederick W. Salogga, FAIA, Salogga-Bradley-Likins-Dillow, Decatur, and William H. Stein, AIA, Fischer-Stein Associates, Carbondale.

Graduates will have an understanding of the design profession, design and production processes, and other components of the construction industry. Their usual point of entry into the profession is as drafting technicians producing construction drawings. As they gain experience they may develop capabilities to accept more responsibility in such areas as project coordination, specification writing, estimating, various types of engineering, construction inspection, architectural design, and presentation.

There are also nonprofessional opportunities in the construction industry with manufacturers, material suppliers, contractors, and developers.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Applied Science Degree, School of Technical Careers

<i>Requirements for Major in Architectural Technology</i>	
GSD 101, 153	6
School of Technical Careers 102, 105a,b, 107a,b,	10
Architectural Technology 111, 112, 113, 124, 125, 214, 215, 216, 217, 218, 220, 224, 225, 226, 229	60
<i>Total</i>	76

Courses

111-7.5 Architectural Drafting. Use of drafting instruments, lettering and linework; geometric construction, projections, sections and intersections; pictorial drawing, perspective, shades and shadows, and reflections. Lecture three hours. Laboratory nine hours.
112-3.5 Architectural Graphics. Freehand drawing; various techniques in black and white media; theory and use of color; delineation techniques in various color media. Lecture one hour. Laboratory five hours.

113-2 Architectural History. Study of influences upon, and ensuing development of architecture from the earliest examples to the present; review of the development of architectural practice to its current state. Lecture two hours.

124-6 Architectural Drawings I. Introduction to basic materials and components used in contemporary construction. A survey of manufacturing methods, available sizes, performance characteristics, quality, finishes and applications. Usage of vendor's brochures and standard references. Preparation of working drawings in light frame construction to practice current procedures, dimensioning, notation, design, correlation, with standard and creative detailing. Lecture three hours. Laboratory six hours. Prerequisite: 111.

125-4 Architectural Design I. Problem solving techniques in architectural design with emphasis on basic design principles, human scale, composition and presentation. Architectural problems of relatively small scope and simple nature; and introducing factors of circulation and environmental control. Lecture one hour. Laboratory five hours. Prerequisite: 111, 112, 113.

214-6 Architectural Drawings II. Continuing study of materials and practice in document preparation for construction of non-complex buildings using framing methods appropriate to various occupancy classifications. Investigation and use of local, state, and federal codes regulating health and safety. Construction techniques relating to criteria of permanence, low maintenance and budget requirements. Working drawings for low-rise buildings of commercial, industrial, educational, professional, or institutional character. Lecture three hours. Laboratory six hours. Prerequisite: 124.

215-4 Architectural Design II. Continuing study of architectural design in application of principles to projects of increased scope and complexity, with attention to research, site planning, and comprehensive feasibility. Presentations in various media. Lecture one hour. Laboratory five hours. Prerequisite: 125.

216-4 Architectural Engineering I. Elementary study of forces and force systems using graphical and mathematical solutions. Basic engineering concepts. Reactions, shear and moment diagrams. Axial, bending, and eccentric loading on beams and columns. Application of principles in design with wood, steel, and concrete. Floor and roof support systems using dead and live load calculations. Lecture four hours. Prerequisite: School of Technical Careers 105a,b, 107a,b.

217-2 Architectural Systems. Basic principles dealing with mechanical and electrical equipment of buildings. Familiarization with water supply and sanitation systems. Fundamentals of properties of heat, sources and transmission of various heating systems, air conditioning and purification systems. Introduction to vertical and horizontal transportation systems. Fundamentals of illumination and electrical systems. Fundamentals of acoustics and appropriate materials for reflection, attenuation, and isolation. Lecture two hours. Prerequisite: School of Technical Careers 107a,b.

218-3 Architectural Surveying. Use of surveyor's tape, transit, and level. Fundamentals of topography, area and volume calculations, site planning, and building layout. Lecture one hour. Laboratory three hours. Prerequisite: School of Technical Careers 105a,b.

220-2 Architectural Specifications. Function of specifications as a contract document. The relationship of specifications to architectural drawings. Organization and format. Content of various sections. Lecture two hours. Prerequisite: fourth semester status.

224-6 Architectural Drawings III. Continuing study of materials and practice in document presentation for construction of high-rise buildings of a more complex nature. Contemporary materials, components, and systems. Steel and concrete framing systems using short and longspan steel joists, steel pans, pre and post tensioned precast components. Correlation with electrical, mechanical, and structural work. Lecture three hours. Laboratory six hours. Prerequisite: 214.

225-4 Architectural Design III. Continuing application of architectural design principles and procedures to projects of higher factor of usage, or greater scope and complexity of function and circulation. Continuing practice in presentation with various media. Lecture one hour. Laboratory five hours. Prerequisite: 215.

226-4 Architectural Engineering II. Continuing study of structural framing materials and systems. Design and investigation of framing components of wood, steel, and concrete. Usage of wood, steel, and concrete handbooks. Standard connections and fastening methods. Concrete design, quality control, and field inspection. Beams, columns, lintels, foundations, footings, and retaining walls. Lecture four hours. Prerequisite: 216.

229-2 Architectural Estimating. Estimating methods. Material lists and quantities. Material and labor costs. Factors affecting costs. Lecture two hours. Prerequisite: School of Technical Careers 105a,b.

Art (School, Major, Courses)

Undergraduate offerings in art provide both introductory and specialized experiences. The course of study offered, leading to the Bachelor of Arts degree with a

major in art, offers the student the opportunity to specialize in drawing, painting, printmaking, sculpture, ceramics, metalsmithing, weaving, art education, art history, or general studio. The specialization in art education requires 51 hours in art. The specialization in art history requires 58 hours in art. The specialization in general studio requires 52 hours in art, and all other specializations require 72 hours in art.

Bachelor of Arts Degree, College of Communications and Fine Arts

A student majoring in art should select one of the following fields of interest by the end of the sophomore year: drawing, painting, printmaking, sculpture, ceramics, metalsmithing, weaving, art education, art history, or general studio.

ART MAJOR—DRAWING SPECIALIZATION

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Art with Specialization in Drawing</i>	72
Art 100	8
Art 200, 201, 203	6
Art 204, 205, 206 (choice of one)	2
Art 107, 207, electives in art history	12
Art 301	8
Art 300	8
Art 400	12
Art electives	16
<i>Electives</i>	3
<i>Total</i>	120



ART MAJOR—PAINTING SPECIALIZATION

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Art with Specialization in Painting</i>	72
Art 100	8
Art 200, 201, 203	6
Art 204, 205, 206 (choice of one)	2
Art 107, 207, electives in art history	12
Art 300	8
Art 301	8
Art 401	12
Art electives	16
<i>Electives</i>	3
<i>Total</i>	120

ART MAJOR—PRINTMAKING SPECIALIZATION

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Art with Specialization in Printmaking</i>	72
Art 100	8
Art 200, 201, 203	6
Art 204, 205, 206 (choice of one)	2
Art 107, 207, electives in art history	12
Art 300	4
Art 301	4
Art 302	8
Art 402	12
Art electives	16
<i>Electives</i>	3
<i>Total</i>	120

ART MAJOR—SCULPTURE SPECIALIZATION

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Art with Specialization in Sculpture</i>	72
Art 100	8
Art 200, 201, 203, 204, 205	10
Art 107, 207, electives in art history	12
Art 300	4
Art 303	8
Art 403	12
Art electives	18
<i>Electives</i>	3
<i>Total</i>	120

ART MAJOR—CERAMICS, METALSMITHING, OR FIBERS/WEAVING SPECIALIZATION

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Art with Specialization in Ceramics, Metalsmithing, or Fibers/Weaving</i>	72
Art 100	8
Art 200, 201, 203, 204, 205, 206	12
Art 107, 207, electives in art history	12
Art 300	8
Art 303	4

Studio specialization	20
Ceramics: Art 304, 404	
Metalsmithing: Art 305, 405	
Fibers/Weaving: Art 306, 406	
Art electives	8
<i>Electives</i>	<u>3</u>
<i>Total</i>	120
ART MAJOR—ART HISTORY SPECIALIZATION	
<i>General Studies Requirements</i>	49
GSC 207 and 8 hours of foreign language (French or German); 4 hours of the foreign language will not count toward General Studies requirements.	
<i>Requirements for Major in Art with Specialization in Art History</i>	64
Art 107	3
Art 207, 217	5
Art 307, 317, 329, 339, 349	15
Art 419, 429, 439, 447, 449, 467, 477	21
Studio	20
Art 100, 12 hours beyond 100-level	
<i>Electives</i>	<u>7</u>
<i>Total</i>	120



ART MAJOR—GENERAL STUDIO SPECIALIZATION

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Art with Specialization</i>	
<i>in General Studio</i>	52
Art 100	8
Art 200, 201, 203, 204, 205, 206.	12
Art 107, 207, electives in art history.	12
Art electives	20
<i>Electives</i>	23
<hr/>	
<i>Total</i>	120

**Bachelor of Arts Degree, College of Communications and Fine Arts or
Bachelor of Science Degree, College of Education**

ART MAJOR—ART EDUCATION SPECIALIZATION

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Art with Specialization</i>	
<i>in Art Education</i>	51
Art 100	8
Art 200, 201, 203, 204, 205, 206.	12
Art 107, 207, electives in art history.	9
Art 308, 318, 328	9
Art electives	13
<i>Professional Education Requirements</i>	24
See Teacher Education Program, page 71.	<hr/>
<i>Total</i>	120

Minor

A total of 16 hours constitutes a minor. A total of 8 hours must be taken in Art 100. The student may elect to take any 200 level courses until the 16-hour requirement is satisfied.

Courses

Art education courses:	308, 318, 328, 338, 348, 408, 418, 428, 508, 518
Art history courses:	107, 207, 217, 307, 317, 329, 337, 339, 347, 349, 419, 429, 439, 447, 449, 467, 477, 507, 517
Studio courses:	100, 200, 201, 203, 204, 205, 206, 300, 301, 302, 303, 304, 305, 306, 319, 400, 401, 402, 403, 404, 405, 406, 414, 500, 501, 502, 503, 504, 505, 506, 514,
Independent study courses:	258, 259, 309, 499, 599
Other Courses:	457

- 100-8 (4, 4) Basic Studio.** Introduction to fundamental technical process and conceptual experiences in art. (a) Two-dimensional art, (b) Three-dimensional art. Incidental expenses will be at least \$15.00 per semester. Note: 100a or b not sequential.
- 107-3 Fundamentals of Art.** Basic experiences in the vocabulary, language, and theory of art.
- 200-2 Beginning Drawing.** Course work to emphasize experience in materials, techniques, processes, and ideas fundamental to the discipline of drawing. Incidental expenses will be at least \$10.00. Prerequisite: 100a, 107.
- 201-2 Beginning Painting.** Course work to emphasize experience in materials techniques, processes, and ideas fundamental to the discipline of painting. Incidental expenses will be at least \$25.00. Prerequisite: 100a, 107.
- 203-2 Beginning Sculpture.** Course work to emphasize experience in materials, techniques, processes, and ideas fundamental to the discipline of sculpture. Incidental expenses will be at least \$25.00. Prerequisite: 100b, 107.
- 204-2 Beginning Ceramics.** Course work to emphasize experience in materials, techniques,

processes, and ideas fundamental to the discipline of ceramics. Supplies and materials will be \$20.00. Additional costs of materials and tools are relevant to individually designed projects. These costs will vary with the individual student. Prerequisite: 100b, 107.

205-2 Beginning Jewelry and Metalsmithing. Course work to emphasize experience in materials, techniques, processes, and ideas fundamental to the discipline of jewelry and metalsmithing. Supplies and materials will be \$15.00. Additional costs of materials and tools are relevant to individually designed projects. These costs will vary with the individual student. Prerequisite: 100b, 107.

206-2 Beginning Fibers. A studio course providing experimental form building experiences in basic woven, dyed, printed, stitched, and non-loom fabric structures, emphasizing expressive use of their varied two and three dimensional qualities. The development of skills, feeling for materials, awareness, understanding and appreciation of these arts are emphasized. Supplies and materials will be \$15.00. Additional costs of materials and tools are relevant to individually designed projects. These costs will vary with the individual student. Prerequisite: 100b, 107.

207-3 Survey of Art History. A comprehensive survey of painting, sculpture, and architecture from prehistoric to present times.

217-2 Methodology of Art History and Criticism. Lecture, discussion, and presentation of the research tools of art history, art historical logic, and the methods of art criticism. Prerequisite: restricted to students specializing in art history.

257-1 to 30 Work Experience. Credit for concurrent structured or non-structured work performed which is related to the student's educational objective. Credit to be granted by department evaluation. Mandatory Pass/Fail.

258-1 to 30 Work Experience. Credit for past work performed which is related to the student's educational objective. Credit to be granted by departmental evaluation. No grade for past work experience.

259-2 to 16 Transfer Credit. Credit to be given for course work granted by any accredited educational institution, or vocational institution. Prerequisite: any work accepted for transfer credit in art must be granted with the approval of the appropriate faculty.

300-4 to 8 (4, 4) Intermediate Drawing. Use of technique, materials, and processes to develop a visual language in a personal way. Incidental expenses will be at least \$15.00 per semester. Prerequisite: 200.

301-4 to 8 (4, 4) Intermediate Painting. Use of technique, materials, and processes to develop a visual language in a personal way. Incidental expenses will be at least \$30.00 per semester. Prerequisite: 201.

302-12 (4, 4, 4) Beginning Printmaking. Course work to emphasize experience in materials, techniques, processes, and ideas fundamental to printmaking. (a) Etching: metal plate and constructive surface printing. Intaglio, metal, cardboard plate reliefs and collograph. (b) Lithography: introduction into plate and stone, including printing in black and white and color. (c) Introduction to silkscreen; photo methods, hand cut stencils and direct drawing. May be taken in any sequence. Supplies and materials will be \$25.00 per semester per student. Incidental expenses will be at least \$15.00 per semester. Prerequisite: 100a and b, 107.

303-8 (4, 4) Intermediate Sculpture. (a) Studio-practical and theoretical in figure modeling, mold-making, and reproduction processes. (b) Studio-practical and theoretical in metal casting, foundry technology, and metal fabrication. Incidental expenses will be at least \$25.00 per semester. Prerequisite: 203.

304-8 (4, 4) Ceramics-Intermediate. (a) Techniques: glaze calculation, body formulation, and aesthetic evaluation. (b) Use of techniques, materials, and processes to develop a visual language in a personal way. Supplies and materials will be \$30.00 per semester. Additional costs of materials and tools are relevant to individually designed projects. These costs will vary with the individual student. Must be taken in a,b sequence. Prerequisite: 204.

305-8 (4, 4) Jewelry-Intermediate. (a) Techniques in forming, fabrication, i.e., repousse, chasing, and die forming. (b) Use of techniques, materials, and processes to develop a visual language in a personal way. Supplies and materials will be \$25.00 per semester. Additional costs of materials and tools are relevant to individually designed projects. These costs will vary with the individual student. Must be taken in a,b sequence. Prerequisite: 205.

306-8 (4, 4) Intermediate Fibers/Weaving. Introduction to the art of weaving using simple as well as floor looms. Spinning and a continuation of work in non-loom fiber and fabric structure is encouraged with emphasis on personal expression and imagery. Supplies and materials will be \$30.00. Additional costs of materials and tools are relevant to individually designed projects. These costs will vary with the individual student. Prerequisite: 206.

307-3 Ancient Art. A survey of the arts from the Classical World including the Aegean, Ancient Greeks, and Romans.

308-3 Theories and Philosophies of Art Education. Students are expected to show an understanding of philosophies and theories, general trends in art education programs and teaching methods, perceptual and psychological developments of children, adolescents, and adults via book and periodical evaluations, preparation of a term paper, lectures, discussions, and a self-instruction center tape-slide series.

309-2 to 12 Independent Study. To be used by majors in the School of Art to pursue

independent research activities. Incidental expenses will be dependent upon the nature of the activity. Prerequisite: completion of all 100 and 200 level requirements in major area and consent of instructor.

317-3 Medieval Art. Survey of the arts beginning with the Fall of Rome through the Gothic period.

318-3 Curriculum and Administration in Art Education. Covers curricula, budgets, liaison with administrative community and professional organization. Also includes the design and development of learning environment. Incidental expenses will be at least \$10.00.

319-3 Art Studio for Non-Majors. General studio for the non-art major. Incidental expenses will be at least \$10 per semester.

328-3 Art Education Methods of Elementary and Secondary Schools I. Methods in art education as they pertain to the professional art teacher in elementary and secondary schools. Incidental expenses will be at least \$20.00.

329-3 19th Century Art. Survey of the arts in Europe from the French Revolution to the end of the century.

338-3 Art Education Methods for Elementary and Secondary Schools II. Methods of basic graphic and commercial art concepts as applied to elementary and secondary schools. Incidental expenses will be at least \$20.00.

339-3 Art Since 1945. A survey of the arts since World War II with the main emphasis on the shift of artistic innovation from Western Europe to the United States.

348-3 Art Education for Teachers. For elementary, special education, early childhood education, child and family, recreation, and other non-art majors. Introduction to uses and applications of art media, approaches to teaching for artistic awareness, concept development, creative expression, appreciation, and knowledge of our art heritage and basic skill building for art judgment. Especially applicable for preschool and K-6 grade levels. Laboratory fee \$2.50. Incidental expenses will be \$12.00 to \$15.00.

349-3 Esthetics. General survey of historical and contemporary philosophies of the beautiful with particular emphasis upon their application to visual works of art.

400-2 to 16 Drawing I. Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes, and ideas that form the content and experience of the student's major field. Prerequisite: Undergraduates-300-8. Graduates-consent of major adviser in appropriate art discipline.

401-2 to 16 Painting I. Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes, and ideas that form the content and experience of the student's major field. Prerequisite: Undergraduates-301-8. Graduates-consent of major adviser in appropriate art discipline.

402-2 to 16 Printmaking I. Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes, and ideas that form the content and experience of the student's major field. Prerequisite: Undergraduates-302-8. Graduates-consent of major adviser in appropriate art discipline.

403-2 to 16 Sculpture I. Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes, and ideas that form the content and experience of the student's major adviser in appropriate art discipline.

404-2 to 16 Ceramics I. Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes, and ideas that form the content and experience of the student's major field. Prerequisite: Undergraduates-304-8. Graduates-consent of major adviser in appropriate art discipline.

405-2 to 16 Metalsmithing I. Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes, and ideas that form the content and experience of the student's major field. Prerequisite: Undergraduates-305-8. Graduates-consent of major adviser in appropriate art discipline.

406-2 to 16 Fibers/Weaving I. Art studio course directed toward helping the student develop a sense of visual organization through individual research in fibers/weaving while gaining skill and facility in the use of these materials and their use in the student's creative expression. Prerequisite: undergraduates, 306-8; graduates, consent of major adviser in appropriate art discipline.

408-2 to 9 (2 to 3, 2 to 3, 2 to 3) Basic Research in Art Education. Each student demonstrates via class presentation, term papers and answers to exam questions a knowledge of basic research techniques and applications; important literature in the field of art education; broad research meanings; a theory of art education and material on behavioral objectives presented in class and via tape-slide self instruction programs.

414-2 to 16 Glassblowing I. Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes, and ideas that form the content and experience of the student's major field. Prerequisite: Undergraduates-consent of instructor.

418-2 to 9 (2 to 3, 2 to 3, 2 to 3) Individual Teaching Methods. Each student demonstrates an understanding of individual teacher-directed self-evaluative teaching methods involving studio projects, teacher-student evaluative sessions, individual projects, lecture-discussions and a term paper. Incidental fee \$20.00 maximum.

- 419-3 17th and 18th Century Art. Painting, sculpture, and architecture in Europe from the Baroque period to the French Revolution.
- 428-3 Individual Problems in Art Education for Elementary Education Majors. Individual concentration on one studio discipline and its application to pre-school, elementary education, early childhood and special education. Incidental expenses will be at least \$20.00. Prerequisite: 348a.
- 429-3 20th Century Art to World War II. Painting, sculpture, and architecture in Europe from the turn of the century to 1945.
- 439-3 American Art to World War II. Painting, sculpture, and architecture in the United States from the Colonial period to 1945.
- 447-3 Introduction to Museology. A survey of museum and gallery techniques answering questions concerning contractual agreements, taxes, insurance, packing, shipping, exhibit design and installation, record systems, general handling, public relations, and sale of art works directed toward problems encountered by the artist outside the privacy of his/her own studio. Prerequisite: art major or consent of instructor.
- 449-3 Renaissance Art. Painting, sculpture, and architecture in Italy and Northern Europe during the Renaissance period and its culmination in 16th Century Mannerist Art.
- 457-3 Women in the Visual Arts. Consists of lecture, discussion, and research in the following areas: women artists in history and the contemporary art world, the image and crafts, and architecture. Screening fee will be \$10.
- 467-3 Critical Issues in Contemporary Art. An examination of the style and meaning of contemporary art in relation to the current political, social and cultural issues. Will include visual arts, architecture, and communications media.
- 477-3 Art of the Thirties. A study of American art (painting, sculpture, mural art, crafts, etc.) during the Great Depression. Special emphasis will be placed on the origins of governmental patronage of the arts; its success and failure.
- 499-2 to 16 Individual Problems. Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes, and ideas that form the content and experience of the student's major field. Designed to adapt to student's individual needs in problem research. Can be used for interdisciplinary program flexibility. Prerequisite: consent of instructor.
- 500-2 to 24 Drawing II.
- 501-2 to 24 Painting II.
- 502-2 to 24. Printmaking II.
- 503-2 to 24 Sculpture II.
- 504-2 to 24 Ceramics II.
- 505-2 to 24 Metalsmithing II.
- 506-2 to 24 Fibers/Weaving II.
- 507-3 to 6 (3, 3) Reading in Art History.
- 508-2 to 9 (2 to 3, 2 to 3, 2 to 3) Research in Art Education.
- 514-2 to 24 Glassblowing II.
- 517-3 to 6 (3, 3) Concepts in Art History.
- 518-2 to 9 (2 to 3, 2 to 3, 2 to 3) Seminar in Art Education.
- 599-2 to 6 Thesis.

Asian Studies (Minor)

The Asian Studies program includes a variety of courses of the languages, civilizations, and contemporary issues of Asia. The program is intended to prepare a student for a number of career options with Asia interests. Through this program, a student may prepare for more advanced work on another campus, may develop a teaching specialty, or may broaden skills and knowledge which would be useful for professional and occupational interests in Asia.

A minor in Asian studies requires a minimum of 20 hours selected from a list of approved courses. Not more than eight hours may be taken in any one department for credit toward the 20 hours.

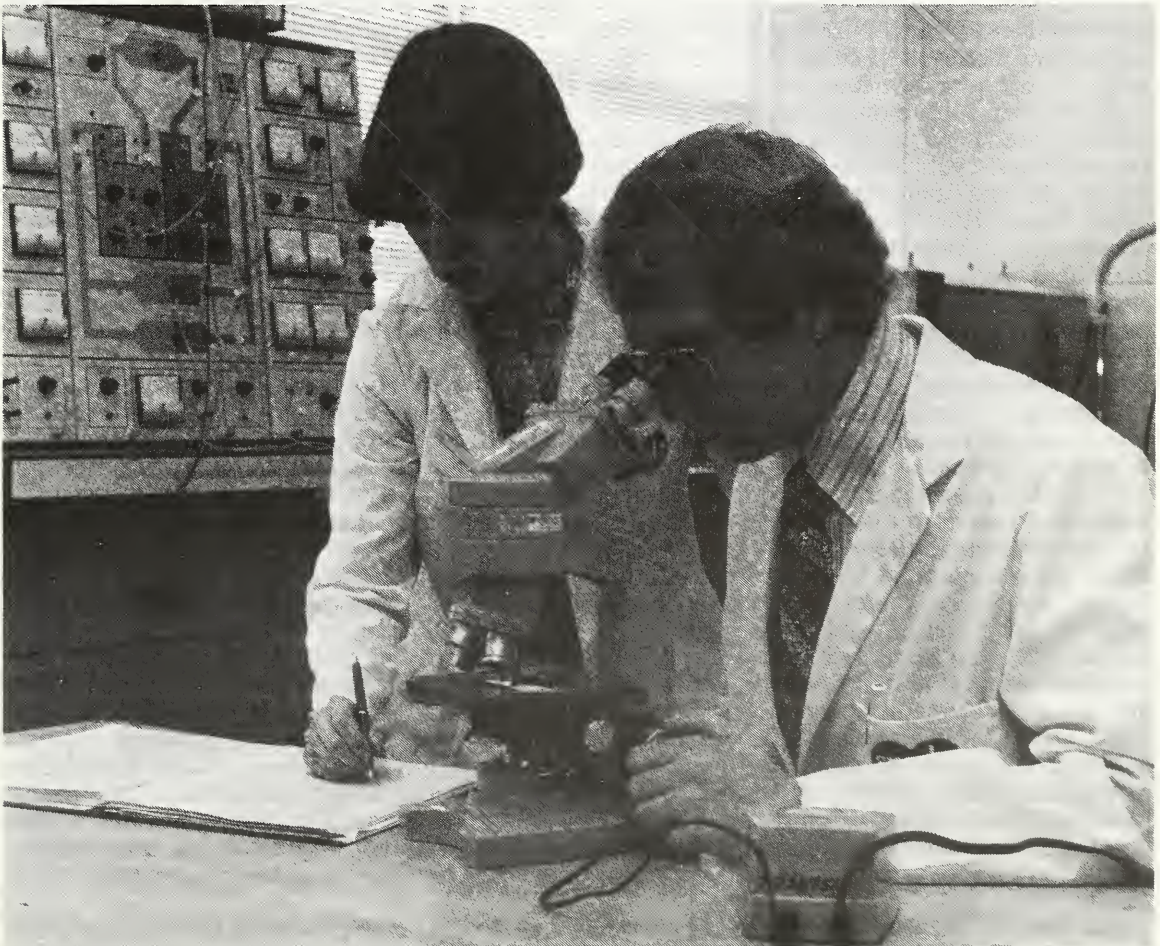
A student may major in Asian studies by means of the special major program of the University for the Bachelor of Arts degree. The student in this program has to meet University, General Studies, and the College of Liberal Arts requirements. The student's special major would not be approved unless at least 30 hours selected from a list of approved courses with at least three disciplines included are completed. Students interested in this program are encouraged to take at least two years of an Asian language.

Associate Degree Nursing (Program, Major [Nursing], Courses)

The Associate Degree Nursing program, offered through the Southern Illinois Collegiate Common Market, is developed as an open-curriculum model and is designed to provide career mobility for persons who have completed a practical nursing program or its equivalency through formal or informal methods. Students will be given an opportunity to validate past experiences through utilization of a comprehensive testing program.

Facilities limit enrollment to twelve full-time students, but since each student has different proficiencies, there is a possibility of openings during the academic year as students complete the requirements. In addition to gaining admission to the University, the applicant must demonstrate satisfactory levels of previous nursing skills and knowledge by taking the Psychological Corporation Pre-Entrance Examination for Schools of Nursing and Nursing Achievement Examinations prior to being admitted to the program. Requests for information should be directed to nursing, School of Technical Careers.

After assessment by the nursing faculty, an individualized prescriptive-type educational program will be developed with each student. Didactic instruction will be implemented mainly through a variety of multi-media teaching techniques with individualized assistance from the nursing faculty. Clinical experience will be gained through various cooperating hospital facilities in a designated geographical area of southern Illinois. Since the students will be traveling to several hospitals, it is essential that they have access to transportation. General education courses will be required in the areas of communication and social studies. The nursing courses follow a unique calendar, consequently the student's schedule will extend beyond the normal semester periods.



Additional expenses of approximately \$400.00 are required to cover textbooks, the cost of uniforms, the pre-admission examinations, liability insurance, workshops, and other items.

This program is designed to prepare the student for the practice of nursing as defined in the Illinois Nurse Practice Act and meets the requirements for accredited schools in associate degree nursing in Illinois.

Upon satisfactory completion of the program the student will be eligible to write the Illinois State Board Nursing Examination and to become a registered nurse. A registered nurse may be employed in private offices, school systems, hospitals and clinics, nursing homes, industrial health clinics, or other health care facilities.

Associate in Art Degree, School of Technical Careers

Requirements for Major in Nursing

Graduation from an accredited school of practical nursing or equivalent— minimum required transfer of credit	26
General Studies: GSD (5 hours in 2 areas), GSB 202 and 203	12
Associate Degree Nursing 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213	30
Electives	3
<hr/> Total	71

Courses

- 201-3 Introduction to Nursing and Science.** Using the individualized modular approach to education this course introduces the student to the basic concepts which are the foundation for the nursing and integrated science curriculum. Emphasis is placed on the scientific principles, conceptual framework and threads which will guide the student through the program. These principles will be applied in selected clinical situations. Lecture one and one-half hours; laboratory three hours. Prerequisite: consent of instructor.
- 202-4 Maternal-Child Nursing Interventions.** Utilizing principles from the physical, biological and behavioral sciences, this course is designed to give the student a basic knowledge of reproductive function, processes of the maternal cycle, and development of the newborns through age sixteen. The problem-solving approach will be applied to identified nursing problems in normal, specialized, and complex clinical situations occurring during the maternal cycle and from birth to age sixteen with special emphasis on concepts of the family. Lecture two hours; laboratory four hours. Prerequisite: 201.
- 203-4 Psychiatric Nursing Interventions.** Designed to assist the student to learn more about mental health and mental illness. The problem-solving approach will be applied to identified nursing problems in specialized and complex clinical situations based on the conceptual framework with special emphasis on interpersonal relationships, principles of psychiatric nursing, psychosocial needs, and skills in therapeutic communications. Lecture two hours; laboratory four hours. Prerequisite: 201.
- 204-2 Neurological Sensory Nursing Interventions.** Utilizing principles from the physical, biological, and behavioral sciences, this course is designed to give the student a basic knowledge of neurological and sensory function and those disorders commonly encountered in nursing practice. The problem-solving approach will be applied to identified nursing problems in specialized and complex clinical situations based on the conceptual framework with emphasis on the comprehensive care of clients of all ages. Lecture one hour; laboratory two hours. Prerequisite: 201.
- 205-2 Dermatological Nursing Interventions.** Utilizing principles from the physical, biological, and behavioral sciences, this course is designed to give the student a basic knowledge of skin function and those disorders commonly encountered in nursing practice. The problem-solving approach will be applied to identified nursing problems in specialized and complex situations based on the conceptual framework with emphasis on the comprehensive care of clients of all ages. Lecture one hour; laboratory two hours. Prerequisite: 201.
- 206-2 Orthopedic Nursing Interventions.** Utilizing principles from the physical, biological, and behavioral sciences, this course is designed to give the student a basic knowledge of skeletal and muscular function and those disorders commonly encountered in nursing practice. The problem-solving approach will be applied to identified nursing problems with specialized and complex clinical situations based on the conceptual framework with emphasis on the comprehensive care of clients of all ages. Lecture one hour; laboratory two hours. Prerequisite: 201.
- 207-2 Genital-Urinary Nursing Interventions.** Utilizing principles from the physical, biological, and behavioral sciences, this course is designed to give the student a basic knowl-

edge of genital-urinary function and those disorders commonly encountered in nursing practice. The problem-solving approach will be applied to identified nursing problems in specialized and complex clinical situations based on the conceptual framework with emphasis on the comprehensive care of clients of all ages. Lecture one hour; laboratory two hours. Prerequisite: 201.

208-2 Metabolic-Endocrine Nursing Interventions. Utilizing principles from the physical, biological, and behavioral sciences, this course is designed to give the student a basic knowledge of metabolic-endocrine function and those disorders commonly encountered in nursing practice. The problem-solving approach will be applied to identified nursing problems in specialized and complex clinical situations based on the conceptual framework with emphasis on the comprehensive care of clients of all ages. Lecture one hour; laboratory two hours. Prerequisite: 201.

209-2 Community Health Nursing. Designed to help the student learn that health and well being of citizens in the community is an integral part of nursing. The problem-solving approach will be applied to identified health problems of clients in a variety of community clinical agencies and settings with special emphasis on community resources for special health problems, communicable diseases, problems accompanying disasters, and special problems of senior citizens. Lecture one hour; laboratory two hours. Prerequisite: 201.

210-2 Cardiovascular Nursing Intervention. Utilizing principles from the physical, biological, and behavioral sciences, this course is designed to give the student a basic knowledge of cardiovascular function and those disorders commonly encountered in nursing practice. The problem-solving approach will be applied to identified nursing problems in specialized and complex clinical situations based on the conceptual framework with emphasis on the comprehensive care of clients of all ages. Lecture one hour; laboratory two hours. Prerequisite: 201.

211-2 Respiratory Nursing Interventions. Utilizing principles from the physical, biological, and behavioral sciences, this course is designed to give the student a basic knowledge of pulmonary function and those disorders commonly encountered in nursing practice. The problem-solving approach will be applied to identified nursing problems in specialized and complex clinical situations based on the conceptual framework with emphasis on the comprehensive care of clients of all ages. Lecture one hour; laboratory two hours. Prerequisite: 201.

212-2 Gastrointestinal Nursing Interventions. Utilizing principles from the physical, biological, and behavioral sciences, this course is designed to give the student a basic knowledge of gastrointestinal function and those disorders commonly encountered in nursing practice. The problem-solving approach will be applied to identified nursing problems in specialized and complex clinical situations based on the conceptual framework with emphasis on the comprehensive care of clients of all ages. Lecture one hour; laboratory two hours. Prerequisite: 201.

213-1 Nursing Today and Tomorrow. Leadership in nursing, transition into new graduate role and current issues in nursing are the integral components of the terminal course of this program. It will provide the successful student with practical experience utilizing all theory and knowledge of skills learned in the care of groups of patients. It is expected that the student will have learned to be a safe practitioner, function in group situations, relate to people of all ages, staff and patients, and effect change in the health care delivery system upon completion. Laboratory two hours. Prerequisite: consent of instructor.

Athletic Training (Minor)

(SEE PHYSICAL EDUCATION)

Automotive Technology (Program, Major, Courses)

The fundamental objective of the automotive technology program at the School of Technical Careers is to provide students with an opportunity to obtain a solid foundation of knowledge, experience, and skills that will assist in job entry and career advancement in automotive service.

The automotive service industry has been and will continue to experience rapid changes in technology. Perhaps the greatest changes will occur within the next decade as more fuel-efficient, less polluting motor vehicles become more commonplace. To service today's vehicles and the vehicles of the future will require highly skilled service technicians who will be skilled in the technologies that have been unknown until just a few years ago. The skills that will be required will be

varied and complex and will require service technicians to specialize in certain specific service areas.

This program recognizes the various needs of the industry and the needs of its future technicians and will offer an opportunity to obtain a solid foundation of knowledge and provide flexibility for a student to develop a specialty of the student's choosing.

During the first year, each student will be required to enroll in a series of core courses which will provide the student with the opportunity to obtain and develop those skills and technical information considered essential to all service technicians.

During the second year, the student may choose any four of seven possible areas. In most cases, these courses will deal with advanced instruction in areas covered in the core courses. In each case, however, the student will select the courses and, after completing this work and the general studies requirements, the student will be eligible for the associate degree.

Instruction in the automotive technology program is geared to a thorough presentation of basic fundamental concepts and reinforced with practical applications of those concepts with structured laboratory activities and service and diagnosis of live automobiles. In a vast majority of the courses all units studied will be working or operational units and dynamic testing of the units is an integral part of the course.

Additional expertise is provided to the program through an advisory committee composed of persons chosen for their knowledge of the field and their interest in education. Current members are: Mr. Al Bradshaw, supervisor of service training, Chrysler Motors Corporation; Mr. R. E. Stone, district service manager, Oldsmobile Division, General Motors Corp., Mr. James Racz, DuPage County Highway Department, Mr. Donald Vogler, Vogler Ford, Carbondale, Mr. Harry Wiggs, Carbondale Auto Supply, and Mr. Jearl E. Nichols, Ford Motor Co., St. Louis, Mo.

The student should expect to spend about \$300 for a basic tool kit consisting of both domestic and metric tools and supplies.

The associate degree can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-instructional educational experience.

Associate in Applied Science Degree, School of Technical Careers

Requirements for Major in Automotive Technology

GSD 101 and 153	6
School of Technical Careers 102, 105a, 107a,b, 108	10
Automotive Technology 101, 103, 105, 107, 115, 121, 123, 125, 127.....	32
Thirty hours of selected 200-level Automotive Technology courses	30
Total.....	78

Courses

101-4.5 Automotive Engines and Fuel Systems Laboratory. Enables the student to learn the fundamental service techniques and procedures required to service current automotive engines through meaningful hands-on experience on live engines. The student will disassemble laboratory engines, inspect for wear and damage, and reassemble the engine to operating condition according to manufacturer's specifications. The student will also be given specific instruction regarding the adjustment, repair, and diagnosis of carburetors. Laboratory will be fourteen clock hours per week for eight weeks. Prerequisite: concurrent enrollment in 121.

103-4.5 Brakes and Chassis Laboratory. Designed to provide the student with work experience performing various chassis, suspension, and brake services on live vehicles. Complete brake overhaul, front end rebuilding, wheel alignment, and wheel balancing are some of the tasks performed. Laboratory will be fourteen clock hours per week for eight weeks. Prerequisite: concurrent enrollment in 123.

105-4.5 Engine Electrical Laboratory. Allows the student to apply the fundamental theories of electricity to the actual diagnosis and testing of the battery, charging, starting, and ignition systems. Hands-on experience on live and laboratory units is the basic part of this course. Laboratory will be fourteen clock hours per week for eight weeks. Prerequisite: concurrent enrollment in 125.

107-4.5 Drive Trains Laboratory. Provides the student with hands-on experience in diagnosis and repair of the modern vehicle drive line. Service activities such as overhaul procedures for 3, 4, and 5-speed manual transmissions, clutch service, universal joint repair, drive line angle measurement, and complete differential repair will be included. Laboratory will be fourteen clock hours per week for eight weeks. Prerequisite: concurrent enrollment in 127.

115-2 Related Shop Laboratory. Provides the student with an opportunity to learn and perform routine service operations and small repairs that are required of all automotive service personnel. Such topics as thread repairs, fasteners, drill sharpening, broken stud removal, copper and brass fitting identification and fabrication, and basic acetylene welding and brazing are examples of some of the course content. Theory-laboratory will be four clock-hours per week for eight weeks.

121-3 Basic Automotive Engines and Fuel Systems Theory. Explanation of the theory of operation and design characteristics of the four-stroke cycle gasoline engine as well as the basic automotive fuel system and carburetor. The different engine designs, basic carburetion and ignition, horsepower and torque computation, and related systems of engine operation are examples of some of the topics to be covered. Theory will be six clock hours per week for eight weeks. Prerequisite: concurrent enrollment in 101.

123-3 Brakes and Chassis Theory. Provides instruction in the physical laws of hydraulics and pneumatics and their application to the modern brake and steering systems. Included is the study of steering geometry and suspension service procedures. Also covered is brake diagnosis and repair, brake machining, and power brakes. Theory will be six clock hours per week for eight weeks. Prerequisite: concurrent enrollment in 103.

125-3 Engine Electrical Theory. Provides the student with an opportunity to learn the fundamental theories of electricity and to apply these fundamentals in the operation of batteries, cranking motors, solenoids, relays, alternators, generators, regulators, and ignition systems. Special emphasis is placed on meter use and sound diagnostic procedures. Theory will be six clock hours per week for eight weeks. Prerequisite: concurrent enrollment in 105.

127-3 Drive Trains Theory. Deals specifically with the units needed to transmit the power of the automobile from the engine to the rear wheels. Presents to the student such things as clutches, standard transmissions 3, 4 and 5-speed, propellor shafts and differentials, their principles of operation, theory involved, and repair procedures. Included in this course is also basic study of planetary gears and fluid couplings. Theory will be six clock hours per week for eight weeks. Prerequisite: concurrent enrollment in 107.

201-4.5 Automatic Transmission Laboratory. Permits the student to acquire practical experience in the service procedures required on automatic transmissions. Proper disassembly, inspection, measurement, and reassembly will be stressed along with dynamic testing on a dynamometer of the transmissions being serviced. Outside vehicles will be repaired with emphasis on proper diagnosis before repairs are performed. Laboratory will be fourteen clock hours per week for eight weeks. Prerequisite: 101, 121, 107, 127, and concurrent enrollment in 221.

203-4.5 Automotive Power Accessories Laboratory. Assists the student in developing a comprehensive understanding of the diagnostic and repair procedures required of the various comfort options and accessories commonly found on current production automobiles. Diagnosis and repair of automotive lighting systems and dash instrumentation will also be included. Laboratory will be fourteen clock hours per week for eight weeks. Prerequisite: 105, 125 and concurrent enrollment in 223.

204-4.5 Automotive Air Conditioning Laboratory. Provides the student with an opportunity to obtain practical experience in the actual service and diagnostic procedures required of all current air conditioning systems. Service activities presented will consist of all operations required of the refrigeration system including compressor rebuilding and the diagnosis and repair of factory-equipped systems. Laboratory will be 14 clock-hours per week for eight weeks. Prerequisite: 105, 125, and concurrent enrollment in 224.

205-4.5 Advanced Fuel and Emission Systems Laboratory. Students will diagnose, overhaul, and adjust the current domestic types of carburetors. Heavy emphasis will be on engine performance testing and diagnosis of engine malfunctions through the use of test equipment such as oscilloscopes and infra-red testers. Laboratory will be fourteen clock hours per week for eight weeks. Prerequisite: 101, 121, 105, 125, and concurrent enrollment in 225.

207-4.5 Advanced Brakes and Chassis Laboratory. Provides the student with the opportunity to acquire practical experience in the actual service of such things as power steering, steering columns, anti-skid brakes, load leveling devices, and total vehicle alignment. Laboratory will be fourteen clock hours per week for eight weeks. Prerequisite: 103, 123, and concurrent enrollment in 227.

208-4.5 Advanced Engine Laboratory. Allows the student the opportunity to develop those skills and service techniques that are considered essential to perform quality engine rebuilding. Service operations such as valve refacing, cylinder head, engine block, crankshaft, rod, and piston reconditioning are examples of activities that will be performed on live vehicles scheduled for this purpose. Diagnosis of engine mechanical failures and noises will also be emphasized. Laboratory will be fourteen clock hours per week for eight weeks. Prerequisite: 101, 121, 105, 125, and concurrent enrollment in 228.

209-4.5 Advanced Electrical Systems Laboratory. Designed to provide detailed instruction on the approved service procedures for diagnosis and repair of current ignition, charging, and starting systems. These activities will be performed on live vehicles and laboratory units. Laboratory will be fourteen clock hours per week for eight weeks. Prerequisite: 101, 121, 105, 125, and concurrent enrollment in 229.

221-3 Automatic Transmission Theory. An in-depth study of the current automatic transmissions offered by the major manufacturers. This course deals with the torque converter, planetary gear systems, methods of clutching, and hydraulic controls. Special emphasis will be placed on methods of diagnosis and repair of problems. Oil circuitry will be presented in detail. Theory will be six clock hours per week for eight weeks. Prerequisite: 101, 121, 107, 127 and concurrent enrollment in 201.

223-3 Automotive Power Accessories Theory. Allows the student to obtain a sound understanding of the theory of operation of the various electrical accessories and popular comfort options. Examples of units studied are: power windows, power seats, windshield wiper motors, dash instruments, heated rear windows, body lighting and warning buzzer systems. Assisting the student to interpret electrical wiring diagrams will be emphasized. Theory will be six clock-hours per week for eight weeks. Prerequisite: 105, 125 and concurrent enrollment in 203.

224-3 Automotive Air Conditioning Theory. Allows the student to obtain in-depth instruction in the fundamental principles of refrigeration systems which are applicable to all current systems, plus the theory of operation of the various controls used on factory installed units. Such topics as the refrigeration cycle, temperature regulation, anti-frost controls, and air conditioning systems testing are examples of the material studied. Theory will be six clock-hours per week for eight weeks. Prerequisite: 105, 125 and concurrent enrollment in 204.

225-3 Advanced Fuel and Emission Systems Theory. Deals specifically with the theory of operation of most types of carburetors used on domestic automobiles. The emission control systems and laws concerning automotive emission standards will also be a major topic of the course. Proper tune-up procedures to meet emission standards will be studied in detail. Theory will be six clock hours per week for eight weeks. Prerequisite: 101, 121, 105, 125, and concurrent enrollment in 205.

227-3 Advanced Brake and Chassis Theory. An in-depth study of brakes and suspension systems to include such topics as power steering, steering columns, anti-skid brakes, load leveling devices, and total vehicle alignment. Theory will be six clock hours per week for eight weeks. Prerequisite: 103, 123, and concurrent enrollment in 207.

228-3 Advanced Engine Theory. Major emphasis will be on piston, rod, crankshaft, cylinder head, and combustion chamber designs of the modern automotive engine. The student will have the opportunity to apply the principles that are directly related to service operations, diagnosis, and repair of mechanical malfunctions of the engine. Theory will be six clock hours per week for eight weeks. Prerequisite: 101, 121, 105, 125 and concurrent enrollment in 208.

229-3 Advanced Electrical Systems Theory. Emphasis will be on operation, diagnosis, and repair of under-the-hood electrical systems. Electronic ignition and charging systems will be studied in detail. Also in-depth instruction will be provided in the operation, diagnosis and repair of starter motors and starter control circuits. Theory will be six clock hours per week for eight weeks. Prerequisite: 101, 121, 105, 125, and concurrent enrollment in 209.

Aviation Technology (Program, Major, Courses)

Skilled technicians are in demand in the aviation industry, both in airlines and general aviation. The industry demands people who possess a wide range of knowledge and ability provided by general education as well as special technical training.

The student learns reciprocating and jet powerplants, cabin environment and jet transport systems, hydraulics, fuel systems, ignition-starting systems, carburetion and lubricating systems, instruments, and powerplant testing in coordinated classroom and laboratory work. The program is fully accredited by the Federal Aviation Administration. Students who wish to qualify for the FAA airframe and powerplant license are required to take a two-course post-associate specialization.

Instruction is conducted at the Southern Illinois Airport between Carbondale and Murphysboro in a combination laboratory-classroom-hangar facility.

The student should expect to spend about \$250 for a tool kit and special study materials.

Executives in the aviation industry constitute an advisory committee which serves the program. Current members are: Robert R. Bethel, senior engineer, avionics department, McDonnell-Douglas Corp., St. Louis, Mo.; Raoul Castro, manager, aviation department, Marcor, flight operations, Chicago; R. Craig Christie, vice president, marketing, King Radio Corp., Olathe, Kansas; John P.. Davis, assistant vice president, maintenance, Delta Air Lines, Inc., Atlanta, Ga.; Roy S. Davis, director, technical services, TWA, O'Hare International Airport, Chicago; Jack Tuitt, captain and flight manager, midwest region, United Air Lines O'Hare International Airport, Chicago; H. E. Chandler, supervisor, training center, Bell Helicopter Co., Fort Worth, Texas; Joseph Goetz, senior captain, pilot, TWA, Kennedy Airport, New York; Howard D. Gould, management consultant, Personnel and Industrial Race Relations Associates. Chicago; Robert J. Graham, supervisor, production control, American Air Lines, O'Hare International Airport, Chicago; Alfred E. Jordan, vice president, technical affairs, TWA, New York; A. Edward Langhorst, manager, aircraft engine group, Evendale Technical Training School, General Electric Co., Cincinnati, Ohio; Roy Levitt, assistant to the president, Roger Smith Aircraft, Aurora Airport, Aurora; C. Steven Nicely, manager, training division, product support, Douglas Aircraft Co., Long Beach, Calif.; William Norwood, captain, United Air Lines, Elk Grove Village; John J. Pitrus, manager, commercial marketing, Pratt and Whitney Aircraft, East Hartford, Conn.; John S. Winter, president, Systron Donner Corporation, Berkeley, Calif.; Frank H. Wood, supervisor, ramp operations department, United Air Lines, O'Hare International Airport, Chicago; and Phillip S. Woodruff, manager, aviation education, marketing division, Cessna Aircraft Company, Wichita, Kansas.

Associate in Applied Science Degree, School of Technical Careers

Requirements for Major in Aviation Technology

GSD 101, 118, 153	8
School of Technical Careers 105a	2
Aviation Technology 110, 111, 112, 113, 201, 203, 204, 205, 210, 211, 212, 214, 215, 216	66
Elective (in social science)	5
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Total.....	81

Courses

- 110-4 Aircraft Structure-Fabrication and Repair.** Students will be able to identify and select materials employed in aircraft construction. Using appropriate FAR's, they will demonstrate competence in repair of honeycomb, fiberglass, welded, wood, or fabric aircraft members. The student will inspect aircraft members for defects and, if necessary, inspect completed repairs for airworthy condition.
- 111-5 Materials and Metal Processing.** Students will be able to identify, select, and inspect aircraft hardware and materials. They will be able to select and apply appropriate cleaning materials and to implement corrosion controls. They will become proficient in the use of precision measurement equipment and related inspection tools. They will be able to make appropriate sheet metal repairs using correct repair procedures, tools, and materials. They will be required to demonstrate correct use and interpretation of structural repair diagrams and correct interpretation of charts and tables from AC 43.13-1 pertaining to materials and methods.
- 112-4 Aircraft Electricity.** Students will have basic knowledge of electricity generation, AC and DC circuitries, and controls. They will be able to solve problems associated with electrical measurement (AC and DC), circuit interpretations and inspection, aircraft electrical load analysis, circuit malfunctions, and circuit or component servicing. They will have as an introduction, a basic knowledge of aircraft electronics.
- 113-5 Aircraft Instruments and FAR.** Students will have a knowledge of operation, installation, marking, and interpretation of synchro and servo systems, aircraft and power-plant

instruments. They will be able to install, adjust, and calibrate these instruments in accordance with FAA and manufacturers' recommendations. They will be able to select and use FAA technical and legal publications in order to perform the duties of an aircraft technician. Lecture, 3 hours. Laboratory, 2 hours.

201-2 Applied Science. A general coverage of applied science and the physical principles of sound, fluid, and heat dynamics. Identification of and proper use of aircraft drawing symbols and schematic diagrams. Sketches of FAA major repairs and alterations to aircraft. Use of aircraft, blueprints, graphs, charts, and tables as applied to aircraft performance and engine power requirements.

203-5 Aerodynamics and Weight and Balance. Students will have a knowledge of flight theory and factors affecting aircraft in flight. They will explain and compare aircraft design features in subsonic, transonic, and supersonic aircraft. They will be able to assemble and rig various aircraft control systems, analyzing and correcting faulty flight characteristics. Students will fully understand and solve problems of aircraft weight and balance. They will be able to perform weighing, computation of G.G., and establishing of equipment list.

204-4 Hydraulics (Aircraft). Students will have a knowledge of fluid theory and applied physics which relates to aircraft hydraulics. They will know the theory of operation, maintenance requirements, and adjustments of various hydraulic components and systems. They will be able to test, inspect, troubleshoot, and service hydraulic systems and overhaul malfunctioning components in accordance with FAA and manufacturers specifications.

205-5 Cabin Environment and Jet Transport Systems. Students will understand the atmospheric variables at different altitudes and the basic equipment required to cope with these variables. They will be able to operate, identify, adjust, and locate common causes of malfunction in the cabin pressurization and air-conditioning systems. Using the available information, jet transport aircraft and simulated training panels, they will understand the operation of and be able to identify the components of flight control systems, landing gear, fuel, anti-icing, and fire detection systems. They will be able to compare and analyze aircraft systems of current jet transport aircraft and to diagnose and resolve malfunction problems. They will have knowledge of procedures for aircraft ground handling, APU operation, and system servicing.

210-7 (2, 5) Aircraft Electrical and Ignition Systems. (a) The successful student should have a knowledge of the operation, repair, inspection, and service of small and large aircraft electrical systems, using schematic diagrams and training panels; (b) The successful student should have a knowledge of the operation, repair, inspection, and service of reciprocation and jet powerplant ignition systems and reciprocating starting system. They will be able to time, overhaul, and troubleshoot the various components of each system. Lecture four hours. Laboratory six hours.

211-5 Reciprocating Powerplant. Students will have a knowledge of construction, operation, and timing mechanisms associated with aircraft reciprocating powerplants. They will be able to disassemble, clean, measure, inspect, and reassemble a powerplant to airworthy condition in accordance with appropriate FAA and manufacturers regulations and practices.

212-5 Carburetion, Lubrication, and Fuel. Students will be able to demonstrate their competence in identifying fuel and oil system components and carburetors, understanding the operating principles of each. They will be able to inspect, adjust, troubleshoot, and overhaul these components according to manufacturers and federal regulations. They will be able to identify the grades of aviation fuels and lubricants and understand the characteristics and uses of each.

214-4 Propellers. Students will have a knowledge of the physical laws and design characteristics governing propeller operation. They will be able to identify components, troubleshoot, and adjust fixed and variable pitch propellers. They will maintain fixed pitch propellers, and the governor system for variable pitch propellers in accordance with FAA and manufacturers standards.

215-5 Powerplant Testing. Students will have an understanding of the correct procedures and precautions to be observed during engine installation, ground operation, and fuel and oil servicing. They will be required to inspect and troubleshoot reciprocating and jet engines for airworthy condition and interpret engine instrument readings to diagnose engine malfunctions.

216-6 Jet Propulsion Powerplant. Students will be able to apply and understand physics laws related to jet powerplants. They will be able to identify and understand the operation of jet engines and their components. They will be able to perform inspection, maintenance repair, troubleshooting, and adjustments of jet powerplants and accessories. They will be able to analyze engine performance and to interpret operational charts, graphs, and tables.

225-6 Aircraft Inspection. Students will be able to perform a 100-hour and an annual inspection of an aircraft. They will demonstrate knowledge of FAR's by checking appropriate AD's, classifying repairs, and pinpointing specific service problems. They will also complete the required maintenance forms, records, and inspection reports required by federal regulations. They will understand and be able to perform inspection under computerized aircraft maintenance programs.

230-6 Powerplant Inspection. Students will be able to perform periodic inspection of

powerplants. They will demonstrate their knowledge of FAR and application of FAA AD's, Service Bulletins, and proper use of inspection equipment. They will use knowledge learned in the powerplant curriculum to perform malfunction analysis of powerplant and related systems. Live equipment is used on a return-to-service basis.

301-6 Helicopter Theory and General Maintenance Practices. The student will have in-depth knowledge of rotary wing aerodynamics, main and tail rotor systems, rotor blades, primary and secondary controls, and general maintenance practices to include inspection and nondestructive testing. Prerequisite: Federal Aviation Administration Airframe and Powerplant Technician licenses.

302-10 Helicopter General Maintenance Laboratory. The student will perform general maintenance on rotary wing main rotor systems, tail rotor systems, rotor blades, flight and powerplant controls to include malfunction analysis, tracking, static balancing, rigging, and repair. The student will perform general helicopter inspections and nondestructive testing including magnetic testing, dye penetrant testing, and boroscope inspection. Prerequisite: concurrent enrollment in 301.

304-6 Helicopter Power Train and Inspection. The student will have an in-depth knowledge of the operation, function and inspection of all rotational components of a rotary wing aircraft to include transmissions, gear boxes, drive trains, and drive shafts. Prerequisite: 301 and 302.

306-10 Helicopter Power Train Lab. The student will perform all functions of overhaul concerned with rotary wing transmissions, gear boxes, and drive trains. The student will demonstrate skills in disassembly, inspection, reassembly, discrepancy analyzation, vibration analysis, and dynamic balancing. Prerequisite: concurrent enrollment in 304.

Avionics Technology (Program, Major, Courses)

Avionics, or aircraft electronics, is a rapidly growing field requiring highly skilled technicians for work in the development, installation, and maintenance of the sophisticated avionics systems required for effective utilization of modern day aircraft by the aviation industry.

The avionics technician finds opportunities for employment with the airline industry, general aviation, and in aircraft manufacturing, where employees will install, maintain, test and repair airborne communications and navigation systems, airborne radar systems, and related equipment.

The avionics technology program combines resources of either aviation technology and avionics technology or electronics technology and avionics technology. The student has the option of enrolling in the airframe program of aviation technology or the first year of electronics technology at Southern Illinois University at Carbondale or a community college with a program in aviation technology. The second year avionics will be completed at the facilities of the Aviation Technologies Division at the Southern Illinois Airport.

All instruction is programmed in a balanced combination of classroom lecture and actual "hands on" laboratory experience under the supervision of instructors who have extensive experience and expertise in their respective fields.

The student will have courses in basic direct current, alternating current, electrical power systems, airborne, auxiliary power systems, electrical generation and distribution, load transfer, solid state devices, aircraft communications and navigation systems, aircraft radar systems, aircraft flight control and instrumentation systems, aircraft integrated flight systems, UHF transmitters, receivers, and transceiver (including single sideband principles), pulse and microwave systems, antenna types, wave propagation and transmission lines, and Federal Aviation Administration and Federal Communication Commission regulations.

Enrollment in the program is limited, so the prospective student should plan to make application well in advance of the session in which the studies begin.

In addition to regular University tuition and fees, the student is required to purchase basic tool kits and study material at an approximate cost of \$100.

Executives in the aviation industry constitute an advisory committee which services the program. The current members are listed under aviation technology and they serve both programs.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community colleges or other acceptable extra-institutional educational experience.

Associate in Applied Science Degree, School of Technical Careers

*Requirements for Major in Avionics Technology**

AVIONICS TECHNOLOGY MAJOR—AIRFRAME OPTION*	
GSD 101, 118, 153	8
GSB Elective	3
School of Technical Careers 105	2
Aviation Technology 111, 112, 113, 201, 203, 204, 205, 210A	32
Avionics Technology 232	10
Avionics Technology 233, 234, 235, 236, 237, 238	32
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<i>Total</i>	87

AVIONICS TECHNOLOGY MAJOR—ELECTRONICS AND AVIONICS OPTION*	
GSD 101, 118, 153	8
GSB Elective	3
School of Technical Careers 105	2
Electronics Technology 101, 102, 111, 112, 121, 122	28
Aviation Technology 113	5
Avionics Technology 233, 234, 235, 236, 237, 238	32
School of Technical Careers 118	2
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<i>Total</i>	80

*To meet Federal and industry requirements, the student should plan to take additional 300-level courses offered as a post-associate specialty.

Courses

- 232-10 Avionics-Electronic Circuits.** Designed especially for students who have completed the Aviation Technology Program and wish to enter the Avionics Technology Program for a second major. Theory of operation of diode, practical rectifiers, DC to DC converter and airborne audio amplifier system both tube and transistor. Construction of basic avionic circuits and isolation of malfunctioning components. Perform repairs and testing of transistors and tube and tube type of avionic circuitries. Lecture eight hours, laboratory four hours. Prerequisite: Aviation Technology 210, Electronics Technology 102 and concurrent enrollment in Avionics Technology 233.
- 233-5 Aircraft Communication and Navigation Systems Theory.** Students will have knowledge of theory of operation, calibration and frequency selection of NAV-COM equipment. They will understand transceiver circuitries, closed frequency loop SCR circuits, audio amplifiers, inter-com systems, VOR navigation receivers, VOR converter, glide slope receivers, ADF receivers, and marker beacon receivers. They will be able to use avionics manufacturers maintenance and overhaul manuals and FAA regulations. Lecture five hours.
- 234-6 Avionics Laboratory II.** Students will be able to identify systems components. They will be able to operate and calibrate test equipment. They will be able to troubleshoot and repair communication and navigation equipment, and to perform alignment of transceivers, navigation receivers, VOR converter, ADF receivers and marker beacon receivers. They will effectively perform modification and compliance of Service Bulletins and FAA Directives. Laboratory twelve hours.
- 235-6 Flight System Theory.** Students will have knowledge of operation and installation of aircraft control, navigation, communication, syncro and servo systems. They will be able to determine if a system meets factory and FAA specifications. They will learn to use technical publications. Lecture six hours.
- 236-5 Avionics Laboratory III.** Students will be able to operate, install, adjust, troubleshoot, and repair automatic pilot, automatic stabilization systems, and integrated flight systems. They will be able to install, adjust, and troubleshoot flux gage compass, gyrosyn directional indicator, rate gyros, RMI repeater and attitude gyros. They will be able to use technical publications. Laboratory ten hours.
- 237-5 Avionics Logic Circuits and Pulse Systems Theory.** Students will be able to ana-

lyze the use and operation of logic gates, gate expanders, invertors, flip-flops, shift reges-tors, decade chounters and operational amplifiers as used in avionics circuits. They will have knowledge of pulse circuits used in distance measuring equipment and ATC transpon-ders. Lecture, five hours.

238-5 Avionics Laboratory IV. Students will be able to locate, identify, troubleshoot, and repair logic circuits used in avionics equipment. They will be able to test, calibrate, troubleshoot, and repair distance measuring equipment and ATC transponders in accord-ance with manufacturer and FAA Repair Station Guidelines. Laboratory, ten hours.

302-3 Avionics Laboratory V. Students will be able to conduct avionics loan analysis and perform weight and balance problems. Given a malfunction in an avionic system on the aircraft, they will be able to locate the faulty component, and to perform necessary repairs and to return equipment to airworthy status. Laboratory 12 hours.

303-2 FCC Regulations. The student will have knowledge of FCC requirements for air-craft station licenses, aeronautical ground station and operator's licenses. Lecture 4 hours.

304-4 Avionics Radar Systems Theory. The student will have knowledge of airborne radar system circuits, and understand the theory of operations of radar antenna system. The student will be able to perform installation, system performance check out, circuit adjust-ment, trouble shooting, and general repair of the airborne radar system.

Biological Sciences (Major)

The biological sciences major consists of courses selected from the Departments of Botany, Microbiology, Physiology, and Zoology. Students selecting biological sciences as their major do not need to take a minor. Besides enrolling in biological sciences courses, students are also required to take courses in chemistry and mathematics. Students should consult their advisers for additional information.

Bachelor of Arts Degree, College of Science

General Studies Requirements	45
Supplementary College of Science Requirements	8
Foreign Languages	(4) + 4
Mathematics 110a,b or 111 (or its equivalent), or 140.....	(4) + 1
Chemistry 224, 225	(4) + 3
Requirements for Biological Sciences	40
Physiology 210	4
Biology 305, 306, 307, 308, 309 (any two)	6
Botany 200 and 201, 204 and 205	8
Microbiology 301, 302.....	7
Zoology 220 a,b	8
Biological sciences electives at 400-level	7
Electives	27
Total	120

Bachelor of Science Degree, College of Education

Students planning to obtain their degree in the College of Education must satisfy all the requirements of that college. The requirements in biological sciences will be the same as those in the College of Science. Those students desiring to attain a secondary education teaching certificate must also enroll in Curriculum, Instruc-tion, and Media 468. See Teacher Education Program, page 71.

Minor

A minor in biological sciences consists of a minimum of 24 hours and may be taken in the College of Education, the College of Liberal Arts, or the College of Science. It must include two of the following biology courses: Biology 305, 306, 307 (6 hours), plus 9 hours selected from the following courses: GSA 208, 209, 303, 312, 313; Botany 200, 201, 204, 205; Microbiology 301, 302; Physiology 410a,b; and Zoology 220a,b. The remaining nine hours may be selected from courses offered by the departments of botany, microbiology, physiology, and

zoology. A student with a major in one of the life sciences may not take a minor in biological sciences.

Biology (Courses)

Courses

210-2 to 6 Biology Field Studies. A trip of from two to six weeks to acquaint students with organisms in various environments or with methods of field study, collection, and preservation. Students will incur costs for food, lodging, and transportation. Prerequisite: consent of instructor.

305-3 Genetics-Classical and Molecular. Broad principles of genetics, including Mendelism, chromosomal behavior, genetic mapping and mutation, Allelism, genes and development, polygenic systems, inbreeding and outbreeding, and genetic applications.

306-3 Cell Physiology. The basic functions of the cell are considered. The biochemical basis and mechanisms of the cellular processes, the functions of the subcellular structures, and their ramifications will be explored in the context of plant and animal cells.

307-3 Environmental Biology. Broad principles of ecology on the organismic, the population, the community, and the ecosystem level. Includes environmental factors, adaptations, energy and material balance, succession, and human ecology.

308-3 Organismic Functional Biology. Fundamental principles and biological examples of basic phenomena characteristic of organisms, including transport, integration, and reproductive systems. Detailed attention will be given to various organ systems with an emphasis on function.

309-3 Developmental Biology. Principles of development; causal mechanisms, cybernetic and phylogenetic aspects. Lecture course.

315-2 History of Biology. The interrelationships between the development of biological knowledge and the history of the human race.

Black American Studies (Minor, Courses)

Black American studies is a part of the Division of Social and Community Services.

The Black American studies program will plan a program for a special major leading to the Bachelor of Science degree in the College of Human Resources. Any student interested in such a program should consult this catalog for an explanation of the special major, and then contact the academic counselor in Black American studies in order to plan and receive approval for the program.

A minor in Black American studies consists of a minimum of 20 hours which are to be selected from Black American studies course offerings and organized according to each individual student's field of interest. An official minor is subject to approval by the coordinator of Black American studies.

Courses

209-3 Introduction to Black American Studies. A survey course providing students with insights into various disciplines and how these disciplines approach the Black American experience. Lecturers of diverse interests attend to specific and general problems in their field and hope to enlighten and expand the awareness of the need for scholarly study of Blacks.

225-3 Social Change in Africa. Examination of the interplay between tradition and modernity in an effort to understand the new Africa. Some of the forces of social change are analyzed. Other topics include African women and the family structure in change and the problems of African development.

230-3 Introduction to Black Sociology. An introductory course which focuses on the concepts of Black sociology in order to fill the gaps of "traditional sociology" pertaining to the Black experience. Designed to heighten the student's awareness of the Black identity and the sociological phenomena which affect it and acquaints the student with specific sociological problems in the study of Afro-Americans. Prerequisite: GSB 109.

257-1 Black American Studies Choir. Prerequisite: consent of instructor.

311-6 (3, 3) Black American History. (Same as History 372.) (a) Black American History to 1865; (b) Black American History since 1865. The role of Blacks and contribution in the building of America and the ongoing fight for equality.

314-6 (3, 3) History of Africa. (Same as History 387a;b.) (a) History of Africa. A study of West African peoples from earliest times to the present; including the era of kingdoms; the role of Islam; African-European relations; colonialism; and African nationalism. (b) History of East-Central Africa. A study of East and Central African peoples from earliest times to the present; including migrations and kingdoms; African-Arab-European relations, colonialism, and African nationalism.

320-3 Leaders of the Black World. A study of black rulers; governmental representatives; activists; and thinkers; both past and present; in Africa; the West Indies; and the United States, with emphasis on the effects of their philosophies on the black world.

330-3 Black American Social Problems. Comparative study of the social problems which afflict Black Americans and their consequences; including crime and delinquency, mental and emotional disorders, drug addiction, housing conditions, poverty and unemployment, and labor conditions. Prerequisite: consent of instructor.

332-3 Black Americans and the Law. Criminal deviancy and its consequences among Afro-Americans. Includes social history, immigration to America, and life conditions here.

333-4 The Black Family. Exploring the myths and realities of the black family from a sociological perspective. Prerequisite: 230 or junior standing.

336-4 The Black Personality. Examines current areas of interest in the study of the psycho/social characteristics of Black Americans. Theoretical and empirical data will be examined. Considers critical issues such as cognitive development; self-concept, socialization process and inter- and intra-group relations. Prerequisite: consent of department.

339-3 Black Americans and the Correctional Process. Analysis of selected topics: the prison community and the Black inmate; correction education and the Black inmate; and the Black professional. Prerequisite: 332.

345-3 Law and Civil Liberties. (See Political Science 332.)

350-3 Contemporary Black Drama. Surveys in the works of major and minor writers of contemporary Black dramas from *A Raisin in the Sun* to *No Place to Be Somebody*. Explores recent criticism on Black theater, and approaches oral and written criticism from the point of view of "Black aesthetics." Prerequisite: GSC 201, GSC 203, or consent of department.

355-3 The Black American Novel Since Native Son. The Black American novel and its major themes since Richard Wright's *Native Son*. Includes such authors as Baldwin, Petry, Williams, etc. Prerequisite: GSC 210, GSC 325, junior standing, or consent of instructor.

357-3 Blacks in the Performing Arts. History of the role of blacks in the performing arts covering dance companies, ballet, folk dance and Black dramatists; cinema, in all its forms; radio and television; and music (spirituals, jazz, opera, classics, etc.) Prerequisite: GSC 325, or consent of department.

358-3 Black Theater Workshop. Designed to train students in the arts of the theater. While major emphasis is placed on acting techniques, opportunities for training in makeup design and oral interpretation are also provided.

362-3 The Music of Black Americans. (See Music 372.)

370-3 Bibliography of Black American Studies. An introductory survey of Black American bibliographic resources course, culminating with students' compilation of a selective, annotated bibliography covering some chosen aspect of the black experience. Prerequisite: junior or senior standing or consent of instructor.

380-2 Regional Geography of Sub-Saharan Africa. (See Geography 365.)

385-4 Myth and Ritual in Archaic Religion. (See Religious Studies 333.)

391-2 Social Services and Minority Groups. (See Social Welfare 391.)

395-3 Investigative Procedures and Techniques for the Affirmative Action Officer. Designed to provide students with the basic skills of investigating equal employment opportunities and affirmative action complaints that might be filed by one who feels discriminated against in the hiring process and upward mobility within an agency. Study and research of existing cases filed with FEPC and EEOC.

399-3 to 5 Independent Study in Black American Studies. Independent study which examines problems and issues not covered in a specific course. Hours and subject matter decided during consultation with a faculty member. Prerequisite: consent of instructor. Elective Pass/Fail.

430-3 Black Political Socialization. Definitive approach to how people learn about politics focusing on Blacks because of their unique experience; i.e., prolonged minority group status. Research oriented, in that, it takes an explanative and predictive approach to produce models of political learning. Not for graduate credit. Prerequisite: 230, junior or senior standing, or consent of department.

445-3 Race and Politics. (See Political Science 429.) Not for graduate credit.

455-2 to 12 Rehabilitation Services with Special Populations.

465-3 Governments and Politics of Sub-Saharan Africa. (See Political Science 465.)

475-3 Sociological Effects on Black Education. A teacher-oriented course dealing with up-to-date research in Black and minority education. The instructor utilizes the findings of current periodicals to present models for understanding and communicating with Black children. Not for graduate credit. Prerequisite: Education 303 or consent of department.

480-4 to 8 (4, 4) Seminar in Black Studies. Analysis of the black experience directed toward

practical contributions in the area studied. Topics vary with instructor. May be repeated once for a total of eight credits provided registrations cover different topics. Topics announced in advance. Prerequisite: GSB 109 or consent of department.
490-1 to 3 Cross-Cultural Rehabilitation. (See Rehabilitation 419.) Not for graduate credit.
499-1 to 5 Special Readings in Black American Studies. Supervised readings for students with sufficient background. Registration by special permission only. Offered on demand. Prerequisite: consent of instructor.

Botany (Department, Major, Courses)

Botany is a broad science that includes many specialties. A major in botany should be considered by those wishing to specialize in teaching and/or research in the plant sciences and related fields.

Students planning to major in botany should consult with the chairperson of the department for information concerning the programs in the department.

As a general rule, students who intend to apply for admission to a graduate school to study for an advanced degree in botany should include the following in their undergraduate program: inorganic and organic chemistry, mathematics through calculus, a modern European language, and as many botany and biology courses as time and scheduling will permit.

An honors program is available to those juniors and seniors in botany who have an overall grade point average of 3.00 or better and an average in Botany courses of 3.25 or better. Honors students should enroll in Botany 492 during some semester in both junior and senior years.

Bachelor of Arts Degree, College of Science

General Studies Requirements	45 ¹
Supplementary College of Science Requirements	7
Foreign Language	(4) + 4
Mathematics 110a, b or 111 (or its equivalent), or 140.	(4) + 1
Physical Sciences (Not General Studies).	(4) + 2
Requirements for Major in Botany.	43-48 ²
Biology 305, 307	6
Botany 200, 201, 204, 205, 304, 320, 335, 337	19
Botany electives (to be selected from Botany offerings excluding Botany 160, 258, 259, 462, 490, 491; and may include up to a total of 6 hours selected from Botany 390, 391, and 492).	16
Chemistry.	(6) + 2-7 ³
Option A: Chemistry 140a,b	
Option B: Chemistry 224, 225, 340, 341	
Electives	20-25
Total	120

¹The 45-hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Studies courses.
²Botany requirements satisfy the biological and physical sciences requirements for the College of Science and may be substituted for a maximum of 12 hours in General Studies.
³Option B is recommended for those interested in plant physiology or graduate study.

Bachelor of Science Degree, College of Education

Students planning to obtain their degree in the College of Education must satisfy all the requirements of that college. The requirements in botany must total 32 semester hours, including Botany 200, 201, 204, and 205. Those students desiring to attain a secondary education teaching certificate must also enroll

in Curriculum, Instruction, and Media 468. See Teacher Education Program, page 71.

Minor

A minor in botany consists of a minimum of 16 semester hours, selected from any botany offerings except 160, 257, 258, 259, 390, 391, 462, 490, 491, or 492.

Courses

For all field courses in botany, students will be assessed a transportation fee. In addition, certain courses may require the purchase of additional materials and supplies, generally \$1 to \$5 in total cost.

160-3 Integrated Science—A Process Approach. An interdisciplinary science course stressing processes of science; observing, classifying, using numbers, measuring, using space-time relationships, communicating, predicting, inferring, defining operationally, formulating hypotheses, interpreting data, controlling variables, and experimenting.

200-3 General Botany. An introduction to botany. Emphasis is placed on structure and development and associated physiological phenomena. Consideration also is given to basic aspects of plant genetics, classification, evolution, ecology, and conservation.

201-1 General Botany Laboratory. Exercises in observation and experimentation on plant structure and development and associated physiological phenomena. Prerequisite: 200 or concurrent enrollment.

204-3 Botany—Plant Diversity. An evolutionary approach to the study of major plant groups—algae to flowering plants. Emphasis will be given to practical aspects of various plant groups in relation to people and their environment. Prerequisite: 200 or consent of instructor.

205-1 Botany—Plant Diversity Laboratory. Cytological, anatomical, and morphological study of selected representatives of major plant groups. All labs are coordinated with lectures in 204. One two-hour laboratory per week. Prerequisite: 204 or concurrent enrollment.

257-2 to 8 Concurrent Work Experience Credit. Practical experience in a laboratory or other work directly related to course work in the botany program and to the student's educational objectives may be used as a basis for granting credit in botany. Credit for ongoing work experience must be arranged prior to registration, is sought by petition to the department chairperson via the departmental undergraduate adviser, and requires the approval of the department chairperson, the executive officer of the student's major program if other than botany, and the dean of the College of Science. Mandatory Pass/Fail.

258-2 to 8 Previous Work Experience Credit. Practical experience in a laboratory or other work directly related to course work in the botany program and to the student's educational objectives may be used as a basis for granting credit in botany. Credit for past work experience is sought by petition to the department chairperson via the departmental undergraduate adviser and requires approval of the department chairperson, the executive officer of the student's major program if other than botany, and the dean of the College of Science. No grade for past work experience.

259-2 to 8 Vocational Education Credit. Formal, post-secondary educational credit earned in a military service or other vocational technical or occupational program and directly related to the student's educational objectives may be used as a basis for granting credit in botany. Credit is sought by petition to the department chairperson via the departmental undergraduate adviser and requires approval of the department chairperson, the executive officer of the student's major program if other than botany, and the dean of the College of Science.

304-3 Plant Classification. Identification of local flora by use of various manuals. Survey of taxonomy and nomenclature. Every semester. Prerequisite: 200 or equivalent.

308-3 Taxonomy of Cultivated Plants. Identification of woody and herbaceous cultivated plants and discussion of their use as ornamentals. Prerequisite: consent of instructor.

320-4 Elements of Plant Physiology. The functions of plants and their relation to the various organs. Two lectures and four laboratory hours per week. Every semester. Prerequisite: 200; organic chemistry or a minor in chemistry.

335-2 Methods in Genetics. Selected organisms and techniques illustrating genetic principle. Two two-hour laboratories per week. Prerequisite: Biology 305 or equivalent.

337-2 Ecology Laboratory. Techniques in vegetation analysis and environmental measurements. One four-hour laboratory per week. Prerequisite: Biology 307 or equivalent.

390-1 to 3 Readings in Botany. Individually assigned readings in botanical literature. Every semester. Prerequisite: consent of departmental chairperson.

391-1 to 4 Special Problems in Botany. Individual laboratory or field work under supervised direction. Every semester. Prerequisite: consent of departmental chairperson.

400-4 Plant Anatomy. An introduction to cell division, development, and maturation of

the structures of the vascular plants. Laboratory. Prerequisite: 200 or consent of instructor.

404-4 The Algae. A phylogenetic approach to the study of algae with emphasis on comparative cytology, morphology, and ecology. Laboratories include a detailed survey of freshwater algae and a general treatment of representative marine forms. Two lectures and two two-hour laboratories per week. Prerequisite: 204 and 205 or consent of instructor.

405-4 The Fungi. A survey of the fungi — their structure, development, relationships, ecological roles, and economic importance. Two lectures and two laboratories. Prerequisite: 204 or equivalent.

406-3 Bryology. Structure, development, and relationships of the liverworts, hornworts, and mosses. Two lectures and one laboratory per week. Prerequisite: 204 or equivalent.

409-3 Field Mycology. The taxonomy, ecology, and distribution of fungi in southern Illinois and environs with emphasis on techniques of specimen collection, preservation, identification, and recognition. Prerequisite: 200; 204 recommended.

410-3 Taxonomy and Ecology of Bryophytes and Lichens. Floristic studies of the moss, liverwort, hornwort, and lichen communities of southern Illinois. Prerequisite: 200 or equivalent, or consent of instructor.

411-3 Morphology of Ferns and Fern Allies. The study of external form, internal structure, and relationships of ferns and fern allies. Two lectures and one laboratory per week. Prerequisite: 204; 400 recommended.

412-3 Morphology of Gymnosperms. The study of external form, internal structure, and relationships of gymnosperms. Two lectures and one laboratory per week. Prerequisite: 204; 400 recommended.

413-3 Morphology of Angiosperms. The study of external form, internal structure, and relationships of the flowering plants. Two lectures and one laboratory per week. Prerequisite: 204; 400 recommended.

414-3 Paleobotany. (Same as Geology 414) The study of external form, internal structure, and relationships of plant fossils. Two lectures and one laboratory per week. Prerequisite: 204; 400 recommended.

421-4 Botanical Microtechnique. Introduction to practical methods of preservation and preparation of plant materials for laboratory and microscopic study. Paraffin and plastic embedding and sectioning techniques, and use of general and histochemical stains stressed. Includes chromosome squashing, whole-mount preparation, photomicrography, and other techniques. One lecture and three laboratories per week. Prerequisite: 200 or equivalent.

425-10 (5,5) Advanced Plant Physiology. (a) Intermediary plant metabolism. Characterization of the photosynthetic and metabolic pathways of biosynthesis and degradation of organic constituents; role of environmental regulants of plant metabolism. (b) Physics of plants; membrane phenomena; water relations; mineral nutrition. Prerequisite: 320 and consent of instructor.

440-3 Grassland Ecology. A study of grassland structure and function in relation to various biotic and abiotic factors. Cost of field trips (\$5.) and textbooks must be incurred by the student. Prerequisite: 304 and Biology 307 or equivalents.

443-4 Forest Ecology. Distribution of forests and shrublands of the world in relation to climate and soil with emphasis on forest types of North America and of the Midwest. Autecology, physiological ecology, and genetics of major forest species. Two lectures per week with Saturday field trips and exercises. Prerequisite: Biology 307 or equivalent, or consent of instructor.

444-4 Analysis and Classification of Vegetation. Includes concepts and analytical methods pertaining to plant community energetics, nutrient dynamics, succession, vegetation classification and niche theory. Laboratory will include the application of these concepts and methods to field situations. Cost of textbooks and travel fee (\$15.) must be incurred by the student. Prerequisite: Biology 307 or equivalent.

446-4 Tropical Ecology. Two weeks of marine ecology on the atolls and extensive barrier reef off the coast of Belize, British Honduras, and two weeks of terrestrial ecology at several locations inland. Cost varies yearly. Summer. Prerequisite: advanced undergraduate or graduate standing in one of biological sciences, and concurrent enrollment in Zoology 446.

447-2 to 6 Field Studies in Latin America. Two to six weeks of intensive field work to acquaint students with the flora and vegetation in various environments of Latin America and with ecological and taxonomic field techniques. Cost varies with type of study and location. Transportation cost: \$80.00. Prerequisite: advanced standing in one of the biological sciences and consent of instructor.

448-3 to 8 Field Studies in the Western United States. Three to six weeks of intensive field work designed to acquaint students with the flora, vegetation, and environments of the Rocky Mountains and adjacent areas. Both ecological and taxonomic field methods are emphasized. Transportation cost (\$100), travel expenses, and textbooks must be incurred by the student. Prerequisite: 304, Biology 307 or equivalents, and consent of instructor.

449-2 Elements of Taxonomy. Principles of taxonomy including historical sketch, phyletic concepts, classical and experimental methods. One lecture and three laboratory hours per week. Prerequisite: 304 or equivalent, or consent of instructor.

- 450-2 Plant Geography.** World distribution of plants related to environmental, floristic, and historical factors. Prerequisite: interest in biology.
- 456-4 Introductory Pathology.** A study of plant diseases caused by fungi, bacteria, and viruses. Special attention given diseases of southern Illinois plants. Laboratory and field trips.
- 457-3 Forest Pathology.** A study of the nature and control of tree diseases in forests, parks, streets, and nurseries. Fungal diseases are stressed.
- 460-3 Application of Statistical Techniques in Botanical Research.** Techniques of data handling and graphical representation, use of statistical tests, design of experiments and interpretation of results, and preparation of scientific papers. Students will choose individualized projects in the greenhouse, laboratory, field, computing center, or library. Two lectures per week plus conferences on projects. Prerequisite: ten hours in botany or equivalent.
- 462-4 Science Process and Concepts for Teachers of Grades N-8.** (Same as Curriculum, Instruction, and Media 427.) Specifically designed to develop those cognitive processes and concepts needed by elementary teachers in the teaching of modern science programs. Lecture three hours per week, laboratory two hours per week. One or two additional field trips required.
- 484-3 Palynology.** (See Geology 484.)
- 485-2 Botanical Literature.** A survey of the major classical and modern writings in the botanical sciences. This includes a consideration of the primary subdivisions; systematics, structure, physiology, genetics, and ecology. In addition, periodicals will be treated. Prerequisite: consent of instructor.
- 490-3 Photographic Methods in Scientific and Biological Photography.** Black and white and color. Specimen photography, macrophotography. Slides for presentation, materials and methods used in scientific publications. Prerequisite: consent of instructor.
- 491-3 Scientific Illustration.** Materials and methods used in illustrating scientific publications including two-dimensional graphs, maps, lettering, and line drawings. Three dimensional techniques will also be covered. Prerequisite: consent of instructor.
- 492-2 to 6 Honors in Botany.** Individual research problems available to qualified juniors and seniors. Prerequisite: consent of department chairperson.
- 500-3 Advanced Plant Anatomy.**
- 503-10 (5, 5) Advanced Angiosperm Taxonomy.**
- 524-2 Advanced Plant Genetics.**
- 525-3 Cytology.**
- 526-4 Cytogenetics.**
- 532-3 Embryogenesis and Organography of Plants.**
- 533-4 Plant Growth and Morphogenesis.**
- 535-2 Energetics of Aquatic Ecosystems.**
- 542-2 Biosystematics.**
- 543-2 Tree Growth.**
- 551-3 Upland Flora.**
- 552-3 Lowland Flora.**
- 570-2 to 3 Graduate Readings in Botany.**
- 580-1 to 6 (1 per semester) Seminar.**
- 584-3 Advanced Palynology.**
- 585-2 to 6 (2 per semester) Advanced Topics in Systematics.**
- 589-1 to 12 (1 per topic per semester) Seminars in Botany.**
- 590-1 to 3 Introduction to Research.**
- 591-2 to 9 Research.**
- 599-2 to 9 Thesis.**
- 600-1 to 36 (1 to 12 per semester) Dissertation.**

Business Administration (Major [Graduate only], Courses)

The graduate faculty in business administration, consisting of members of the Departments of Accountancy, Administrative Sciences, Finance, and Marketing of the College of Business and Administration, offers graduate work leading to the Master of Business Administration degree. The MBA program has as its objective the development of professional managers and executives to serve the needs of business and government and to prepare interested graduates for doctoral study. The program has been structured with flexibility so as to serve holders of baccalaureate degrees in business administration as well as those who hold degrees in other disciplines. For a more complete description of the program, refer to the Graduate Catalog.

Courses

- 410-3 Accounting Concepts.** Interpretation and critical analysis of reports, statements, and other accounting data from the viewpoint of users of financial information. Restricted to MBA students. Prerequisite: enrollment in MBA program or consent of instructor.
- 430-3 Business Finance.** An introductory course combining both a description of the structure of business financing and an analysis of functional finance from a managerial viewpoint. Prerequisite: enrollment in MBA program or consent of instructor.
- 440-3 The Management Process.** Analysis of management theories and the administrative process. Specific managerial activities are analyzed and discussed. Functional relationships in administered organizations are explored. Prerequisite: enrollment in MBA program or consent of instructor.
- 450-3 Introduction to Marketing Concepts.** An overview of the role of marketing within an economic system and of the major marketing activities and decisions within an organization. Emphasis is on developing an understanding of the marketing process. Prerequisite: enrollment in MBA program or consent of instructor.
- 451-5 Methods of Quantitative Analysis.** (See Mathematics 457.)
- 500-3 Research Applications in Business and Organizations.**
- 501-3 Operations Research I.**
- 502-3 Business in our Capitalistic Society.**
- 510-3 Managerial Accounting and Control.**
- 511-3 Accounting Theory.**
- 512-3 Auditing Concepts and Methods.**
- 514-3 Controllorship.**
- 515-3 Accounting Informations Systems.**
- 519-3 Seminar in Accounting.**
- 521-3 Business Conditions Analysis.**
- 526-3 Managerial Economics.**
- 530-3 Financial Management.**
- 531-3 Advanced Financial Management.**
- 532-3 Financial Institutions and Markets.**
- 533-3 Investment Concepts.**
- 539-3 Seminar in Finance.**
- 540-3 Managerial and Organization Behavior.**
- 541-3 Operations Research II.**
- 543-3 Personnel Management.**
- 544-3 Production-Operations Management.**
- 549-3 Seminar in Administration.**
- 550-3 Marketing Management.**
- 551-3 Product Strategy and Management.**
- 552-3 Advanced Marketing Research and Analysis.**
- 555-3 Consumer Behavior.**
- 559-3 Seminar in Marketing.**
- 580-3 International Business Operations.**
- 591-3 Independent Study.**
- 598-3 Business Policies.**
- 599-3 to 6 Thesis.**

Business and Administration (Major)

The Bachelor of Science degree program with a major in business and administration is a college-wide degree which is intended for those students with personal and professional goals which cannot be met by one of the existing majors, i.e., accounting, administrative sciences, business economics, finance, or marketing, available in the college and in addition have an interest in subject areas offered in other schools and colleges of the University. The program requires students to combine interests — business with an outside field — into a unique program. For example, a student with international business interests can combine business and administration with foreign languages; a student interested in going into the restaurant business can combine course work in food and nutrition with business and administration. The outside field, or secondary concentration, would have to be consistent with a specific career objective or personal develop-

ment plan and at least 15 semester hours must be structured to achieve this objective. Individual programs would be subject to the approval of the dean of the College of Business and Administration.

Bachelor of Science Degree, College of Business and Administration

<i>General Studies Requirements</i>	45-46
<i>Professional Business Core (See page 66)</i>	47-48
<i>Requirements for Major in Business and Administration</i>	15-23
Secondary concentration approved by the dean	
<i>Electives</i>	3-13
<i>Total</i>	120

Business Economics (Major)

The business economics major offered through the College of Business and Administration emphasizes the application of economic concepts and the use of critical analysis to the solution of economic and managerial problems.

This undergraduate program is an excellent general preparation for future managerial and staff assignments in a variety of business and public organizations. The program also prepares students for graduate study in economics as well as for the Master of Business Administration (MBA) degree.



Those students who desire professional careers as business and managerial economists are advised to plan to complete one to four years of postgraduate study.

Bachelor of Science Degree, College of Business and Administration

<i>General Studies Requirements</i>	45-46
<i>Professional Business Core (See page 66)</i>	47-48
<i>Requirements for Major in Business Economics</i>	15-18
Administrative Sciences or Economics 479.....	3
Economics 315, 340, 341.....	9
Finance 475	(3) ¹
Two courses from the following list, one of which must be in economics	3-6
Economics 310, 330, 329, 436, 443, 465, 467	
Accounting 341, 365, 405	
Administrative Sciences 345, 352, 361	
Finance 323, 325, 480	
Marketing 335, 341, 390, 495	
<i>Electives</i>	88-13
<i>Total</i>	120

¹Hours shown in parentheses are already included in total of hours shown for professional business core.

Business Education

(SEE VOCATIONAL EDUCATION STUDIES)

Chemistry and Biochemistry (Department, Major [Chemistry], Courses)

The Department of Chemistry and Biochemistry offers three degree programs with a major in chemistry. The first is the Bachelor of Science degree in the College of Science. This degree is for those who wish to prepare for graduate study in chemistry or who will become professional chemists. Students completing this degree program will be certified to the American Chemical Society.

The second is the Bachelor of Arts degree in the College of Science. This program is designed primarily for students who wish to complete a major in chemistry, but who plan to eventually go into other professional areas such as medicine, dentistry, or business.

The third program of study leads to the Bachelor of Science degree in the College of Education. This degree program is administered by the College of Education. It is provided for those students who wish to become secondary school chemistry teachers.

Candidates for admission to degree programs are required to have a 2.0 grade point average in chemistry courses. However, students with grade point averages in chemistry courses below 2.25 can expect to have difficulty in advanced courses.

A knowledge of German and of computer programming is recommended for all majors in chemistry.

Students taking a laboratory course will be required to purchase a notebook or a laboratory exercise book costing from \$1.50 to \$8.50.

Bachelor of Science Degree, College of Science

CERTIFIED BY THE AMERICAN CHEMICAL SOCIETY

General Studies Requirements	45 ¹
Supplementary College of Science Requirements.....	5
Foreign Language (German)	(4) + 4
Mathematics 110a,b or 111	(4) + 1
Biological Sciences (not general studies).....	(6) ¹
Requirements for Major in Chemistry.....	63
Chemistry 224 and 225 or 222a,b; 226; 344 and 345; 346 and 349; 462a, b; 434; 411; and 490. In addition, two courses from among 436; 446; 450 (451a,b may be substituted for 450 but will count as only one course); 466; 412; 416; 455; 471; and 491, but at least one must be from among 436, 446, 450, and 466. The total hours must be at least 48	(3) + 45
Mathematics 150, 250, 251, 305	14
Physics 205a,b and 255a,b.....	(4) + 4
German 126a,b	(8) ³
Electives	7
Total.....	120

¹The 45 hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Studies courses.
³Russian or French may be substituted with departmental permission.

Bachelor of Arts Degree, College of Science

General Studies Requirements	45 ¹
Supplementary College of Science Requirements.....	5
Foreign Language	(4) + 4
Mathematics 110a,b or 111	(4) + 1
Biological Sciences (not general studies).....	(6) ¹
Requirements for Major in Chemistry	53-57
Chemistry 224 and 225 or 22a,b; 226; 344 and 345 plus 346 and either 347 or 349; either 462a,b or 460; 434; plus additional courses to give a minimum of 34 hours	34-38
Mathematics 150, 250, and 251 or 305 (251 is prerequisite to Chemistry 462a,b)	11
Physics 205a,b and 255a,b ²	8
Electives	13-17
Total	120

¹The 45 hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Studies courses.
²Certain other courses may be substituted with permission of the department.

Bachelor of Science Degree, College of Education

General Studies Requirements	45 ¹
Requirements for Major in Chemistry	40-47
Chemistry 224 and 225 or 222a,b; 226; 344 and 345 plus 346 and either 347 or 349; 462a, b or 460	(4) + 23-30
Mathematics 111 and 110a,b, 150, 250 and 251 or 305 recommended (251 is prerequisite to Chemistry 462a,b).....	(4) + 12
Physics 203a,b and 253a,b or 204a,b and 254a,b or 205a,b and 255a,b	(3) + 5

Modern foreign language recommended	
<i>Professional Education Requirements</i>	24
See Teacher Education Program, page 71. Secondary education majors must take a special methods course. Curriculum, Instruction and Media 468 fulfills this requirement.	
<i>Electives</i>	4-11
<i>Total</i>	120

¹Refer to Professional Education Experiences for General Studies courses which may be required.

Minor

The minor in chemistry requires a minimum of 16 semester hours including 222a,b or 224 and 225. Elective courses must be selected with at least one course in each of two different areas of chemistry. Recommended courses are 226, 340 and 341, 352 and 460.

Courses

115-4 Introductory General Chemistry. A preparation for Chemistry 224 or 222 for students who have less than a year of high school chemistry. May be audited by students who have had a year of high school chemistry. Two lectures, one three-hour laboratory, and one hour of recitation per week.

140-8 (4, 4) Chemistry. A two-semester course of general, organic, and biological chemistry designed to meet the needs of students of nursing, dental hygiene, physical therapy, other allied health programs, agriculture, forestry, home economics and other majors with comparable requirements. This course does not satisfy prerequisite requirements for other courses offered by the Department of Chemistry and Biochemistry. It is not applicable to a major or minor in chemistry. Three lectures and one three-hour laboratory per week. Must be taken in a,b sequence.

222-8 (4, 4) Introduction to Chemical Principles. For students majoring in scientific, pre-professional, engineering, or technological programs. Atomic structure, molecular structure and bonding, stoichiometry, properties of gases, liquids and solids, thermodynamics and kinetics, chemical equilibria, pH, electrochemistry. The content of this two semester sequence is equivalent to the one semester offering of 224 plus 225. Two lectures, one laboratory-lecture recitation, and one three-hour laboratory per week. Must be taken in a,b sequence. Prerequisite: one year of high school chemistry or 115.

224-5 Introduction to Chemical Principles. For students majoring in scientific, preprofessional, engineering, or technological programs. Atomic structure, molecular structure and bonding, stoichiometry, properties of gases, liquids and solids, thermodynamics and chemical equilibria, pH, electrochemistry. Four lectures and one recitation per week. Prerequisite: one year of high school chemistry, or 115, and concurrent enrollment in 225. The 225 corequisite may be waived for students in those departments where 225 is listed as a required course for graduation.

225-2 Introduction to Laboratory Techniques. For students majoring in scientific, pre-professional, engineering, or technological programs. Introduction to laboratory apparatus and techniques. One three-hour laboratory and one hour of laboratory-lecture per week. Prerequisite: one year of high school chemistry, or 115, and concurrent enrollment in 224.

226-5 Introduction to Quantitative Chemical Principles. Introduction to quantitative chemical determinations. Two lectures, one laboratory-lecture recitation, and two three-hour laboratories per week. A reasonable knowledge of logarithms and algebra is assumed. Prerequisite: 222b, or 224 plus 225. Elective Pass/Fail.

340-4 Survey of Organic Chemistry. A basic survey course of organic chemistry. This course does not satisfy the prerequisites requirement for Chemistry 450 or 451. Four lectures per week. Prerequisite: 222b, or 224 plus 225. Concurrent enrollment in 341 is recommended.

341-2 Organic Chemistry Laboratory. One three-hour laboratory and one laboratory-lecture per week. Prerequisite: 222b, or 224 plus 225. Concurrent enrollment in 340 is recommended.

344-4 Organic Chemistry. A fundamental introduction to the chemistry of carbon compounds designed for chemistry, and other science majors; premed and pre dental students, engineers, and others ultimately requiring a year of organic chemistry. Four lectures per week. Prerequisite: 222b, or 224 plus 225. Concurrent enrollment in 345 is recommended.

345-2 Laboratory Techniques. Physical techniques and reactions of inorganic and organic compounds. One three-hour laboratory and one laboratory-lecture per week. Prerequisite: 222b, or 224 plus 225. Concurrent enrollment in 344 is recommended.

346-2 Organic Chemistry. The organic chemistry of compounds of biological interest with emphasis on the mechanistic, structural, and stereochemical approach to organic chemistry. Two lectures per week. Prerequisite: 344 and 345. Concurrent enrollment in 347 or 349 is recommended.

347-3 Laboratory Techniques. A laboratory course for preprofessionals and those wanting a minor in chemistry. Synthesis and reactions of compounds of biological interest. One laboratory-lecture and two three-hour laboratories per week. Prerequisite: 344 and 345. Concurrent enrollment in 346 is recommended.

349-3 Laboratory Techniques. A laboratory course for chemistry majors. Synthesis and structural identification of inorganic and organic compounds, with emphasis on instrumental procedures. One laboratory-lecture and two three-hour laboratories per week. Prerequisite: 344 and 345. Concurrent enrollment in 348 is recommended.

352-4 Survey of Biological Chemistry. A survey of the chemistry and metabolism of biological compounds. A terminal course in biochemistry. Intended for students who have had a one-semester course in organic chemistry and who desire a one-semester survey of biological chemistry. Three lectures and one three-hour laboratory per week. Prerequisite: 340 and GSA 115.

375-1 to 2 Undergraduate Seminar. For juniors and seniors with a major in chemistry. Prerequisite: consent of the department chairperson.

396-4 (2, 2) Chemical Problems. Chemical investigations under the direction and supervision of a faculty member. Prerequisite: consent of instructor and four semesters of chemistry laboratory.

411-3 Intermediate Inorganic Chemistry. Fundamentals of inorganic chemistry, covering bonding and structure, coordination compounds, and the chemistry of some familiar and less familiar elements. Three lectures per week. Prerequisite: 460 or 462a or concurrent enrollment in either.

412-2 Inorganic Preparations. Introduction to modern techniques of syntheses and compound characterization. Synthetic techniques include handling of air-sensitive materials, electrosyntheses, high-temperature reactions, and chemistry of non-aqueous solvents plus modern spectroscopic techniques for characterization. Prerequisite: 226, 347, and 349.

416-3 X-Ray Crystallography. (See Geology 416.) Prerequisite: 224 and 225, or 222b, one year of college physics and Mathematics 150.

431-4 Environmental Analytical Chemistry. Practical applications of common instrumental and wet methods to the determinations of chemical substances in common natural and commercial materials. Techniques will include titrimetry; quantitative transfer of liquids and solids; gas, thin-layer and ion-exchange chromatography; atomic absorption; flame photometry; ion selective electrode potentiometry; and spectrophotometry. The course is intended for senior-level and graduate students in disciplines other than chemistry who desire to know the practical aspects of laboratory measurements. The course is not applicable to a major in chemistry. One lecture, one laboratory-lecture, and two three-hour laboratories per week. Prerequisite: 224 and 225, or 222a,b or nine hours of chemistry excluding general studies courses. Elective Pass/Fail.

434-4 Instrumental Analytical Chemistry. Theory and practice of modern instrumental measurements, including emission and absorption spectroscopic, electroanalytical, and chromatographic methods, and an introduction to applied electronics. Two lectures and two three-hour laboratories per week. Prerequisite: one semester of physical chemistry or concurrent enrollment in 462a or 460.

436-3 Analytical Separations and Analyses. A study of the analyses of complex materials, usually inorganic, with emphasis on separations, functional-group chemical analyses, and instrumental applications. Two lectures and one three-hour laboratory per week. Prerequisite: 434 or equivalent, or consent of instructor.

446-3 Qualitative Organic Analysis. A systematic study of the separation and identification of organic compounds. One lecture and six hours of laboratory per week. Prerequisite: 226 and either 346 and 349 or consent of instructor.

450-4 Survey of Biochemistry. Function and metabolism of amino acids, proteins, enzymes, carbohydrates, lipids, and nucleic acids. For preprofessional students, chemistry majors, biology majors, and others desiring a terminal one-semester survey of biochemistry. Three lectures and one laboratory per week. Prerequisite: 346 and 347 or 349.

451-6 (3, 3) Biochemistry. (a) Chemistry and function of amino acids, proteins, and enzymes; enzyme kinetics; chemistry, function and metabolism of carbohydrates; citric acid cycle; electron transport and oxidative phosphorylation. (b) Chemistry, function and metabolism of lipids; nitrogen metabolism; nucleic acid and protein biosynthesis; metabolic regulation. Three lectures per week. Must be taken in a,b sequence. Prerequisite: one year of organic chemistry.

455-4 Biochemistry Laboratory. Modern biochemical laboratory techniques for isolation, purification, and characterization of constituents of living cells and for investigations of pathways, kinetics, energetics, and regulatory mechanisms related to metabolism and enzymic activity. One lecture and eight hours of laboratory per week. Prerequisite: 451a and 226 or concurrent enrollment; graduate standing in the Department of Chemistry and Biochemistry or consent of the instructor.

- 460-4 Principles of Physical Chemistry.** A one-semester course in physical chemistry designed especially for non-chemistry majors. Not for those who intend to be professional chemists. Three lectures and one three-hour laboratory per week. Prerequisite: 226 and Mathematics 150. Elective Pass/Fail.
- 462-10 (5, 5) Physical Chemistry.** Three lectures and two three-hour laboratories per week. Thermodynamics and its applications, chemical kinetics, the quantum mechanics of atoms and molecules, and statistical thermodynamics. Laboratory work includes the analysis of data, computational techniques, and typical physical-chemical measurements. Prerequisite: (a) 226, Mathematics 251; (b) 462a, Mathematics 305 recommended. Must be taken in a,b sequence.
- 466-3 Molecular Structure and Spectroscopy.** An introduction to the principles of spectroscopy with emphasis on ir., Raman, n. m. r., and e. s. r. spectroscopy. Three lectures per week. Prerequisite: 462a, b.
- 471-2 Industrial Chemistry.** A survey of modern industrial chemistry and an introduction to chemical research processes. Two lectures per week. Prerequisite: 346 and 347 or 349.
- 472-6 (3, 3) X-Ray Crystallography.** (See Engineering Mechanics and Materials 402.) Prerequisite: 462b and 463b.
- 489-1 to 3 Special Topics in Chemistry.** Prerequisite: consent of instructor and of chairperson.
- 490-2 Chemical Literature.** A description of the various sources of chemical information and the techniques for carrying out literature searches. Two lectures per week. Prerequisite: 224, 225, 346 and 347 or 349.
- 491-2 History of Chemistry.** The evolution of chemistry from ancient times until 1920. Two lectures per week. Elective Pass/Fail.
- 496-1 to 8 Undergraduate Research (Honors).** Introduction to independent research under the direction of a faculty member culminating in a written report. Not for graduate credit. Prerequisite: a 3.0 grade point average, five semesters of chemistry laboratory including one semester of physical chemistry, consent of instructor and department chairperson.
- 500-3 Structural Inorganic and Theoretical Organic Chemistry.**
- 501-3 Kinetics and Thermodynamics.**
- 502-2 Molecular Orbital Theory.**
- 503-4 Applied Spectroscopy and Electronics.**
- 511-6 (3, 3) Advanced Inorganic Chemistry.**
- 519-2 to 9 (2 to 3 per semester) Advanced Topics in Inorganic Chemistry.**
- 531-3 Theory of Chemical Analysis.**
- 532-3 Analytical Chemistry Instrumentation.**
- 534-3 Analytical Molecular Spectroscopy.**
- 539-2 to 9 (2 to 3 per semester) Advanced Topics in Analytical Chemistry.**
- 541-3 Advanced Organic Chemistry**
- 542-3 Advanced Organic Chemistry.**
- 549-2 to 9 (2 to 3 per semester) Advanced Topics in Organic Chemistry.**
- 556-7 (3, 4) Advanced Biochemistry.**
- 559-2 to 9 (2 to 3 per semester) Selected Topics in Organic Chemistry.**
- 561-3 Chemical Thermodynamics.**
- 562-6 (3, 3) Quantum Chemistry Basic Principles.**
- 563-3 Chemical Dynamics.**
- 564-3 Statistical Thermodynamics.**
- 569-2 to 9 (2 to 3 per semester) Advanced Topics in Physical Chemistry.**
- 594-2 to 3 Special Readings in Chemistry.**
- 595-1 Advanced Seminar in Chemistry.**
- 597-1 to 15 Professional Training.**
- 598-1 to 50 (1 to 12 per semester) Research.**
- 599-1 to 6 Thesis.**
- 600-1 to 30 (2 to 12 per semester) Dissertation — Doctoral.**

Child and Family (Major, Courses)

The child and family program is a part of the Division of Human Development.

Bachelor of Science Degree, College of Human Resources

CHILD AND FAMILY MAJOR—PRESCHOOL PROGRAMS SPECIALIZATION

These courses offer basic background leading to positions as nursery school director or teacher in private schools, colleges and universities, and day care centers; director or teacher in residential living facilities for exceptional children;

child care specialists with social, public health and welfare agencies; home economics extension specialist in child care; and recreational leaders.

<i>General Studies Requirements</i>	45
Including GSB 202, 203, 212, GSD 152	
<i>Requirements for Major in Child and Family</i>	36
Child and Family 227, 237, 337, 345, 346, 366, 445, 456, 466, 471-6	33
Food and Nutrition 100	3
<i>Electives</i>	39
Recommended for Preschool Directors and Teachers; Child and Family 340, 408, 490; Botany 390; Curriculum, Instruction, and Media 455, 453; Art 348; Physical Education 202; Special Education 400; Psychology 301; Music 303, Human Development 481a.	
Recommended for Child Care Specialists in Social Services: Psychology 305, 459; Social Welfare 375, 383, 391; Family Economics and Management 340, 341, 370; Interior Design 131; Special Education 400; Sociology 426; Child and Family 408, 490, Human Development 481a.	
Recommended for Residential Life Directors and Supervisors: Health Education 334; Special Education 400, 401, 402, 403; Speech Pathology and Audiology 104, 316; Music 302; Recreation 300; Social Welfare 375, 383; Psychology 301, 451.	
Recommended for Infant Care Specialists: GSA 115, 302, 314; GSB 321; Child and Family 457; Health Education 334; Psychology 301.	
<i>Total</i>	120

Bachelor of Science Degree, College of Human Resources

CHILD AND FAMILY MAJOR—PRESCHOOL/EARLY CHILDHOOD CERTIFICATION SPECIALIZATION

The preschool/early childhood specialization has been specifically designed to prepare future teachers of children under six and will lead to certification by the State of Illinois. This program is jointly offered with the Department of Curriculum, Instruction, and Media in the College of Education. Students wishing the special education endorsement should select the special education option.¹

<i>General Studies Requirements</i>	45
Including GSB 202, 212, GSC 100, GSD 117 or 119, GSE 201	
<i>Requirements for Major in Child and Family</i>	62
Child and Family 227, 237, 240, 245, 337, 345, 466, 417-6	26
Curriculum, Instruction, and Media 209, 213, 317, 318, 418, 419, 435	21
Food and Nutrition 100	3
Music 303	3
Psychology 301	3
Special Education 400	3
Speech Communication 444	3
<i>Electives</i>	13
Special Education Option, Special Education 405 ² , 406, 412	
Field experience, 471, must be supervised by University coordinator of field experience.	
<i>Total</i>	120

¹Special Education 400 and Speech Communication 444 are required for the special education endorsement.
²Special Education 405 is taken in place of Curriculum, Instruction, and Media 318 for students electing the special education option.

Courses

See also Human Development for additional 400 and 500-level courses.

227-3 Marriage and Family Living. A study of relationships and adjustments in family living, designed largely to help the individual. To help student better understand the recent changes that have occurred in marriage and the family in the United States.

237-3 Child Development. Principles of development and guidance of children as applied to home situations. Directed observation involving children of varying ages. Understanding the social, emotional, physical, and intellectual development of children.

240-2 Survey of Careers in Preschool Programs. A survey course to acquaint students with the varied career opportunities, approaches to programming, and professional personnel in working with children under six. Field trips will be taken to area program centers. To be taken concurrently with 245 and Elementary Education 218.

245-3 Interpersonal Relationships Seminar. This course is designed with emphasis on realization of one's own potential in wholeness of life pattern and relationships as preparation for work with children, parents, and professional peers. To be taken concurrently with 240 and Elementary Education 218.

337-3 Advanced Child Development. Examines the specific behaviors of both parents and teachers to determine the effects they have on the development of children's desirable and undesirable behavior. Prerequisite: 237.

340-3 Instructional Materials and Activities for the Preschool. Provides opportunities to acquire a working knowledge of the purposes of the various types of preschool centers; the roles of the personnel; basic teaching skills; curriculum areas, including objectives, activities, and evaluation; and basis for parent-teacher communication.

345-3 Child Development Practicum. Observation and participation in the guidance of preschool children in the daily routines, preparation and use of materials and equipment for activities. One hour lecture, three hours laboratory. Interaction and involvement with preschool children. Prerequisite: 237.

346-3 Child Development Practicum. Planning and executing a variety of experiences for preschool children. Three hours seminar, three hours laboratory. Development of skills in preschool management and curriculum development. Prerequisite: 345.

366-3 Family Development. Study of changing patterns in family living throughout the family life cycle. Insight into common current family problems typical of each stage of the family life cycle. Prerequisite: 227 or GSB 341.

408-3 to 9 (3, 3, 3) Workshop. Designed to aid workers in professions related to child and family. Emphasis for the workshop will be stated in the announcement of the course.

410-3 Human Sexuality. Provides detailed in-depth information on such topics as philosophical views of sexual behavior, sex techniques, sex therapy, sexual variations, sexual anatomy and physiology, including the sexual response and changes with age and sexual development in childhood.

445-3 Administration of Pre-School Programs. Planning and organizing programs for preschool or residential facilities including budgeting, staffing, programming, and evaluation. Prerequisite: 345 and 346 or consent of instructor.

456-3 Infant Development. Current theories and knowledge concerning growth and development of infants with related laboratory field experiences. Prerequisite: 237 or Psychology 301 or equivalent.

457-3 Infant Stimulation and Care. Application of theories in infant development in care and stimulation practicum. Development of competencies and skills needed by infant specialists and professionals. Two hours seminar, 4 hours practicum. Prerequisite: 456 or concurrent enrollment.

466-3 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. Prerequisite: 227, 237, or equivalent.

471-2 to 6 Field Experience. Supervised learning experiences in community nursery schools and public agencies. Prerequisite: consent of instructor.

490-3 Introduction to Marriage and Family Counseling. Problems and techniques of premarital, marital, divorce, family, and family crisis counseling. Counseling individuals singly, in family units, and in groups. Prerequisite: 227 or equivalent and consent of instructor.

556-3 The Pre-School Child.

562-3 Child Development through Home and School.

566-3 Interpersonal Relationships within the Family.

Cinema and Photography (Department, Major, Courses)

Cinema and photography courses provide the undergraduate student with a background in the history, theory, and practice of photographic communication. The program is structured to make available a foundation for professional, fine arts, and educational careers in film and photography; to explore the social implications of still and motion pictures; and to provide opportunity for the study of both cinema and still photography as media for personal expression.

The major in cinema and photography requires from 36 to 48 credit hours, depending on the specialization chosen by the student. Six specializations are available within the major: film production, film theory/history, fine arts photography, professional photography, cinema and photography, or photojournalism. The photojournalism sequence is administered jointly by the Department of Cinema and Photography and the School of Journalism.

To be admitted to the major, a student must have a grade point average of *C* or better. In order to remain in the specialization within the major, all required and/or prerequisite courses must be passed with a grade of *C* or better and, where applicable, with recommendation to continue in the specialization. Photographic portfolios and/or films must be submitted for entry into some courses. Grades below *C* will not be accepted as fulfilling major or specialization requirements. All Mandatory Pass/Fail courses must be completed with a grade of Pass. Cinema and Photography courses are not available to majors on a pass/fail basis unless designated as Mandatory Pass/Fail.

A senior thesis, Cinema and Photography 499 or its equivalent in the film production specialization, is required of all cinema and photography majors. This thesis will consist of the preparation of a photographic portfolio, film, research or critical paper under the supervision of a cinema and photography faculty member. In the film production specialization only, with faculty approval, a student may substitute for the thesis a film produced as part of course work in Cinema and Photography 455 and 456. Normally taken during the last semester in residence, the senior thesis is evaluated on a Mandatory Pass/Fail basis by the departmental faculty. A copy of the thesis is to be provided for the department by the student.

Cinema students may earn credit toward their Southern Illinois University at Carbondale degree by studying at the Inter-University Film Study Center in Paris. Information about this program is available from the department.

Students provide photographic materials for all cinema and photography production courses. In still photography production courses, students supply their own film, photographic paper, certain specialized chemicals, and a fully adjustable 35mm or 120 roll film camera. Some students have found that owning additional items of equipment is advantageous. A cost of \$5 for laboratory materials is charged for each still photography production course. In motion picture production courses students provide their own film, processing, recording materials, and editing supplies. In courses which involve the screening of a number of films, there is a \$10 screening fee.

The University reserves the right to retain examples of the work of each student in each photography class, to make and retain prints of all films made as part of course work other than thesis, and to retain copies of student papers. Such photographs, films, or papers become part of a permanent departmental collection.

The Department of Cinema and Photography is currently operating under a strict enrollment limitation policy. Before enrolling in courses students should obtain from the department a copy of the statement governing enrollment limitations. There is no required minor.

Bachelor of Arts Degree, College of Communications and Fine Arts

CINEMA AND PHOTOGRAPHY MAJOR—FILM PRODUCTION SPECIALIZATION

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Cinema and Photography with a Specialization in Film Production</i>	36
Cinema and Photography 355, 356, 360, 368, 452	17
Cinema and Photography 455 and 456, or 499	4-6
Six hours from the following Group I courses:	
460, 461, 464, 468	6
Six hours from the following Group II courses:	
462, 463, 465, 468	6
(468 may count toward Group I or Group II requirements but not both.)	
Additional hours to total a minimum of 36.	1-3
36 hours minimum; 48 hours maximum in major.	
<i>Electives</i>	39
<i>Total</i>	120

CINEMA AND PHOTOGRAPHY MAJOR—FILM HISTORY/THEORY SPECIALIZATION

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Cinema and Photography with a Specialization in Film History/Theory</i>	36
Cinema and Photography 355, 360, 368, 468, 499	17
Additional hours selected from the following: 460, 461, 462, 463, 464, 465, 470a	19
36 hours minimum; 48 hours maximum in major.	
<i>Electives</i>	39
<i>Total</i>	120

CINEMA AND PHOTOGRAPHY MAJOR—FINE ARTS PHOTOGRAPHY SPECIALIZATION

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Cinema and Photography with a Specialization in Fine Arts Photography</i>	36
Cinema and Photography 310, 311, 320, 322, 499	18
Additional hours selected from the following: 420, 421, 422, 423, 425, 491, 495, 497	18
36 hours minimum; 48 hours maximum in major.	
<i>Electives</i>	39
<i>Total</i>	120

CINEMA AND PHOTOGRAPHY MAJOR—PROFESSIONAL PHOTOGRAPHY SPECIALIZATION

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Cinema and Photography with a Specialization in Professional Photography</i>	36
Cinema and Photography 310, 311, 320, 322, 499	18
Additional hours selected from the following: 403, 405, 406, 407, 408, 415, 418, 470b, 491, 495, 497	18
36 hours minimum; 48 hours maximum in major.	
<i>Electives</i>	39
<i>Total</i>	120

CINEMA AND PHOTOGRAPHY MAJOR—CINEMA/PHOTOGRAPHY SPECIALIZATION

General Studies Requirements..... 45

*Requirements for a Major in Cinema and Photography with a
Specialization in Cinema/Photography* 48

 Cinema and Photography 310, 311, 320, 322, 355, 356, 360,
 368, 499..... 32

 Additional hours selected from 400-level departmental courses..... 16

 48 hours minimum; 60 hours maximum in major.

Electives 27

Total 120

CINEMA AND PHOTOGRAPHY MAJOR—PHOTOJOURNALISM SPECIALIZATION

General Studies Requirements..... 45

*Requirements for a Major in Cinema and Photography with a
Specialization in Photojournalism* 36

 Cinema and Photography 310 or 311, 320, 322, 407, 408, 499,
 Journalism 300, 310, 311 30

 Additional hours in journalism courses 6

 36 hours minimum; 48 hours maximum in major.

Electives 40

Total 120

Courses

- 257-1 to 30 Work Experience.** Used to recognize concurrent structured and unstructured work experience related to the student’s educational objective. One to 30 hours of credit in 257 and 258 may be applied toward graduation requirements following departmental evaluation and approval.
- 258-1 to 30 Work Experience.** Used to recognize past work experience related to the student’s educational objective. One to 30 hours of credit in 257 and 258 may be applied toward graduation requirements following departmental evaluation and approval. No grade for prior work experience.
- 259-1 to 36 Technical Subjects.** Used to recognize credit in cinema and photography earned in art, technical or trade schools above the high school level. One to 36 hours of credit may be applied toward graduation requirements following departmental evaluation and approval of the credit.
- 310-3 History of Still Photography.** History, aesthetics and appreciation of still photography. Covers the period from 1839 to World War II. Students purchase texts. Elective Pass/Fail.
- 311-3 Contemporary Photography.** Uses, styles and influences of contemporary still photography. Covers the period from World War II to the present. Students purchase texts. Elective Pass/Fail.
- 313-3 Introduction to Photojournalism.** (See Journalism 313.)
- 315-4 Basic Photography for Art Students.** Specifically designed to meet the needs of art students. The class will explore basic photographic technique, deal with camera vision and the way it relates to other media, and attempt to cover the special problems and areas of investigation that the art major will encounter. 315 will not be accepted as a substitute for 320 in the cinema and photography program. \$15.00 laboratory charge.
- 320-4 Basic Photography.** Introduction to photographic communication. Basic camera controls, black and white film and print processing, the use of 35 mm and large format cameras. Students purchase texts and provide photographic materials and chemicals. Each student must have available a fully adjustable camera. \$15 cost for additional laboratory materials. Elective Pass/Fail.
- 322-4 Color Photography.** Theory, techniques and aesthetics of color photography. Production of color prints and transparencies. Students purchase texts and provide photographic materials and chemicals. Each student must have available a fully adjustable camera. \$15 cost for additional laboratory materials. Prerequisite: 320 and consent of department. Elective Pass/Fail.
- 355-4 Film Production I.** Basic techniques for filmmaking. Production of Super 8 motion pictures. Students purchase texts, film stock and processing. Screening fee. Elective Pass/Fail.
- 356-4 Film Production II.** Techniques of 16mm double system sound film production.

Production of films by individuals or crews. Students purchase texts. film stock, processing and sound materials. Screening fee. Prerequisite: 355 and consent of department. Elective Pass/Fail.

360-3 Film Analysis. The relationships among structure, style and meaning in all types of films. Screening fee. Students purchase texts. Elective Pass/Fail.

368-3 Introduction to Cinema Theory. A survey of cinema theories propounded by figures such as Munsterberg, Arnheim, Eisenstein, Bazin, Kracauer, and important modern theorists. The course covers the wide range of major attempts to derive the essence of cinema. Films that exemplify or raise theoretical issues are screened. Screening fee. Students purchase texts. Elective Pass/Fail.

403-3 Studio Portraiture. History, theory and practice of formal studio portrait photography. Students purchase texts and provide photographic materials and chemicals. \$15 cost for additional laboratory materials. Prerequisite: 322 and consent of department. Elective Pass/Fail.

405-3 Commercial/Industrial Photography. History, theory and practice of commercial and industrial photography. Students purchase texts and provide photographic materials and chemicals. \$15 cost for additional laboratory materials. Prerequisite: 322 and consent of department. Elective Pass/Fail.

406-3 Advertising/Illustrative Photography. History, theory and practice of photography as used for advertising, illustration and editorial purposes. Students purchase texts and provide photographic materials and chemicals. \$15 cost for additional laboratory materials. Prerequisite: 405 and consent of department. Elective Pass/Fail.

407-3 Publications Photography I. History, theory and practice of photographic news reporting with emphasis on production and design of picture stories and essays. Students purchase texts and provide photographic materials and chemicals. \$15 cost for additional laboratory materials. Prerequisite: 322 and/or consent of department. Elective Pass/Fail.

408-3 Publications Photography II. History, theory and production of picture essays, including research, lay-out, captions and text. Black and white and color. Students purchase texts and provide photographic materials and chemicals. \$15 cost for additional laboratory materials. Prerequisite: 407 and/or consent of department. Elective Pass/Fail.

415-3 Technical and Scientific Photography. History, theory and application of photographic research methods in science, technology and medicine. Students purchase texts and provide photographic materials and chemicals. \$15 cost for additional laboratory materials. Prerequisite: 322 and consent of department. Elective Pass/Fail.

418-3 Documentary Photography. Survey of the history and theory of documentary still photography. Production of documentary photographic essays dealing in depth with an aspect of contemporary life. Students purchase texts and provide photographic materials and chemicals. \$15 cost for additional laboratory materials. Prerequisite: 322 and/or consent of department. Elective Pass/Fail.

420-3 Experimental Camera Techniques. Experimental approaches to the creation of photographic images in the camera. Students purchase texts and provide photographic materials and chemicals. \$15 for additional laboratory materials. Prerequisite: 322 and consent of department. Elective Pass/Fail.

421-3 Experimental Darkroom Techniques. Experimental darkroom manipulations of the straight camera image. Students purchase texts and provide photographic materials and chemicals. \$15 for additional laboratory materials. Prerequisite: 322 and consent of department. Elective Pass/Fail.

422-3 Advanced Color Photography. Advanced study and production of color photographs with emphasis on experimental techniques using Dye Transfer, Kwik Proof and other forms of photo-mechanical reproduction. Students purchase texts and provide photographic materials and chemicals. \$15 for additional laboratory materials. Prerequisite: 322 and consent of department. Elective Pass/Fail.

423-3 Reconstruction of Color. A study of the principle of color separation in photography as it relates to the processes of dye transfer, silkscreening, lithography, letter press, etching, and other reproduction processes. Students purchase texts and provide photographic materials and chemicals. \$15 cost for additional laboratory materials. Prerequisite: 322. Elective Pass/Fail.

425-3 to 9 Studio Workshop. An intensive workshop focusing on current trends in photography as a fine art. Students provide photographic materials and chemicals. \$15 for additional laboratory materials. Prerequisite: 322 and consent of department. Elective Pass/Fail.

452-3 Film Planning and Scripting. Analysis of both scripted and non-scripted films. Script as a basis for production. Practice in preparing film plans, treatments, storyboards and scripts. Students purchase texts. Screening fee. Prerequisite: 355 and/or consent of department. Elective Pass/Fail.

454-3 Graphic/Animated Film Production. Practical course for visual expression related to the graphic film; symbology, composition, kinestasis, animation, typography, color and materials. Students purchase texts and materials. Screening fee. Prerequisite: 355 and 453. Elective Pass/Fail.

455-3 Film Production III. Advanced production by individuals or crews of 16mm sound films from pre-production through shooting. Intensive study of budgeting, production planning, scripting, casting, location and studio shooting techniques, equipment rental, lighting, and double system sound filming. Students provide film stock, processing and sound materials. Screening fee. Prerequisite: 356, 452 and consent of department. Elective Pass/Fail.

456-3 Film Production IV. Continuation of 455 through editing and post production to a first answer print. Intensive study of editing, sound mixing, laboratory procedures and distribution problems. Students provide expendable editing and sound materials and are responsible for laboratory costs. Screening fee. Prerequisite: 455 and consent of department. Elective Pass/Fail.

460-3 History of the Silent Narrative Film. Study of the theatrical film from its beginning to 1930. Screening fee. Students purchase texts. Elective Pass/Fail.

461-3 History of the Sound Narrative Film: 1927-1945. Study of the theatrical sound film from its beginnings to 1945. Screening fee. Students purchase texts. Elective Pass/Fail.

462-3 History of the Documentary Film. Study of the development of the non-fiction film with emphasis on the documentary. Screening fee. Students purchase texts. Elective Pass/Fail.

463-3 History of the Experimental Film. Study of experimentation in cinema from the turn of the century, through the avant garde periods, to contemporary independent films. Screening fee. Students purchase texts. Elective Pass/Fail.

464-3 History of the Contemporary Film. Study of the major movements in theatrical motion pictures from neo-realism to the present. Screening fee. Students purchase texts. Elective Pass/Fail.

465-3 History of the Animated Film. Study of the history, techniques, and aesthetics of the graphic/animated film. Students purchase texts. Screening fee. Elective Pass/Fail.

468-3 Advanced Cinema Theory. An intensive study of the major cinema theoretical approaches that center upon the writings by Eisenstein, Bazin, and recent sign and system scholars. Films important to or exemplary of the theories are screened. Screening fee. Students purchase texts. Prerequisite: 368. Elective Pass/Fail.

470-1 to 9 (1 to 9, 1 to 9) Advanced Topics. An advanced course concentrating on special topics in cinema or photography. Topics vary and will be announced in advance. (a) Advanced studies in cinema (b) Advanced studies in photography. Not more than 6 semester hours may be counted toward the M.A. or M.S. degree. A screening fee or a \$15 charge for laboratory materials may be required. Prerequisite: consent of department.

491-1 to 9 Individual Study in Cinema or Photography. Research in history, theory or aesthetics. Usually taken 3,3,3. Prerequisite: consent of department. Elective Pass/Fail.

492-1 to 3 Practicum. Practical experience in the presentation of photographic theory and procedures. Not for graduate credit. Prerequisite: consent of department. Mandatory Pass/Fail.

495-1 to 12 Internship in Cinema or Photography. Credit for internship with professional film or photographic units. Not for graduate credit. Prerequisite: consent of department. Mandatory Pass/Fail.

497-1 to 9 Projects in Cinema or Photography. Individual or crew projects in motion picture production or still photography. Usually taken 3,3,3. Additional laboratory materials costing \$15 required for still photography projects. Prerequisite: consent of department. Elective Pass/Fail.

499-4 Senior Thesis. Preparation of a portfolio, film, research or critical paper under the supervision of a cinema and photography faculty member. Normally taken during last term in residence, the senior thesis is evaluated by the departmental faculty. A senior thesis is required of all majors with the following exception: a film completed in 456 may be submitted with approval of the cinema faculty to satisfy the requirements of a senior thesis. In this case, no course hour credit is given for 499. Senior thesis credit, 499, may not be applied to graduate work. The department will retain one copy of all theses. Additional laboratory materials costing \$15 required for still photography projects. Prerequisite: consent of department. Mandatory Pass/Fail.

591-1 to 6 Individual Study in Cinema and Photography.

595-1 to 4 (1, 1, 1, 1) MFA Seminar.

597-1 to 16 MFA Projects.

598-1 to 6 MFA Final Creative Project.

Clothing and Textiles (Major, Courses)

The clothing and textiles program is a part of the Division of Comprehensive Planning and Design.

Students majoring in clothing and textiles may specialize in either apparel design or retailing. A double specialization is available for students with broader interests and goals, and a special major may be planned with approval of the division director. Requirements for a minor in clothing and textiles are also shown.

Bachelor of Science Degree, College of Human Resources

CLOTHING AND TEXTILES MAJOR—APPAREL DESIGN SPECIALIZATION

This specialization is intended for the student interested in professional preparation in apparel design or allied design positions in either industrial or commercial fashion businesses. The courses available to the student cover textile information, fashion design, and skills required for developing original designs into patterns and completed garments. Courses in clothing and textiles are complemented by ones in art, business, and other areas in order to provide a suitable background for various career opportunities.

<i>General Studies Requirements</i>	45
GSA 106, 107	4
GSB 202, 211	6
GSC 205	3
<i>Requirements for Major in Clothing and Textiles</i>	63
<i>Clothing and Textiles Core:</i> 304, 305, 351, 352	10
<i>Specialization Requirements:</i> Clothing and Textiles 127, 310, 314, 328, 414, 416, 428, 460 or 462; Art 100-8, 200, Art History	39
<i>Professional Electives</i>	14
Choose from the following: any clothing and textiles or art courses; accounting, chemistry, finance, interior design, journalism, marketing, psychology, or other approved courses. Specific suggestions: Physiology 300; Physical Education 303; Theater 414; Psychology 307; Family Economics and Management 451; GSC 204, 207, 349.	
<i>Electives</i>	12
<i>Total</i>	120

CLOTHING AND TEXTILES MAJOR—RETAILING SPECIALIZATION

This specialization prepares the student for a profession in retail stores, either as buyers or department managers. Other related retailing positions are also available to students who complete the retailing specialization. The courses available to the student cover textile information, fashion merchandising, marketing, and other business-related courses.

<i>General Studies Requirements</i>	45
GSA 106, 107	4
GSB 202, 211	6
GSC 205	3
<i>Requirements for Major in Clothing and Textiles</i>	63
<i>Clothing and Textiles Core:</i> 304, 305, 351, 352	10
<i>Specialization Requirements:</i> Clothing and Textiles 341, 343, 349, 405, 442, plus 5-6 hours of clothing and textiles electives; Marketing 304 plus 6 hours of marketing electives; Accounting 210 or 221; Interior Design 300; one of the following: Administrative Sciences 301, 304, Psychology 320 or 323; one of the following: Electronic Data Processing 107, Computer Science 202, GSD 110 or 112.....	37-38

Professional Electives	15-16
Choose from the following: chemistry, clothing and textiles, fi- nance, interior design, journalism, marketing, psychology, or other approved courses.	
Electives	12
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Total	120

CLOTHING AND TEXTILES MAJOR—DOUBLE SPECIALIZATION

This double specialization prepares the student for professional positions calling for either apparel design or retailing backgrounds, and the student will also be prepared to assume professional responsibilities calling for a blend of these, for example, a business which both designs apparel and sells it to the ultimate user.

General Studies Requirements	45
GSA 106, 107	4
GSB 202, 211	6
GSC 205	3
Requirements for Major in Clothing and Textiles ¹	79-80
Clothing and Textiles 127, 304, 305, 310, 314, 328, 341, 343, 349, 351, 352, 405, 414, 416, 428, 442, 460 or 462	49
Accounting 210 or 221	3
Administrative Sciences 301 or 304 or Psychology 320 or 323	3
Art 100a, 107, 200, any art history	11
Computer Science 202 or Electronic Data Processing 107 or GSD 110 or 112	2-3
Interior Design 300	2
Marketing 304 and 6 hours of electives in marketing	9
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Total	124-125

¹Substitutions must be approved by the division director.

Minor

A minor in clothing and textiles is intended to provide background that will assist students in pursuing their career goals or other interests. At least 16 hours of clothing and textiles courses are required as follows:

104 or 304	2
150 or 351 or 352	2-3
Other clothing and textiles courses	11-12

Courses

Proficiency examinations are available for Clothing and Textiles 104, 127, and 150. Students will be expected to purchase their own materials in some of the courses offered in clothing and textiles.

- 104-2 Basic Textiles. Emphasis on recognition of fabrics and weaves, suitability, care, and maintenance, especially household textiles. Credit cannot be earned for 104 after receiving credit for 304A.
- 127-2 to 3 Clothing Construction. Basic construction laboratory utilizing self-paced instruction. Use of machine and pattern; fabric preparation; garment construction techniques. For beginning student. Elective Pass/Fail.
- 150-2 Clothing Selection. Study of selection and care of clothing in relation to fabric composition, fashion emphases, art principles, suitability, and cost. Credit cannot be earned for 150 after receiving credit for 351 or 352. Elective Pass/Fail.
- 227-2 to 3 Creative Pattern Adaptation. Redesigning commercial patterns using flat pattern procedures; fitting; constructing garments using couture techniques. Credit will not be granted after taking 314. Prerequisite: 127 or consent of chairperson. Elective Pass/Fail.
- 304-2 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. Prerequisite: GSA 106 and 107.

- 305-2 Textiles Lab.** Introduction to textile laboratory equipment. Identification of fibers, fabric performance, care and labeling. Prerequisite: 304 or equivalent or concurrent enrollment.
- 310-3 Fashion Design-Styling.** Original designs for male and female apparel and accessories using various media. Designs based on various sources of inspiration. Prerequisite: Art 100 or Interior Design 131.
- 314-5 Drafting, Draping, Flat-Pattern Making.** Fitting basic tissue or muslin and making sloper; making garment form; making patterns through flat pattern manipulation, draping, and drafting; testing and refining patterns. Prerequisite: 127.
- 328-3 Tailoring.** Basic principles of tailoring applied to coat or suit. Prerequisite: 127 or equivalent.
- 341-3 (1,1,1) Fashion Retailing Seminar.** Comparison of practices drawn from students' work experiences and information from readings or resource persons. Individual and group projects. (a) Inventory shrinkage, (b) Buying and buying procedures, (c) Personnel. Prerequisite: 100 hours approved retailing experience.
- 343-3 Apparel Accessories.** Product knowledge, levels of quality, selling points, and care of plastics, leather goods, furs, jewelry, cosmetics. Elective Pass/Fail.
- 349-3 Fashion Merchandising.** Functions and responsibilities of the fashion merchandiser, considering various retail establishments. Professional course for retailing majors. Prerequisite: 319-1 and Marketing 304.
- 351-3 Fashion Motivation.** Psychological motivation for wearing clothing; societal functions of clothing, cultural differences in dress.
- 352-3 Family Clothing.** Clothing needs of individual family members within the context of developmental stage, life style and societal setting; functional and fashion-motivated needs considered; clothing budgeting.
- 391-1 to 12 (1 to 6 per semester) Field Experience.** Supervised learning experience in approved business or industry. Prerequisite: consent of chairperson.
- 405-3 Textile Testing.** Exposure to and experience with methods used by retailers and manufacturers of textile items to measure performance and maintain quality. Standards, sampling, and replication requirements and interpretation of results.
- 414-4 Experimental Custom Apparel Designing.** Development of apparel to meet esthetic, structural, and functional needs; problem-solving for exceptional proportions, rehabilitation, activity, performing arts, new technology, materials, environment. Some patterns originated in 414 may be tailored following semester in 428. Prerequisite: 314 or consent of chairperson.
- 416-3 Mass-Market Apparel Designing.** Design of a line to specifications; drafting; toiles; mass-production costs; work flow; use of industrial equipment. Field trips. Prerequisite: 314 or equivalent.
- 428-3 Custom Tailoring.** Individualizing, fitting, and contouring of male or female garment for customer from commercial pattern or from pattern originated in 414 preceding semester. Organization of work and time. Prerequisite: 328, or 414, or consent of chairperson.
- 442-3 Clothing Economics.** Factors of production, distribution, and consumption influencing clothing industry; management of these factors in clothing related businesses; place of clothing industry in national and international markets. Field trip. Prerequisite: GSB 211 or Economics 214.
- 460-3 Historic Clothing: Western Cultures.** Development of clothing in Western Civilization to the present time. Consideration of social, economic and esthetic factors, and technical innovations influencing clothing. Offered alternate years. Prerequisite: junior standing.
- 462-3 Historic Clothing: Non-Western Cultures.** Traditional dress in non-western cultures. Esthetics, symbolism, and uses of costume in the culture; effect of clothing on economy. Cultures studied may vary with each offering. Offered alternate years. Prerequisite: junior standing.
- 555-3 Foundations of Fashion.**
- 573-2 College Teaching of Clothing and Textiles.**

Commercial Graphics—Design (Program, Major, Courses)

The advertising business is a growing field, presenting ever increasing opportunities for men and women who have creative and artistic ability. Trained people are needed to develop story illustrations, advertising layouts, billboard design, point-of-purchase displays, package designs, direct mail pieces, annual report designs, television commercials, title cards, finished lettering, fashion illustrations, airbrush and photo retouching, and many others.

Students in this program develop multiple art skills so they may qualify for initial positions in many different areas of advertising art and design. Each

individual has a base upon which to build a career according to personal special interests and talents.

Each graduating design student is required to pass, with 90% accuracy, a vocabulary proficiency test and to have compiled a professionally acceptable portfolio of work.

The student should expect to spend approximately \$600 for supplies, equipment, and materials over a two year period.

An advisory committee whose members are active in the advertising and graphic design professions serves the program. Current members are: Richard Frybarger, director of visuals, John Deere Co., Moline; Richard Linton, Rechten Associates, Paducah, Kentucky; Craig Leinicke, Norm Obermoeller Advertising Art; Ray Raedel, president, Ray Raedel, Inc.; Ray Welch, Ray Welch Advertising; and J. R. Zinke, art supervisor, Bell Laboratories, Naperville.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Admission each fall to the program is limited by available space. Students are admitted on a first-come, first-served basis.

Associate in Art Degree, School of Technical Careers

Requirements for Major in Commercial Graphics-Design

GSB 200-level	3
GSD 101	3
School of Technical Careers 102, 153a,b, 199	8
Commercial Graphics 110, 120, 122, 124, 130, 132, 133, 134, 210, 215, 222, 224, 230.	60
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Total.....	74

Courses

- 103-2 to 8 Lithographic Stripping and Platemaking Laboratory. The student will apply imposition principles for offset in stripping line and halftone negatives, positives, combinations, surprints, double burns, tints and color blocks, step and repeat, burn plates, and produce printing on small presses. Prerequisite: concurrent enrollment in 127 or consent of instructor.
- 105-2 to 8 Typesetting and Make-up Lab. Students will learn to operate photoelectronic typesetting equipment designed to produce text as well as display type. Make-up will include work on newspaper advertisements and pages, as well as other printed material. The lab work will be performed in conjunction with the publication of a daily newspaper and other printing projects.
- 110-3 Art Appreciation—From the Cave to the Futuristic. The student will be able to recognize and identify at least thirty paintings and works of art and their creators from 1500 B.C. to the contemporary designer and illustrators through the observations of color, composition, and technique. A field trip will be taken to an art museum. Lecture three hours.
- 120-4 Artistic Anatomy and Color Perception I. Students will demonstrate an ability to understand and use pigmental and light ray color theory and practical application. Students will also demonstrate a knowledge of the bones and muscles of the human anatomy by way of examination and further demonstrate their comprehension and talent by way of artistically and accurately drawing the figure from life. Students will also demonstrate an ability to design, organize, and structure through compositional arrangement. Lecture two hours. Laboratory three hours. Prerequisite: concurrent enrollment in 122 and 124.
- 122-4 Technical Drawing for Graphics. Students will demonstrate an ability to understand and utilize the proper point of perspective in illustration and to use the T-square, triangle, and drawing instruments in precisely executing geometric forms, mechanical, and industrial illustration. In addition, students will demonstrate an ability to render objects on scratchboard: the utilization of zipatone patterns and the proper use of the ruling pen to accurately execute ruled business forms. Lecture two hours. Laboratory three hours. Prerequisite: concurrent enrollment in 120 and 124.
- 124-4 Graphic Layout and Typography I. Students will demonstrate an ability to use the basic principles of layout, how to do thumbnails, roughs, and clear accurate comprehensives. They will also demonstrate an understanding of basic lettering styles and techniques with chisel point pencil. They will demonstrate an ability to understand the history and

practical uses of typography in advertising. Lecture two hours. Laboratory three hours. Prerequisite: concurrent enrollment in 120 and 122.

126-2 Fundamentals of Drawing and Composition. For non-majors. The student will demonstrate awareness of perspective, light and shade, color theory and application, and composition through basic drawing techniques. Lecture one hour. Laboratory two hours. Elective Pass/Fail.

127-2 Lithographic Stripping and Platemaking Theory. The student will pre-plan the darkroom procedures necessary to produce line and halftone negatives, positives, combinations, double burns, tints, color blocks, step and repeat, and apply nomenclature procedures to maintain a supply of materials for varied shelf life. Prerequisite: concurrent enrollment in 103.

128-2 Fundamentals of Graphic Processes. For non-majors. The student will prepare layouts, execute the mechanical, shoot the negative, strip the film, burn a plate and develop a working knowledge of a duplicator press. Lecture one hour. Laboratory two hours. Elective Pass/Fail.

129-2 Typesetting and Make-up Theory. The student will become familiar with the various typesetting methods including handset, linotype, monotype, as well as the newer photoelectronic typesetting. The study will also include the various techniques of paste-up and preparation of camera-ready copy.

130-4 Artistic Anatomy and Color Perception II. The student will continue to demonstrate knowledge and artistic ability of the human anatomy in the development of advertising, illustration, fashion illustration, and by way of modification the development of the cartoon figure. Lecture two hours. Laboratory three hours. Prerequisite: 120, 122, and concurrent enrollment in 132 and 134.

132-3 Airbrush and Photo Retouching. The student will demonstrate development of skills in the operation and techniques of airbrush rendering used for mechanical and illustrative purposes, and in addition, will retouch black and white photographs suitable for reproduction. Lecture one hour. Laboratory three hours. Prerequisite: 120 and 122 and concurrent enrollment in 130 and 134.

133-1 Copyfitting. The student will demonstrate an ability through discussion and examination to properly solve copy fitting problems, specify how many lines a given manuscript or ad will set, how deep, how many pages in any given format, and to calculate the number of characters per pica and per line. Lecture one hour. Prerequisite: concurrent enrollment in 134.

134-4 Graphic Layout and Typography II. The students will demonstrate their ability through discussion and examination to identify at least 14 different type faces on sight. In addition, they will demonstrate an ability to prepare clean, accurate, professional, quality paste-up, keylines with overlays, and separations. They will demonstrate an ability to work with offset lithography, letterpress, gravure, and silk screen printing processes. Lecture two hours. Laboratory three hours. Prerequisite: 122 and 124, and concurrent enrollment in 130, 132, and 133.

200-1 Artfair Exhibition. Students will receive practical experience in the coordination and development of an art exhibition. They will participate in the development of announcements, mailers, cataloging, scheduling news releases, receiving of entries, security, and returning procedures. They will each develop a systems flow chart for the effective and smooth operation of an exhibition including hands-on operation of exhibit construction and location. Laboratory three hours. Elective Pass/Fail.

201-2 to 8 Lithographic Photography Laboratory. The student will produce line and halftone negatives, tint screens, reverses contact prints, positives, posterization, process color, emphasis techniques and produce selected work on small presses. Prerequisite: concurrent enrollment in 225 or consent of instructor.

202-2 to 8 Offset Presswork Laboratory. The student will produce selected work on the Heidelberg KORA, including multiple imposition, four-color process, step and repeat, duotones, posterization and bindery. Prerequisite: concurrent enrollment in 226 or consent of instructor.

210-8 Advertising Graphics. Students will demonstrate an ability to apply the techniques learned during the first year in the preparation of professional assignments in the areas of marker comps, logo design, cartoons to be used for various types and styles of advertising illustration, and storyboards for television commercials. Further, they will demonstrate an ability to design professional quality letterheads, envelopes, business cards, and matchbook covers. In addition, students will have their work selected for production on client-oriented publications. They will be assigned to a discussion group in order to receive the benefit of personal critique and individual progress and development assistance for projects and assignments. Lecture four hours. Laboratory six hours. Prerequisite: 130, 132, and 134.

215-8 Dimensional Design. Students will demonstrate an ability to conceptually order verbal information to form a precise concept, and to express the concept visually in the execution of point-of-purchase displays, packaging, exhibits, and signs. They will also show an ability to do package design. Students will be assigned to a discussion group in order to receive the benefit of personal critique and individual progress and development assistance

for projects and assignments. Lecture four hours. Laboratory six hours. Prerequisite: 210 and 224 and concurrent enrollment in 222.

222-8 Graphic Design and Advertising Illustration. Students will demonstrate an ability to prepare professional quality assignments in the areas of cover and billboard design and illustrations, and the complete development of storyboards for television commercials. They will have the opportunity to have work selected for production on client-oriented publications. Students will be assigned to a discussion group in order to receive the benefit of personal critique and individual progress and development assistance for projects and assignments. Lecture four hours. Laboratory six hours. Prerequisite: 210 and 224 and concurrent enrollment in 215.

224-8 Publication Graphics. Students will demonstrate an ability to create new and unusual techniques in advertising design, sales promotion booklets, tent cards, and folder design with complete production art. Contemporary techniques in design and production, the use of color keys and stock will be emphasized. They will also have the opportunity to have work selected for production on various client-oriented publications. Students will be assigned to a discussion group in order to receive the benefit of personal critique and individual progress and development assistance for projects and assignments. Lecture four hours. Laboratory six hours. Prerequisite: 130, 132, 134 and concurrent enrollment in 210.

225-2 Lithographic Photography Theory. The student will inventory, order, maintain supplies and materials essential to darkroom operations to produce the lab work. They will evaluate the emphasis techniques as they are produced on colored and textured paper stocks. Prerequisite: concurrent enrollment in 201.

226-2 Offset Presswork Theory. Students will pre-plan work for the KORA including imposition of various sheet sizes or half sizes, with advantages or disadvantages with relationship to bindery procedures of folding, cutting, scoring, and perforating. Prerequisite: concurrent enrollment in 202.

230-1 Job Orientation Seminar. Students will demonstrate a knowledge through discussion and examination of the operations of large and small agencies and studios including the various responsibilities of the people employed in them by class discussion and examination. Prospecting for employment, working conditions, prospects for advancement, how much an artist should charge for a piece of art, and the legal responsibilities of the artist-designer to the client-agency will be discussed. Students will conclude this course with the presentation of a portfolio demonstrating their ability to do professional quality work (at least 10 plates) and will have acquired the experience of being interviewed for an artist position. Lecture one hour.

240-3 to 12 Special Study. A student with a special interest in a particular advertising art or graphic design area will be selected projects and research to develop additional professional skill. Requires approval of the program supervisor. Lecture three hours. Laboratory 24 hours maximum.

Commercial Graphics—Production (Program)

(ALSO SEE COMMERCIAL GRAPHICS—DESIGN)

Opportunities abound in the printing and publishing field for trained production specialists and persons with both mechanical skills and management ability.

The School of Technical Careers currently is developing innovative approaches to education in this field which allow the student to build a program of relevant courses drawn from diverse areas of offerings meet the challenge of emerging technologies which are revolutionizing the publishing industry. The student who wishes to enter this program will work with an adviser in planning a course of study which meets individual needs and University requirements.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Communications and Fine Arts (College, Courses)

Courses

397-1 to 6 Special Interdisciplinary Study. Designed to offer and test new and experimental courses and series of courses within the College of Communications and Fine Arts. Prerequisite: consent of instructor.

497-1 to 6 Special Interdisciplinary Study. Designed to offer and test new and experimen-

tal courses and series of courses within the College of Communications and Fine Arts. Prerequisite: consent of instructor.

Community Development (Major [Graduate only], Minor, Courses)

The community development program is a part of the Division of Social and Community Services.

In recognition of major national legislation in community development and the growing need for informed leaders and trained practitioners at the community level in many fields, this minor has been developed.

Requirements: 15 semester hours, including 401 and at least 6 additional hours selected from community development courses and 6 more hours from community development courses or from courses closely related to the community development field offered in other departments. A list of approved courses is available from the community development office. If students receive credit in their major for any of these courses, it may not also be counted toward their community development minor.

Courses

200-3 The Nature of Community. Human communities have existed since pre-history, but the nature of what a community is, should, or could be remains a subject of wide debate. The purpose of this course is to clarify some of the issues of this debate by examining some of the ways that communities have changed since prehistoric times as well as the different philosophies and theories of community, both past and present, and also by identifying those aspects and elements of community life that appear common to all human communities. Elective Pass/Fail.

201-3 Communes and Communities: Experiments Past and Present. Throughout recorded history various individuals have envisioned, and various groups have deliberately sought to establish, communities that differed greatly from the conventional communities of the time. Some, like the medieval monastic orders or the "Bruderhoffs" of today, have been remarkably durable; but many have failed. In this course, the history and philosophy of experimental and intentional communities from monasteries to communes will be reviewed with the object of better understanding the social conditions that give birth to such communities and those conditions that appear to either enable or inhibit their survival. Elective Pass/Fail.

202-3 Communities of the Future. The focus of this course will be on problems of and solutions to the creation and maintenance of human settlements and the interdependence of social, cultural, and economic elements. Problems of crime, disease, health, moral issues, government control, population, migration, and others will be explored against a background of innovative, technical and utopian social ideas about communities of the future. Elective Pass/Fail.

302-3 Community Self-Study. An introduction to problem analysis and needs assessment. The self-study approach, pioneered by the Southern Illinois University at Carbondale community development program, enables citizens in small towns and social and economic groups in urban areas to identify needed changes harmonious with their values. Examines the community self-study method and applications to current problems.

401-3 Introduction to Community Development. This course surveys the field of community development, an applied social science that encourages self-reliance by generating change and growth strategies for groups and communities. The course focuses on the history and philosophy of community development, citizen rights issues, change techniques, value dilemmas confronting change agents, and examination of some current community development programs.

402-3 Comparative Community Development. Analyses of the history, goals, methods, and techniques of socioeconomic development in the Third World countries. Cultural, economic, social structural, political, and administrative factors in development and in the process of community organization are discussed. Case studies from Africa, Asia, and Latin America.

403-3 Community Organization. An examination of basic approaches to community organization used by change agents and human service workers. Special emphasis is placed on sensitizing students to consumer participation issues.

404-3 Role Theory and Analysis in Community Development. The focus of this course is on role theory and methods of analysis. The student will gain considerable exposure to the

techniques of role analysis as an evaluation tool in community development training and program development. Elective Pass/Fail.

405-3 Social Planning. Introduction to the methods, practices, functions, and ethics of social planning in the United States, including a critical perspective. Criminal justice, health, manpower, welfare, and other sectors of social planning will be discussed to illustrate the principles of social planning.

491-1 to 6 Independent Study in Community Development. Supervised individual study and projects in keeping with the needs of each student. Prerequisite: consent of instructor.

497-1 to 12 (1 to 3 per topic) Seminar in Community Development. The identification and analysis of special problems in community development. (a) Project funding, evaluating, and reporting; (b) Central and peripheral systems in community development; (c) Community development cooperatives and credit unions; (d) Research problems and methods; (e) Special problems. Credit limited to not more than three per topic and not more than 12 total.

500-3 Research Seminar in Community Development.

501-4 Small Group Process in Community Development.

502-3 Community and Change.

503-3 Problems of and Approaches to Community Development.

589-2 Professional Seminar in Community Development.

593-1 to 6 Individual Research in Community Development.

595-1 to 8 Internship.

599-1 to 6 Thesis Research.

Comparative Literature (Minor)

A comparative literature minor is available within the College of Liberal Arts. The program is directed by the comparative literature adviser in either the Department of English or the Department of Foreign Languages and Literatures. The minor consists of 18 hours of course work at or above the 300-level in literatures other than those in which the student is majoring.

Comprehensive Planning and Design (Division, Courses)

The Division of Comprehensive Planning and Design resulted from consolidation of three units in the College of Human Resources: Clothing and Textiles, Design, and Interior Design. Most courses in the division and all undergraduate specializations and majors are offered by these units. Undergraduate courses common to more than one unit have been combined and are offered as division courses. These are listed below or under Environmental Design. Information on the graduate program and courses may be found in the graduate bulletin under Environmental Design.

Courses

391-1 to 6 Independent Study. Independent effort developed by student with supervision by faculty sponsor. Prerequisite: consent of instructor.

Computer Science (Department, Major, Courses)

The Department of Computer Science offers courses covering the major areas of computer science. These courses constitute the basis for an undergraduate major which prepares students for a variety of professional and technical careers in business, industry, and government or for graduate work leading to advanced degrees. In addition, the department offers an undergraduate minor and service courses for students from other fields who will use computer science as a tool in their own areas. Students interested in computer science will be advised with respect to computer science courses by the department so they may profitably pursue their academic and professional interests.

Requirements for a major in computer science are specified in two alternative forms. The program under option A is the more flexible, broadly based, and provides preparation for a wide range of careers as well as for graduate training in computer science. Option B is more specifically oriented toward preparing a student for a career in business and management information processing.

Bachelor of Arts Degree, College of Liberal Arts

COMPUTER SCIENCE MAJOR—OPTION A

<i>General Studies Requirements</i>	45
<i>Supplementary College Requirements</i> (See Page 78)	(4) + 4
<i>Requirements for Major in Computer Science</i>	57
Computer Science 202, 204, 302, 304, 306, 342, 411, each with a grade of C or better	22
Computer Science electives	18
At least 18 additional hours including 361 or 464a. The electives should include at least 12 hours of 400-level computer science courses. The remaining courses may be 300 or 400-level computer science courses or approved courses from other departments.	
Mathematics 150, 250, 221	11
Mathematics 280 or 282 or 283	3
English 290 or equivalent	3
<i>Electives</i>	14
<i>Total</i>	120

COMPUTER SCIENCE MAJOR—OPTION B

<i>General Studies Requirements</i>	45
<i>Supplementary College Requirements</i> (See page 78)	(4) + 4
<i>Requirements for Major in Computer Science</i>	62
Computer Science 202, 204, 302, 304, 306, 312, 411, each with a grade of C or better	22
Computer Science 430, 435	6
Computer Science electives	6
At least 6 additional hours of computer science courses including at least 3 hours at the 400-level.	
Mathematics 139 and 140 or equivalent	7
Mathematics 280 or 282 or 283	3
English 290 or equivalent	3
Accounting 221, 222	6
Administrative Sciences 304, 318, 352	9
<i>Electives</i>	9
<i>Total</i>	120

Minor

A minor consists of Computer Science 202, 204, 302, 304, and 306.

Courses

- 102-3 **Computers in Society.** An introduction to computers, their uses, present and future roles of computer technology in society, and related social issues. Includes elementary programming using on-line terminals.
- 202-3 **Introduction to Computer Programming.** An introduction to computers and programming including a discussion of algorithms, flowcharts, data representation, structure and debugging of programs, computers and languages. Primary emphasis will be given to the solution of problems using PL/1.
- 204-3 **Advanced Programming Techniques.** An advanced treatment of PL/1 which includes emphasis on programming style and elementary data structures. Prerequisite: 202.
- 212-3 **Introduction to Business Computing.** An introduction to concepts and features of

computing systems with reference to business information processing. Includes a basic treatment of programming using PL/1. This course will serve as an equivalent of 202 for prerequisite purposes.

222-3 Introduction to FORTRAN. A basic treatment of FORTRAN with applications to numeric and nonnumeric processing.

302-4 Assembly Language Programming. Basic computer organization. An extensive treatment of a specific assembly language, including macros. Prerequisite: 204 or concurrent enrollment.

304-3 Information Structures. Study of structures used to organize information in computer memory, with a discussion of manipulation algorithms and applications. Topics include vectors and arrays, linked lists, trees, garbage collection, dynamic storage allocation, sorting and searching, and hashing. Prerequisite: 302.

306-3 Fundamentals of Computing Systems. An introduction to the organization of a computing system in terms of hardware, firmware, software. Computer architecture and hardware subsystems. Design of an assembler and other system software. Prerequisite: 302.

312-3 COBOL and Business Data Processing. COBOL and its use in business data processing. Prerequisite: 202.

314f-2 Programming Techniques in FORTRAN. A thorough treatment of FORTRAN with extensive programming practice. Prerequisite: 202.

314l-2 Programming Techniques in List and String Processing Applications. Thorough analysis of the techniques used to support string and list processing. Includes extensive programming practice. Prerequisite: 202.

318-2 Topics in Assembly Language Programming. Selected advanced topics in assembly language programming. Prerequisite: 306.

322-2 Advanced FORTRAN. An advanced treatment of FORTRAN IV with extensive programming practice. Prerequisite: 222.

342-3 Introduction to Discrete Structures. (Same as Mathematics 301.) Sets, relations, and functions. Elements of graph theory with emphasis on algorithms and applications to computing problems. Boolean algebras with applications to computer logic and logical design. Prerequisite: 202 and Mathematics 111 or consent of either department.

361-3 Numerical Calculus. (Same as Math 361.) Algorithms for the solution of numerical problems encountered in scientific research work with special emphasis on the use of digital computers. Includes an elementary discussion of error, polynomial interpolation, quadrature, solution of nonlinear equations and linear systems, solution of differential equations. Prerequisite: 202 and Mathematics 150.

370-2 Basic Simulation. A study of the basic techniques used in simulating discrete systems on a digital computer. Emphasizes the writing of computer programs to model probabilistic systems with special emphasis on a general purpose simulation language. Credit will not be given for both 370 and 470. Prerequisite: 202.

401-3 Computer Organization. Computer main frame architecture; control unit, arithmetic/logic unit, memory, other features. Input/output devices, mass storage devices, channels, and communications equipment. Computer system configurations design and comparison. Prerequisite: 306 and 342.

411-3 Programming Languages. Study of the significant features of existing programming languages with particular emphasis on the underlying concepts abstracted from these languages. Includes formal specification of syntax and semantics, representation and evaluation of simple statements, grouping of statements, scopes and storage allocation, procedures. Prerequisite: 304 or concurrent enrollment.

414-3 Introduction to Operating Systems. Operating systems: batch, multiprogramming, multiprocessing, and time-sharing systems. Specific treatment of one operating system with respect to scheduling, program initiation, memory allocation, CPU allocation, and input/output control. Prerequisite: 306.

420-1 to 3 Topics in Computer Science for Teachers. A consideration of topics in computer science useful in curriculum enrichment in elementary and secondary education. May be repeated as topics vary. Does not count toward a computer science major. Prerequisite: consent of department.

430-3 File Organization. Organization of records and blocks. Design of files, file system, and access methods. File maintenance, external sorting, and searching. Techniques for creating and using hashed files. Introduction to the concepts of data base systems. Prerequisite: 306.

435-3 Information Systems Analysis. An exercise in the analysis, design, implementation, testing, and maintenance of a large modular application system. Team production of a system is the focal point for the course. Topics include the system life cycle, modular design, human interfaces, external system specification, program design languages, and improved programming techniques. Prerequisite: 306.

438-3 Introduction to Telecommunications. Time dependent computational processes. Hardware and software considerations. Dialogue design. System design and implementation. Prerequisite: 306.

445-3 Boolean Algebra and Logical Design. (Same as Mathematics 445.) Boolean algebra

with applications to computer logic and circuit design. Simplification algorithms. Sequential circuits and sequential machines. Introduction to error-correcting codes. Prerequisite: 342 or Mathematics 319.

449-3 Combinatorics and Graph Theory. (Same as Mathematics 449.) An introduction to graph theory and combinatorial mathematics with computing applications. Topics include permutations and combinations, generating functions, recurrence relations, the principle of inclusion and exclusion, Polya's theory of counting, graph theory, transport networks, matching theory, block designs. Prerequisite: 342.

451-3 Introduction to the Theory of Computing. (Same as Mathematics 451.) The fundamental concepts of the theory of computation including finite state acceptors, formal grammars, turing machines, and recursive functions. The relationship between grammars and machines with emphasis on regular expressions and context-free languages. Prerequisite: 445.

464-6 (3, 3) Numerical Analysis. (Same as Mathematics 475.) An introduction to the theory and practice of computation with special emphasis on methods useful with digital computers. Topics include the solution of nonlinear equations, interpolation and approximation, numerical differentiation and integration, solution of differential equations, matrix calculations and the solution of systems of linear equations. Must be taken in a,b sequence. Prerequisite: 202, Mathematics 250, and Mathematics 221.

470-3 Computer Simulation Techniques. Applications and rationale. Design and analysis of discrete simulation models. Generation of random sequences and stochastic variates. Simulation languages. Prerequisite: 202 and either Mathematics 280 or 480 or 483 or consent of instructor.

471-3 Introduction to Optimization Techniques. (Same as Mathematics 471.) Nature of optimization problems. General and special purpose methods of optimization, such as linear programming, classical optimization, separable programming, integer programming, and dynamic programming. Prerequisite: 202, Mathematics 221, and Mathematics 250.

472-3 Linear Programming. (Same as Mathematics 472.) Nature and purpose of the model. Development of the simplex method. Application of the model to various problems. Introduction to duality theory. Transportation and network flow problems. Postoptimality analysis. Prerequisite: 202 and either Mathematics 139 or 221.

485-3 Computer Graphics. Study of the devices and techniques for the use of computers in generating graphical displays. Includes display devices, display processing, transformation systems, interactive graphics, 3-dimensional graphics, graphics system design and configuration, low and high level graphics languages, and applications. Prerequisite: 306 and Mathematics 111 or equivalent.

490-1 to 6 (1 to 3 per semester) Readings. Supervised readings in selected subjects. Prerequisite: consent of instructor and department.

491-1 to 4 Special Topics. Selected advanced topics from the various fields of computer science. Prerequisite: consent of instructor.

492-1 to 6 (1 to 3 per semester) Special Problems. Individual projects involving independent work. Prerequisite: consent of department.

493-1 to 4 Seminar. Supervised study. Preparation and presentation of reports. Prerequisite: consent of instructor.

501-3 Advanced Computer Organization.

514-3 Systems Programming.

516-3 Compiler Construction.

531-3 Text Processing and Data Base Systems.

536-3 Artificial Intelligence and Heuristic Programming.

553-3 Formal Languages and Automata.

555-3 Theory of Computability.

564-3 to 9 (3, 3, 3) Advanced Numerical Analysis.

590-1 to 9 Readings.

591-1 to 9 (1 to 3 per topic) Special Topics.

592-1 to 6 (1 to 3 per semester) Special Problems.

593-1 to 4 Seminar.

599-1 to 5 Thesis.

Construction Technology—Building (Program, Major)

(ALSO SEE CONSTRUCTION TECHNOLOGY—CIVIL)

The construction technology—building curriculum is designed to meet the needs of the construction industry. The technician must be able to talk the language of the industry and interpret instructions, and must also be capable of working in the area between the architect and the craftsmen who are expected to carry out the mandates of the design. The program provides sufficient theory and labora-

tory work so that the graduate can perform in areas of design, drafting, construction methods, estimating, and surveying.

The curriculum is designed to accept both new freshmen and transfer students. Students entering with industrial experience or courses taken in the military may be given credit by proficiency or transcript evaluation.

The student should expect to spend about \$60.00 for instruments and supplies.

The program is served by an advisory committee whose members have extensive experience in the field. Current members are: Mike Grant, Unibuilt Structures, Charleston; Fred H. Persson, Steffes Construction Co., Carterville; Paul Phillips, Phillips Lathing, Inc., Carbondale; D. Leo Robinson, J & L Robinson Development and Construction Co., Carbondale; and Arthur Vincent, Egyptian District Council Carpenter's Union, Murphysboro.

Graduates of this program may find employment as construction engineering aids, assistants to a contractor supervisor, building materials sales representatives, inspectors, and estimators.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experiences.

Associate in Applied Sciences Degree, School of Technical Careers

Requirements for Major in Construction Technology—Building

GSD 101	3
School of Technical Careers 102, 105a,b, 107a,b.	10
Accounting 110	3
Construction Technology 102a, 103a,b, 104, 110, 111, 125a,b 208, 210, 211	53
Electives (in Humanities or Social Science)	3
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Total.	72

Construction Technology—Civil (Program, Major, Courses)

The construction technology—civil curriculum is designed to produce a technician who can, under supervision, perform many of the specialized tasks required to coordinate and guide a construction project from the planning stage to a satisfactory completion. Technical training is provided in surveying, materials of construction, construction methods, equipment, planning, estimating, design, and drafting.

Credit may be obtained for relevant courses or work experience by transcript evaluation or proficiency examination.

The student should expect to spend approximately \$40.00 for instruments and supplies.

The following people serve on an advisory committee which assists the program: M. P. Berteaux, Department of Transportation, Springfield; Carroll Fry, city manager, Carbondale; Charles Lockett, Superior Structures Corp., Marion; Henry Mitchell, Shawnee Construction, Marion; B. J. Schwegman, Clark, Dietz, and Associates, consulting engineers, Carbondale; and Don Shelton, State Highway Department, Carbondale.

Career opportunities exist primarily with heavy construction oriented organizations: governmental units engaged in providing public works such as highways, airports, and conservation projects; contractors; consulting engineers; industrial organizations; material suppliers and testing laboratories.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experiences.

Associate in Applied Science Degree, School of Technical Careers

Requirements for Major in Construction Technology—Civil

GSD 101	3
School of Technical Careers 102, 105a,b, 107a,b.....	10
Construction Technology 101a,b, 102a,b, 103a,b, 125a,b, 201, 203, 207, 208, 213a,b.....	53
Elective (in Humanities or Social Science)	3
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Total.....	69

Courses

101-14 (7, 7) Surveying. Students will be able to make observations, prepare field notes, and make field checks using equipment usually encountered in plane surveying. They will be able to reduce field notes and present the results in a form which is understandable to others using the desk calculator, planimeter, slide rule, and drawing instruments as required. They will know techniques employed in construction layout. (a) Horizontal distance, leveling, the transit, traverses, elementary triangulation, surveys for maps, stadia and photogrammetry, construction surveys. Lecture three hours, laboratory six hours. (b) Surveying computations, areas, volumes; error theory, earthwork, horizontal curves, vertical curves, slope staking, ties, construction tolerances, elements of land surveying, state plane coordinate systems. Must be taken in a,b sequence or by consent of instructor. Lecture three hours, laboratory six hours.

102-8 (4, 4) Drafting. Students will acquire the basic skills necessary for more advanced drafting work. They will then specialize in drafting techniques used in the preparation of working drawings for steel and concrete structures. (a) Lettering, line work, geometrical constructions, drawing layout, dimensioning, orthographic projection, sections, auxiliary views, surface intersections, surface development, isometric drawing, oblique drawing, elements of structural drafting. Lecture two hours, laboratory four hours. (b) Preparation of working drawings for steel and concrete structures from given design data. Lecture two hours, laboratory four hours.

103-8 (4, 4) Construction Materials. Students will obtain knowledge of production methods, physical properties, uses, installation methods, advantages and disadvantages, together with relative costs of materials frequently used in construction. Using given test procedures, they will be able to perform tests on concrete materials and soils which are required for on-site control. (a) Concrete materials including laboratory, wood, ferrous metals, bituminous materials, soil cement, nonferrous metals, stone, masonry, concrete proportioning, introduction to reinforced concrete. Lecture two hours, laboratory three hours. (b) Soils including laboratory, elementary soil mechanics, foundations, other building materials including plastic, glass, insulation, building boards, protective coatings. Lecture two hours, laboratory three hours.

104-4 Building Construction Surveying. Students will be able to give line and grade for elementary construction layout using the tape, transit, and level or equivalent equipment. They will also be able to make surveying observations required for the preparation of a site plan. Lecture two hours, laboratory three hours.

110-7 Basic Construction I. Students will acquire the skills and knowledge necessary to enable them to safely operate basic woodworking machines, identify the common commercial wood species, and apply basic methods of testing wood and other wood-based materials. Lecture two hours, laboratory nine hours.

111-7 Basic Construction II. Students will acquire the skills and knowledge necessary to enable them to demonstrate their abilities in light frame construction, electrical wiring methods, and small tool maintenance and repair. Lecture two hours, laboratory nine hours. Prerequisite: 110 or consent of instructor.

125-6 (3, 3) Statics and Strength of Materials. The student will learn fundamental concepts which are necessary in order to understand terms continually used in civil technology. (a) Force systems, strength of materials, friction, connections, thin wall, pressure vessels. Lecture three hours. (b) Beam design, torsion, shafts, couplings, keys, combined stresses, columns, statically indeterminate members. Lecture three hours.

201-3 Advanced Surveying. The student will develop the ability to organize a small field party, make field observations using techniques consistent with given survey requirements, and present results in a form useful to others. Comprehensive problems will be assigned which include traverses, triangulation, topography and field astronomy. Laboratory and homework in addition to regularly scheduled class time will be required. Lecture two hours, laboratory two hours. Prerequisite: 101 or consent of instructor.

203-3 Hydraulics and Drainage. Students will have sufficient technical background to perform inspection functions on projects where static and moving liquids are being controlled. Under supervision, they will be able to make small area surface run-off and drain-

age structure computations. Subjects studied are: static pressures, flow in open channels and pressure conduits, surface run-off, drainage structures. Lecture three hours.

207-3 Construction Planning, Methods, and Equipment. Students will have basic knowledge of construction management functions, primarily from the point of view of the contractor. They will be able to assist in the preparation of work schedules, requests for progress payments and the evaluation of alternate methods of construction. Systematic problem-solving procedures based on factual data are emphasized. Lecture three hours. Elective Pass/Fail.

208-3 Construction Cost Estimating. The student will be able to assist in the preparation of construction cost estimates. Actual working drawings and specifications are used extensively. Emphasis is on quantity take-off and the development of unit costs from given or derived data. Lecture three hours.

210-7 Advanced Construction I. Students will acquire the skills and knowledge to enable them to perform advanced operations in light frame, prefab, and modular construction. Lecture three hours, laboratory six hours. Prerequisite: 111 or consent of instructor.

211-7 Advanced Construction II. Students will acquire the skills and knowledge to enable them to demonstrate their competency in the preservation and finishing of building materials, plumbing and pipefitting as it relates to domestic and other buildings, concrete forming methods; and block and bricklaying techniques. Lecture three hours, laboratory six hours. Prerequisite: 210 or consent of instructor.

213-5 (2, 3) Structural Design. Sufficient design background is provided for supervision of field construction techniques to insure that the intentions of the drawings and specifications are fulfilled. (a) Pertinent provisions in the American Institute of Steel Construction-Manual of Steel Construction are emphasized. Lecture two hours. (b) Similar to (a), but the American Concrete Institute-Building Code Requirements for Reinforced Concrete is used. Lecture three hours.

Consumer Studies (Minor)

(SEE FAMILY ECONOMICS AND MANAGEMENT)

Correctional Services (Program, Major)

(ALSO SEE LAW ENFORCEMENT)

A growing demand for trained correctional workers is being created by increasing emphasis on rehabilitation of criminal offenders. These people are needed both in institutions and in community-based corrections.

This correctional services program has the two-fold purpose of providing a broad-based social science type curriculum to both the person entering the field and to presently employed personnel who wish to upgrade skills for advancement opportunities.

Students will learn the nature and effects of crime on both the perpetrator and the victim, methods used to combat crime in modern society, and various approaches to rehabilitation of the offender. They will spend one term in supervised internship working in a correctional institution or with a correctional agency.

Persons already employed in the correctional field may enroll in the program on a part-time basis with the assurance that faculty members will help them to arrange classes compatibly with their work schedules.

Professionals in the field serve on an advisory committee which assists in the program. Current members are: Warden Thomas Israel, Illinois State Penitentiary at Menard; Warden Vernon Housewright, Vienna Correctional Center; Dr. Champ Brahe, director, Southern Illinois Work Release Center, Carbondale; Associate Circuit Judge William Lewis, Anna; and Joseph Coughlin, Center for the Study of Crime, Delinquency and Corrections, Southern Illinois University at Carbondale.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Art Degree, School of Technical Careers

Requirements for Major in Correctional Services

GSB 202, 203, 212	11
GSD 101, 118, 153	8
Political Science 213	3
Sociology 372	4
Correctional Services/Law Enforcement 103, 104, 105, 106, 108, 115, 209, 210, 215, 217, 220	39
Electives	3
<hr/>	
Total	68

Correctional Services/Law Enforcement (Courses)

Courses

- 103-3 Introduction to Criminal Justice.** Enables the student to understand the workings of the criminal justice system and is the foundation course for the law enforcement program. Upon completion of this course, the student will have an understanding of the processes from arrest through imprisonment enabling assimilation of progressive courses such as criminal law and criminal behavioral theories. Lecture three hours.
- 104-3 Treatment Methods in Criminal Justice.** The general goal of this course is to introduce to the student several treatment methods utilized in the criminal justice system. The student will briefly examine several treatment modalities and will discuss transactional analysis in detail. Other course items will include participation in a treatment group and a trip to a maximum security prison. Also includes involvement in many group exercises that should help the student gain a working knowledge of treatment methods. Lecture three hours.
- 105-3 Criminal Behavior.** Will enable the student to understand the psychological and sociological forces that make up criminal behavior. Upon completion of this course the student will have the knowledge to complete studies of the behavioral field in other disciplines of the university such as criminology. Lecture three hours.
- 106-3 Treatment Practicum.** Will enable the successful student to apply the techniques learned in 104 in actual therapeutic settings and groups in area social service agencies and correctional institutions. Upon completion of this course, the successful student will be prepared to assist in leadership of therapeutic or treatment modalities and will have the ability to use these skills in human service agencies. Lecture three hours. Prerequisite: 104.
- 108-3 Supervision in Criminal Justice.** The criminal justice supervisor's role in discipline, intradepartmental relations, problem-handling, and personnel policies. Problems relating to supervisory relationships, wages, grievances, morale, and safety. Lecture three hours.
- 115-3 Interpersonal Relations in Criminal Justice.** Enables the student to develop a better understanding of people, their motivations, and their behavior patterns. A specific emphasis of this course is on individual and organizational intrapersonal and interpersonal relations. Upon successful completion of this course, each student should have developed the skills necessary for positive interaction with individuals in the free society and within a setting of incarceration. Lecture three hours.
- 205-3 Criminal Investigation.** Enables the student to examine the major theories and techniques of criminal investigation. Upon successful completion of the course, the student should have an understanding of the techniques of criminal investigation and how these techniques can be applied to various types of investigations. The student should learn the value of adequate preservation, collection, and handling of physical evidence. Lecture three hours.
- 209-3 Criminal Law I.** Enables the student to understand the due process functions of the criminal law. Upon completion of this course the student will be able to use a law library and will have an understanding of the laws of arrest, search and seizure, and evidence including recent Supreme Court decisions affecting daily work assignments. This course is also a foundation for Criminal Law II where the substantive law is covered. Lecture three hours.
- 210-3 Criminal Law II.** Will enable the student to apply the law of due process (constitutional law) to the study of substantive law including Illinois state penal code and the Illinois Corrections Code. Upon completion of this course the student will have a working knowledge of how both the penal and corrections codes of the state enables society to successfully prosecute violators of the law. The student will also be able to brief cases pertaining to criminal and correctional law. Lecture three hours. Prerequisite: 209.
- 215-9 Internship in Criminal Justice Practice.** The pre-service student will be exposed to

the operations of a criminal justice agency through an eight-week internship in that agency under supervision. Upon completion of the internship the student will have been exposed to all aspects of the agency and reinforce the student's attitudes toward that particular area of criminal justice. (Internship—40 hours per week. Eight weeks.)

217-3 Correctional Administration. Will enable the student to examine the administrator's role in corrections including budgeting, personnel, and police guidelines. Upon completion of this course the student will have the fundamental skills necessary for middle management personnel. Lecture three hours. Prerequisite: 103.

220-3 Probation, Parole, and Community Based Corrections. Will enable the student to understand the concept of alternatives to incarceration. The benefits and workings of probation and parole will be examined and the student will be exposed to the casework method utilized in these areas. The student will learn of alternatives to incarceration that are community based and of the need for community involvement and support for these efforts. Lecture three hours. Prerequisite: 103.

221-3 Police Administration. Principles of organization and modern management as applied to law enforcement agencies. The course will provide the student with an introduction to organizational theory, organizational behavior and administration. Special attention will be paid to the objectives of police operation and some of the factors lying ahead in the field of police administration. Lecture three hours. Prerequisite: 103 and 107 or consent of instructor.

Curriculum, Instruction, and Media (Department, Majors, Minor [Educational Media], Courses)

Students may enter the Department of Curriculum, Instruction, and Media (1) directly from within the College of Education, (2) from the General Studies Program, (3) from other academic units, or (4) from other institutions of higher education. The department offers a major in early childhood education with either a preschool or a kindergarten through grade 3 specialization, a major in elementary education, a minor in educational media, and offers courses for students pursuing the standard high school certification program.

Educational Media Minor

Persons trained as teachers may qualify as a school media professional by completing the following courses: 438, 439, 440, 442, 435 or 445, and Education 304a. Other courses in the utilization and administration of teaching materials are designed to train both audiovisual coordinators and librarians to become fully qualified educational media specialists who can administer all teaching materials.

Bachelor of Science Degree, College of Education

The Department of Curriculum, Instruction, and Media prepares students to qualify for the following Illinois teaching certificates: Early Childhood Certificate (for teaching ages 0-6), Standard Elementary Certificate (for teaching in grades K-9), or Standard High School Certificate (for teaching in grades 6-12).

Early Childhood Education Major

EARLY CHILDHOOD EDUCATION MAJOR—PRESCHOOL SPECIALIZATION

Students interested in teaching children 0-6 years of age in private or state-approved settings may elect to participate in the early childhood preschool specialization program. This major is jointly offered with the College of Human Resources. Specifically designed to prepare future teachers of children under six, this program will lead to the State of Illinois Early Childhood Certificate. Students wishing the special education endorsement should select the special education option.¹ Students wishing to teach public school kindergarten are directed to the K-3 specialization program.

<i>Requirements for Major in Early Childhood Education</i>	62
Child and Family 227, 237, 240, 245, 337, 345, 466, 471-6	26
Curriculum, Instruction, and Media 209, 213, 317, 318, 418, 419, 435	21
Food and Nutrition 100	3
Music 303	3
Psychology 301	3
Special Education 400	3
Speech Communication 444	3
<i>Electives</i>	13
Special Education Option—Special Education 405 ² , 406, 412	
<i>Total</i>	120

¹Special Education 400 and Speech Communication 444 are required for the special education endorsement.
²Special Education 405 is taken in place of Curriculum, Instruction, and Media 318 for students electing the special education option.

EARLY CHILDHOOD EDUCATION MAJOR—KINDERGARTEN THROUGH GRADE THREE SPECIALIZATION

In the early childhood education kindergarten through grade 3 specialization program, special emphasis is placed on teaching young children in the elementary school. This major leads to the State of Illinois Standard Elementary Certificate.

<i>General Studies Requirements and Additional General Education</i>	
<i>Requirements for Major</i>	75
Physical and Biological Sciences (GSA).	11
Social Sciences (Including GSB 202 and 300 or 301, other GSB courses)	11
Fine Arts (Including GSC 100, 101, or 205. Music 101 or two levels of Music 030; Music 300; and Art 348.	14
Language Arts (Including GSD 101; 117 or 119; GSD speech and GSC literature)	16
Mathematics (Including Mathematics 114 or equivalent to substitute for GSD 107 and Mathematics 314.	7
Health and Physical Education (Including GSE courses and Physical Education 202	7
Electives (Curriculum, Instruction, and Media 427 recommended) ¹	9
<i>Professional Education Requirements</i>	24
See Teacher Education Program, page 71.	
<i>Specialization Requirements for Major</i>	25
Curriculum, Instruction, and Media 213, 312, 315, 316, 324, 423, 426, 435 ¹ , Education 312 ² , Vocational Education Studies 368	
<i>Electives</i>	4
Must be taken in Curriculum, Instruction, and Media: recommended are 402, 412, and 419	
<i>Total</i>	128

¹Applies as a general education certification requirement for major.
²Education 312 must be taken concurrently with Curriculum, Instruction, and Media 324.

Elementary Education Major

A Bachelor of Science degree with a major in elementary education entitles the student to apply for the State of Illinois Standard Elementary Certificate, which will allow the holder to teach in kindergarten through ninth grade.

Elementary education majors may select either an area of interest consisting

of eight semester hours of electives in educational media, black American studies, foreign languages, language arts, mathematics, science, or social studies, or the student may elect to earn a minor in either educational media, black American studies or Spanish.

General Studies Requirements and Additional General Education

Requirements for Major	67
Physical and Biological Sciences (GSA)	11
Social Studies (Including GSB 202, 212, and 300 or 301)	11
Fine Arts (Including GSC 100, 101, or 205; must include one music and one art course, which may be taken as part of GSC)	9
Language Arts (Including GSD 101; 117 or 119; GSD speech and GSC literature)	16
Mathematics (Including Mathematics 114 or equivalent to substitute for GSD 107 and Mathematics 314)	7
Health and Physical Education (GSE)	5
Electives (May be taken from electives cited under specialization requirements to further enhance and support this area)	8
Professional Education Requirements	24
See Teacher Education Program, page 71.	
Specialization Requirements for Major	26
Curriculum, Instruction, and Media 312, 315, 423, 424 426, 435 ²	18
Electives	8 ¹
Electives to be selected from one of the following areas: instructional materials; black American studies; foreign languages (See Foreign Languages and Literatures); Language Arts (English 290, Speech Communication 430 recommended); Mathematics, Science (Curriculum, Instruction, and Media 427 ² or Botany 462 recommended); social studies (Political Science 332, Sociology 302, Geography 300 recommended)	
Electives ³ (eight hours must be in Curriculum, Instruction, and Media courses)	11
Total	128

¹Elective hours from general education may apply; combined total must equal 16 hours.
²Applied as a general education certification requirement for major.
³Many states require a course on special needs learners and two courses in reading methods. Two courses in reading are required for teaching in Chicago schools.

Secondary Education Majors

Students who elect to pursue a Bachelor of Science degree in the College of Education, for purposes of preparing to teach in junior or senior high schools, should select academic majors and minors from the areas included in the listing below. Included in the column headed Major are those areas for which Southern Illinois University at Carbondale has approval from the State of Illinois Office of Education and from the State Teacher Certification Board.

TEACHING AREA	MAJOR	MINOR ¹
Agricultural Education ²	X	
Art	X	
Biological Sciences	X	X
Black American Studies		X
Botany ³	X	X
Business Education ²	X	X
Chemistry	X	X
Earth Science		X
Economics	X	X

TEACHING AREA	MAJOR	MINOR ¹
Educational Media		X
English	X	X
Foreign Languages	X	X
Geography	X	X
Health Education	X	
History	X	X
Home Economics Education ²	X	
Journalism	X	X
Language Arts and Social Studies	X	
Mathematics	X	X
Microbiology		X
Music	X	X
Occupational Education (Industrial Arts and Trades and Industries) ²	X	
Philosophy		X
Physical Education for Men	X	X
Physical Education for Women	X	X
Physics	X	X
Physiology		X
Political Science	X	X
Psychology		X
Social Studies	X	
Sociology		X
Speech Communication	X	X
Theater		X
Zoology ³	X	X

¹All minors used for certification purposes must include a minimum of 18 semester hours.

²Requirements for programs in agricultural education, business education, home economics education, and occupational education may be found in the catalog section titled Vocational Education Studies.

³A student with a major in botany or zoology should have a minor in the other in order to meet certification standards for teaching biology at the high school level.

Each student who wishes to apply for the Standard High School Certificate through the certification entitlement process at Southern Illinois University at Carbondale must fulfill the following requirements of the University's Teacher Education Program:

1. The individual must have completed a baccalaureate program at Southern Illinois University at Carbondale.

2. The individual must have completed one of the approved majors included in the previous listing.

3. The individual must have fulfilled requirements for certification related to the state and federal constitutions and an American government or American history course by either (a) taking GSB 212, or, 300 or, 301; (b) taking a course in American history or political science other than those listed in (a), above, and passing the constitution test administered by Southern Illinois University at Carbondale; (c) presenting written notification from another institution that a course in American history or political science has been passed and that the Illinois and United States Constitutions tests have been passed.

4. The individual must have fulfilled certification requirements in health and physical education which can be satisfied by taking GSE 201 and two hours in GSE 100-114 courses.

5. The individual must have completed the following sequence of professional education courses:

<i>Professional Education Sequence</i>	24
Decision Component	
Education 201	1 ¹

Basic Professional Block

Education 301.	2
Education 302.	2
Education 303.	2
Education 304a, b, c, d, e, f, g, or h	2

Professional Semester²

Education 350.	3
Education 400.	4
Education 401.	8

¹Must be completed prior to admission to the teacher education program.
²See catalog section titled Professional Education Experiences for prerequisite for student teaching in the professional semester.

6. The individual must have completed a special methods course pertaining to the major.

7. The individual must have fulfilled State Teacher Certification Board general education distributions in the required areas: language arts, science, mathematics, social studies, humanities, health and physical education.

Students who wish to prepare to teach in middle schools or junior high schools should inform their advisers of this interest early so they can include in their programs those courses which will prepare them for teaching in that area. The student’s electives should be planned to include course work in a subject matter area of major interest to the student.

Courses

- 209-2 Philosophy of Creativity.** The creative process in the developing child. Emphasis will be upon the levels, dimensions, and individuality of creativity as it is manifested, observed, and nurtured in preschool children. (To be taken concurrently with Child and Family 240 and 245 by early childhood preschool majors.)
- 213-2 Understanding the Elementary School Child.** Child development concepts necessary for understanding the elementary school child, with information provided on pre-school, primary, and intermediate grade levels.
- 214-2 Understanding and Building a Positive Self-Concept in Young Children.** Provides background information of the development of the self-concept. Methods for developing a positive self-concept in three-to-five-year-old children will be explored and demonstrated in the trainee’s classroom. One and one-half hour lecture; one hour laboratory.
- 215-2 Understanding and Developing Cognitive Development in Young Children.** Provides background information on the cognitive development of three-to-five-year-old children and information on materials, equipment and appropriate activities for this age group. Practical experiences will be demonstrated in trainee’s classroom. One and one-half hour lecture; one hour laboratory.
- 216-2 Understanding and Developing Physical Development in Young Children.** Provides background information on the physical development of three-to-five-year-old children and information on materials, equipment, and appropriate activities for this age group. Practical experience will be demonstrated in trainee’s classroom. One and one-half hour lecture; one hour laboratory.
- 217-2 Establishing and Maintaining a Learning Environment for Young Children.** Organizing space, equipment, and materials for a learning environment for young children. Maintaining a planned arrangement for program activities and children’s participation within the program. Prerequisite: 215 and 216 or consent of instructor.
- 218-2 Organizing and Sustaining the Preschool Program.** Provides an integrating experience of organizational schemes for preschool programs. Supporting behaviors and planning are stressed. Practical application will be demonstrated in the trainee’s classroom. One and one-half hour lecture; one hour laboratory. Prerequisite: 215, 216, and 217 or equivalent experiences/competencies.
- 219-2 Establishing Home, School, Community Relations.** Provides background and resource ideas and materials necessary for establishing a good home, school, community oriented program. Practical application will be demonstrated in the trainee’s program. One and one-half hour lecture; one hour laboratory.
- 223-2 Language Arts Activities for Young Children.** Provides background information on the development of language usage and comprehension in three-to-five-year-old children. Materials, equipment, and activities for advancing language development will be studied and developed. Practical application will be demonstrated in the trainee’s classroom. One and one-half hour lecture; one hour laboratory.

258-1 to 4 Credit for Work Experience. This course includes work experience relevant to the student's major program, such as work in day care centers, teacher's aid in a public school, or with federal, state, or local agencies or programs that deal with children. Prerequisite: 12 semester hours completed with a grade of *B* or better in the student's major area of concentration in the CIM department and consent of undergraduate affairs committee, Department of Curriculum, Instruction, and Media.

312-3 Teaching Reading in the Elementary School. Examination of the reading process with emphasis on the factors and conditions that affect reading. Emphasis on the formulation of a philosophy of reading and its implications in relation to methods, materials, organizational procedures, and evaluation techniques.

315-3 Teaching Mathematics in the Elementary School. Objectives of mathematics education, learning theory as it is related to mathematics, major concepts to be taught, modern approaches to instruction, with emphasis on the use of concrete learning aids. Four class hours and two laboratory hours per week.

316-2 Early Childhood Education Methods and Curriculum (K-3). 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: concurrent enrollment in Education 302.

317-4 Early Childhood (Preschool) Curriculum I. Understanding the role of the teacher in integrating the principles underlying the child-development with the natural interests and activities of the child 3-5 through the use of equipment, materials, and educational methods. Emphasis will be on language and affective development. Practical experiences in a preschool setting one-half day per week. Prerequisite: 209 and Child and Family 240.

318-5 Early Childhood (Preschool) Curriculum II. Diagnosing factors in the preschool learning situation, prescribing learning experiences, assessing effectiveness of learning, and developing inquiry. Emphasis on cognitive and psycho-motor development. Practical experiences in a preschool setting — one day or two one-half days per week. Prerequisite: 317.

324-2 Early Childhood Social Learning Methods. The objectives, procedures, and methods of designing and implementing social learning environments for early childhood education programs; including an overview of significant early social learning theory and practice. Two hour block required for practicum experiences.

361-3 Teaching Reading in High School. A foundation course in how to teach reading in junior and senior high school; developmental and remedial reading programs; appraisal of reading abilities; methods and materials of instruction in the content areas.

390-1 to 3 Readings. In-depth reading in various areas of education as related to the fields of (a) Curriculum, (b) Supervision for instructional improvement, (c) Language arts, (d) Science, (e) Mathematics, (f) Reading, (g) Social studies, (h) Early childhood education, (i) Elementary education, (j) Middle school, (k) Secondary school, (l) Disadvantaged children and youth, (m) Instruction, (n) Educational media. Prerequisite: consent of instructor.

393-1 to 6 Individual Research in Education. The selection, investigation, and writing of a research topic under the personal supervision of a member of the departmental staff in one of the following areas: (a) Curriculum, (b) Supervision for instructional improvement, (c) Language arts, (d) Science, (e) Mathematics, (f) Reading, (g) Social studies, (h) Early childhood education, (i) Elementary education, (j) The middle and junior high school, (k) Secondary education, (l) Disadvantaged children and youth, (m) Instruction, (n) Educational media, and (o) Environmental education. Maximum of 6 hours to be counted toward a bachelor's degree. Prerequisite: consent of instructor.

400-2 Simulation and Gaming. The role of simulation and gaming in instruction, the availability of commercial games and simulation devices, and the theoretical backgrounds used in constructing teacher-made games are to be examined.

401-1 to 3 Problems in Public School Reading. Requires attendance at all sessions of a reading conference; preparation of a paper showing practical applications of theory to the student's own teaching situation.

402-3 Education for Disadvantaged and Culturally Different Students. The student examines the characteristics of behavior and learning patterns of culturally different and socioeconomically disadvantaged children. Content also includes school adjustment, experiential background, self-concept, language development, and appropriate teacher behaviors and teachings strategies.

407-3 to 9 (3 per topic) Diagnostic and Corrective Techniques for the Classroom Teacher. A presentation of diagnostic and remediation techniques with emphasis placed on appropriate methods and materials to be used in classrooms in the areas of (c) Language arts, (e) Mathematics, and (f) Reading. Prerequisite: special methods course in field selected by student and/or consent of instructor.

409-3 Creative Teaching. To assist pre- and in-service teachers in acquiring methods and materials that will improve instruction in the public school classroom, with special attention to the characteristics and needs of students. Prerequisite: Education 302.

410-2 Creative Writing in the Public School. Techniques of encouraging creative writings in the schools.

412-3 to 15 (3 per topic) Improvement of Instruction in Early Childhood Education

(Preschool-Grade 3). Examines recent findings, current practices, and materials used in early childhood education in the fields of (c) Language arts, (d) Science, (e) Mathematics, (f) Reading, and (g) Social studies. Prerequisite: specialized methods course for the field of study selected by the student.

415-3 Improvement of Instruction in Middle School Mathematics (Grades 4-8). Examines recent findings, current practices, and materials in the middle school setting. Prerequisite: 315 or consent of instructor.

418-2 History and Philosophy of Early Childhood Education. A survey of the history and philosophies of early childhood education with its implication for current program practices. Student's analysis of personal philosophy of early childhood education. Prerequisite: 316, 318, senior or graduate standing.

419-3 Parent Involvement in Education. Materials, techniques, and resources suitable for use by teachers in helping parents and teachers to understand how they can help each other in the partnership responsibilities of the education of children from a variety of backgrounds. Prerequisite: 317, student teaching, or consent of instructor.

420-3 Teaching the Adult Functional Illiterate. The emphasis in the course will be on understanding the problems of the individual whose literacy level does not permit full participation in the economic, social, and civic opportunities available to the majority of citizens. Prerequisite: permission of instructor.

423-3 Teaching Elementary School English Language Arts. Oral and written communication processes with emphasis on the structure and process of the English language arts in the elementary school. Specific attention to the fundamentals of speaking English, writing, spelling, and listening. Study of learning materials, specialized equipment and resources.

424-3 Teaching Elementary School Social Studies. Emphasis on the structure and process of teaching social studies in the elementary school setting. Specific attention to the fundamentals of developing social studies objectives, planning units, developing a general teaching model, organizing the curriculum, and evaluating behavioral change. Study of learning materials, specialized equipment, and resources.

426-3 An Introduction to Teaching Elementary School Science. Content and methods of elementary school sciences, grades K-8. Emphasis on the materials and strategies for using both traditional and modern techniques of science education. One or more field trips.

427-4 Science Process and Concepts for Teachers of Grades of N-8. (Same as Botany 462). Specifically designed to develop those cognitive processes and concepts needed by elementary school teachers in the teaching of modern science programs. Lecture three hours per week, laboratory two hours per week. One or two additional field trips required.

435-3 Literature for Children. Studies types of literature; analysis of literary qualities; selection and presentation of books and other media for children; and, integration of literature in preschool, elementary, and library settings.

436-2 Library Research Methods. Introduction to the use of library materials for graduate research. The use of bibliographies and reference works in various subjects. Students will consult sources in their own disciplines. Not open to students in the educational media program.

437-3 Educational Media in Training Programs in Business and Industry. The utilization of visual, audio, electronic, display, and print media in industrial and business training programs. Includes experiences in using sources, selecting and evaluating media, the operation and maintenance of media hardware, and the use of multi-media. Not open to students pursuing a graduate major in educational media.

438-3 Introduction to Technical Services. Organization of library materials. Emphasis on cataloging and classification. Includes acquisition, processing, and circulation of materials. The Dewey Decimal classification system and Sears list of subject headings are stressed. Laboratory assignments.

439-3 Basic Reference Sources. Introduction to the principles and methods of reference work. Concentration on the study and examination of the tools which form the basic reference collection of the school library.

440-3 Selection of Media. Evaluation of print and non-print media; resources and services; competencies for efficient purchasing and selecting of media.

442-4 Administration of the School Media Program. Functions and management of elementary and secondary school library media programs with emphasis on services, personnel, financial aspects, facilities, and evaluation. Current issues and trends as reflected in the literature. Field trips to school library media centers.

445-3 Media for Young People. The selection and use of books and other educational media for students in the junior high and senior high school.

450-3 Photography for Teachers. Photography as a tool of communication in the modern school. Techniques of camera handling, visually planning a story, macro-photography, and color slides.

451-3 Photographic Preparation of Educational Media. Techniques of photography used in producing prints, overhead transparencies, daylight slides, high contrast materials, picture stories, filmstrips, and other photographic instructional materials. Prerequisite: 450 or consent of instructor.

453-3 Local Production of Educational Media. The study of the various processes and

techniques used by classroom teachers in the production of locally-made nonphotographic instructional material.

455-3 Organization and Production of Media for Self-Instruction. The study of various programming techniques and the procedures used in producing, designing, and evaluating materials used for self-instructional purposes. Includes organizing a teaching segment and producing the needed materials to create a self-instructional package.

458-3 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.

462-3 Middle and Junior High School Programs. Focuses on the development of middle and junior high school curriculum, and the identification of instructional activities which relate to the pre and early adolescent student. It is anticipated that the student will be able to plan and develop teaching units and evaluate procedures complementary to this portion of the school structure.

464-2 Student Activities. Analysis of extra-class activities and programs in public schools with a focus on the status, trends, organization, administration, and problems.

465-3 Advanced Teaching Methods. The focus is on a variety of teaching strategies which are appropriate for secondary school teachers. Both individual and group methods are emphasized.

468-3 Science Methods for Junior and Senior High Schools. An analysis of the skills and strategies needed for effective science instruction in the secondary school. The acquisition of teaching skills and the development of instructional materials. Classroom observation and one or more field trips may be required.

469-2 Teaching Social Studies in the Secondary School. Emphasis is placed upon instructional strategies and curricular designs in social studies at the junior and senior high school levels.

496-2 to 6 (2 to 4 per semester) Field Study Abroad. Orientation and study before travel, readings, reports, and planned travel. Includes visits to cultural and educational institutions. Maximum credit hours in any term is 4.

498-1 to 15 (1 to 3 per topic) Workshops in Education. Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices in each of the following areas: (a) Curriculum, (b) Supervision for instructional improvement, (c) Language arts, (d) Science, (e) Mathematics, (f) Reading, (g) Social studies, (h) Early childhood education, (i) Elementary Education, (j) The middle school, (k) Secondary education, (l) Disadvantaged children and youth, (m) Instruction, (n) Educational media, and (o) Environmental education. (p) Children's Literature. Maximum of six hours toward a master's degree. Prerequisite: consent of instructor.

500-3 Research Methods in Education.

501-3 Organization and Administration of Reading Programs.

502-3 Education of Disadvantaged Students: Research and Teaching.

504-3 Systematic Approaches to Instruction.

508-3 Supervision of Professional Education Experiences.

509-3 Foundations of Environmental Education.

511-3 Seminar in Psychology of Elementary School Subjects.

512-3 Reading in the Elementary School.

513-3 Kindergarten-Primary Reading.

515-3 Advanced Remediation in Mathematics.

517-3 Early Childhood Programs: Organization and Administration.

518-3 Early Childhood Education.

521-8 (4,4) Diagnosis and Correction of Reading Disabilities.

522-3 Teaching Reading Skills to College Students.

523-3 Language Arts in the Elementary School.

524-3 Teaching the Social Studies in the Elementary School.

526-3 Problems in Elementary School Science Education.

531-3 The Elementary School Curriculum.

532-3 Research in Elementary Education.

533-3 Instructional Leadership in Elementary Education.

534-3 Organization of the Elementary School.

538-3 Organization of the Nonbook Collection.

539-3 Reference Services of the School Media Center.

540-2 Mass Communications in Education.

542-3 Administration of an Educational Media Center.

544-3 Administration of the Community College Media Program.

545-3 Selection for the Community College Media Program.

546-3 The Library of Congress Classification Scheme.

548-5 Production and Utilization of Media.

549-2 Designing Multi-Image Learning Materials.

550-3 History of Media.
551-4 Survey of Research and Developments in Educational Media.
553-2 Instructional Design.
554-3 Integration of Educational Media.
555-3 Visual Learning.
560-3 Instructional Television.
561-3 Reading in the Secondary School.
569-3 Principles and Trends in Secondary School Social Studies Education.
571-3 Secondary School Curriculum.
573-3 Perspectives on the Future and Its Schools.
580-3 Current Developments in Major Subject Areas in Secondary Schools.
582-3 Research in Secondary Education.
585-3 to 15 (3 per topic) Seminars in Education.
586-3 Curriculum Design and Development.
587-3 Curriculum Implementation and Evaluation.
590-1 to 15 (1 to 3 per topic) Independent Readings.
593-1 to 15 (1 to 3 per topic) Individual Research in Education.
594-(3 to 9 per topic) Practicum.
595-(2 to 8 per topic) Internship.
596-3 to 6 Independent Investigation.
599-2 to 6 Thesis.
600-1 to 32 (1 to 16 per semester) Dissertation.

Dance (Minor)

(SEE PHYSICAL EDUCATION)

Dental Hygiene (Program, Major, Courses)

This program of study is designed to prepare the student to successfully enter the health profession of dental hygiene. Upon completion of the program, the graduate should be capable of passing the written National Board Examination, State/Regional Examination including the required clinical practical examination.

The primary role of dental hygienists is education and prevention of oral disease. Therefore, they must have a basic knowledge of the human body and a detailed knowledge of the oral cavity. The student develops skill, dexterity, and use of judgment in procedures relating to preventive dentistry on clinical patients scheduled in the dental hygiene clinic. Services provided by the dental hygienist are regulated by state laws which vary among the states, but all include the services of scaling and polishing teeth, x-ray examination, patient education and nutritional counseling, application of preventive medicaments, administrative procedures, chairside assisting, and some laboratory techniques. All the services must be performed under the supervision of a dentist.

Since the curriculum includes many science courses the entering student should have a thorough background in the basic sciences including chemistry, biology, and general sciences. Facilities limit enrollment to 55 students admitted only in the fall semester. Additional application information is required other than that required for admission to the University, including the results of the Dental Hygiene Aptitude Test. This test should be taken at the fall testing date a year prior to the fall semester of admission. Additional expenses of approximately \$1600 are required to cover the cost of instruments, uniforms, insurance, and other items in addition to textbooks.

The program is served by an advisory committee made up of practicing dentists and dental hygienists. These members include: dean, School of Dental Medicine, Southern Illinois University at Edwardsville; president, Southern Illinois Dental Society; dentist and dental hygienist; Veteran's Administration Hospital, Marion; dentist, Federal Penitentiary, Marion; president, Illinois Dental Association; chief, Division of Dental Health, Department of Public Health, State of

Illinois; practicing dentists and dental hygienists, State of Illinois; and a student member.

A licensed dental hygienist may be employed in private practice offices, in school systems, in industrial health clinics, as civil service employees in government agencies or, with additional education, as a teacher in dental hygiene schools, in public health, in research, in administration, or as a commissioned officer in the armed services.

This associate degree program can be completed in two academic years, plus one summer session, at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Art Degree, School of Technical Careers

Requirements for Major in Dental Hygiene

GSA 209	3
GSB 202, 203	7
GSD 101, 152	5
Chemistry 140a,b	8
Microbiology 301	4
Physiology 301	4
Dental Hygiene 133, 136, 137a,b, 138, 201, 209, 210a,b, 211, 215, 217, 218a,b, 220a,b, 240, 241	57
Total	88

Courses

133-2 Histology and Embryology. The student will learn the microscopic components of the primary tissue groups of the human body and will be expected to identify microscopically in detail, the dental tissues of the oral cavity. The course also enables the student to relate the embryonic development of the head to the normal and abnormal structures of the adult head and oral cavity. Lecture two hours.

136-4 Cranial and Oral Anatomy. During the first part of the course, the student will study the detailed anatomic structures of the head and neck including skull, muscles, nerves, and blood supply. Following this, the student will learn to recognize and identify in detail the structures within the oral cavity including the tongue, salivary glands, lips and cheeks, and cheeks and teeth, both permanent and primary. Lecture three hours. Laboratory three hours.

137-10 (5, 5) Pre-Clinical Dental Hygiene. (a) The student is introduced to the profession of dentistry with emphasis on the role and duties of a hygienist. Basic skills and techniques of instrumentation will be acquired using manikins in the laboratory followed by clinical experience on selected patients. Included will be didactic instruction in normal and abnormal tissue conditions, the role, function, and structure of calculus deposits. Additional skills, techniques, and procedures include clinical rules and procedures, aseptic technique, patient and operator positioning, rules of professionalism. Lecture two hours. Laboratory six hours. (b) The student will continue to apply information and skills learned in (a) on selected patients with varying oral hygiene needs. New information, procedures, and skills will be introduced during the course with the student expected to master one area before proceeding to the next. Included are complete health histories, office emergencies, charting for deposits and tissue conditions, auxiliary scaling instruments, rationale and techniques of polishing. The ability to perform basic dental health education and manage patients with specific physical and mental problems will be developed. Lecture two hours. Laboratory six hours. Must be taken in a,b sequence. Prerequisite: 136, 137a, 215, Chemistry 140a.

138-3 Pathology. The student will learn to recognize the appearance, causes, and body's responses to pathological conditions including congenital disorders, circulatory, and neurological ailments, tumors and neoplasms. Special attention will be placed on pathological conditions of the oral cavity including dental caries, periodontal disorders and lesions of the hard and soft tissues. The student will apply this knowledge by giving intra and extra oral examinations on selected patients and recording the findings. Lecture two hours. Prerequisite: 133, 136, 218b, Physiology 301, GSA 209, Microbiology 201; concurrent enrollment in 241.

201-4 Dental Materials and Assisting Techniques. The student will study the physical and chemical properties of various dental materials used in dental practice including plaster and stone, impression materials, synthetic resins, metals and cements. In the laboratory the student will manipulate those dental materials and recognize the effects of proper

and improper techniques. Emphasis will be placed on dental assisting techniques for both operator and laboratory in the generalist and specialist type of practices. Lecture three hours. Laboratory three hours. Prerequisite: 209, 218b.

209-3 Dental Hygiene Clinic. The student will perform professional services of a hygienist on designated clinical patients and is expected to demonstrate improvement of skills covered in 137 a,b. Additional skills incorporated into clinical procedures include application of fluoride gels, maintenance and sharpening of scaling instruments, recognition and detection of carious lesions, extended or home care education, auxiliary polishing devices, caries etiology tests and nutritional counseling. Laboratory 12 hours, eight weeks. Prerequisite: 133, 137b, Chemistry 140b, Physiology 301.

210-12 (6,6) Clinical Dental Hygiene and Radiology. (a) The student will continue to perform the professional services of a hygienist on designated clinical patients and will be expected to demonstrate improvement of skills covered in 137a,b and 209. Those skills incorporated into clinical procedures include application of fluoride gels, maintenance and sharpening of scaling instruments, recognition and detection of carious lesions, extended home care education, auxiliary polishing devices, caries etiology tests, and nutritional counseling. Dental radiographs will be taken on clinical patients as a part of required clinical experience. Laboratory 12 hours. Prerequisite: 209, 217, 218b, Microbiology 201. (b) The student continues clinical experience and is expected to show improvement in skills and abilities. Additional procedures include application of stannous fluoride, patient control programs, complete charting of the oral cavity, care of dental prosthesis, use of ultrasonic cleaning devices, measurement of periodontal pockets, and maintenance of dental equipment. Additional clinical experience is provided in the Model Cities clinic. Students will continue to take dental radiographs on clinical patients as a part of required clinical experience. Laboratory 12 hours. Prerequisite: 138, 201, 210A, 220A, 240, 241.

211-2 Seminar. Theoretical content is presented covering procedures and techniques incorporated into the concurrent clinic course. Additional requirements include dental specialties presented through guest lecturers with two abstracts of published articles relating to those specialties; reports on model cities assignments and outside activity experiences with a research paper on some phase of dentistry; assignment of paper on patient problems which incorporate and correlate course material from preceding courses. Lecture two hours. Prerequisite: 215, 241; concurrent enrollment in 210B.

215-1 Ethics, Jurisprudence, and Office Management. The student will identify the rules of conduct and behavior that a dentist and hygienist must adhere to; differentiate between ethical and unethical, legal and illegal behavior, and understand the consequences of unethical and illegal acts relating to the practice of dentistry. Professional responsibilities and legal obligations of the dental profession and how to prevent a malpractice charge or lawsuit will be included.

217-2 Dental Nutrition. The biologic functions of essential nutrients are studied in their relation to growth and development of dental and oral tissues. Nutrition in health and disease is considered in detail; food sources of essential nutrients are identified. Knowledge gained is applied to the nutritional management and prevention of dental health problems in clinical practice through dietary counseling. Lecture four hours, eight weeks. Prerequisite: Chemistry 140 a, b; Physiology 301.

218-4 (2, 2) Dental Radiology. (a) The student will learn the techniques of exposing, processing, and mounting bitewing and periapical dental x-ray surveys, and will learn how x-rays are produced, hazards and precautions in using x-ray equipment, and the chemical composition and action of processing solutions on x-ray film. In the laboratory, the student will receive individual assistance in learning the techniques of exposing and processing films. (Lecture three hours. Laboratory three hours. Eight weeks.) Prerequisite: 136, 137a, Chemistry 140a. (b) The student will learn special dental survey techniques including paralleling, occlusal, and special views, and will identify anatomical landmarks and recognize appearance of pathological conditions as viewed on dental x-rays. In the laboratory the student will receive assistance in learning special survey techniques. Lecture one hour. Laboratory two hours. Must be taken in a,b sequence. Prerequisite: 133, 218a, GSA 209, Physiology 301.

220-6 (3,3) Community Dentistry. (a) Includes both the theoretical and practical aspects of preventive dentistry and public health. The student will discuss various methods utilized in developing, implementing, and evaluating plaque control and will have the opportunity to design a preventive dental program. In addition, the principles and practice of public health will be discussed. Emphasis is placed on the role of the dental hygienist in public health programs and related practical problems. Incidental expenses will be at least \$7.50 per semester. Lecture two hours. Laboratory two hours. (b) Continuation of public health with field experience. Dental health education with field experiences in student teaching in the elementary district schools. Incidental expenses will be at least \$7.50 per semester. Lecture two hours. Laboratory two hours. Must be taken in a, b sequence.

240-2 Dental Pharmacology and Anesthesia. The student will recognize the various types of drugs, their actions and effects on tissues of the body. Special emphasis will be placed on those drugs most commonly prescribed by the dentist. The student will study the anesthetics commonly used in a dental office and the techniques of administering them. Lecture

two hours. Prerequisite: Chemistry 140B, Physiology 301, GSA 209, Microbiology 201. **241-2 Periodontology.** The student will be introduced to the specialty of periodontics, including a review of the topics of classification, etiology, and the treatment of periodontal disease. Clinically, the student will perform a complete examination, scaling and root planing for the periodontal patient as presented in theory in this course. Consideration will also be given to special adaptations and recommendations of oral physiotherapy for the periodontal patient. Prerequisite: 209, 217, 218b, Microbiology 201; concurrent enrollment in 138.

Dental Laboratory Technology (Program, Major, Courses)

The dental laboratory technology program prepares the student to be a competent dental technician in the commercial laboratory, an educational institution, a dental manufacturing company, or the private dental office. To implement the goal, the prospective student must satisfactorily meet the requirements of courses in both the dental laboratory area and in the science, business, and humanities area.

Persons interested in careers in dental technology should have a sincere interest in working with their hands and find satisfaction in their creative work.

Enrollment of beginning students is limited by size of faculty and physical facilities with new students admitted only in the fall semester. Additional application information is required other than that required for admission to the University.

An advisory committee whose members are drawn from the profession and from educational institutions serves the program. Current members are: Virgil Beadle, Sr., DDS, Carbondale; James D. Harrison, DDS, director of dental auxiliaries, School of Dental Medicine, Southern Illinois University at Edwardsville; Tilghman S. Tade, CDT, Tade Dental Laboratory, Belleville; Larry E. Worthey, University Dental Laboratory, Edwardsville; William Cotton, DDS, U.S. Naval Dental Research Institute, Bethesda, Md.; Andrew Larson, executive director, Illinois Dental Lab Association, Northfield; Dan Sullivan, Ney Gold Company, Kirkwood, Mo.; and Todd Toepper, TNT Dental Laboratory, Janesville, Wisc.

Graduates of the two-year dental laboratory technology program find that career opportunities are excellent. The trained dental technician not only has a wide choice of geographic location for the pursuit of a career, but can also choose working conditions. Graduates are employed by commercial dental laboratories, dental schools, dental supply companies, private dental offices, or are self-employed in their own dental laboratories.

The student should expect to spend about \$425 for a dental kit, laboratory jacket, and Delta Tau Club fee over the two-year period.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Art Degree, School of Technical Careers

Requirement for Major in Dental Laboratory Technology

GSD 101, 152.	5
School of Technical Careers 102, 104, 115a, 141	9
Dental Laboratory Technology 102, 103a,b, 104a,b, 106, 113a,b, 128, 143, 200, 202, 204a,b, 206a,b, 210	61

Total 75

Courses

102-4.5 Tooth Anatomy Theory and Laboratory. The student will be able to write definitions on the nomenclature of teeth and their supportive structures; draw five different peripheral views of maxillary and mandibular teeth; carve maxillary and mandibular teeth

in plaster, three times natural size and in wax, natural size. Lecture three hours. Laboratory 17 hours. Five weeks.

103A-4.5 Complete Dentures Theory and Laboratory. The student will be able to: write the steps of denture construction; identify and use impression materials, lab stone and lab plaster, acrylic resins, and articulators, namely the Hanau Model H and Whip-Mix; construct edentulous casts, individual trays, base plates, occlusal rims; and mount casts on the above named articulators. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 105.

103B-4.5 Advanced Complete Dentures Theory and Laboratory. The student will be able to: describe the theory inherent in all phases of full denture construction; set up teeth on the Hanau, Whip-Mix, and Simplex articulators; select and set teeth for different classes of arch forms; wax, invest, process and finish full dentures; rebase, reline, duplicate, and repair full dentures. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 103A.

104A-4.5 Removable Partial Dentures Theory and Laboratory. The student will be able to: write the basic steps of partial denture construction; identify and use impression materials, laboratory stones, plaster, surveyors, waxes, and different types of forms of artificial teeth; construct and mount master casts, survey and design partial denture cases, and arrange teeth. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 103B.

104B-4.5 Advanced Removable Partial Denture Theory and Laboratory. The student will be able to: describe and do the planning, designing, and surveying of partial dentures; construct a refractory cast, wax, invest, and finish partial denture frameworks; set up artificial teeth on the partial frames; and, repair broken partial. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 104A.

106-4.5 Dental Orthodontics and Pedodontics. The successful student will be able to fabricate a maxillary hawley, a mandibular hawley, holding arch, share maintainer, suture opener, tongue spikes, tongue crib, occlusal-palatal splint, space regainer, stabilizing plate, and bite planes and obturator; operate the soldering machine and equipment associated with it; write the gauges of wires that are used for the orthodontic appliances; and write the theory that is associated with the fabrication of the above named appliances. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 104b.

113A-2 Science of Dental Materials. The student will be able to: identify orally, as well as written, the uses and composition of dental gypsum products, namely, plaster, stones, and investments, impression materials, dental resins, dental cements, polishing agents, abrasives, and dental waxes. Lecture two hours.

113B-2 Science of Dental Materials. The student will be able to identify orally, as well as written, the physical and mechanical properties of metals and alloys, namely, dental golds, chrome cobalt alloys, and nickel cobalt alloys; the control of their physical properties, namely, strain hardening, alloying and heat treatment, the chemistry of tarnish and corrosion, gypsum investments for inlay procedures, casting and soldering techniques, and dental porcelains. Lecture two hours.

128-1 Oral Anatomy. The student will be able to identify the anatomical features of the head and oral cavity; identify the blood and nerve supply to the oral cavity and area; be able to list the muscles of mastication, and know the origin and insertion of each muscle; identify the anatomical parts of the maxilla and mandible; differentiate the movements of the mandible; and be able to identify the temporomandibular articulations. Lecture one hour.

143-1 Orientation to Dental Technology. The student will be able to: identify the specialties of dental technology; identify opportunities for the dental technician in the large laboratories versus the small laboratories or the dental office; identify the differences in laboratory prices from different parts of the country, and what determines laboratory prices; write, and orally report, on a term project resulting from an interview with a dental technician, who is a laboratory owner, or who is working as a technician in a dental laboratory. Lecture one hour.

200-4.5 Dental Occlusion. The successful student will be able to draw peripheral views of maxillary and mandibular teeth, and identify the occlusal anatomy; write and identify the functions of the muscles of mastication including origins and insertions; write and identify the anatomy and function of the temporomandibular joint including ligaments; write and identify the nomenclature of occlusion; write and identify the theory inherent in occlusion; wax a maxillary and mandibular quadrant in cusp marginal ridge occlusion and cusp fossa occlusion; and wax a natural full mount rehabilitation case using the principles of occlusion discussed in lecture. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 102.

202-1 Professional Ethics. The student will be able to differentiate between the organizations affecting dental laboratories; be able to identify the industry and its members, and to identify the ethics necessary in dealing and cooperating with the dental profession, and will know the legal requirements of the technician and the dental laboratory. Lecture one hour.

204A-4.5 Beginning Crown and Bridge Theory and Laboratory. The student will be able

to: write the definitions of the nomenclature of beginning crown and bridge prosthetics; communicate orally, as well as written, the theory that is necessary for successful completion of the laboratory projects; construct amalgam, stone and copper plated dies; construct master and working casts; construct full and veneer crown, acrylic jackets, inlays and onlays; and operate and maintain crown and bridge laboratory equipment. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 203.

204B-4.5 Advanced Crown and Bridge Theory and Laboratory. The student will be able to: write definitions of the nomenclature of advanced crown and bridge; identify soldering and heat treatment techniques; differentiate between different types of pontics, waxing, venting, and sprueing techniques; write the theory inherent in broken stress bridgework, Steele's facing bridgework, telescope bridgework, and cantilever bridgework; list and perform techniques in crown and bridge repair; identify causes and remedies for porosity, open margins, and general casting failure in crown and bridge construction; and, construct a six-unit maxillary Steele's facing bridge, a five-unit broken stress bridge, and an eight unit telescope bridge. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 204A.

206A-4.5 Dental Ceramics Theory and Laboratory. The student will be able to: write definitions of the nomenclature of ceramics; identify porcelain constituents; identify the parts of the porcelain furnace and their use; construct platinum matrices; and, construct six maxillary porcelain jackets. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 208.

206B-4.5 Advanced Dental Ceramics Theory and Laboratory. The student will be able to: draw substructure design for single and multiple unit bridgework; write the theory of color control, demonstrate the uses and maintenance of porcelain equipment, construct single and multiple unit porcelain to gold bridgework; and, demonstrate a working knowledge of staining and shade control. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 206A.

210-4.5 Dental Laboratory Specialty. The successful student will be able to fabricate dental prosthesis on practical laboratory cases in one of the following specialty areas: full dentures, partial dentures, crown and bridge, or ceramics. Laboratory 20 hours. Five weeks. Prerequisite: all of 100 and 200 level Dental Laboratory Technology courses.

Design (Major, Courses)

The design program is a part of the Division of Comprehensive Planning and Design.

A major in design follows one of three specializations, while at the same time maintaining a core program. The core provides a systems approach to problem solving, while being sensitive to the needs of the areas of specialization. The areas of specialization from which the student may select at the beginning of the junior year are visual communications, urban planning, and product design. The freshman and sophomore years are preparatory and allow the student to carry the required General Studies courses.

The program recognizes as a goal the maintenance of an educational experience which fosters in individuals a sensitivity and openness to themselves and their environment through an integration of design skills with problem solving strategies and concepts relevant to present and future events. In addition, students and faculty engage in socially useful design research and provide appropriate services to the University and the community.

Bachelor of Arts Degree, College of Human Resources

<i>General Studies Requirements</i>	45
GSA (three areas)	9
GSB (three areas)	9
GSC (three areas) including GSC 205	12
GSD	4
GSE	4
<i>Requirements for Major in Design</i>	68
Design Core	47
Design 100, 102, 150, 152	15
Design 200, 201, 202, 252, 254, Industrial Technology 105 ..	17

6 hours selected from 300, 301, 302, 303, 350, 351, 352, 353, 354	6
9 hours selected from 400, 401, 405, 406	9
Specialization Requirements.....	21
Electives	7
300-level courses or above outside Design. May include General Studies courses	
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Total	120

Design Specializations

- Visual Communications: 322, 372, 373, 422, 423, 472 or other courses approved by the division.
- Urban Planning: 332, 333, 380, 381, 432, 433 or other courses approved by the division.
- Product Design: 312, 313, 362, 412, 413, 462, 463, 464, 465.
- A special major may be planned with the approval of the director of the Division of Comprehensive Planning and Design.

Courses

Students will be expected to purchase their own materials in some of the courses offered in Design.

- 100-3 Structure and Form. The study of structure and form through examples selected from the world of natural objects, of man-made artifacts, and of abstract structures. Includes elementary model-building exercises.
- 102-5 Design Fundamentals. Dialogue, problems and experimentation are used to illuminate the creative problems-solving processes and fundamental cognitive skills of the designer. The individual engages in a variety of projects dealing with such subjects as visual communications, environmental planning, structures, and product design.
- 103-3 The Way Things Work. A study of various contemporary artifacts designed for our environment and how they work. This course will not be a technical course but a general overview of these artifacts and how they perform the functions they were designed for.
- 150-4 Foundations in 2-D and 3-D Design. Introduction to the principles of two and three dimensional relationships with emphasis on special techniques, elements of form, light, color, and increased perceptual skills.
- 152-3 Introduction of Systems Approach to Design. Course material covers the historical foundations of general systems theory and the search for universal principles underlying all open systems. The student is introduced to a unique set of principles for problem solving which apply to all aspects of the design process. Specific design problems will be used to demonstrate how the principles can be generally applied to a large variety of design functions, including the selection of alternatives and the optimization of the final product.
- 200-3 Basic Representation Fundamentals. Drawing fundamentals, basic freehand drawing principles, architectural sketching, and finished rendering techniques as used to solve design problems and communicate solutions.
- 201-3 Survey of Design. A critical study of a design field from prehistoric periods to the modern era with reference to the social, political, and technological movement which affected their development. Prerequisite: consent of chairperson.
- 202-3 Basic Materials and Processes. Introduction to tools and skills used in the manipulation of wood, metal, and plastics. Emphasis is placed on projects selected by the students to enhance their ability to solve problems in terms of specified materials and processes.
- 252-3 Human Engineering for Designers. An introduction to basic man-machine concepts specifically oriented to design students. Subjects include sneory and motor processes, space and arrangement, and environmental factors in design. Prerequisite: 152.
- 254-3 3-D Moldeling Techniques/Basic Photography. This course is divided into two parts: an exploration into the techniques of three dimensional model making as a communication and research tool; and an introduction to the basic techniques of photographic image generation, experimentation in photographic techniques and materials, and transmission of ideas through the photographic image. Prerequisite: 102, 150, 152, 200, 201, 292, or consent of chairperson.
- 300-3 Graphic Reproduction. Exploration of the various techniques and methods utilized by the designer in preparing communication messages for production. Coursework will deal in such topics as paste-up, keyline, scaling photography, cold type and photocomposition, typography, and offset duplication. Prerequisite: 254.
- 301-3 Structures for Designers. Description and design of elementary physical structures.

Includes survey of architectural design. Introduces the computer as a tool for drawing geometrical forms.

302-3 Applied Systems Theory to Design. A pragmatic design course emphasizing the application of systems theory to the design of special environments; e.g., environments for the handicapped, the blind, paraplegics, the elderly, etc. Students have the option of selecting their own projects which they carry through from the conceptual and analytical stage to construction of models. Prerequisite: 152.

303-3 Design Foresight and Assessment. Introduction and overview of the foresight and assessment functions for designers. Includes an exploration of alternative futures and futures-creating methods, types and procedures of planning, implementation processes and techniques, and assessment of the consequences of proposed action.

304-3 Reprographics. An introduction to the field of reprographics, reproduction of images by means of office copying and duplicating equipment. Coursework will include an examination of the processes available, a survey of the equipment and methods, and graphic standards and techniques that can be utilized.

312-3 Product Design Analysis. An introduction to product evaluation techniques, such as human engineering, consumer safety, environmental impact, design liability, and patent protection.

313-3 Materials and Methods I. Exploration of methods, tools and materials for developmental prototyping.

322-3 Visual Communication I. Introduction to visual communication, including exploration of words, images, and symbols. Experimentation with graphic techniques and processes. Emphasis on solving basic visual communication problems. Prerequisite: 150, 152, 200 and 300.

332-3 Survey of Urban Design. Introduction to the study of human settlements. Estimation of the ways cities, landscapes, and buildings have been built. Critical analysis, through historical and contemporary case studies, of the major issues and problems of the urban environment as they affect the individual.

333-4 Urban Design I. Continuation and development of skills learned in core courses by work in projects of small scale dealing with a variety of environments. Prerequisite: 332 or concurrent enrollment.

342-3 Introduction to Computer Graphics. Introduction to the use of the computer in the production of graphic images. Topics include the definition of two- and three-dimensional data, the generation of engineering and perspective images, and animation. Prerequisite: Computer Science 202.

350-3 Research Methods for Designers. An exploration of research methods for designers, both qualitative and quantitative, including search methods, observational methods, experimental methods, and systems, simulation, and gaming methods.

351-3 Cross Cultural Problem Solving. Development of design projects within the cultural conditions outside of the United States through field study trips when possible to arrange or orient lectures and other insight material. A hypothetical follow through on the development of design projects within a selected country exposing sociological and marketing pertinent of ensuing limitations of that country.

352-3 Design Methodology. The processes of design, from recognition of a need, through definition of the problem, its analysis, synthesis and evaluation of feasible solutions; selected design methods will be explored, with special emphasis given to design science methodology.

353-3 Projected Images. Experimentation into various forms of projected images as a form of visual expression and documentation. Prerequisite: 150, 254 or concurrent enrollment.

354-3 Introduction to Design Science. An exploration of the seminal work of Buckminster Fuller: his philosophy, conceptual tools and generalized principles; introduction to synergetics; comprehensive anticipatory design science, and the World Game.

362-3 Product Development. Investigation and identification of significant product related human need areas. Application of development methodologies in selected product design projects.

372-3 Visual Communication II. An investigation of the theories and methods of visually communicating concepts and information. Emphasis is placed on the analysis of the communications need and progresses through the production of items in prototype form. Prerequisite: 102, 254 or concurrent enrollment, 322 or consent of chairperson.

373-3 Serigraphy. Introduction to serigraphy (silk screen printing) as a tool of visual communication. The course will be especially useful in providing the graphic reproductive capability for testing designs made in other classes. Various kinds of stencils will be explored: photographic as well as hand made. Prerequisite: 254.

380-2 Environmental Aspects of Urban Planning. Study of the needs of environmental control, including thermal, luminous, sanitary, and acoustic aspects of building and urban environments, building systems, and urban developments.

381-4 Urban Design II. Continuation of urban design I with emphasis on projects of greater scale. Educational environments and others of a socially useful nature will be

- examined. Prerequisite: 333, 380 or concurrent enrollment, consent of chairperson, and declared specialization in urban design.
- 392-3 Elementary Topics in Computer Aided Design.** Elementary application of computers to the design process. Selected topics include structural studies, environmental systems, architectural design, and system analysis. Prerequisite: 342, Computer Science 202 or consent of chairperson and declared specialization in computer aided design.
- 400-3 Portfolio and Resume.** An investigation and implementation of the planning, production, and management of interface information such as resume, portfolio, and presentation of self. Not for graduate credit. Prerequisite: 200, 201, 202, 250, 252, 254 plus 9 hours elective on 300 level or consent of chairperson.
- 401-3 Problem Solving in Applied Design.** A design team approach solving real problems utilizing the methods and techniques acquired in the design program. Not for graduate credit.
- 405-3 Environmental Graphics.** An introduction to the theory and practice of designing meaningful symbols for the public environment, including spatial perception and typography as related to signage systems, imagery, symbols, color, and light. Not for graduate credit.
- 406-3 Exhibition Design.** Techniques of exhibition design from two dimensional linear displays to freestanding traveling units. Not for graduate credit.
- 412-4 Practicum in Product Design.** Advanced comprehensive product design projects developed into production prototypes. Not for graduate credit.
- 413-3 Professional Practice in Product Design.** The study of designer/client relationships, business practices, design office procedures, and professional ethics. Not for graduate credit.
- 422-3 Visual Communication III.** Principles of visual message making and investigation of symbols as they are used in communication. Study includes the development of contemporary communication techniques including photographics, topography, color, and illustration as well as learning to identify techniques and processes of communication. Not for graduate credit. Prerequisite: 372.
- 423-3 Multi-Media Exploration.** Experimentation into various forms of electronic and sensory media as a form of visual expression, documentation, and research. Film making, animation techniques, 35mm slide format and VTR will be explored. Not for graduate credit. Prerequisite: 372 and 373.
- 432-3 Landscape Architecture.** Study of the principles of urban and regional landscape architecture and an introduction to the elements of landscape architecture. Site analysis and site planning are studied in relation to structures and large scale developments. Technical aspects of site development are stressed. Not for graduate credit.
- 433-4 Urban Design III.** Continuation of urban design II with emphasis on client interaction. Projects dealing with community groups and advocacy planning needs will be dealt with where appropriate. Not for graduate credit. Prerequisite: 381.
- 450-1 to 6 Internship.** Supervised work experience related to student's academic program and career objectives. Not repeatable for credit. Not for graduate credit. Prerequisite: consent of chairperson. Mandatory Pass/Fail.
- 462-4 Research in Product Design.** Not for graduate credit. Prerequisite: consent of chairperson, declared specialty in product design.
- 463-4 Products for Special Populations.** Products for special subset groups within greater population norms. May be of cross-cultural and interdisciplinary implementation. Not for graduate credit.
- 464-4 Environmentally-Integrated Products.** Development of products integral to comprehensive environmental planning. Not for graduate credit.
- 465-2 to 4 Independent Study in Product Design.** Creative project developed by student and faculty sponsor and approved by chairperson. Not for graduate credit.
- 472-3 Visual Communication IV.** Advanced problems in visual communication, with emphasis on creative research and experimental solutions. The course will allow opportunity to explore various approaches to visual communication problems: combinations of two and three dimensions, film, etc. Not for graduate credit. Prerequisite: 422.

Early Childhood Education

(SEE CURRICULUM, INSTRUCTION, AND MEDIA)

Earth Science (Minor)

This course of study is designed for the student with an interest in the interdependent dynamic processes that take place on and near the earth's surface. At

present the program is structured to complement a major in another discipline. This work may be taken through the College of Liberal Arts, the College of Science, or the College of Education.

A minor in earth science consists of a core program of 15-17 hours and 7 to 9 hours of electives, as follows:

Core Program.....	15-17
GSA 110, GSA 330 or Geography 331 and Geography 302	
Plant and Soil Science 346 or GSA 312	
Geology 221 or 374, 400	
Electives	7-9
Appropriate substitutions may be made with the approval of the adviser.	
GSA 322, 240	
Geography 310, 432, 424, 438	
Geology 425	
Plant and Soil Science 240	

Economics (Department, Major, Courses)

The study of economics provides a useful means of analyzing the behavior of consumers, businesses, and government so that the student can better understand many of the problems facing contemporary society. Majoring in economics gives the student an analytical ability and flexibility that is attractive to a wide range of employers in both business and government. Economics is also an excellent major for students who are considering graduate school in law, business, or any of the social sciences.

A student can major in economics in the College of Liberal Arts or the College of Education. The economics major in the College of Liberal Arts provides the most flexible program with 30 to 36 hours of electives. This flexibility allows the student to follow a program oriented toward a wide range of careers in government and business or to prepare for graduate study in any of several areas. The economics major in the College of Education is offered for students who are planning to teach social sciences at the secondary school level.

Economics courses at the 300 level generally require only a limited background in introductory economics, while many economics courses at the 400 level require Economics 340 (440) and 341 (441) as prerequisites. Students considering graduate study in economics should take Economics 340 and 341 as early in their college careers as possible and should choose several courses at the 400 level to complete their major requirements. A student considering graduate study in economics should also plan to take Mathematics 139 and 140 or 111 and 150 (the latter two courses are better preparation for additional courses in mathematics).

Students are urged to discuss their major programs with the director of undergraduate studies or with any other professor in the Department of Economics; the department also has a director of career information and placement available for consultation.

Bachelor of Arts Degree, College of Liberal Arts

General Studies Requirements	45
Supplementary College Requirements (See page 78).....	(4) + 8-14
Requirements for Major in Economics.....	31-32

One course from the following all of which are approved substitutes for GSD 107: Mathematics 116, 117, 140, 150. The student will automatically satisfy a portion of the General Studies Area D requirements with any one of these courses. Four hours are already included in total hours shown for General Studies Requirements (4) + 0-1

Economics 214, 215, 340, 341, 308	16
Any five remaining economics courses except 301, 490.....	15
Electives	29-36
<hr/>	
Total	120

Bachelor of Science Degree, College of Education

General Studies Requirements	45
Requirements for Major in Economics	32
Economics 214, 215, 340, 315 or 341.....	12
GSD 110.....	2
Any additional 18 hours in economics excluding 301.....	18
Professional Education Requirements	26
See Teacher Education Program, page 71.	
Curriculum, Instruction, and Media 469	
Electives	17
<hr/>	
Total	120

Honors Program

Students who are economics majors and working toward a Bachelor of Arts degree in the College of Liberal Arts may choose to enter the Honors Program if they have a minimum cumulative grade point average of 3.0 in all prior courses in economics.

As part of the ten economics courses required for a major, students in the honors program will be required to take 443 and any two other 400-level economics courses, except 425, 440, 441, 471, 479, and 490.

In order to be granted departmental honors, a student must have attained at graduation, a minimum cumulative grade point average of 3.0 in economics courses taken.

Minor

For students majoring in other departments, a minor in economics is useful for employment in business or government and for graduate work in any of the social sciences, law, or business. The minor requires 15 hours of work in economics including Economics 214 and 215. Approval of the minor program by the director of undergraduate studies is required in order to assist students in designing coherent programs to meet their individual interests.

Courses

- 214-3 Introduction to Macroeconomics. Determination of income, employment, output and price levels in the national economy; government taxation, expenditure, and monetary policies to solve problems such as inflation and unemployment. Elective Pass/Fail.
- 215-3 Introduction to Microeconomics. Study of businesses, consumers and the government and their effects on prices, output and income distribution. Current economic problems will be used as illustrative examples. Elective Pass/Fail.
- 300-3 to 9 Contemporary Economic Problems. A study of one or more contemporary economic problems. Problems chosen vary from semester to semester and the topic will be announced in advance. Prerequisite: 214, 215 or GSB 211 or consent of instructor. Elective Pass/Fail.
- 301-1 to 6 Economic Readings. Readings in books and periodicals in a defined field, under direction of one or more faculty members. Periodic written and oral reports. Prerequisite: consent of instructor and department chairperson. Elective Pass/Fail.
- 303-3 Poverty and the Economy. Poverty as a study of income inequality. Economic determinants of income inequality are isolated and related to current policy proposals. Elective Pass/Fail.
- 304-3 Economics of the Welfare State. Analysis of programs and proposals attacking poverty, insecurity, inequality of opportunity, and maldistribution of income. Analyzes such programs as social security, unemployment compensation, medical care, income main-

tenance, public assistance, housing, and job creation. Economic foundations and consequences are linked with social and political problems. Elective Pass/Fail.

308-4 Economic and Business Statistics. Survey of the foundations and applications of the principal statistical methods used in economic and business decision making. Included are probability theory, probability distributions, and testing of hypotheses about, and estimation of, the important types of population parameters. Elective Pass/Fail.

310-3 Labor Problems. Covers the basics of the job market with emphasis on the outlook for college trained personnel, the kinds of jobs available in the economy and how people train for them, the composition of the labor force, union-management relations in the private and public sectors and the government's role in the labor market and in union-management relations. Prerequisite: 215 or consent of instructor. Elective Pass/Fail.

312-3 Collective Bargaining and Dispute Settlement. An analysis of the economic social effects of collective bargaining with an examination of its legal framework in the private and public sectors. Special attention to issues discussed in bargaining and to procedures for settling disputes. Readings and cases. Prerequisite: 310 or consent of instructor. Elective Pass/Fail.

315-3 Money and Banking I. Study of the operation of the money and banking system in the United States. Stresses Federal Reserve control of the money supply and credit conditions to combat inflation and unemployment. Monetary arrangements and problems among nations are also considered. Prerequisite: 214 or consent of instructor. Elective Pass/Fail.

318-3 Economic History of Europe. The economic growth and development of the European economies from the middle ages to the common market. Topics include the rise of the market system, the development of capitalism and the systematic growth of European economic integration. Prerequisite: 214 or GSB 311 or consent of instructor. Elective Pass/Fail.

320-3 Economic History of the United States. The dynamic process of American economic growth and development from its colonial beginnings to its status as world economic power. Particular emphasis is given to the changing role of the United States in the developing world economy and the contribution of changing economic institutions to the character and pace of American economic growth. Prerequisite: 214 or consent of instructor. Elective Pass/Fail.

322-3 Introduction to Economic Development. An analysis of the preconditions, processes, and problems involved in economic development. Both the theory and policy relevant to development, with special emphasis on the developing or emerging economies, are stressed. Prerequisite: 214 and 215 or consent of instructor. Elective Pass/Fail.

323-2 Operation of Public Utilities. (Same as Engineering Technology 323.) The study of public utilities regulation, electrical utility, load factors, rates fixed, and operating costs, power plant economics, and distribution policy. Prerequisite: GSB 211 or consent of instructor. Elective Pass/Fail.

329-3 Introduction to International Economics. Introduction to the principles of international economics. Stresses the relationship between the balance of payments and the United States economy, the determinants of deficits and surpluses, and policy options to correct an imbalance. Prerequisite: 214 and 215 or consent of instructor. Elective Pass/Fail.

330-3 Public Finance. Effects of government spending and taxing activities on the rest of the economy. Analysis of government debt, the federal budgetary process, and various taxes used in the United States. Prerequisite: 215 or consent of instructor. Elective Pass/Fail.

333-3 Economics of the Environment. Factors which lead to physical and human deterioration in a market economy. Consideration of solutions to such problems as urban decay, overpopulation, and pollution. Prerequisite: 214, 215 or consent of instructor. Elective Pass/Fail.

334-3 Health Economics. Factors underlying the demand for and supply of health and medical care services. Included are the market, voluntary nonprofit, and governmental sectors of the industry. Special topics are the regional coordination of hospital facilities and services, the consumer price index and the measurement of benefits and costs of control programs.

340-3 Intermediate Microeconomics. A survey of theories of household, firm, and government economic behavior in the determination of competitive and non-competitive market prices. Emphasis is on understanding the United States economic system and on evaluating existing and proposed government microeconomic policies designed to improve the system. Not open to students who have had Economics 440. Prerequisite: 215 or consent of instructor. Elective Pass/Fail.

341-3 Intermediate Macroeconomics. The determinants of fluctuations in aggregate economic activity, unemployment and inflation. An analysis of the behavior of consumption and investment, the impact of government monetary and fiscal policies, and factors affecting the rate of economic growth. Not open to students who have had Economics 441. Prerequisite: 214 or consent of instructor. Elective Pass/Fail.

350-3 History of Economic Thought. An analytical study of the development of economic ideas, with special reference to historical and societal context, central thrust, and impact.

Such benchmark figures as Smith, Marx, Marshall, Veblen, and Keynes are highlighted and major schools of economic thought are identified. Prerequisite: 214 and 215; or GSB 211; or consent of instructor. Elective Pass/Fail.

361-3 Regional and Urban Economics. A survey of regional and urban economic growth and the associated problems, including disparities among regions in income and employment. Examination of governmental policies aimed at reducing or eliminating such problems as depressed areas and urban blight. Prerequisite: 214 or 215 or consent of instructor. Elective Pass/Fail.

375-3 Economics of Antitrust. An economic analysis of government policies intended to limit and/or control the exercise of private monopoly power. Prerequisite: 215 or consent of instructor. Elective Pass/Fail.

416-3 Money and Banking II. An examination of the principal institutions whose joint actions determine the supply of money in the United States economy. Emphasis is placed on the commercial bank operating as a firm within the Federal Reserve System. Policy issues are examined for the regulation of the banking industry as well as for the control of the domestic money supply. Prerequisite: 315 or 340 or 341 or consent of instructor. Elective Pass/Fail.

419-3 Latin American Economic Development. Special attention to contemporary policy issues and alternative strategies for development. Among the topics included are inflation and financial reform, international trade and economic integration, foreign investment, and agrarian reform. Prerequisite: 322 or 340 or 341 or consent of instructor. Elective Pass/Fail.

420-3 The History of American Growth in the 20th Century. An analytical survey of American growth in the present century. Concentrates on problems associated with the United States' role as a world economic power and changes in economic institutions engendered by rapid technological change and the need to cope with such problems as income distribution, equity, the growing public sector, inflation, unemployment, and others. Prerequisite: 340 or 341 or consent of instructor. Elective Pass/Fail.

425-4 Economics in Geography and Planning. (Same as Geography 422.) Concepts, symbols, language, theory, elementary mathematics of economics, and geography. Individual's preferences, production functions, the firm, markets optimality, externalities, and welfare economics. Elementary mathematics of time and intertemporal criteria. Prerequisite: Geography 300 or consent of instructor. Elective Pass/Fail.

429-3 International Trade and Finance. Analysis of the pattern and volume of world trade and capital flows; effects of trade and payments on the domestic economy; problems and methods of adjusting to change in the balance of payments. Prerequisite: 340 and 341 or consent of instructor. Elective Pass/Fail.

431-3 Public Finance II. State and local. Analysis of the economic effects, problems, and alternative solutions concerning state and local government expenditures, revenues, and debt. Prerequisite: 330 or 340 or 341 or consent of instructor. Elective Pass/Fail.

436-3 Government and Labor. (Same as Political Science 428.) Influence of government and law on collective bargaining, on the internal operation of unions, and on job discrimination in the public and private sectors. Prerequisite: GSB 211 and 212 or equivalents or consent of instructor. Elective Pass/Fail.

440-3 Price, Output, and Allocation Theories. A systematic survey of theories of product prices, wage rates, rates of production and resource utilization under conditions of competition, monopolistic competition, oligopoly and monopoly markets. Emphasis is on developing analytical tools useful in the social sciences. Not open to students who have had Economics 340. Prerequisite: 215 or consent of instructor. Elective Pass/Fail.

441-3 Contemporary Macroeconomic Theory. An examination in the causes of inflation, unemployment, and fluctuations in aggregate economic activity, factors affecting consumption and investment, and the sources of economic growth. Emphasis is on understanding contemporary United States macroeconomic problems and the options for fiscal, monetary, and incomes policies facing the United States government. Not open to students who have had 341. Prerequisite: 214 or consent of instructor. Elective Pass/Fail.

442-3 Monopoly and Competition in the Industrial State. A survey of economic theories and empirical studies on the nature and consequences of business rivalry in imperfectly competitive markets. Prerequisite: 340 or 440 or consent of instructor. Elective Pass/Fail.

443-3 Honors Seminar in Economics. Application of the tools of economic analysis to the study of contemporary social problems. Enrollment limited to economics majors who have a minimum cumulative grade point average of 3.0 or higher in all prior economics courses. Economics graduate students are not permitted to enroll in this course. Prerequisite: 340 and 341.

465-3 Mathematical Economics I. A systematic survey of mathematical economics. Application of basic mathematical tools to economic analysis, and a restatement of economic theory in mathematical terms. Prerequisite: 340 to 440, and Mathematics 117 or 140, or consent of instructor. Elective Pass/Fail.

467-3 Introduction to Econometrics. Introduction to the use of statistical inference and distribution theory for measuring and testing economic theory. Emphasis placed on the linear model, least square estimation, hypothesis testing, and the underlying assumptions. Prerequisite: 308 or consent of instructor. Elective Pass/Fail.

- 471-3 Land Resource Economics. (See Agricultural Industries 440.) Elective Pass/Fail.
- 479-3 Problems in Business and Economics. (Same as Administrative Sciences 479.) Application of economic theory and tools of analysis to practical business problems. Cost and demand functions, and forecasting are analyzed from a policy standpoint. Prerequisite: 215; 308 or Administrative Sciences 208; Marketing 304. Elective Pass/Fail.
- 481-3 Comparative Economic Systems. Capitalism, socialism, communism, and other forms of social organization are examined from a theoretical point of view. Economic and social theories from Adam Smith and Karl Marx to Milton Friedman and Paul Sweezy will be examined. Prerequisite: 340 or 440 or consent of instructor. Elective Pass/Fail.
- 490-3 Workshop in Economic Education. (Same as 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. Elective Pass/Fail.
- 500-3 to 24 (3 per topic) Economics Seminar.
- 501-1 to 21 Economics Readings.
- 502-1 to 4 Readings in Resource Economics
- 505-1 to 8 Political Economy Seminar.
- 507-1 to 4 (1, 1, 1, 1) Practicum in Undergraduate Teaching.
- 510-2 Research in Economics: Design, Methodology, and Presentation.
- 512-3 Seminar in Labor Institutions.
- 517-3 Monetary Theory and Policy.
- 518-3 Monetary Theory and Policy II.
- 520-6 (3, 3) Economic Development Theory and Policy.
- 522-3 Microeconomic Foundations of Labor Markets.
- 525-4 Seminar in Economics in Geography and Planning.
- 526-3 Managerial Economics.
- 530-3 Foreign Trade.
- 531-3 International Finance.
- 532-3 Economics of Human Resources.
- 533-3 Public Finance Theory and Practice.
- 538-3 Advanced Price, Output, and Allocation Theories.
- 540-8 (4, 4) Microeconomic Theory I and II.
- 541-6 (3, 3) Macroeconomic Theory I and II.
- 552-3 Seminar in Economic Thought.
- 555-3 Seminar in Economic History.
- 562-3 Seminar in Economic Systems.
- 565-3 Applied Econometric Analysis.
- 566-3 Mathematical Economics II.
- 567-6 (3, 3) Econometrics I and II.
- 570-3 Seminar in Contemporary Microeconomic Theory.
- 571-3 Seminar in Contemporary Macroeconomic Theory.
- 575-3 Microeconomic Regulation.
- 583-3 Methodological Foundations of Economics.
- 585-3 Seminar in Social Economy.
- 590-1 to 8 (1 per semester) Seminar in Contemporary Economics.
- 599-1 to 6 Thesis.
- 600-1 to 36 (1 to 16 per semester) Doctoral Dissertation.

Education (Courses)

Courses

- 200-1 to 10 Experimental Education. Offered the purposes of testing new and experimental courses and series of courses within the College of Education. Prerequisite: consent of instructor.
- 201-1 The Teacher's Role in Public School Education. Designed to assist students in confirming their thinking concerning the desirability of pursuing a career in teaching. A requirement in the Professional Education Sequence, this course is available at the freshman level and is prerequisite to admission to the Teacher Education Program. Two-day long observation field trips to elementary and secondary schools are required during the semester in which 201 is completed. Mandatory Pass/Fail.
- 300-1 to 10 Experimental Education. Offered for purposes of testing new and experimental courses and series of courses within the College of Education. Prerequisite: consent of instructor.
- 301-2 Human Growth, Development, and Learning. A requirement in the Professional Education Sequence. Deals with factors involved in the teaching-learning process including: cognitive development, socio-personal characteristics, socio-cultural characteristics, motivation for learning, and principles of school learning. Prerequisite: GSB 202 or equivalent, admission to the Teacher Education Program.

302-2 Basic Techniques and Procedures in Instruction. A requirement in the Professional Education Sequence. Techniques and procedures applicable to effective teaching including the topics: planning for instruction, strategies for instruction, assessment and evaluation, and classroom management. During the semester when enrolled in 302, each student is required to spend one-half day per week doing observation and participation activities in public schools or other appropriate settings. Prerequisite: admission to the Teacher Education Program.

303-2 School and Society: Historical, Sociological, and Philosophical Perspectives. A requirement in the Professional Education Sequence. Fulfills the minimum State Certification requirement in the history and/or philosophy of education. Assists students in developing and understanding of the organization, function, and role of schools in the United States. Prerequisite: admission to the Teacher Education Program.

304-2 to 16 (2, 2, 2, 2, 2, 2, 2, 2) Individualization in Professional Education. A series of courses dealing with various aspects of professional education. One course must be selected as part of the Professional Education Sequence requirement. (a) Audiovisual Methods in Education. Selection and utilization of audiovisual materials in the learning environment, elementary through secondary level. Audiovisual machine laboratory is required. (b) Career Education. Principles and practices of career education K-adult. Classroom, study, and field experiences. Understanding administration and curricular organizations at various levels and in various agencies. Field trip fee \$10.00 (c) Evaluation in the Classroom. Construction and use of evaluation instruments intended to assess learning especially in the public school settings. (d) Teaching in the Middle and Junior High School. The role of the middle and junior high school in the present school structure. A focus on the curriculum, learning, and instruction patterns unique to this area. (e) Teaching the Special Needs Learner. Emphasizes an understanding of special needs learners (e.g., educationally disadvantaged youth) and the development of strategies which are effective in teaching them. (f) Teaching and Affective Education. The affective domain of educational objectives. Emphasis given to a theory of values and strategies for the clarification of values; the process of valuing as an operation of teaching. (g) Discipline and Classroom Management. Techniques and procedures intended to provide teachers with skills for managing groups of students. Content includes group dynamics and leadership skills. (h) Extra-Curricular Activities in the Junior High and Senior High School. An overview of the extra-curricular activity program in secondary schools, focusing on the various types of activities, the role of the teacher as sponsor, adviser or coach, and the function of the activity program as a part of the total curriculum of the school. Prerequisite: admission to the Teacher Education Program.

312-1 to 8 Field Observation and Participation. Allows the pre-service teacher education student to observe and participate in activities and experiences relating to the offerings of their major department. These experiences will be correlated with the offerings of the student's major department, and the experiences will be designed to meet the needs of the individual student. Enrollment in this course will be coordinated by the student's major department. Placement in public school settings will be coordinated by the Office of Professional Education Experiences. Prerequisite: 301, 302, 303, or concurrent enrollment.

350-3 Seminars in Professional Education. A requirement in the Professional Education Sequence. Concentrates on situations, events, and issues that frequently arise in public school work. Prerequisite: admission to the Teacher Education Program, acceptance for student teaching, and concurrent enrollment in 400 and 401. Mandatory Pass/Fail.

400-4 Student Teaching. A requirement in the undergraduate Professional Education Sequence, 400 represents preliminary student teaching experiences necessary for certification entitlement. Enrollment in this course must be arranged through the Office of Professional Education Experiences. For undergraduate credit only. Students majoring in special education and seeking entitlement to more than one teaching certificate in the State of Illinois may in certain instances be allowed credit for up to 8 semester hours of Education 400. Such increase in hours shall be contingent on the student enrolling in 4 hours of Education 400 in each of two two semesters, and shall require the written permission of the coordinator of professional education experiences. Prerequisite: admission to the Teacher Education Program, acceptance for student teaching, and concurrent enrollment in 350 and 401.

401-8 Student Teaching. A requirement in the undergraduate Professional Education Sequence, 401 concludes the student teaching experience necessary for certification entitlement. Enrollment in this course must be arranged through the Office of Professional Education Experiences. For undergraduate credit only. Prerequisite: admission to the Teacher Education Program, acceptance for student teaching, and concurrent enrollment in 350 and 400.

450-1 to 10 Experimental Education. Offered for purposes of testing new and experimental courses and series of courses within the College of Education. Prerequisite: consent of instructor.

550-1 to 10 Experimental Education.

590-4 Doctoral Seminar in Cultural Foundations of Education.

591-4 Doctoral Seminar in Behavioral Foundations of Education.

Educational Leadership

(Department, Major [Graduate only], Courses)

The Department of Educational Leadership does not offer an undergraduate major but offers courses for undergraduate credit over a broad range of subject matter in cultural and legal foundations of education.

Courses

354-3 Philosophy of Education. (Same as Philosophy 355.) Intended primarily for those interested in education as a profession. Schools of philosophy are reviewed as they relate to education, and students are encouraged to develop and apply philosophic thought to the practices and problems of education.

360-3 Subcultures in American Education. Poverty, racial prejudice, and various sub-cultural issues as may relate to American educational development. Analysis of conflicting systems of cultural values and norms and their implications.

421-3 The Law, The Teacher, and The Student. Legislative and case law including civil rights and responsibilities for the teacher and for the student.

430-3 History of Education in the United States. An historical study of the problems of American education.

431-3 Workshop in Adult and Community Education. The focus for this workshop is to provide quality in-service education for practitioners in the field of adult and community education with a variety of specialties.

432-3 Education and Social Forces. A study of the social forces that shape educational policies in the United States.

454-3 Contrasting Philosophies of Education. An examination of current educational problems and trends in the light of contrasting philosophies of education.

465-3 Organization and Administration of Adult and Community Education Programs. Review of methods and procedures for working with various types of adult programs and populations, for administering adult curricula programs and staff for using area and state social services, and for program funding are the primary emphases of this course.

475-3 Administration of Staff Development Programs in Adult and Continuing Education. Review and examination of the needs, problems, administrative requirement, and alternatives available for staff development in adult and continuing education. Emphasis will be placed on needs assessments, planning, and designing inservice or staff development programs to meet institutional needs and individual professional needs.

500-3 Educational Research Methods.

501-3 Educational Administration: Tasks and Processes.

503-3 Educational Administration: Introduction to Theory.

505-2 Organization and Administration of the Middle and Junior High School.

507-3 Secondary School Principalship.

509-3 School-Community Relations and Development.

510-3 Cultural Foundations of Adult Education.

511-3 Organization and Administration of Curriculum.

513-3 Supervision of Instruction.

515-1 to 12 Current Issues in Educational Administration.

517-3 The Legal Framework of Education.

519-3 Illinois School Law.

521-3 School Facilities.

523-3 Systems Analysis: An Application to Education.

525-3 School Finance Theory.

527-3 School Business Administration.

529-3 Supervision of Personnel: Problems.

530-3 Historical Research in Education.

531-3 School Boards and Policies.

533-3 Elementary School Principalship.

539-3 Evaluation and Accreditation in Public Schools.

541-3 Personnel Evaluation.

551-3 Educational Leadership: Politics of Education

552-3 Seminar in Comparative Education.

553-3 Educational Leadership: Systems and Accountability.

554-3 Seminar in Philosophy of Education.

555-3 Advanced Educational Administration Theory.

556-3 Seminar in History of European Education.

558-3 to 9 (3, 3, 3) Advanced Seminar in Comparative Education.

- 559-3 Interdisciplinary Seminar in Educational Administration: I.
- 560-3 Education and Culture.
- 561-3 Interdisciplinary Seminar in Educational Administration: II.
- 562-3 Education and the American Way of Life.
- 564-3 Education and the Challenges of the Twentieth Century.
- 588-3 to 9 General Graduate Seminar.
- 590-1 to 6 Readings in Administration and Foundations.
- 593-1 to 3 per topic Individual Research.
- 595-1 to 8 Internships in Educational Administration.
- 596-1 to 6 Independent Investigation.
- 597-1 to 8 Externship.
- 599-1 to 6 Thesis.
- 600-1 to 36 (1 to 16 per semester) Dissertation.

Educational Media

(SEE CURRICULUM, INSTRUCTION, AND MEDIA)

Electrical Sciences and System Engineering

(SEE ENGINEERING)

Electronic Data Processing (Program, Major, Courses)

The growth of electronic data processing in both the expansion of installations and in the complexity of hardware and software has increased the need for competent computer programmers and systems analysts. The need for persons trained only on unit record equipment, however, is decreasing.

The curriculum in electronic data processing at the School of Technical Careers prepares students for employment as business computer programmers and systems analysts. Skills which the graduate obtains include competency in programming languages (such as COBOL, Assembler, and RPG) and associated areas such as accounting and systems design and development.

An outstanding feature of the program at the School of Technical Careers is the availability of an IBM 370 computer system for batch and interactive use. The hardware and software configuration is representative of large computer installations in industry. The data center is accessible for approximately 100 hours per week.

The student should plan to spend small amounts for special laboratory materials.

An advisory committee of professional people and educators helps to keep the program responsive to needs in the field. Current members are: Ellis T. Bick, division data systems manager, Southwestern Bell Telephone Company, St. Louis, Mo.; Edward Long, data processing manager, City of Carbondale; John Crawford, vice president, Horace Mann, Springfield; and Thomas Purcell, institutional research, Southern Illinois University at Carbondale.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Applied Science Degree, School of Technical Careers

Requirements for Major in Electronic Data Processing

GSD 101, 153.....	6
Accounting 110, 120	6
School of Technical Careers 104	2

School of Technical Careers 102 or GSD 118.....	2
Electronic Data Processing 101, 102, 104, 201a,b, 203, 204a,b, 205, 206, 207, 235	50
Approved technical electives	4
Approved social science elective.	3
Electives	2
<hr/>	
Total	75

Courses

101-3 Introduction to Data Processing. The successful student should be able to demonstrate an understanding of basic terminology, procedures, applications, and equipment used in data processing, and be able to compare manual, punched card, and computer methods of processing. Lecture three hours.

102-5 Introduction to Programming. The successful student should be able to flowchart logical solutions, write programs for business data processing problems, and describe the general features and usage of several different programming languages. Lecture three hours, laboratory three hours.

104-3 Data Processing Applications. The successful student will demonstrate by examination a general knowledge of processing procedures and terminology for basic business applications such as billing, accounts receivable, accounts payable, inventory control and payroll. Lecture three hours. Prerequisite: 101.

107-3 Electronic Data Processing Concepts. Designed as a concepts course for non-data processing majors. Each student will learn the basic operation and functions of data processing equipment, be able to flow chart logical solutions, write a program for a simple data processing problem, describe the use of several different programming languages, and discuss the impact of computers on our socio-economic system. Averages two lecture and three laboratory hours per week. Elective Pass/Fail.

109-2 Punched Card Preparation. Designed as a skill course for non-data processing majors. Each student will learn the basic operation and function of IBM unit record machines, memorize the keyboard and design program cards for the IBM 26 and 29 model key punches. Most of the laboratory time will be spent in improving speed and accuracy of alphameric punching. Averages one lecture and three laboratory hours per week. Prerequisite: typing skills.

201-8 (4, 4) Assembler Language Programming. The successful student will demonstrate a working knowledge of Assembler Language by flow charting, coding, compiling and testing (a) simple problems using card/prINTER input-output and decimal arithmetic, and (b) complex problems using disk/tape input-output, fixed point arithmetic and indexing. Averages four lecture and six laboratory hours per week. Prerequisite: 101.

202-3 FORTRAN IV Programming. The successful student will demonstrate a working knowledge of the FORTRAN IV programming language by flow charting, coding, compiling and testing a variety of mathematical and statistical problems. Lecture two hours. Laboratory three hours. Prerequisite: Mathematics 111 or consent of instructor.

203-5 Job Control Language and Utilities. The successful student will utilize the computer to demonstrate skills using JCL for applications such as utilities, sorts, merges and multi-programming operations. Lecture three hours. Laboratory three hours. Prerequisite: 201 or 204.

204-8 (4, 4) COBOL Programming. The successful student will demonstrate a working knowledge of programming language by flow charting, coding, compiling and testing (a) simple problems using sequential card, disk, and tape files with fixed length records, and (b) complex problems using ISAM and direct organization files, variable length records and subprograms. Averages four lecture and six laboratory hours per week. Prerequisite: 101.

205-3 Systems Design and Development. The successful student will demonstrate in class discussion, on examinations and by preparing a case study, an ability to design an effective business information processing system including the system flow chart, system specifications, feasibility, the implementation procedure and essential documentation. Lecture three hours. Prerequisite: 104.

206-7 RPG Programming. The successful student will be able to prepare a variety of reports from several established data files using the REPORT PROGRAM GENERATOR of the IBM 360/40 DOS System. Some reports will involve calculations and use data from both tape and disk files. Averages three lecture and six laboratory hours per week. Prerequisite: 101.

207-6 Data Processing Project. Designed to provide the student with a data processing problem which is beyond the scope of any single course. Prerequisite: consent of department.

208-8 (4, 4) Numerical Control Programming. The student will be able to (a) operate basic data processing machines; plan, code test and debug an elementary FORTRAN IV pro-

gram; plan, code, test and prove an elementary AD-APT part program, and (b) describe the environment in which the AD-APT system resides and become proficient in using the AD-APT part programming language. Lecture two hours. Laboratory three hours. Prerequisite: Tool and Manufacturing Technology 210.

209-1 to 8 Data Processing Internship. Designed to provide the students with meaningful practical experience. Involves study, observation, and participation in a data processing installation. Hours and credit arranged individually. May be repeated for credit up to eight hours total. Prerequisite: consent of department. Mandatory Pass/Fail.

217-3 Computing for Business Administration. Designed for business oriented students who need to know how computer systems may be used as management tools. Topics include: types of hardware and software, information systems design and management, and an introduction to FORTRAN programming. A successful student will be able to write programs in FORTRAN to analyze management information. Lecture three hours. Prerequisite: completion of the General Studies mathematics requirement or equivalent.

235-2 Business Statistics. The student will present data in tabular form and draw graphic representations of data; compute measures of central tendency, and solve problems dealing with measures of dispersion and skewness; do basic probability computation; deal with sampling distributions; and solve problems dealing with regression and correlation analysis. Lecture two hours. Prerequisite: Accounting 110 or consent of instructor.

240-3 Database Processing. Database concepts, design, languages, implementation, and administration. Students will write, compile, and execute COBOL programs to retrieve, update, and create database records. Lecture three hours. Prerequisite: 204B or consent of department.

260-3 Introduction to Text Processing. (Same as Secretarial and Office Specialties 260) Each student will learn the basic operations and functions of representative word processing machines and terminals. The laboratory time will be spent in improving speed and accuracy in the typing of textual materials. Lecture two hours, laboratory three hours. Prerequisite: typing skills.

Electronics Technology (Program, Major, Courses)

The goal of the electronics technology program is to educate electronics technicians capable of taking their places in industry in both indirect and direct support to the electronics engineer. Experiences in meter measurements and troubleshooting are provided with manuals and specifications to allow the indirect supporting technician to work for a senior technician. More than an hour each day is spent descriptively and mathematically presenting the general theory principles of electronics. This theory is then applied in a two-hour laboratory each day to design, breadboard, and evaluate circuitry to not only reinforce the theory knowledge but to prepare the direct supporting technician for work later directly for an engineer. During the early stages of the program, most instruction is directed toward basic principles of electricity and electronics. This is followed by principles related to study of communication systems, digital circuits, instrumentation, and control system.

The persons who make the best electronics technicians are those who are interested in physics and mathematics, who have a desire to learn how complex equipment functions and are careful of small details, and who enjoy using their own heads to seek out and solve problems.

The purchase of a set of specified hand tools, costing approximately \$150, is mandatory for students enrolled in the program. A list of the specific hand tools and supplies required will be sent upon request.

An advisory committee drawn from among professionals active in the industry helps to assure that students get a course of study that will prepare them for existing and developing conditions in the field. Current members are: Richard W. Burritt, education and training, Caterpillar Tractor Company, East Peoria; John Cappellin, General Tire Company, Mt. Vernon; Carl Brooks, Phelps-Dodge, Du-Quoin; Howard Schlechte, IBM Corporation, Springfield; and George Watson, Monsanto Company, William G. Krummrich Plant, Sauget.

Opportunities exist throughout industry for technicians, and students are limited only by their own talent and motivation. Job pay is directly commensurate with the technician's ability, resourcefulness, and drive.

Students who have an excellent background in AC-DC theory are especially suited for an accelerated program. Students who have extensive studies in electronics in high school vocational courses and at area vocational centers are encouraged to enter an accelerated program which shortens the time required to earn the associate degree at the School of Technical Careers. The electronics technology faculty has developed a formalized program of proficiency testing which allows these students to:

1. Gain credit in first semester major courses through testing.
2. Take second semester major courses during the eight-week summer session.
3. Begin third semester, or sophomore, courses in the fall semester of what would normally be their freshman year of college.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.



Associate in Applied Science Degree, School of Technical Careers

Requirements for Major in Electronics Technology

GSD 101	3
School of Technical Careers 102, 105a,b, 107a,b, 118, and 101 or 153a.....	14
Electronics Technology 101, 102, 111, 112, 121, 122, 201, 202, 211, 212, 221, and 223 or 224	56
Total.....	73

Courses

- 101-5 DC-AC Circuit Analysis.** The laws and theory principles of DC-AC passive circuits are presented in a comprehensive manner using descriptive, mathematical, and verbal analytical approach. Prerequisite: concurrent enrollment in School of Technical Careers 105a,b.
- 102-5 Electronics Circuit Theory.** The operation of active devices with their passive components are descriptively, verbally, and mathematically presented in circuits such as simplifiers, oscillators, op amps, and other IC systems. Prerequisite: 101.
- 111-6 DC-AC Circuit Analysis Laboratory.** Application of the theory studies in 101 on passive circuits is made under experimental conditions. Laboratory ten hours. Prerequisite: concurrent enrollment in 101.
- 112-6 Electronics Circuits Laboratory.** Application of the theory studies in 102 on electronic circuits is made under experimental conditions. Laboratory ten hours. Prerequisite: 111, and concurrent enrollment in 102.
- 121-3 Electronic Devices.** The focus is placed on electronic devices, their construction, operational characteristics, and application in a single functional block according to manufacturer specifications, Lecture three hours. Prerequisite: concurrent enrollment in 111.
- 122-3 Communications Fundamentals.** Communications systems, components, propagation, and coupling, and other transmission modes are covered as applied to communications. Prerequisite: 101.
- 201-1 to 5 Telemetry and Industrial Circuits Theory.** The theory principles are covered on circuitry employed in the measurement, transmission, resolution, and development of data required for operation in industrial and commercial applications. Lecture five hours. Hours and credit to be individually arranged. Prerequisite: 102 and consent of instructor.
- 202-1 to 5 Digital Circuits Theory.** Concepts of the circuits used to make up such systems as numeric controls, computers, and communications networks. Lecture five hours. Hours and credit to be individually arranged. Prerequisite: 102 and consent of instructor.
- 211-6 Telemetry and Industrial Circuits Laboratory.** Application of the theory studied in 201. It develops skills in design, testing, and troubleshooting transducers, telemetry equipment, and industrial circuits. Laboratory ten hours. Prerequisite: concurrent enrollment in 201 or consent of instructor.
- 212-1 to 6 (Digital Circuits Laboratory.** The laboratory provides organized investigation of individual circuits and subsystems that are employed in a variety of major systems in industry and commerce. Laboratory ten hours. Hours and credit to be individually arranged. Prerequisite: 102 and consent of instructor.
- 221-3 Electronic Systems Analysis.** Extends the basic analysis skills developed in the prerequisite course to the analysis of typical modern electronic systems and subsystems. Lecture three hours. Prerequisite: 102 or consent of instructor.
- 223-3 Federal Communications Commission Test Preparation.** Programmed instruction designed to prepare a student for the test for the second class FCC radio-telephone license. Individualized instruction three hours. Prerequisite: 102.
- 224-3 Computer Systems Application.** Analysis of the computer's operational blocks, machine language programming, and troubleshooting are done on the Digiac 3060 computer. Lecture three hours. Prerequisite: 201 and concurrent enrollment in 202.
- 250-2 Controls, Motors, and Generators.** Upon completion of this course students will be able to choose the proper contactors and fuses for a given job. They will be able to read meters and apply Ohm's law to the DC motor-generator, series, parallel and combination circuits with the proper wire sizes. This course is designed for non-majors and is learner paced. Elective Pass/Fail.
- 251-3 Advanced Solid State Devices.** Knowledge of diodes, transistors, silicon controlled rectifiers, triacs, diacs, tunnel diodes, and integrated circuits will be discussed in detail. Specific emphasis will be given to the theory of linear integrated circuits and the operational amplifier and its application in instrumentation. This course is learner-paced. Prerequisite: 250. Elective Pass/Fail.
- 252-2 Amplifiers, Power Supplies, and Transducers.** Upon completion of this course, students will be able to measure an amplifier's gain, frequency response, input and output

impedance. They will be able to measure a power supply's efficiency, ripple and regulation and properly apply a new power supply to a given load. They will be able to analyze an amplifier to properly apply input transducers (microphones, phonopickups, etc.) and output transducers (speakers, meters, etc.) This course is designed for non-majors and is learner paced. Prerequisite: 251. Elective Pass/Fail.

301-1 to 5 Introduction to Electronic Biomedical Instrumentation. Designed to develop an understanding of the fundamentals of electronic circuits employed in biomedical instrumentation of the following purposes: cardiovascular measurements, patient care and monitoring, measurements in the respiratory system, measurement of physical variables, sensory measurements for the study of behavior, biotelemetry, instrumentation for the clinical laboratory, X-ray and radioisotope instrumentation, and particularly electrical safety for medical equipment. Lecture five hours. Hours and credit to be individually arranged. Prerequisite: consent of instructor

311-1 to 6 Electronic Biomedical Instrumentation Laboratory. The laboratory is designed to provide hands-on experience with the equipment currently available for use in biomedical instrumentation. The equipment is selected from the major supplies and will be utilized to teach interfacing and applications. The equipment will encompass sensors, transducers, amplifiers, oscillators, display and recording devices. Complete systems approach will be taught in conjunction with the medical school laboratories on existing equipment. Laboratory ten hours. Hours and credit to be individually arranged. Prerequisite: consent of instructor.

Elementary Education

(SEE CURRICULUM, INSTRUCTION, AND MEDIA)

Engineering (Major, Courses)

Engineering is the profession in which a knowledge of the mathematical and natural sciences gained by study, experience, and practice is applied with judgment to develop ways to utilize economically the materials and forces of nature for the benefit of people.

The four-year undergraduate program leading to the Bachelor of Science Degree in engineering is a modern, flexible curriculum fully accredited by the Engineer's Council for Professional Development (ECPD), the recognized agency for accrediting engineering curricula in the United States. Graduating seniors with a major in engineering are eligible to take the Engineer-In-Training (EIT) examination as a first step toward registration as a Professional Engineer (PE).

The program of study consists of a common core and an elective option. The common core consists of courses in basic sciences, mathematics, engineering science, and engineering design. Sometime before the senior year, the student selects the option which contains required and elective courses in an area of interest. Fully accredited by ECPD, the options are:

Electrical Sciences and Systems Engineering

Engineering Mechanics and Materials

Thermal and Environmental Engineering

Judicious selection of elective courses allows the student to prepare for a variety of areas (see individual curricula) identified with the traditional engineering disciplines (electrical, mechanical, civil, etc.) and other areas that transcend the traditional disciplines. The aim of this flexibility is to provide society with graduates who can cope with a variety of engineering activities such as design, development, testing, consulting, and applied research. These activities may be directed toward the solution of contemporary problems varying from design of devices to problems of an interdisciplinary or complex-systems nature.

Students enrolled in community colleges who plan to transfer to Southern Illinois University at Carbondale should take courses that provide backgrounds in mathematics, physical sciences, social sciences, and humanities. They may

transfer at any time, but there are advantages in having completed a baccalaureate-oriented associate-degree program. Community college students can complete specific Southern Illinois University at Carbondale course requirements which include 5 hours of English composition and speech, 8 hours of university physics, 7 hours of chemistry, 11 to 14 hours of mathematics (including calculus), 5 hours of statics and dynamics, and 16 hours of social sciences and humanities. Calculus and analytical mechanics are prerequisites for most junior-level engineering courses.

Students with bachelor of science degrees in engineering can specialize further at the graduate level.

Courses

Safety glasses, an electronic calculator or a slide rule with log-log scales, and textbooks are required for all engineering students.

100-3 Introduction to Engineering. Introduction to the exciting and challenging experience of engineering. Methods and procedures utilized by the engineer for problem solving are discussed. Each student will be involved in an authentic engineering design project. A graphics and computational tools laboratory will be part of the course.

222-2 Computational Methods for Engineers and Technologists. Introduces the student to the use of digital computers and programmable calculators in the solution of technical problems. A problem-oriented computer language is used to solve relevant problems that are specifically designed for the engineering and technology student. Problem analysis, flow charting, coding, diagnostics, execution, and solution verification are discussed. Prerequisite: Mathematics 111. Elective Pass/Fail.

260-5 (2, 3) Mechanics of Rigid Bodies. (a) Principles of statics; force systems; equilibrium of particles and rigid bodies; trusses, frames and machines, centroids; friction; moments of inertia of areas. Prerequisite: Mathematics 150. (b) Principles of dynamics; mass moment of inertia; kinematics and kinetics of particles and rigid bodies; vibrations. Prerequisite: 260a or equivalent.

300-3 Engineering Thermodynamics I. Study of the basic principles of thermodynamics. Engineering analysis of physical systems based on the first and second laws. Properties of pure substance (ideal gas behavior, non-ideal gas behavior, and equations of state). Mixtures of ideal gases. Introduction to cycle analysis. Prerequisite: Chemistry 224 or equivalent and Physics 205a. Physics prerequisite waived with consent of instructor.

302-3 Engineering Heat Transfer. An introductory study of the rate mechanisms of thermal energy transport both in steady state and in transient conditions, with and without phase change. Prerequisite: 260a.

311-3 Mechanics of Deformable Bodies. Introduction to the mechanics of deformable bodies. Forces and deformations. Torsion. Stresses in beams. Deflections of beams. Statically indeterminate beams. Columns. Laboratory. Prerequisite: 260a.

312-3 Materials Science Fundamentals. Sub-microscopic structure of solids, including electronic states, atomic and molecular arrangement, structural imperfections and atomic diffusion, and their relationship to macroscopic properties; physical properties of semiconductors, dielectric and magnetic properties of materials; metallic, organic, and ceramic materials and their mechanical properties; composite materials. Prerequisite: Physics 205 and Mathematics 250.

313-3 Fluid Mechanics. A broad introduction to the concepts and principles of fluid statics, kinematics, and dynamics. The fundamental laws for fluid motion in the form of Euler's, Bernoulli's, impulse-momentum and work-energy equations. Dimensional analysis and dynamic similitude. Resistance to flow: deformation drag, surface drag, form drag. Introduction to compressible fluid flow. Laboratory. Prerequisite: 260b or concurrent enrollment.

325-3 Introduction to Digital Systems. Number systems, boolean algebra, combinational circuits, minimization, sequential circuits, and preliminaries of processors, memory, I/O, peripherals, machine language, microprocessor architecture. Prerequisites: 222 and 335, or consent of instructor.

335-3 Electric Circuits. Foundation course in electric circuits. Basic laws and concepts of linear circuits. Analysis of AC and DC circuits by mesh and nodal methods, Thevenin's and Norton's theorems, superposition principle, and phasor notation. Transients. Prerequisite: Mathematics 250. Elective Pass/Fail.

345-3 Electronics. Functional electronics and basic signal processing. Characteristics and typical applications of analog and digital electronic modules. Operational amplifiers. Fundamentals of transistors. Use of basic instruments. Lecture and laboratory. Prerequisite: 335. Elective Pass/Fail.

361-2 Engineering Economics in Design. Procedures for evaluating the relative economic

merits of engineering projects and designs. These procedures compare alternate engineering estimates, evaluate engineering effectiveness, and proceed toward decision making based on economic and engineering optimization. Course materials are present in professional engineering examinations. Prerequisite: Mathematics 111 or equivalent.

385-3 **Electromechanical Energy Conversion.** Principles of electromechanical energy-conversion and related circuitry. Magnetic circuits. Transformers. DC machines. Singlephase and polyphase machines. Polyphase circuits. Prerequisite: 335. Elective Pass/Fail.

443-4 **Engineering Design.** Projects of an engineering systems design nature. Students select a problem, define and design the various subsystems, define subsystem interface requirements, integrate the subsystems into the final design and document the design effort. Laboratory. Not for graduate credit in engineering. Prerequisite: senior standing in engineering.

455-3 **Engineering Geology.** (See Geology 455.)

ELECTRICAL SCIENCES AND SYSTEMS ENGINEERING
(Department, Major [Engineering], Courses)

Students who choose the electrical sciences and systems engineering option prepare themselves for professional employment or graduate studies in areas associated with electrical or systems engineering. Employment opportunities exist within a wide range of organizations, such as governmental laboratories; consumer-goods manufacturers; and telecommunications, electric-power, computer, and microelectronic companies. Flexibility in this option allows students to choose among courses in applications and theory of circuits, systems, communications, digital systems, controls, electronics, instrumentation, electromagnetics, and power systems.

Bachelor of Science Degree, School of Engineering and Technology

ENGINEERING MAJOR—ELECTRICAL SCIENCES AND SYSTEMS ENGINEERING
SPECIALIZATION

<i>General Studies Requirements</i>	29 ¹
GSA: Substitute basic sciences	
GSB	9
GSC	9
GSD: Substitute mathematics	7
GSE	4
<i>Requirements for a Major in Engineering</i>	103
Basic Sciences	18 ²
Physics 205a, b; 255a, b	8
Chemistry 224 and 225	7
GSA 110 or 115 or 209, or substitute Geology 220	3
Mathematics 150, 250, 251, 305 and approved elective-3	17
Engineering	37
General: Engineering 100, 222, 361	7
Engineering Sciences	26
Engineering 260a, 300, 302, 325, 335, 345, 385, select two from 260b, 311, 312, 313	
Engineering Design	4
Engineering 443	
Specialization in Electrical Sciences and Systems Engineering	31
Engineering Sciences	6
ESSE 455; select one of ESSE 447, 476, 477, or 486	
Engineering Design	14
ESSE 465; select 11 hours from ESSE 427, 446, 456, 457, and 487	

Approved technical electives	11
Total	132

¹Courses required for the major will apply toward 16 hours of General Studies making a total of 45 in that area.
²Transfer students holding the associate degree in a baccalaureate-oriented program, and having at least 18 semester hours of basic science approved by the department chairman or a designate, meet this requirement.

Courses

Safety glasses, an electronic calculator or a slide rule with log-log scales, and textbooks are required of all electrical sciences and systems engineering students.

421-2 Digital Computers in Applied Physical Research. Computational techniques for matrix inversion, solution of linear equations, and characteristic roots and vectors. Least squares analysis, curve-fitting, and regression. Numerical quadrature. Solution of nonlinear equations. Solution of regular differential equations and boundary-value problems. Generation of approximate solutions. Monte Carlo techniques. Engineering and other physical examples are used as the primary teaching vehicle. Prerequisite: Engineering 222 and Mathematics 305. Elective Pass/Fail.

426-4 Digital/Analog System Applications. The application of digital/analog systems. Microprocessor programming, analog computer programming, input/output hardware such as analog-to-digital and digital-to-analog converters, stepping motors, light sensors, displays, and controls. Lecture and laboratory. Prerequisite: Engineering 325 or consent of instructor.

427-3 Digital-Systems Design I. Properties of digital systems hardware components and architectures. Microprocessors, memory, I/O, interrupt and microcomputers. Prerequisite: Engineering 325 or consent of instructor; 426 recommended.

446-4 Electronic Circuit Design. Design techniques for a wide range of electronic circuits. Device and circuit modeling. Computer aided circuit design. Consideration of audio, video, and tuned amplifiers; feedback; oscillators; digital circuits. Design project. Lecture and laboratory. Prerequisite: 455 or concurrent enrollment. Elective Pass/Fail.

447-3 Applications of Electronic Devices. Physical mechanisms governing the operation of a wide variety of semiconductor devices. Applications of specific devices are used to illustrate performance characteristics and the relation between device design parameters and terminal properties. Prerequisite: Engineering 222, 312, and 345. Elective Pass/Fail.

455-3 Linear Systems. Fundamental techniques in analysis of linear systems. Transient analysis of linear electrical networks and analogous systems by classical, Laplace-transform, and computer techniques. Feedback, frequency response, and state variables. Prerequisite: Engineering 335 and Mathematics 305. Elective Pass/Fail.

456-3 Control Theory. Fundamentals and techniques for analysis and design of systems with feedback. Signal flow graphs. S-plane analysis. Frequency-domain analysis. Root locus. Stability conditions. Compensation techniques. Prerequisite: 455. Elective Pass/Fail.

457-3 Systems Theory. In-depth study of system concepts such as interaction, anticipation, feedback, feedforward, stability, and memory. Methods which maintain flexibility and generality in dealing with all types of engineering systems. Prerequisite: Mathematics 305 or consent of instructor. Elective Pass/Fail.

458-3 Communications Theory. Basic information theory. Fourier series and transform. Sampling theory. Amplitude modulation, frequency modulation, and pulse modulation. Signal-to-noise ratio. Statistical methods. Prerequisite: 455. Elective Pass/Fail.

461-4 Bio-electricity and Biomedical Instrumentation. Interdisciplinary course primarily for life-science students. Electromagnetics relative to living systems. Circuit analysis. Functional electronics. Electric safety. Specific clinical and research instrumentation. Lecture and laboratory. Elective Pass/Fail.

465-3 Instrumentation. Theory and practice related to measurement systems for research and industry. Instrument characteristics. Techniques in analog and digital instrumentation. Transducers. Signal conditioners. Output and display systems. Statistics of measurement. Design project. Lecture and laboratory. Prerequisite: Engineering 345. Elective Pass/Fail.

476-3 Electromagnetic Fields I. Electric and magnetic fields using vector analysis. Evolution of Maxwell's equations through the laws of Coulomb, Gauss, Ampere, and Faraday. Concepts of energy and potential. Poisson and Laplace fields. Wave equation and plane waves. Transmission lines. Prerequisite: Mathematics 305. Elective Pass/Fail.

477-3 Electromagnetic Fields II and Microwaves. Application of Maxwell's equations and the laws of electromagnetics to boundary-value problems, microwave devices, guiding structures, and radiating structures. Poynting's theorem and energy relationships. Lecture and laboratory. Prerequisite: 476. Elective Pass/Fail.

486-3 Electric Energy Sources. Principles and utilization of nuclear, solar, and fossil-fuel

generators. Direct energy converters including thermionic, thermoelectric, and photovoltaic. Prerequisite: Engineering 385 or consent of instructor. Elective Pass/Fail.

487-4 Power Systems Analysis I. Introduction to analysis of electric power systems. Modeling of power system components. Power system configuration. Control of power and frequency. Control of voltage and reactive power. Load-flow analysis. Introduction to symmetrical components. Prerequisite: Engineering 385. Elective Pass/Fail.

492-1 to 5 Special Problems in Engineering. Topics and problems selected either by student or instructor. Prerequisite: senior standing and consent of instructor. Elective Pass/Fail.

527-3 Digital Systems Design II.

536-3 Network Synthesis.

547-3 Solid-State Theory of Electronic Materials.

556-3 Modern Control Theory.

557-6 (3, 3) Complex Systems.

577-4 Electromagnetic Fields III.

580-1 to 4 Seminar.

586-3 Power Systems Analysis II.

592-1 to 5 Special Investigations in Engineering.

599-1 to 6 Thesis.

ENGINEERING MECHANICS AND MATERIALS (Department, Major [Engineering] Courses)

The engineering mechanics and materials option is designed to help students prepare for a broad professional career in areas of civil and/or mechanical engineering, to specialize in selected areas of engineering mechanics, or to prepare for graduate studies. Course work is offered by the department in experimental analysis, vibrations, machine design, materials science, hydraulics, soils and foundations, structural analysis and design, numerical methods, and supersonic flow. The student, with the help of an adviser, is encouraged to choose a sequence of technical electives to achieve a solid and coherent specialization.

Bachelor of Science Degree, School of Engineering and Technology

ENGINEERING MAJOR—ENGINEERING MECHANICS AND MATERIALS SPECIALIZATION

General Studies Requirements 29¹

GSA: Substitute basic science

GSB 9

GSC 9

GSD: Substitute mathematics 7

GSE: 4

Requirements for Major in Engineering 103

Basic Sciences 18²

Physics 205a, b; 255a, b 8

Chemistry 224 and 225 7

GSA 110 or 115 or 209, or substitute Geology 220 3

Mathematics 150, 250, 251, 305 and approved elective-3 17

Engineering 37

General: Engineering 100, 222, 361 7

Engineering Sciences 26

Engineering 260a,b, 300, 302, 311, 312,
313, 335, 345 or 385

Engineering Design 4

Engineering 443

Specialization in Engineering Mechanics and Materials 31

General: EMM 440, 451 6

Engineering Sciences: EMM 464 2

Engineering Design: EMM 413, 475 6

Engineering Science electives 5

Select from EMM 414, 419³, 441³, 447, 449, 465

Engineering Design electives	7
Select from EMM 409, 419 ³ , 441 ³ , 442, 444, 472, TEE 406	
Technical electives in approved areas	5
<hr/> Total	<hr/> 132

¹Courses required for the major will apply toward 16 hours of General Studies making a total of 45 in that area.
²Transfer students holding the associate degree in a baccalaureate-oriented program, and having at least 18 semester hours of basic science approved by the department chairman or a designate, meet this requirement.
³This course may be used for either one semester hour of design credit or two semester hours of engineering science credit or both.

Courses

Safety glasses, an electronic calculator or a slide rule with log-log scales, and textbooks are required of all engineering mechanics and materials students.

- 409-3 Hydrology and Hydraulic Engineering Design.** Study of the hydrologic cycle. Streamflow analysis. Unit hydrograph. Matrix methods; synthetic methods. Frequency analysis; multivariate distributions. Hydrologic and hydraulic routings. Groundwater hydrology. Application of hydrology to the design of various hydraulic structures: small dams, spillways, drainage systems. Prerequisite: Engineering 313 or equivalent or consent of instructor. Elective Pass/Fail.
- 413-3 Fluid Systems Design.** Two to three week projects involving the identification, modeling, analysis, and design of fluid-engineering systems. Prerequisite: Engineering 313.
- 414-3 Intermediate Fluid Mechanics.** A development of the governing equations of motion including the continuity, Navier-Stokes, and energy equations. Application of these equations to potential, viscous, and compressible flows. Isentropic flow of a perfect gas. Normal and oblique shock waves, Prandtl-Meyer flow. Prerequisite: Engineering 313 or equivalent.
- 419-3 Soil Mechanics and Foundation Engineering Design.** Study of soil behavior and its application in foundation engineering. Laboratory. Soil-water systems and interactive forces; stress-strain characteristics; effective stress concept; drained and undrained conditions for saturated soils; theory of consolidation. Design of retaining walls, earth dams, shallow and deep foundations. Prerequisite: Engineering 311, 313, or consent of instructor.
- 440-3 Structures.** An introduction to structural engineering. The design procedure. Loads. Types of structures. Structural materials, safety. Social and environmental considerations. Analysis of structures. Influence lines. Deflections. Slope deflection. Moment distribution. Matrix methods. Prerequisite: Engineering 311 or consent of instructor.
- 441-3 Vibration in the Design of Machines and Structures.** Theory: Review of second order ordinary linear differential equations. Matrices and determinants. Phasor and trigonometric solutions, Duhamel integrals, Fourier Series. Applications: motor and equipment mounts, deflection of rotating shafts, resonance, dynamic balancing, vibration absorbers, vibrometer and accelerometer design, analysis of accelerometer and vibrometer data, seismic loads on buildings, vehicle suspensions, vibration of geared systems, vibration linkages. Prerequisite: Engineering 260B and Mathematics 305.
- 442-3 Structural Steel Design.** An introduction to structural steel design with emphasis on buildings. Composite design. Plate Girders. Rigid frames. Prerequisite: 440 or consent of instructor.
- 444-3 Reinforced Concrete Design.** Behavior and strength design of reinforced concrete beams, slabs, compression members, and footings. Prerequisite: 440 or consent of instruction.
- 447-2 Intermediate Mechanics of Materials and Structures.** Shear center for beams. Unsymmetrical bending. Flexure of curved members. Contact stresses. Energy methods. Inelasticity in one dimension. Buckling formulas. Prerequisite: Engineering 311.
- 448-3 Experimental Stress Analysis in Design.** Theoretical and experimental methods used to determine stress and strain for design and design improvement of machine and structural components. The methods include photoelastic analysis; brittle coating; electrical, optical and mechanical strain gauges, and Moire Analysis. Laboratory. Prerequisite: Engineering 311.
- 449-2 Intermediate Dynamics.** Kinematics and kinetics of plane and three-dimensional motion. The principles of work and energy applied to the motion of rigid bodies. The principle of impulse-momentum applied to variable mass and rigid body systems including gyroscopic motion. Vibrational analysis of single degree of freedom systems. Prerequisite: Engineering 260b.
- 451-3 Numerical Methods in Mechanics.** An introduction to the available numerical methods and techniques which are employed to solve engineering problems with special emphasis devoted to areas of mechanics involving stress analysis, vibrations, fluid flows,

mechanisms, and structures. Prerequisite: Engineering 222, 311, 313 or consent of instructor.

458-2 Photoelasticity. Optics related to photoelasticity; theory of photoelasticity; photoelastic model materials; analysis techniques; three-dimensional photoelasticity; birefringent coatings; holography in photoelasticity; application of photoelastic methods in industrial problems. Laboratory. Prerequisite: Engineering 311.

462-3 Matrix Methods of Structural Analysis. Flexibility method and stiffness method applied to framed structures. Introduction to finite elements. Prerequisite: 440 and Engineering 222 or consent of instructor.

464-2 Physical Metallurgy and Ceramics. Structure/composition determination for bulk and surfaces. Thermodynamics of solutions. Phase transformations. Structure and properties of aggregate and composite materials. Corrosion. Dislocation theory. Plastic flow. Fracture. Failure analysis. Prerequisite: Engineering 312.

465-3 Materials Preparation and Processing. Forming and processing of materials. Solidification: single crystal techniques, plane front and dendritic solidification, microsegregation, nonequilibrium structures. Vapor deposition: fractionation, physical vapor deposition, ion plating, sputtering. Thermal processing of solids: homogenization, crystallization, precipitation. Powder preparation, sintering and densification. Deformation processing: rolling, forging, extrusion, drawing, preferred orientation. Prerequisite: 464.

470-3 Engineering Analysis. Methods of solution for basic ordinary differential equations with applications to engineering systems. Basic methods of solution for partial differential equations with emphasis on applications of the Laplace, Poisson, and heat equations to engineering problems. Basic vector field theory; transformation theorems. Simulation techniques applied to engineering systems. Prerequisite: Mathematics 305 or equivalent.

472-3 Materials Selection for Design. Interaction of design parameters and materials selection parameters; comparison of alternative materials, thermomechanical processing, fabrication, joining methods, materials compatibility, and cost analysis. Projects in the selection of materials, processing and fabrication to meet the requirements of a design in the students' areas of specialization. Prerequisite: Engineering 312.

475-3 Mechanical Systems Design. Working stresses, shafting, springs, belts, other machine elements. Lubrication theory and practice, gears, belt drives, chains. Taught from text, association manuals, manufacturer's handbooks. Prerequisite: Engineering 260b, 311 or equivalent.

492-1 to 5 Special Problems in Engineering. Selected engineering topics and/or problems in (a) Stress analysis, (b) Fluid flow analysis, (c) Structural engineering, (d) Computational mechanics, (e) Materials engineering, and (f) Dynamics. Prerequisite: consent of instructor.

504-3 X-Ray Diffraction and the Solid State.

505-3 Physical Properties of Crystalline Materials.

506-3 Solidification Processing.

512-3 Introduction to Theoretical Elasticity.

513-3 Mechanics of Viscous Fluids.

514-3 Mechanics of Inviscid Fluids.

515-2 Wave Motion.

518-3 Introduction to Turbulence.

540-2 Elastic Stability.

542-2 Theory of Plates.

544-3 Advanced Design of Reinforced Concrete.

550-3 Advanced Compressible Fluid Flow.

561-3 Intermediate Vibrations.

580-1 to 4 Seminar.

592-1 to 4 Special Investigations in Engineering.

599-1 to 6 Thesis.

THERMAL AND ENVIRONMENTAL ENGINEERING (Department, Major [Engineering] Courses)

The option in thermal and environmental engineering prepares graduates to provide engineering solutions to problems such as optimum energy utilization, conservation of resources and environmental protection by working in or across the areas associated with traditional engineering disciplines. This option allows study of energy and environmental areas. The energy areas include heat and mass transfer, thermal systems and processes such as solar, coal conversion, electric power plants, refrigeration, engines. The environmental areas include wastewater, potable water, air pollution, waste heat, solid waste, and industrial waste. Previous graduates are successfully practicing in manufacturing and en-



ergy industries, in consulting engineering firms, in state and federal agencies, and in graduate studies.

Bachelor of Science Degree, School of Engineering and Technology

**ENGINEERING MAJOR — THERMAL AND ENVIRONMENTAL ENGINEERING
SPECIALIZATION**

<i>General Studies Requirements</i>	29 ¹
GSA: Substitute basic science	
GSB	9
GSC	9
GSD: Substitute mathematics	7
GSE	4
<i>Requirements for Major in Engineering</i>	103
Basic Sciences	18 ²
Physics 205a, b; 255a,b	8
Chemistry 224 and 225	7
GSA 110 or 115 or 209, or substitute Geology 220	3
Mathematics 150, 250, 251, 305 and approved elective-3	17
Engineering	31
General: Engineering 100, 222, 361	7

Engineering Sciences	20
Engineering 260a, b, 300, 302, 312, 335, 345 or 385	
Engineering Design	4
Engineering 443	
Specialization in Thermal and Environmental Engineering.	37
Engineering Sciences	13
TEE 314; select three from the following:	
Engineering 313, 455, TEE 301, 400, 405	
Engineering Design	16
TEE 404, 408, 435; select two from the following:	
TEE 402, 406, 407, 415, 416, 419, EMM 409, 475	
Engineering Laboratory	1
TEE 401 or 417 or 418	
Approved technical electives	7
Total	132

¹Courses required for the major will apply toward 16 hours of General Studies making a total of 45 in that area.

²Transfer students holding the associate degree in a baccalaureate-oriented program, and having at least 18 semester hours of basic science approved by the department chairman or a designate, meet this requirement.

Courses

Safety glasses, an electronic calculator or a slide rule with log-log scales, and textbooks are required of all thermal and environmental engineering students.

301-3 Engineering Thermodynamics II. Combined first and second law analysis; availability and reversibility. Third Law. General thermodynamic relations. Reactive systems. Thermodynamic equilibrium. Phase Rule. Applications. Thermodynamics of one dimensional fluid flow. Prerequisite: Engineering 300.

314-4 Introduction to Environmental Pollution. Basic engineering aspects and interrelation of air, water and land pollution. Problems, sources and effects of pollution. Pollution abatement. State and Federal air and water quality standards and engineering systems for pollution abatement. Prerequisite: Chemistry 224, junior standing. Elective Pass/Fail.

400-3 Power and Refrigeration Cycles. Use of engineering thermodynamics in analysis of power and refrigeration cycles. Detailed treatment of various gas and vapor power cycles including combined gas and steam cycles. Thermodynamics of combustion. Gas and vapor refrigeration cycles. First and Second Law analysis and turbo-machinery. Prerequisite: Engineering 300.

401-1 Thermal Measurements Laboratory. Study of basic physical measurements used in the thermal sciences. Calibration techniques for temperature sensors. Transient and steady-state error analysis. Thermal and transport property measurements. Prerequisite: Engineering 302.

402-3 Heat Exchange Equipment Design. Thermal radiation. Radiation with participating media. Combined convection and radiation. Principles of furnace design. Moist air heating and cooling coils. Enthalpy potential. Cooling coil design. Refrigerant evaporators and condensers. Two-phase flow regions. Freon heat exchangers. Heat pipes. Prerequisite: Engineering 302.

404-4 Optimization of Process Systems. The simulation and optimization of industrial process systems based on the principles of thermodynamics, heat transfer, mass transfer, and fluid mechanics. The analysis and correlation of experimental engineering data, and the use of the correlated data in process simulations. The mathematical modeling of the performance of energy transfer and environmental treatment equipment (pumps, turbines, mass and heat exchangers, etc.) from analytical predictions and experimental results. The application of the principal optimization methods encountered in engineering practice. Computer applications. Prerequisite: Engineering 361, Mathematics 305 and senior standing in engineering.

405-3 Internal Combustion Engines and Gas Turbines. Operation and performance characteristics of Otto, Diesel, Wankel engines and gas turbines. Methods of engine testing, types of fuels and their characteristics, fuel metering systems, engine combustion analysis as related to engine performance, fuel characteristics and air pollution, exhaust gas analysis, and air pollution control. Prerequisite: 301.

406-3 Thermal Systems Design. Application of the principles of engineering analysis to the design of thermal systems. Consideration of such systems as refrigerators, building air conditioning systems, spacecraft control systems, solar heating systems, and gas liquefying systems. Prerequisite: Engineering 300, 302.

407-3 Solar Heating Design. Characteristics of solar energy. Design of passive, active,

- and hybrid solar heating systems. Introduction to advanced systems. Design of solar assisted heat pump systems. Prerequisite: Engineering 300.
- 408-3 Energy Conversion and Conservation Systems.** Energy resources, renewable and nonrenewable, their use and development. Criteria for selecting alternative energy systems. Energy conversion systems for power generation: nuclear fission, nuclear fusion, fossil fuels; geothermal and solar energy. Societal, economic, and environmental constraints on design and utilization of the energy conversion systems. Principles of energy conservation; applications. Emphasis on analysis and engineering design of engineering systems. Prerequisite: Engineering 300.
- 415-3 Wastewater Treatment.** A study of the design equations used in physical, chemical, and biological treatment processes and comparison to design by state standards. Basics of bacteria and their metabolic processes in the degradation of organic wastes. Treatment and disposal of sludges produced in wastewater treatment. Advanced waste treatment processes; reuse of wastewater. Concurrent enrollment in 417 is recommended for students in thermal and environmental engineering option. Prerequisite: 314.
- 416-3 Air Pollution Control.** Engineering control theory, procedures, equipment, and economics related to particulate and gaseous emissions control. The environmental impact of controlling emissions. Sampling and analysis procedures. Laboratory work includes design, construction, and use of a source sampling system. Safety glasses are required. Concurrent enrollment in 418 is recommended for students in thermal and environmental engineering option. Prerequisite: 314.
- 417-1 Water Quality Laboratory.** Measurements of water quality parameters performed. Use of modern instrumental techniques demonstrated. Safety glasses are required. Prerequisite: 314.
- 418-1 Air Quality Laboratory.** This laboratory consists of design, construction, and use of systems to measure and analyze ambient atmospheric pollution. Safety glasses required. Prerequisite: concurrent enrollment in 416.
- 419-3 Water Supply and Treatment.** Water quality requirements, water sources, water treatment to include coagulation and flocculation, mixing and sedimentation basins, filtration, disinfection processes, and water softening. Consideration of toxic elements in water (sources, problems, and treatments). Prerequisite: 314.
- 423-3 Waste Heat Management.** Energy sources and waste heat produced in their utilization. Management of heated surface water effluents to minimize their ecological impact; chemical, physical, and biological. Methods of waste heat disposal from electric power plants. Selection and design of waste heat disposal systems. Prerequisite: 314, Engineering 300, or consent of instructor.
- 435-3 Heat and Mass Transfer Processes.** Review of single phase and two phase heat transfer. Heat exchanger design. Mass transfer principles and processes. Processes involving simultaneous heat and mass transfer. Prerequisite: 302.
- 492-1 to 5 Special Problems in Engineering.** Engineering topics and problems selected by either the instructor or the student with the approval of the instructor. Five hours maximum course credit. Prerequisite: senior standing and consent of instructor.
- 500-3 Advanced Engineering Thermodynamics.**
- 501-3 Transport Phenomena.**
- 502-3 Advanced Heat Transfer.**
- 503-3 Convective Heat Transfer.**
- 507-3 Combustion Phenomena.**
- 510-3 Solid Waste Collection and Disposal.**
- 515-3 Advanced Biological Treatment Processes.**
- 516-3 Water Resources Management.**
- 517-3 Industrial Waste Treatment.**
- 525-3 Small Particle Phenomena.**
- 531-4 Reaction Engineering and Rate Processes.**
- 532-3 Separation Processes and Equilibrium Operations.**
- 580-1 to 4 Seminar.**
- 592-1 to 4 Special Investigations in Engineering.**
- 599-1 to 6 Thesis.**

Engineering Biophysics (Major, Courses)

The program is essentially a five-year curriculum leading to the Master of Science degree in engineering biophysics. However, a full four-year undergraduate curriculum is offered leading to the degree of Bachelor of Science with a major in engineering biophysics. The undergraduate curriculum is interdisciplinary, emphasizing selected areas in the behavioral, engineering, life, mathematical, and physical sciences. The first two years of the program are sufficiently general and

basic so the student can move freely from this program into the traditional scientific disciplines without penalty. The fifth year emphasizes the advanced aspects in the behavioral and life sciences and provides for the student optimum flexibility in electives as well as practical biomedical experience.

Students interested in this program will be advised by the administrator of the program or by members of the executive committee.

Bachelor of Science Degree, College of Science

<i>General Studies Requirements</i>	45 ¹
<i>Supplementary College of Science Requirements</i>	11
Foreign Language (French, German, or Russian recommended).	(4) + 4
Biological Science (Not General Studies)	6 ²
Mathematics 111	(4) + 1
<i>Requirements for Major in Engineering Biophysics</i>	60-62 ³
Required courses are selected in consultation with the administrator to ensure a background of basic courses in natural, physical, and social sciences.	
<i>Electives</i>	2-4 ⁴
<i>Total</i>	120

¹The 45 hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Studies courses.
²With proper selection, these courses can also satisfy the GSA-2 requirement.
³It is assumed the student will take General Studies substitute courses and the hours in the major may be increased by an equivalent amount.
⁴By effecting footnote 2, electives can be increased to 7-9 credit hours.

Courses

- 492-1 to 5 (1 per semester) **Colloquy in Engineering Biophysics I.**Discussion of topics related to engineering biophysics; guest lecturers, field trips. Offered in spring semesters only. Required for undergraduate Engineering Biophysics majors. Mandatory Pass/Fail.
- 592-1 to 3 (1 per semester) **Colloquy in Engineering Biophysics II.**
- 598-1 to 6 **Internship in Engineering Biophysics.**
- 599-1 to 6 **Thesis.**

Engineering Mechanics and Materials

(SEE ENGINEERING)

Engineering Technology (Major, Courses)

Engineering technology is that part of the technological field which requires the application of scientific and engineering knowledge and methods combined with technical skills in support of engineering activities; it lies in the occupational spectrum between the technician and the engineer at the end of the spectrum closest to the engineer.

All curricula in engineering technology are accredited by the Engineers' Council for Professional Development. These curricula are the civil engineering technology, electrical engineering technology, and mechanical engineering technology specializations. ECPD recommends that graduates of these baccalaureate programs be called engineering technologists.

Bachelor of Science Degree, School of Engineering and Technology

ENGINEERING TECHNOLOGY MAJOR—CIVIL ENGINEERING TECHNOLOGY SPECIALIZATION

The civil engineering technology specialization is primarily suited for those stu-

dents interested in pursuing careers with highway departments or in construction industries. However, the broad range of studies insures a solid technical background in many areas of civil engineering technology. Graduates of the program are employed by railroads, coal companies, consulting engineering firms, state and local agencies, and various construction firms.

General Studies Requirements	45
Requirements for Major in Engineering Technology	76
GSD 118	(2)
Chemistry 140a	(3) + 1
Mathematics 111, 150, 250	(4) + 9
Physics 203a, b; 253a, b	(6) + 2
Engineering 222	2
Industrial Technology 390	2
Engineering Technology 103, 202, 245a, 260a, b, 310a, 311, 313a, 314a, 315, 318a, c, 363a, 363b or c, 364a, 365, 426a, approved technical electives-10	60
Electives	3
Total	124

ENGINEERING TECHNOLOGY MAJOR—ELECTRICAL ENGINEERING TECHNOLOGY
SPECIALIZATION

The electrical engineering technology specialization is designed to prepare technologists who are capable of technical design and who can contribute to the development and production of electrical circuits and devices. In addition, graduates are capable of participation in the planning and installation of power distribution systems and operating and maintaining complex electrical systems. Graduates of the program are employed in communications, power, electronics, sales, manufacturing, and other fields.

General Studies Requirements	45
Requirements for Major in Engineering Technology	76
GSD 118	(2)
Chemistry 140a	(3) + 1
Mathematics 111, 150, 250	(4) + 9
Physics 203a, b; 253a, b	(6) + 2
Engineering 222	2
Industrial Technology 390	2
Engineering Technology 103, 245a, 260a, b, 304a, b, 313a, 318a, 332a, b, 403a, b, 437a, b, 438a, approved technical electives-11	60
Electives	3
Total	124

ENGINEERING TECHNOLOGY MAJOR—MECHANICAL ENGINEERING TECHNOLOGY
SPECIALIZATION

The mechanical engineering technology specialization is designed to prepare graduates for a career in the power industry; provides a background in general mechanical technology. Graduates are employed in industries which have a need for technologists trained in the generation, transmission, and utilization of mechanical energy.

General Studies Requirements	45
Requirements for Major in Engineering Technology	76

GSD 118	(2)	
Chemistry 140a	(3) + 1	
Mathematics 111, 150, 250	(4) + 9	
Physics 203a, b; 253a, b	(6) + 2	
Administrative Sciences 301	3	
Engineering 222	2	
Industrial Technology 390	2	
Engineering Technology 103, 104, 245a, 260a, b, 301a, 308a, 311, 313a, b, 318a, b, 320, 323, 424a, b, approved technical electives-10	57	
<i>Electives</i>		3
<i>Total</i>		124

Courses

Safety glasses, a suitable calculator or slide rule, and textbooks are required for most of the following courses.

103-3 Engineering Drawing I. Principles and practices of engineering drawing. Orthographic (multiview) projection; sections and conventions; the spatial relationship of points, lines, and planes; revolution; and basic dimensioning and tolerancing. Drawing supplies and problems workbook required, costing approximately \$15.00.

104-3 Engineering Drawing II. Principles and practices of engineering drawing. Representation of mechanical components; dimensioning; tolerancing; electrical and electronic diagrams; and fluid power diagrams. Drawing supplies and problems workbook required. Cost is approximately \$8.00. Prerequisite: 103.

202-2 Structural Detailing. Principles and practices of engineering drawing as applied to structural design with emphasis on reinforced concrete and structural steel drawings. Drawing supplies required, cost \$8.00. Prerequisite: 103.

236-2 Electrical Instrumentation. Theory and use of D.C. and A.C. instruments; measurement and error, units, standards, meters, bridges, oscilloscopes, electronic instruments, instruments for generation and analysis of waveforms, counters, and transducers, Laboratory. Prerequisite: Mathematics 111.

244-3 Mechanical Systems for Industry. A mechanical fundamentals course covering such topics as gears, belts, other machine parts, fluidics, and lubrication techniques.

245-6 (3, 3) Electrical Systems for Industry. (a) Fundamentals of electrical lighting and industrial wiring. Motor types, synchronous motors, fractional-horsepower motors, applications, bearings, lubrication and rebuilding. Laboratory. Prerequisite: Mathematics 111. (b) Introduction to electronics: laboratory practices, oscilloscopes, meters, components, power supplies, amplifiers, and characteristics of semiconductor devices. Laboratory. Prerequisite: Mathematics 111.

260-7 (4, 3) Principles of Mechanics. (a) Statics and Strength of Materials. Principles of forces, moments, and static equilibrium; centroids, centers of gravity, and moments of inertia; stress and strain; torsion, bending, and combined stresses. (b) Dynamics. Friction; particles and rigid bodies in translation, rotation, and plane motion; relative motion; impulse and momentum; work and energy. Must be taken in a,b sequence. Prerequisite: Mathematics 150 or concurrent enrollment.

263-3 Mine Surveying. Development of basic surveying practices and use of surveying equipment, linear and angular measurements; mapping, calculations; applications of mine surveying. Laboratory. Civil engineer's scale required costing approximately \$3.00. Field notebook for each course costs approximately \$1.00. No credit granted toward civil engineering technology graduation requirements. Prerequisite: Mathematics 111.

301-6 (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. Prerequisite: 313a. (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. Prerequisite: 313a.

304-7 (4, 3) Electrical Circuits. (a) Solutions to D.C. steady-state networks by branch, equivalent circuit, loop current, and node voltage methods. Study of network theorems. Extension of these topics to A.C. steady-state by use of the phasor transform. Laboratory. Prerequisite: Mathematics 150 or concurrent enrollment. (b) Further topics in A.C. circuits; frequency response, resonance, filters, transformers and magnetic coupling, complex power, and dependent sources. Transient response by the classical solution of differential

equations and by Laplace transform methods. Laboratory. Prerequisite: 304a, Mathematics 250 or concurrent enrollment.

308-6 (3, 3) Machine Design. (a) Strength and safety considerations in design of machine parts. Fatigue and stress concentrations, bearings, brakes, clutches and springs. Applications of the principles of mechanics to problems of design and development, mechanisms. Prerequisite: 260a. (b) Combined stresses, gearing, curved beams, high speed cams, thick cylinders, and flat plates. Student undertakes the design of a complete machine. Prerequisite: 308a, 311.

310-6 (3, 3) Heavy Construction. (a) The fundamental elements of heavy construction methods and equipment. Prerequisite: 206a, b or consent of instructor. (b) Construction planning, estimating, and management procedures and techniques. Complete detailed contractor's estimates for bid are prepared for a heavy construction project. Civil engineer's scale required, costing approximately \$3. Prerequisite: 310a.

311-3 Strength of Materials. Statically indeterminate beams and beam deflections; combined static and dynamic loading; column theory; connections. Prerequisite: 260a.

313-6 (3, 3) Elementary Heat Power. (a) The fundamental laws of heat power, properties of systems, liquids, vapors, and liquid-vapor mixtures. (b) Engine cycles and applications. Must be taken in a,b sequence. Prerequisite: Mathematics 150.

314-6 (3, 3) Soil Mechanics. (a) Laboratory determination of the basic properties of soils; components of soil surveys; engineering soil classifications; fundamental study of soil properties. Laboratory. Laboratory notebook required, costing approximately \$4. (b) Soil water and seepage; frost action in soils; soil stabilization; stress distribution in soils and introduction to foundation design. Prerequisite: 260a, 314a.

315-3 Elementary Structural Analysis. Applications of the principles of mechanics to the determination of forces and deflections of statically determinate structures; approximate methods of determining member forces in indeterminate frames; study of various types of structures and loading conditions. Prerequisite: 260a.

318-8 (2, 3, 3) Hydraulics and Pneumatics. (a) Fundamentals of fluid statics, basic fluid flow concepts for idealized fluids, flow networks, and introduction to viscous fluids. Prerequisite: 260b or concurrent enrollment. (b) Viscous flow in closed conduits, basic hydraulic machinery and fluid power systems. Laboratory. Prerequisite: 318a, Engineering 222. (c) Flow measuring devices; collection, storage and distribution of water; collection and transportation of sewage; pumps and pumping. Laboratory. Prerequisite: 318a.

320-3 Mechanical Laboratory. Various types of measuring instruments; gas analysis; lubricant testing, and testing of thermodynamic systems, including internal combustion engines, fans, heat exchangers, and refrigeration systems. Laboratory. Safety glasses required, costing approximately \$4. Prerequisite: 313a.

322-3 Internal Combustion Engines. The design and principles of operation of internal combustion engines. The Otto, Diesel, and Brayton cycles and the fundamental thermodynamic laws involved. Prerequisite: 313a.

323-2 Operation of Public Utilities. (See Economics 323.) Prerequisite: GSB 211 or consent of instructor.

332-6 (3, 3) Electromechanical Principles and Devices. (a) Introduction to D.C. and A.C. machinery. Theory and operating characteristics of D.C. generators and D.C. motors. Laboratory. Prerequisite: 304a or concurrent enrollment. (b) Theory and operating characteristics of polyphase and single-phase A.C. motors. Special applications of A.C. and D.C. motors. Laboratory. Safety glasses required, costing approximately \$5.00. Prerequisite: 304a or concurrent enrollment.

342-2 Technology Design. An elective project on any technical subject selected by the student with advice from the instructor. Stimulates original thought and creativity. Prerequisite: senior standing.

363-9 (3, 3, 3) Surveying. (a) Use and care of surveying instruments; principles of surveying practice and computations. Laboratory. Prerequisite: 103, Mathematics 111, (b) U.S. Public Land Systems and boundary surveys; route surveying; field astronomy. Laboratory. Prerequisite: 363a. (c) Topographic surveying; precise surveying; geodesy. Laboratory. Prerequisite: 363a. Civil engineer's scale, costing approximately \$3.00 and field notebook, costing approximately \$1.00, required for each course.

364-7 (4, 3) Highway Engineering Technology. (a) Highway surveys, plans and computations. Highway design, drainage, roadside development and subgrade structure. Study of types of base courses, pavements, and surfaces. Highway construction and maintenance. Laboratory. Prerequisite: 363a, 314a or consent of instructor. (b) Highway administration, planning, economics, and finances. Traffic engineering. Introduction to railroad and airport design. Prerequisite: 364a.

365-3 Water Treatment and Sanitation. Introduction, description, and design of potable water and wastewater treatment facilities. Chemical coagulation, sedimentation, disinfection, and hardness removal of water. Sanitation measures and control of communicable diseases. Laboratory.

403-8 (4, 4) Electronics Technology. (a) Fundamental theory and operation of semiconductor diodes and bipolar transistors, incremental models for transistors, biasing, stability,

and feedback of single and multistage amplifiers. Parameters and applications of field-effect transistors, opto-electronic devices, thyristors, unijunction transistors and amorphous semi-conductors. Laboratory. (b) Parameters and applications of operational amplifiers, linear integrated circuits, monolithic voltage regulators, and digital integrated circuits. Laboratory. Must be taken in a,b sequence. Prerequisite: 340b.

415-4 Elementary Structural Design. Introduction to structural properties of steel and reinforced concrete. Design of basic steel elements: tension members, beams, columns, and connections. Basic design of reinforced concrete elements: beams, columns, and footings. Use of AISC and ACI codes. Prerequisite: 311 (or concurrent enrollment), 315.

424-6 (3, 3) Power Systems Technology. (a) Fundamentals of basic power plant operation and equipment; e.g., fuels, steam generators, heat exchangers, turbines, pumps, and nuclear reactors. Prerequisite: 313a. (b) A study of cycles, heat balances, efficiencies and power plant economics. Student is exposed to the design considerations and trade-offs associated with the total design of a power plant. Prerequisite: 313b, 318b, 424a.

426-4 (2, 2) Photogrammetry. (a) Cameras and photography; flight planning; mathematical principles of vertical and tilted aerial photographs; ground control methods; extension of control; stereoscopy and parallax; basic instruments, stereo plotters, and latest developments. Laboratory. Prerequisite: 363a or consent of instructor. (b) Rectification of tilted photographs; stereoscopic plotting instruments; principles and use of oblique photography; analytic photogrammetry and new concepts. Laboratory. Prerequisite: 426a or consent of instructor.

437-6 (3, 3) Communications Systems Technology. (a) Radio-frequency transmission-line theory. Electromagnetic fields in rectangular and circular waveguides. Laboratory. Prerequisite: 340b. (b) Communication systems with a unified treatment of various types of transmission systems with emphasis on the role of system bandwidth and noise in limiting the transmission of information. Laboratory. Prerequisite: 403a, 437a.

438-8 (4, 4) Design of Control and Digital Systems. (a) Fundamentals of control systems; equations of electrical, mechanical, hydraulic, and thermal systems; applications of Laplace transforms, transfer functions, block diagrams and flowgraphs. Computer implemented graphical analysis and design methods: root locus, frequency response. Nyquist diagrams, and compensator design. Continuous-systems simulation laboratory. Prerequisite: 340b, Engineering 222. (b) Design of digital systems; logic operations; number systems and applications. Digital systems simulation laboratory. Prerequisite: Engineering 222.

439-3 Microprocessor Applications and Hardware. A study of microprocessor applications and hardware based on microprocessor manufacturer's literature. System configuration, hardware, requirements, typical instruction set, programming, input/output techniques, interfaces, and peripheral devices. Prerequisite: 438B or concurrent enrollment.

492-1 to 6 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 instructor.

English (Department, Major Courses)

The major in English is 36 semester hours at least half of which must be taken at Southern Illinois University at Carbondale. The English major may choose from four specializations.

Students who wish to declare English as a major should consult the director of undergraduate programs in English early in their college careers. Continuing students who wish to declare an English major should petition the Department of English for admission to the department. Transfer students should bring their transcripts and evaluation of transfer credit. Thereafter, all English majors must have their advance registration forms signed by an adviser in the Department of English. Only English courses which are completed with at least a C will fulfill a major requirement. Deviations from regular programs must have prior written department approval.

Students who wish to construct an inter-departmental major in English and certain related fields may do so in consultation and with the approval of an English department adviser.

All students are strongly urged to supplement their English majors through the study of classical and modern languages, as well as the study of foreign literature in translation. Majors preparing for graduate school should take two years of a foreign language.

Although a minor field is not required, students are urged to consider comple-

mentary minor fields such as foreign languages and literatures, history, philosophy, and journalism.

ENGLISH CORE CURRICULUM

All students majoring in English will take the following courses:

English 302a, 302b, 309, 390, and 471 or 472.

**Bachelor of Science Degree, College of Education or
Bachelor of Arts Degree, College of Liberal Arts**

Students who wish to become certified teachers of English may pursue their majors as follows:

<i>General Studies Requirements</i>	45
<i>Requirements for Major in English</i>	36
<i>Professional Education Requirements</i>	24 ¹
See Teacher Education Program, page 71	
<i>Electives</i>	15
Students in the College of Liberal Arts must complete the college requirements as a part of the 15 hours. (See page 78.)	

<i>Total</i>	120
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In addition to the core curriculum teacher training candidates will take the following courses:

English 300; 485; a 400-level course in English literature before 1800; a 400-level course in American literature before 1900; a 400-level course in world literature; two electives chosen from 300 and 400-level English courses.

¹In order to qualify for entrance into the teacher education program and for a student teaching assignment, students must have a grade point average of at least 2.50 (A is 4.0) in the major.

Bachelor of Arts Degree, College of Liberal Arts

A student may wish to pursue one of several specializations in the College of Liberal Arts. The degree earned and the requirements for the degree are as follows:

<i>General Studies Requirements</i>	45
<i>Supplementary College Requirements</i>	
Refer to catalog section titled College of Liberal Arts	6-8
<i>Requirements for Major in English</i>	36
<i>Electives</i>	31-33
<i>Total</i>	120

ENGLISH MAJOR—GENERAL SPECIALIZATION

In addition to the core curriculum, students will take seven electives from the 200, 300, and 400-level courses in English, with several courses at the 400-level. At least one of these elective courses must be a course in English literature before 1800, one a course in American literature before 1900 and one a course in Continental literature. In addition, at least one of these elective courses must be in each of the three major genres: prose fiction, poetry, and drama. Students planning to enter graduate school are strongly urged to take two years of a foreign language or the equivalent. Students should consult with their departmental adviser to achieve a suitable range and breadth of course work.

ENGLISH MAJOR—GENERAL WRITING AND CREATIVE WRITING SPECIALIZATION

In addition to the core curriculum, students should take at least two courses selected from English 281, 282, 283; at least two courses from 381, 382, 383; and English 492. Elective courses outside the Department of English may be ac-

cepted toward the major with prior written approval of the Department of English.

ENGLISH MAJOR—PREPROFESSIONAL SPECIALIZATION

In addition to the core curriculum, majors interested in such fields as law, business, and government will take the following courses:

English 300, 391, 445; four electives, which may concentrate on a special interest, and which, with the consent of the departmental adviser, may include courses in other departments.

ENGLISH MAJOR—DEPARTMENTAL HONORS PROGRAM SPECIALIZATION

The department honors program is open to all undergraduate English majors who maintain a 3.5 grade point average in their English major courses and a 3.25 average overall. Determination of eligibility will be made at the beginning of the student's second semester of junior level work.

In addition to the core curriculum, the honors student should take at least four elective courses on the 400 level. 200 and 300 creative writing courses may count as electives for students initially enrolled in the creative writing option, and English 300 will count as an elective for students initially enrolled in the teaching option. In addition, the student must take at least one English honors seminar, English 497, for three hours of credit, and write a senior honors research paper. If the student elects, the paper will count for six hours of credit toward the English major. The student may elect to write a paper worth only three hours of credit. In that case the student must take a second English honors seminar worth three hours of credit.

The senior honors paper will be an independent research project undertaken through mutual agreement between the honors student and a member of the continuing English faculty.

Minor

The minor in English is a minimum of 18 semester hours. Minors are available with several specializations, and the following are listed as examples only. Students interested in English as a minor are invited to confer with the director of undergraduate programs in English, or an adviser in the Department of English.

ENGLISH MINOR—TEACHING SPECIALIZATION

For students who wish to meet the minimum certification requirements for teaching English in the secondary schools, the following courses are required: English 209; 300, 390; 471 or 472; and two of the following: English 302a, 302b, 309, 445.

For the following minor specializations, these courses are recommended as part of the 18 hour minimum.

ENGLISH MINOR—PREPROFESSIONAL SPECIALIZATION

English 209; 300; 391; 445; 471 or 472.

ENGLISH MINOR—GENERAL WRITING OR CREATIVE WRITING SPECIALIZATION

Writing minors should take at least one course from English 290, 390; two courses from English 281, 282, 283; and two courses from English 381, 382, 383.

ENGLISH MINOR—WORLD LITERATURE SPECIALIZATION

English 209; 390; and four courses from 425, 438, 445, 455, 465. For further information, see catalog section titled Comparative Literature.

ENGLISH MINOR—OTHER SPECIALIZATIONS

Students wishing to arrange other specializations in English should consult the

director of undergraduate programs in English or one of the departmental advisers.

Courses

209-3 Introduction to the Forms of Literature. Poetry, drama, and fiction. Statement and illustration of the techniques of the three genres over the range of American and English literature. Prerequisite: GSD 120; or GSD 117, 118, or 119; or equivalent.

281-3 Creative Writing: Beginning Fiction. Introduction to basic techniques of writing creative prose with emphasis on characterization, plot, and narrative devices. Study and application of various methods of short story writing. Exercises. Critiques. Prerequisite: GSD 120 or 119 or consent of instructor. Elective Pass/Fail.

282-3 Creative Writing: Beginning Poetry. Introduction to basic theories and techniques of poetry writing with emphasis on metrics, forms, and poetic stances. Study and application of each of these general aspects of writing poetry. Exercises. Critiques. Prerequisite: GSD 120 or 119 or consent of instructor. Elective Pass/Fail.

283-3 Creative Writing: Beginning Drama. Introduction to basic problems and techniques of dramatic presentation. Emphasis on producing works for the amateur market, with a secondary purpose of advising future teachers of possibilities of using plays, skits, etc., as teaching aids. Exercises in creating original dramatic material. Critiques. Prerequisite: GSD 120 or 119 or consent of instructor. Elective Pass/Fail.

290-3 Intermediate Expository Writing. Designed for any University student, to improve writing skills beyond freshman composition. Based on individual needs and areas of specialization. Prerequisite: GSD 120; or GSD 117, 118 or 119; or equivalent.

291-1 Writing Research Papers. A course for any student in the University who wants or needs intensive, directed help in preparing research papers. Instruction will be individualized by directing students in the use of the style sheet recommended by their major department. Prerequisite: GSD 120; or GSD 117, 118, or 119; or equivalent.

300-3 Introduction to Language Analysis. Nature of language and linguistic inquiry. Dialectology, usage, and chief grammatical descriptions of present day American English. Required of teacher training candidates.

302A-3 Literary History of England, Beowulf to 1800. Social, historical, and intellectual backgrounds of English literature with selected readings from each period from Beowulf to 1800.

302B-3 Literary History of England, 1800 to Present. Social, historical, and intellectual backgrounds of English literature with selected readings from each period from 1800 to the present.

309-3 A Literary History of the United States. Social, historical, and intellectual backgrounds of American literature, with selected readings for each period.

381-3 Creative Writing: Advanced Fiction. Emphasis on the long short story and novella with exercises and study oriented to more sustained forms of prose than the short story. Theories and techniques of extended fictional forms treated. Critiques. Prerequisite: 281 or consent of instructor. Elective Pass/Fail.

382-3 Creative Writing: Advanced Poetry. Concentration on modern forms and theories of poetry. Writing assignments and exercises in the application of various poetic techniques, primarily 20th century American. Critiques. Prerequisite: 282 or consent of instructor. Elective Pass/Fail.

383-3 Creative Writing: Advanced Drama. Concentration on serious literary statements through drama, and on practical instruction in writing extended and concentrated dramatic forms. Presentation of various dramatic theories through the study of representative plays. Drama writing exercises and critiques. Prerequisite: 283 or consent of instructor. Elective Pass/Fail.

390-3 Advanced Composition. Expository writing. Prerequisite: C average in GSD 120; or C average in GSD 101 and 117, 118, or 119; or equivalent. Open to English majors and minors or with consent of department.

391-3 Precision in Reading and Writing. To improve the student's ability to read and write with precision and clarity, depending on reading complex material (requiring no particular background for comprehension) and on writing precis of it. Prerequisite: grade of B in GSD 117, 118, or 119; or C in GSD 120; or C in English 290.

393-3 to 9 (3 per topic) Special Topics in Literature and Language. Topics vary and are announced in advance. Both students and faculty suggest ideas. May be repeated as the topic varies. Prerequisite: departmental approval. Elective Pass/Fail.

400-3 Introduction to English Linguistics. Methods of structuralizing: phonetics, phonemics, morphemics, syntax. Especially recommended for students preparing to teach English to native speakers. Elective Pass/Fail.

403-3 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 changes. Elective Pass/Fail.

404-3 Middle English Literature Excluding Chaucer. Elective Pass/Fail.

405-3 Middle English Literature: Chaucer. Elective Pass/Fail.

412-3 English Non-Dramatic Literature: The Renaissance. Elective Pass/Fail.

- 413-3 **English Non-Dramatic Literature: The Restoration and Earlier Eighteenth Century.** Elective Pass/Fail.
- 414-3 **English Non-Dramatic Literature: The Later Eighteenth Century.** Elective Pass/Fail.
- 417-3 **Black Literature.** Studies in American and African Black literature, with major emphasis upon contemporary Black expression. Elective Pass/Fail.
- 421-3 **English Romantic Literature.** Elective Pass/Fail.
- 422-3 **Victorian Poetry.** Victorian poets: Tennyson, Browning, Arnold, and other poets in England. Elective Pass/Fail.
- 423-3 **Modern British Poetry.** Elective Pass/Fail.
- 425-3 **Modern Continental Poetry.** Representative poems by major 20th century poets of France, Italy, Germany, Spain, Russia, and Greece. Elective Pass/Fail.
- 426-3 **American Poetry to 1900.** Trends in American poetry to 1900 with a critical analysis of the achievement of the more important poets. Elective Pass/Fail.
- 427-3 **American Poetry from 1900 to the Present.** The more important poets since 1900. Elective Pass/Fail.
- 436-3 to 9 (3 per topic) **Major American Writers.** Significant writers of fiction and nonfictional prose from the Puritans to the 20th Century. May be repeated only if topic varies, and with consent of department. Elective Pass/Fail.
- 438-3 **Intellectual Backgrounds of American Literature.** The relationship of basic ideas in America to American literature. Elective Pass/Fail.
- 445-3 **Cultural Backgrounds of Western Literature.** A study of ancient Greek and Roman literature, Dante's *Divine Comedy*, and Goethe's *Faust*, as to literary type and historical influence on later Western writers. Elective Pass/Fail.
- 451-3 **Eighteenth Century English Fiction.** Defoe through Jane Austen. Elective Pass/Fail.
- 452-3 **Nineteenth Century English Fiction.** Victorian novel: 1830-1880. Elective Pass/Fail.
- 453-3 **Modern British Fiction.** Elective Pass/Fail.
- 455-3 **Modern Continental Fiction.** Selected major works of European authors such as Mann, Silone, Camus, Kafka, Malraux, Hesse. Elective Pass/Fail.
- 458-3 **American Fiction to the Twentieth Century.** The novel in America from its beginnings to the early 20th Century. Elective Pass/Fail.
- 459-3 **American Fiction of the 20th Century.** Trends and techniques in the American novel and short story since 1914. Elective Pass/Fail.
- 460-3 **Elizabethan and Jacobean Drama.** Elizabethan drama excluding Shakespeare: such Elizabethan playwrights as Green, Peele, Marlowe, Heywood, Dekker; and Jacobean drama: such Jacobean and Caroline playwrights as Jonson, Webster, Marston, Middleton, Beaumont and Fletcher, Massinger, Ford, Shirley. Elective Pass/Fail.
- 462-3 **English Restoration and 18th Century Drama.** After 1660, representative types of plays from Dryden to Sheridan. Elective Pass/Fail.
- 464-3 **Modern British Drama.** Elective Pass/Fail.
- 465-3 **Modern Continental Drama.** The continental drama of Europe since 1870; representative plays of Scandinavia, Russia, Germany, France, Italy, Spain, and Portugal. Elective Pass/Fail.
- 468-3 **American Drama.** The rise of the theater in America, with readings of plays, chiefly modern. Elective Pass/Fail.
- 471-3 **Shakespeare: The Early Plays, Histories, and Comedies.**
- 472-3 **Shakespeare: The Major Tragedies, Dark Comedies, and Romances.**
- 473-3 **Milton.** A reading of a selection of the minor poems, of *Paradise Lost*, *Paradise Regained*, *Samson Agonistes*, and the major treatises. Elective Pass/Fail.
- 481-3 **Literature for the Adolescent.** Criteria for evaluation of literary materials for junior and senior high school, with emphasis on critical approaches in selection of literature. Elective Pass/Fail.
- 484-3 **Non-Print Media and English.** Theory and application of film and other non-print media to the study and teaching of English. Especially emphasized is the relationship between print and non-print communications systems and verbal and non-verbal systems. Prerequisite: consent of instructor.
- 485-3 **Problems in Teaching Composition, Language, Literature and Reading in High School.**
- 491-3 **Expository Technical Writing.** An all-university course designed to teach advanced academic and professional (non-fictional) writing skills. Prerequisite: GSD 117, 118, or 119, or equivalent. Elective Pass/Fail.
- 492-3 to 9 **Creative Writing: Senior Writing Project.** The topic varies among the writing of poetry, drama, or prose. A directed written project will be submitted at the end of the semester in prose, poetry, or drama. A collection of short stories or poems, a novel or play of what instructors consider to be acceptable quality will fulfill the Senior Project requirement. An alternative to the Senior Project may be an internship in a publishing firm if appropriate arrangements can be made by the department. Prerequisite: consent of the instructor. Elective Pass/Fail.
- 493-3 to 9 (3 per topic) **Special Topics in Literature and Language.** Topics vary and are

announced in advance; both students and faculty suggest ideas. May be repeated as the topic varies. Elective Pass/Fail.

495-3 Literary Criticism. Includes both history of criticism and modern criticism. Open only to seniors and graduate students. Elective Pass/Fail.

497-3 to 9 (3 per topic) Senior Honors Seminar. Topics vary yearly. May be repeated as the topic varies. Prerequisite: departmental approval and undergraduate status.

499-1 to 6 (1 to 3, 1 to 3) Readings in Literature and Language. For English majors only. Prior written departmental approval required. May be repeated as the topic varies, up to the maximum of six semester hours.

500-3 Materials and Methods of Research in Literature.

506-3 to 12 Anglo-Saxon and Medieval Studies.

510-3 to 12 Renaissance Studies.

516-3 to 12 Restoration and 18th Century Studies.

530-3 to 12 19th Century English Literature.

533-3 to 12 Early American Literature.

539-3 to 12 Modern American Literature.

550-3 to 12 Modern British Literature.

579-3 to 12 (3 per topic) Studies in Modern Literature.

581-3 to 9 (3 per topic) Problems in Teaching English.

585-3 Teaching College Composition.

593-3 to 12 Special Topics.

595-1 to 9 Independent Readings.

596-3 to 12 Language Studies.

600-1 to 36 (1 to 16 per semester) Dissertation.

Environmental Design (Major [Graduate only] Courses)

Courses

411-1 to 6 Workshop. Current topics and problems facing professionals in the field of design. Discussion, reports, lectures, and other methods of analyzing and working on environmental design problems. Emphasis stated in announcement. Maximum of three hours per topic. Prerequisite: senior standing and consent of instructor.

412-3 Seminar. Special topics and projects considered at stages of design, production, sale, or use. Individual preparations and presentations required. Prerequisite: senior standing or consent of instructor.

413-1 to 4 Readings. Supervised study of selected, relevant literature in area of individual interest related to environmental design. Prerequisite: senior standing or consent of instructor.

414-1 to 6 Special Problems. Directed independent work and study in areas determined by individual needs and interests. Maximum of three hours counted toward master's degree. Prerequisite: senior standing or consent of instructor.

500-3 Research Methods and Problem Solving.

504-3 Systems in Environmental Design.

508-3 Environmental Integration.

510-3 to 6 Practicum.

531-3 Spatial Concepts in Design I.

532-4 Spatial Concepts in Design II.

541-3 Application of Science and Technology to Design.

551-3 Anticipatory Design.

598-1 to 6 Project.

599-1 to 6 Thesis.

Environmental Studies (Courses)

Courses

200-3 Human Society and the Natural Environment. The interaction of current political, economic, and social forms of human behavior with the natural environment. Emphasis is on the way understandings of environmental processes and the dynamics of American society influence our relations with the natural environment.

201-3 Science, Technology and Societal Values. An examination of general societal values relative to the scientific and technological endeavors of selected ancient, medieval, and modern cultures. Special attention will be given to urban environments as case studies of the interaction of science, technology, and other societal values in these cultures.

Family Economics and Management (Major, Courses)

The family economics and management program is a part of the Division of Human Development. Issues in consumer economics, management, and housing are of growing interest to consumers, business, and society. This program is concerned with (1) consumer's role and effectiveness in the marketplace, (2) the family's management of limited or restricted resources, and (3) the social and economical aspects of housing. Two specializations, consumer services in business and family services consultant, are offered leading to the Bachelor of Science degree. A minor in consumer studies is also available.

Bachelor of Science Degree, College of Human Resources

<i>General Studies Requirements</i>	45
GSB 202, 203 and 211 required	
<i>Requirements for Major in Family Economics and Management</i>	32-46
Family Economics and Management 240, 330, 340, 350, 370, 494-4, 499	20
Specialization Requirements	12-26
See Requirements listed below	
<i>Electives</i>	29-43
<i>Total</i>	120

CONSUMER SERVICES IN BUSINESS SPECIALIZATION

This specialization prepares students for professional opportunities in consumer affairs in industry and government. Special emphasis is placed on the role of the consumer in the marketplace and the consumer's relationship to private enterprise and government agencies. A key focus of the program is the application of concepts and the critical analysis of problems and issues affecting the consumer's interests and choices.

<i>Specialization Requirements</i>	12
Family Economics and Management 341, 445, plus three additional hours	9
GSB 346	3
<i>Recommended Electives</i>	43
Accounting 210; Administrative Sciences 170, 301, 304; Clothing and Textiles 352, 104 or 304, 305; Finance 271, 370; Food and Nutrition 100, 256, 321, 335, 356, GSD 110, 153; Journalism 340, 341; Marketing 304, 305, 329; Radio-Television 467; Speech Communication 221; Human Development 400	

FAMILY SERVICES CONSULTANT SPECIALIZATION

This specialization is designed to give students a knowledge and understanding of the family's management and allocation of resources. This specialization prepares students for employment in public and private welfare agencies, cooperative extensions and local government and other programs. The low-income family is of particular interest in this specialization. Elective courses should reflect the student's personal employment goals. The program is tailored to meet the theoretical as well as applied concepts in preparing students to serve individuals and families of various ages, physical abilities, and income levels.

<i>Specialization Requirements</i>	26
Family Economics and Management 320, 351, 430, 445	10

Child and Family 227, 366	6
Clothing and Textiles 352	3
Food and Nutrition 100	3
GSA 209	(3)
Social Welfare 383	4
<i>Recommended Electives</i>	29
Family Economics and Management 331, 451; GSB 341, 346; GSE 236; Black American Studies 330; Psychology 307; Social Welfare 375, 401, 402, 463; Sociology 302, 335, 435; Human Development 400.	

Minor in Consumer Studies

The consumer studies minor offered through the Division of Human Development is designed to give students background in consumer economics and home management. The selection of courses is flexible so that course work can be adapted to the special interests of students with diverse goals and backgrounds.

Required courses: Family Economics and Management 350 and 340; 12 hours to be selected from the following: Family Economics and Management 240, 320, 330, 341, 351, 370, 407, 420, 430, 451, 494, Human Development 481b, and GSB 346. A maximum of 6 hours may be selected from Food and Nutrition 100, Child and Family 227, and Journalism.

Courses

See also Human Development for additional 400 and 500-level courses.

240-3 Consumer Resources. An introduction to the resources available to young adults in tackling consumer problems and disputes in housing, automobile care, health services, food purchases, educational expenditures, money management, and other areas of interest to the student. Special attention is given to community and university agencies such as IPIRG, tenant union, chamber of commerce, attorney general's office, and other organizations helpful in resolving problems.

320-2 Household Equipment. Materials, construction, selection, operation, and care of equipment to provide maximum satisfaction to the family are identified. Some emphasis placed on design and use of kitchen and laundry ares.

330-3 Housing. An examination of the physical characteristics of housing as they relate to family needs, wants, and capabilities, as well as the social and economic factors which affect satisfaction associated with family shelter. Field trip.

331-3 Human Environment and Living Space. A study of the living spaces of homes and the relationship of these spaces to the social, economic and aesthetic needs of humans.

340-3 Consumer Problems. Study of family income and expenditure patterns, selection of commodities and services, and an analysis of consumer protection devices.

341-3 Consumers and the Market. The impact of market and governmental activities on consumers' decision-making. Analysis and evaluation of programs designed to inform and to protect consumers.

350-3 Management of Family Resources. A study of factors affecting the management of the home in meeting needs of individuals and creating a satisfying environment for the family. Special consideration given to management of time, money, and energy resources.

351-2 Home Management Practicum. Analysis of current management situations and family resources use with practical application of basic principles. Additional costs required. Prerequisite: 350 and consent of chairperson.

370-3 Management for Low-Income Families. Job-oriented course for social welfare careers; selected concepts in family economics and management with application to the low-income family.

380-2 to 6 Special Problems. Selection and investigation of a special problem under personal supervision of departmental faculty, approved by chairperson and instructor. Every semester.

407-1 to 3 Workshop. Designed to aid workers in professions related to use of family resources. Emphasis for each workshop will be stated in the announcement of the course. Every semester.

420-3 Trends in Household Equipment. Design, function, principles of operation, current trends, and ecological problems related to equipment use in household and society are considered. Prerequisite: 320.

430-3 Housing Alternatives. Selected aspects of the housing market and their relationship

to changing life styles of households. Structure, operations and performance of the housing market and home building industry., housing finance, and contemporary housing problems and issues are considered. Fall Semester. Prerequisite: 330 or consent of instructor.

445-3 Family and Financial Management. Developments in family financial management and the evaluation of methods and procedures for helping families, with emphasis on the role of the consultant. Case studies and simulation, as well as field problems, are included. Fall semester and alternate summers. Prerequisite: 340 and 350, equivalent, or consent of instructor.

451-3 Household Activity Analysis. A study of work methods and place, as well as the characteristics of the worker, in relation to solving problems of employed, full-time, and handicapped home managers.

480-3 Women in the Home and Labor Market. An evaluation and interpretation of the economic contributions of women in household production and in the labor market. Related issues such as fair employment practices, role conflicts, and legal issues will be considered.

494-1 to 4 Field Experience. Supervised learning experiences in an acceptable employment area. Every semester. Prerequisite: 370 and consent of chairperson.

499-1 Senior Seminar. A study of contemporary issues in the field of family economics and management including the concerns of new professionals entering the field. Not for graduate credit.

530-3 Societal Factors in Housing.

535-3 Housing Consumption.

540-3 Consumption Trends.

550-3 Advanced Home Management.

Finance (Department, Major, Courses)

The financial implications of decisions in both business and government are daily becoming more complex. Within the firm, financial considerations permeate the concentrations of research, engineering, production and marketing. Within governmental activities, sophisticated financial techniques are becoming increasingly important. The financial executive thus takes a key role in the successful management of both business and governmental operations.

The finance curriculum offers two areas of specialization to meet the varied interests of students: (1) financial management and (2) financial institutions. The financial management program provides the background for a career in the financial operations of business firms and public institutions. The financial institutions specialization is designed for those interested in the operations of financial intermediaries and financial markets.

Bachelor of Science Degree, College of Business and Administration

<i>General Studies Requirements</i>	45-46
<i>Professional Business Core (See page 66.)</i> ²	47-48
<i>Requirements for Major in Finance</i>	21
Finance 323, 325, 421	9
Specialization (Choose one)	12
Financial Institutions	
Select four: 324, 326, 327, 328, 372, 475, Economics 416	
or	
Select four: 327, 328, 329, 350, 378, 379, 301	12
Financial Management	
Select one additional upper division accounting course	(3) ¹
Select three: 327, 372, 422, 475, 480	9
<i>Electives</i>	5-6
<i>Total</i>	120

¹Hours shown in parentheses are already included in total hours shown for professional business core.

²Courses outside of major should be selected from: Accounting 341, 321, 322, or 365; Economics 315, 330, 340, or 341; Marketing 363 or 390; and Administrative Sciences 350, 352, or 361.

Courses

271-3 Business Law I. Legal problems arising from situations involving contracts and agency and business organizations. Not pass/fail for business majors. Elective Pass/Fail.
300-3 Internship in Finance. Designed to provide an opportunity to relate certain types of work experience to the student's academic program and objectives. Approved internship assignments with cooperating companies in the fields of finance are coordinated by a faculty member. Not repeatable for credit. Prerequisite: consent of department chairperson. Mandatory Pass/Fail.

301-1 to 6 Readings in Finance. Readings in classical and current writing on selected topics in various areas in the field of finance. Prerequisite: consent of department chairperson. Mandatory Pass/Fail.

320-3 Introduction to Business Finance. Principal problems of managing the finance function of a business firm. Emphasis on asset acquisition and management, and financial structure planning and management. Prerequisite: Accounting 222, Economics 215, Administrative Sciences 208.

323-3 Investments. Survey of the problems and procedures of investment management; types of investment risks; investment problems of the individual as well as the corporation. Prerequisite: Accounting 210 or 221. Elective Pass/Fail.

324-3 Security Analysis. Application of investment principles to investment policy; analytical principles and techniques; analysis of fixed income corporate securities, of senior securities with speculative features, of common stocks, of government and municipal securities, and of investment company securities. Prerequisite: 320, 323.

325-3 Financial Markets. Operations of capital markets. Sources and uses of funds of financial institutions. Prerequisite: Economics 214, 215, Administrative Sciences 208.

326-3 Management of Financial Institutions. Principal policies and problems which confront top management. Emphasis on liquidity, loans, investments, deposits, capital funds, financial statements, organization structure, operations, personnel, cost analysis, and public relations. Prerequisite: 320.

327-3 Insurance. Fundamentals of insurance and risk management including a study of selected insurance contracts and alternative methods of controlling risk exposures. Elective Pass/Fail.

328-3 Real Estate. Problems of real estate ownership, management, financing and development. Elective Pass/Fail.

329-3 Advanced Topics in Insurance. Continuation of Finance 327. Insurance and risk management. Includes a detailed investigation of company practices with regard to rate-making, risk selection and underwriting, and statement preparation. Emphasis is on coverages not studied in basic course.

350-3 Small Business Financing. Financing problems involved in raising venture capital, debt type funds, expansion funds, and government sponsored funding. Budgeting, working capital management, and fixed asset planning are covered. Prerequisite: Accounting 222 and Economics 215 or consent of department. Elective Pass/Fail.

370-3 The Legal and Social Environment of Business. An examination of the legal, social, and political forces that influence business and businessmen. Particular attention to the role of law as an agency of social control in the modern business society. Elective Pass/Fail.

372-3 Business Law II. Legal problems arising from situations involving sales, commercial paper, secured transactions, and property.

378-3 Real Estate Appraisal and Finance. The technique and art of real estate appraisal using various evaluation approaches; an analysis of current practices, and procedures in real estate finance, including the mortgage market, loan policy, and administration of loans. Prerequisite: 328 or consent of department.

379-3 Real Estate Law. A survey of legal principles applicable to real property, including the following: conveyances, titles, land descriptions, rights and duties of ownership, and the law of real estate brokerage. Prerequisite: 328 or consent of instructor.

421-3 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. Prerequisite: 320.

422-3 Acquisitions, Divestments, and Recapitalization. A study of the issues involved in developing financial plans for external growth, divestment, and recapitalization. The case approach is emphasized in the course. Prerequisite: 320.

475-3 Forecasting and Budgeting. Methods and problems associated with the development of data used in planning financial activities. Prerequisite: 320.

476-3 Problems in Labor Law. Social, economic, and legal evaluations of recent labor problems, court decisions, and legislation. Concern is on long-run legislative impact on manpower planning, dispute settlement, and utilization of employment resources. Elective Pass/Fail.

480-3 International Financial Management. Financial behavior of multinational firms.

Emphasis on the modification of conventional financial models to incorporate uniquely foreign variables. Prerequisite: 320.

Food and Nutrition (Major, Courses)

The food and nutrition program is a part of the Division of Human Development. Students will be required to take field trips in those courses so designated with the expenses pro-rated for each student. Appropriate uniforms will be required of all students enrolling in those courses that involve preparation of food.

Bachelor of Science Degree, College of Human Resources

FOOD AND NUTRITION MAJOR—DIETETICS SPECIALIZATION

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.

General Studies Requirements	45
Requirement for Major in Food and Nutrition with Specialization in Dietetics	57-58
GSA 115, 209.....	(6)
GSB 104 or 203, 202, 211.....	(9-10)
GSD 107	(4)
GSD 112	2
Electronic Data Processing 107.....	3
GSD 118	(2)
Administrative Sciences 301 or 304.....	3
Animal Industries 310	3
Chemistry 140a, b.....	(4) + 4
Child and Family 237	3
Food and Nutrition 100, 156, 256, 320, 335, 356, 360a, 361, 362, 363, 390, 420 or 490	33
Vocational Education Studies 321 or Psychology 309.....	2-3
Microbiology 301	4
Electives	17-18
Recommended Electives: GSE 236; Child and Family 227; Food and Nutrition 360b, 372, 373, 421; Microbiology 421, 422; Physiology 300	
Total.....	120

FOOD AND NUTRITION MAJOR—FOOD AND LODGING SYSTEMS MANAGEMENT SPECIALIZATION

These courses prepare students for positions as food systems managers for restaurants, hotels, school food service, public and private lodging facilities, airlines, industrial feeding, resorts, institutions, hospitals and clubs. They meet the requirements as set forth by industry, the Council of Hotel, Restaurant, and Institutional Education, and the National Restaurant Association. Through this program in the hospitality field, transfer students from community colleges also will be able to complete their baccalaureate degrees.

General Studies Requirements.....	45
Requirements for Major in Food and Nutrition with Specialization in Food and Lodging Systems Management.....	60
GSA 115, 209.....	(6)

GSB 202.....	(3)
Accounting 221, 222.....	6
Administrative Sciences 304, 385.....	6
Animal Industries 310.....	3
Chemistry 140a.....	(4)
Finance 271.....	3
Food and Nutrition 100, 156, 256, 335, 360a,b, 361, 362, 363, 371, 372, 373.....	32
Marketing 304.....	3
Microbiology 301.....	4
Psychology 320.....	3
<i>Electives</i>	15
Recommended electives: GSE 236; Chemistry 140b; Child and Family 227, 237; Electronic Data Processing 107; Food and Nutrition 320, 390, 420, 421; Microbiology 421	
<i>Total</i>	120

FOOD AND NUTRITION MAJOR—FOOD AND NUTRITION SCIENCE SPECIALIZATION

These courses give a strong scientific education to those interested in preparing for graduate study in food, nutrition, or related discipline; for research in university, industrial, or governmental laboratories; or for educational and promotional work in industry or public health organizations.

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Food and Nutrition with Specialization in Food and Nutrition Science</i>	50
GSA 115, 209.....	(6)
GSB 202.....	(3)
Chemistry 222a,b, 340, 341, 352.....	(4) + 14
Food and Nutrition 100, 156, 256, 320, 356, 420, 421.....	20
Mathematics 110a,b,.....	(4) + 1
Microbiology 301, 421, 422.....	9
Physiology 411a.....	2
Psychology 211.....	4
<i>Electives</i>	25
Recommended electives: Chemistry 451a,b; Child and Family 227, 237; Food and Nutrition 490; Health Education 490; Physiology 300, 410a,b, 420.	
<i>Total</i>	120

FOOD AND NUTRITION MAJOR—FOODS IN BUSINESS SPECIALIZATION

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>	45
<i>Requirements for Major in Food and Nutrition with Specialization in Foods in Business</i>	53
GSA 115, 209.....	(6)
GSB 202.....	(3)
Animal Industries 310.....	3
Accounting 210 or equivalent.....	3
Administrative Sciences 301 or 304.....	3

Chemistry 140a,b	(4) + 4
Family Economics and Management 320, 341, 420	8
Food and Nutrition 100, 156, 256, 320, 321, 335, 356	19
Marketing 304, 363	6
Microbiology 301	4
Radio-Television 467	3
<i>Electives</i>	22
Recommended electives: Child and Family 227, 237; Clothing and Textiles 304; Food and Nutrition 371, 420; Interior Design 131, 300; Radio-Television 300M.	
<i>Total</i>	120

Courses

See also Human Development for additional 400 and 500-level courses.

- 100-3 Fundamentals of Nutrition. Emphasis on basic principles of food and nutrition in relation to personal health. Elective Pass/Fail.
- 156-3 Fundamentals of Foods. An introduction to the basic principles and techniques of food preparation.
- 247-3 (1, 1, 1) The School Lunch Program. (a) Food purchasing; (b) quantity food production; and (c) nutrition practices in the school lunchroom. Elective Pass/Fail.
- 256-3 Science of Food. Application of scientific principles of food preparation. Prerequisite: 156, Chemistry 140 or equivalent.
- 320-3 Nutrition. Principles of nutrition in relation to intermediary metabolism and the role of vitamins and minerals. Prerequisite: 100, Chemistry 140 or equivalent.
- 321-2 Food and Nutrition Demonstration. Emphasis on principles of food and nutrition including food standards and demonstration techniques. Field trip. Prerequisite: 256.
- 335-2 Meal Management. The selection, purchase, preparation and service of food with emphasis on time and money management. Prerequisite: 256.
- 356-3 Experimental Foods. Experimental approach to the study of factors influencing the behavior of foods. Individual problems. Prerequisite: 256.
- 360-6 (3, 3) Quantity Food Production. (a) Use of power equipment, standardized formulas, and techniques of quantity preparation and service of food to large groups (b) Practical experiences in area food service units. Prerequisite: 256 or equivalent.
- 361-3 Food Service Organization and Management. Policies, budgets, supervision, and personnel in feeding large groups. Field trip.
- 362-2 Institution Equipment and Layout. Selection and arrangement of various types of institutional food service equipment, including materials, construction operation, cost, use and care. Field Trip. Prerequisite: 361.
- 363-2 Food Purchasing for Institutions. Principles and methods of purchasing food in quantity. Field trip. Prerequisite: 361.
- 371-2 to 6 Field Experience. Opportunity for supervised learning experiences in the student's major. Prerequisite: consent of instructor or chairperson. Elective Pass/Fail.
- 372-2 Food Systems in the Lodging Industry. Principles and concepts in developing and operating food production systems in the lodging and tourism industry. Prerequisite: Accounting 210 or equivalent.
- 373-2 Food and Beverage Controls. Duties and responsibilities of the manager in restaurant, catering, hospitals, and club operations. The use of management methods in budgeting, forecasting, controlling costs, and establishing operational policies in food and beverage cost control. Prerequisite: Accounting 210 or equivalent.
- 390-3 Diet Therapy. Physiological and biochemical changes in certain diseases with emphasis on those involving nutritional therapy. Prerequisite: 320.
- 420-3 Recent Developments in Nutrition. Critical study of current scientific literature in nutrition. Prerequisite: 320 or equivalent. Elective Pass/Fail.
- 421-2 Recent Trends in Food. Critical study of current scientific literature in food. Prerequisite: 320 or equivalent. Elective Pass/Fail.
- 480-3 Community Nutrition. Offers a study of the objectives, implementation strategies, and evaluation methods of nutrition programs in communities' health programs. Integration of nutrition into the health care delivery system at local, state, and federal levels is included.
- 490-3 Nutrition and Growth. The study of human nutrition during each phase of the life cycle, prenatal through geriatric. Students elect at least two phases for in-depth study. A general review of basic nutrition is included. Prerequisite: consent of instructor and department chairperson. Elective Pass/Fail.
- 520-2 Advanced Nutrition.
- 556-3 Advanced Experimental Foods.

Foreign Languages and Literatures (Department, Majors, Courses)

Majors and minors are offered in classical studies (minor: classical civilization), French, German, Russian, and Spanish. Minors are also offered in Chinese, classical civilization, classical Greek, East Asian Civilizations, Japanese, and Latin. A student majoring in a foreign language who has taken four years of that language in high school is expected to begin with 300-level courses and to take more upper level courses. Transfer students planning to major in a foreign language must complete a minimum of 12 semester hours of courses in that language at Southern Illinois University at Carbondale. No courses completed with a grade below C will be counted toward fulfillment of the requirements for a major. Every foreign language major must have a departmental advance registration form, signed by the appropriate adviser in the department, before proceeding to college advisement and registration.

Bachelor of Arts Degree, College of Liberal Arts

(WITHOUT SECONDARY SCHOOL TEACHING CERTIFICATE)

<i>General Studies Requirements</i>	45
<i>Supplementary College Requirements</i> (See page 78.)	(4) + 8-14
Though not required, a minor of at least 15 hours is recommended. This may be in another foreign language or in any other department within the College of Liberal Arts, but must be approved by the student's departmental adviser; a minor outside the college must be approved by the dean of the college as well. See the Spanish description for a major program which combines a Spanish major with a minor in secretarial and office specialties.	
<i>Requirements for Major in Foreign Language</i>	36 ¹
Except for classics, 100-level courses will not count toward the major and at least 12 hours must be in courses on the 400-level.	
<i>Electives</i>	25-31
<i>Total</i>	120

¹See individual language listings for specific requirements.

Bachelor of Arts Degree, College of Liberal Arts

(WITH SECONDARY SCHOOL TEACHING CERTIFICATION)

<i>General Studies Requirements</i>	45
<i>Supplementary College Requirements</i> (See page 78.)	(4) + 8-14
Though not required, a minor of at least 15 hours is recommended. This may be in another foreign language or in any other department within the College of Liberal Arts, but must be approved by the student's departmental adviser; a minor outside the college must be approved by the dean of the college as well.	
<i>Requirements for Major in Foreign Language</i>	36 ¹
Except for classics, 100-level courses will not count toward the major and at least 12 hours must be in courses on the 400-level. Foreign Languages 436 will be one of those courses required on the 400-level for majors in French, German, Russian, and Spanish.	
<i>Professional Education Requirements</i>	24
See Teacher Education Program, page 71.	

<i>Electives</i>	1-7
<i>Total</i>	120

¹See individual language listings for specific requirements.

Bachelor of Science Degree, College of Education

<i>General Studies Requirements</i>	45 ²
<i>Requirements for Major in Foreign Language</i>	36 ¹
Except for classics, 100-level courses will not count toward the major and at least 12 hours must be in courses on the 400-level. Foreign Languages 436 will be one of those courses required on the 400-level for majors in French, German, Russian, and Spanish.	
<i>Professional Education Requirements</i>	24
See Teacher Education Program, page 71.	
<i>Electives</i>	15
<i>Total</i>	120

¹ See individual language listings for specific requirements.
² See catalog section titled Curriculum, Instruction, and Media for specific certification requirements.

Placement. The student who has completed only one year of foreign language in high school normally begins with the first semester course. The student who has successfully completed two years of study in high school of any language currently taught in the department may begin with the second year level without having to take the placement proficiency examination. Those students who have successfully completed three or more years of high school language should consult the departmental adviser for that language.

Minor

A minor in a foreign language is constituted by 18 hours in courses above the first-year level. See individual language listings for specific requirements. State certification requirements, in terms of total semester hours of subject matter



courses, may be met in part by counting first-year foreign language courses or by doing additional advanced work.

A minor in classical civilization or East Asian civilizations is constituted by 15 hours of courses to be selected in consultation with the appropriate sectional adviser.

Secondary Concentration for Majors in the College of Business and Administration

The Department of Foreign Languages and Literatures participates with the College of Business and Administration’s major program in business and administration by offering a secondary concentration of 20-23 hours for those students who wish to formulate an academic program leading to a career specialization which combines business and a foreign language.

The secondary concentration varies according to the language chosen, but does not normally exceed 23 hours and involves course work from the 100 through the 400 levels. For specific course requirements in the respective languages, interested students should contact advisers in the Department of Foreign Languages and Literatures.

GENERAL FOREIGN LANGUAGE COURSES

Courses

- 300-3 to 9 (3, 3, 3) Life and Its Expression in the Arts.** Lectures and discussion of a selected theme related to the expression of human experience in the arts of such countries as Greece, Italy, Spain, France, Germany, Russia, China, and Japan. Students will do outside readings in English translations. Lectures will be given by several members of the Department of Foreign Languages and Literatures, and will often be illustrated with films, slides, recordings, and other audiovisual aids. Elective Pass/Fail.
- 436-3 Methods in Teaching Modern Foreign Languages.** Survey of general principles of second-language teaching, based upon insights of modern linguistics and learning-psychology. Followed by intensive practical work in classroom and language laboratory with teachers experienced in the student’s specific language field. Required of prospective teachers of modern foreign languages in secondary schools. Prerequisite: concurrent or prior enrollment in 300-level course in French, German, Russian, or Spanish. Elective Pass/Fail.
- 437-1 to 6 Workshop in High School Foreign Language Instruction.** Familiarizes high school teachers with recent curricular developments in foreign language teaching with emphasis on practical classroom application of instructional innovations. Prerequisite: 436 or consent of instructor. Elective Pass/Fail.
- 475A-1 to 34 Full Year Abroad Austria.** Two semesters at the Padagogische Akademie at Baden and at various institutions of higher learning in Vienna. All courses are taught in German. Students may obtain 30 to 34 semester hours of credit in German language, literature and civilization as well as in elective areas of study including music, art, architecture, history, anthropology, political science, physical education, and sociology. Not for graduate credit. Prerequisite: 5 semesters of college German or equivalent with 3.0 grade point average.
- 506-1 to 4 Research Problems—French.**
- 507-1 to 4 Research Problems—German.**
- 508-1 to 4 Research Problems—Russian.**
- 509-1 to 4 Research Problems—Spanish.**
- 535-2 Critical Theory.**
- 566-2 Bibliography and Research Techniques—French.**
- 567-2 Bibliography and Research Techniques—German.**
- 568-2 Bibliography and Research Techniques—Russian.**
- 569-3 Bibliography and Research Techniques—Spanish.**

CHINESE (Minor, Courses)

Minor

Chinese courses above 100 level.	18
200 level: 201a,b	10
300 level.	8

Courses

- 120-8 (4, 4) **Elementary Chinese.** Emphasis on development of reading, writing, speaking, and listening skills. No previous knowledge of Chinese required. Must be taken in a,b sequence. Elective Pass/Fail.
- 201-10 (5, 5) **Intermediate Chinese.** Designed to give the student a review of the Chinese language and its expansion, a reading ability in modern prose, and practice in conversation and composition. Must be taken in a,b sequence. Prerequisite: one year of college Chinese or equivalent. Elective Pass/Fail.
- 300-3 **Chinese Literature in Translation.** No knowledge of Chinese required. Lectures and collateral readings of representative Chinese literary works in English translation with special attention to the literary forms and thought from Confucius to contemporary China. Elective Pass/Fail.
- 306-2 to 6 (2, 2, 2) **Readings in Chinese.** Readings in the contemporary Chinese such as the adaptations of the writings of Tsau Yu, Lau she, Hu shih, and Lu Synn.
- 370-3 **Contemporary China: Society and Culture.** Ideology, literature, social institutions, and various cultural aspects of present-day mainland China. Lectures, films and slides, discussion. Taught in English. No knowledge of Chinese required. Elective Pass/Fail.
- 371-3 **Chinese Cultural Traditions: An Introduction.** Designed for the student with only a casual knowledge of China. An attempt will be made to systematically approach the main currents in Chinese history and civilization from neolithic times to the present day. The goal of the course is to provide the new student of China with a specific corpus of facts and ideas that are essential to any understanding of China's significance in the world both past and present. Taught in English. Elective Pass/Fail.
- 410-3 **The Linguistic Structure of Chinese.** (Same as Linguistics 411.) Phonology and syntax of Mandarin Chinese. Principal phonological features of major Chinese dialects. Special emphasis on the contrastive analysis between Mandarin Chinese and English. Theoretical implications of Chinese syntax for current linguistic theories. Prerequisite: one year of Chinese or introduction to linguistics. Elective Pass/Fail.

CLASSICS (Major [Classical Studies], Minors [Greek, Latin, Classical Civilization], Courses)

Bachelor of Arts degree, College of Liberal Arts

Classics courses and courses from participating departments	36
Original Greek and Latin courses, two years of one language or one year of each	12-16
Electives: additional courses in Greek, Latin, or Classical Civilization (225, 270, 271, 310, 332, 405, 406, 441, 496) ¹ ; Classics 396; GSC 231, 232, 330; courses from participating departments (limited to 12 hours): Anthropology 304; Art 307; History 310, 313; Philosophy 304, 470, 471; Political Science 404a.	20-24

Minor in Greek

Greek courses above 100-level	18
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Minor in Latin

Latin courses above 100-level (288 may not be counted); 320 recommended	18
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Minor in Classical Civilization

Courses to be selected in consultation with adviser from Greek, Latin, or Classical Civilization (225, 270, 271, 310, 332, 405, 406, 441, 496) ¹ ; courses also recommended: GSC 231, 232, 330; and either Classics 100 or 101.	15 ²
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¹Classical civilization includes all classics courses above the 100-level for which no knowledge of Greek or Latin is required.

²18 hours are required for state certification.

Courses

100-2 Greek and Latin in English. Vocabulary building through roots, prefixes, and suffixes. Recommended for students interested in the origin of English words. No knowledge of Greek or Latin is required. Elective Pass/Fail.

101-3 Scientific Terminology: Greek and Latin Derivatives. Analysis of common vocabulary and of basic scientific terminology into its component prefixes, roots, and suffixes. The course concentrates on methods for recognizing and understanding polysyllabic technical terms. No prerequisite required. No knowledge of Greek or Latin is required.

130-8 (4, 4) Elementary Classical Greek. The object of this course is to give students a firm foundation in the grammar, vocabulary, and syntax of Ancient Greek in order to enable them to progress to the reading of the Greek classics and New Testament. Must be taken in a,b sequence. No previous knowledge of Greek required. Elective Pass/Fail.

133-8 (4, 4) Elementary Latin. The object of this course is to give students a firm foundation in the grammar, vocabulary, and syntax of Latin in order to enable them to progress to the reading of the Latin classics. No previous knowledge of Latin required. Must be taken in a,b sequence. Elective Pass/Fail.

201-6 (3, 3) Intermediate Greek. Reading and interpretation of selected works by authors such as Xenophon, Plato, Homer, and the New Testament writers. Must be taken in a,b sequence. Prerequisite: 130 or equivalent. Elective Pass/Fail.

202-6 (3, 3) Intermediate Latin. Reading from authors such as Livy, Caesar, and Cicero. Must be taken in a,b sequence. Prerequisite: 133 or two years of high school Latin or equivalent. Elective Pass/Fail.

225-3 Athletics, Sports, and Games in the Ancient World. The Olympics and other great games of ancient Greece; games and sporting events of ancient Rome; differences between ancient and modern attitudes about sport and sports. No knowledge of Greek or Latin is required. Elective Pass/Fail.

270-3 Greek Civilization. An introduction to the life and culture of ancient Greece. Greek contributions to western civilization in literature, art, history, and philosophy. No knowledge of Greek or Latin is required. Elective Pass/Fail.

271-3 Roman Civilization. An introduction to the life and culture of ancient Rome. Rome's function in assimilating, transforming and passing on the Greek literary and intellectual achievements. Rome's own contributions in the political, social, and cultural spheres. No knowledge of Greek or Latin is required. Elective Pass/Fail.

288-6 (3, 3) Latin as a Research Tool. Intensive course designed to impart grammar and vocabulary necessary for a reading knowledge of the language. Also to serve as a review for people who have had some Latin. Development of interpretive and translation skills in student's own discipline. With consent of student's department, 288b satisfies the graduate school requirement for foreign language as a research tool. Open to graduates and undergraduates.

310-3 Ancient Art and Archaeology. Survey of the physical remains of ancient civilizations of the Aegean and Mediterranean areas. Special attention to the artistic and architectural achievements of the Greeks and Romans. Occasionally offered overseas. No knowledge of Greek or Latin is required. Elective Pass/Fail.

320-3 Latin Composition. The object of this course is to understand and appreciate the structure and style of Latin through composition. Prerequisite: 202 or equivalent. Elective Pass/Fail.

332-3 Classical Drama. Reading several tragedies and comedies of the Greeks and Romans both with a view to enjoying them as timeless works of art and with a view to understanding how they grew out of the societies of classical Greece and Rome. No knowledge of Greek or Latin is required. Elective Pass/Fail.

380-2 to 4 Greek Prose Authors in Greek. Reading of Greek prose. Selections from the historians (Herodotus, Thucydides), orators (Lysias, Demosthenes, etc.) philosophers (Plato, Aristotle), or epistles of the New Testament. Prerequisite: 201 or equivalent. Elective Pass/Fail.

381-3 Homeric Epic in Greek. Reading and interpretation of selections from the *Iliad* or the *Odyssey*. Homeric grammar and metrics, epic diction, the conventions of oral poetry. Prerequisite: 201 or equivalent. Elective Pass/Fail.

382-3 Greek Drama in Greek. Reading and interpretation of selections from the works of the classical Greek dramatists: Aeschylus, Sophocles, Euripides, and Aristophanes. Stage conventions of the Attic theater. Prerequisite: 201 or equivalent. Elective Pass/Fail.

383-3 Early Greek Lyric in Greek. Reading and interpretation of poets of the Archaic Age such as Alcaeus, Sappho, and Pindar. Socio-political background, dialects, meters. Prerequisite: 201 or equivalent. Elective Pass/Fail.

384-3 Roman Philosophy in Latin. Selections from Cicero, Lucretius, and Seneca the Younger. Recommended for students with double majors in philosophy and classics. Prerequisite: 202 or equivalent. Elective Pass/Fail.

385-3 Medieval Latin. Selected readings from Latin authors of the Middle Ages. Prerequisite: 202 or equivalent. Elective Pass/Fail.

386-3 Roman Historians in Latin. Selections from Caesar, Sallust, Livy, Tacitus, and Suetonius. Recommended for students with double majors in history and classics. Prerequisite: 202 or equivalent. Elective Pass/Fail.

387-3 Vergil in Latin. Selections from Vergil's major works, the *Aeneid*, *Eclogues*, etc. Prerequisite: 202 or equivalent. Elective Pass/Fail.

388-3 Lyric and Satire in Latin. Reading and interpretation of works by poets such as Catullus, Horace, Juvenal, and Persius. Study of either the lyric or satiric genre. Prerequisite: 202 or equivalent. Elective Pass/Fail.

389-3 Myth, Fable, and Story in Latin. Selections from works such as the *Metamorphoses* of Ovid, the *Fables* of Phaedrus, and *Satyricon* of Petronius. Prerequisite: 202 or equivalent. Elective Pass/Fail.

390-3 Roman Comedy in Latin. Reading and interpretation of selections from play(s) by Plautus and Terence. Prerequisite: 202 or equivalent. Elective Pass/Fail.

396-3 Honors in Classics. Readings of classical literature, in Greek or Latin or English translation, for junior or senior majors. The course requires preparation of an honors paper or comparable project, and satisfies one of the requirements for graduation with honors in classics. Prerequisite: 3.75 grade average in classics courses and consent of classics faculty.

405-2 Greek Literature in Translation. Reading and analysis of selected classical Greek author(s), genre(s), theme(s), such as the role of woman, the social life of the ancient Greeks, etc. Students taking the course for graduate credit will do a critical study of one aspect. No knowledge of Greek or Latin is required. Elective Pass/Fail.

406-2 Latin Literature in Translation. Reading and analysis of selected Roman author(s), genre(s), theme(s). Students taking the course for graduate credit will do a critical study of one aspect. No knowledge of Greek or Latin is required. Elective Pass/Fail.

415-1 to 9 (1 to 3 per topic) Readings from Greek Authors in Greek. Reading and interpretation of works of Greek literature at an advanced level. Prerequisite: two semesters of 300-level Greek or consent of instructor.

416-1 to 9 (1 to 3 per topic) Readings from Latin Authors in Latin. Reading and interpretation of works of Latin literature at an advanced level. Prerequisite: two semesters of 300-level Latin or consent of instructor.

441-3 Themes in Greek Tragedies and the New Testament. (Same as Religious Studies 441.) Greek tragedies and New Testament passages from the Synoptic Gospels and the Letters of Paul showing similarities and differences in their treatment of such themes as freedom, law, love, and justice. Not for graduate credit. No knowledge of Greek or Latin is required. Prerequisite: 270, 332 or 405 or GSC 330, or 231 and GSC 217 or consent of instructor. Elective Pass/Fail.

496-2 to 8 (2 to 4, 2 to 4) Independent Study in Classics Program. (Same as Anthropology 376, History 396, Philosophy 496, Religious Studies 496.) Normally taken in course of junior and senior years to a total of at least four hours under a professor participating in classics program (anthropology, classics, history, philosophy, or religious studies). At end of advanced level work, student will submit a research paper. Not for graduate credit. No knowledge of Greek or Latin is required. Prerequisite: consent of instructor and classics section head. Elective Pass/Fail.

EAST ASIAN CIVILIZATIONS (Minor)

Minor

Courses in Chinese and Japanese selected in consultation with adviser 15¹

¹18 hours is required for State certification.

FRENCH (Major, Minor, Courses)

Bachelor of Arts Degree, College of Liberal Arts

French courses above 100 level	36
200 level: 201a,b (220 recommended; does not usually count toward major or minor)	8
300 level: 320, plus any combination of 300 level courses (one of these courses must be chosen from the following: 310, 311, 330).	14
400 level: any combination of 400 level courses	14

**Bachelor of Science Degree, College of Education, or
Bachelor of Arts Degree, College of Liberal Arts
(with secondary school certification)**

French courses above 100 level	36
200 level: 201a,b (220 recommended; does not usually count toward major or minor)	8 ¹
300 level: 320, plus any combination of 300 level courses (one of these courses must be chosen from the following: 310, 311, 330).	14
400 level: Foreign Languages and Literatures 436, plus any combination of 400 level courses	14

Minor

French courses above 100 level	18
200 level: 201a, b	8 ¹
300 level; 320, plus any combination of 300 level courses.	10

¹ With the approval of the French section, one semester of 220 may be counted toward the major or minor, in which case the 400-level requirements would be reduced to 12 hours for the major and the 300-level course requirements would be reduced to 8 hours for a minor.

Courses

123-8 (4, 4) Elementary French. The basic skills of listening, speaking, reading, and writing. No previous knowledge of French is required. Must be taken in a,b sequence. Elective Pass/Fail.

190-5 Review of Elementary French A review course on first year level for students who have had two or more years of high school French or equivalent. Elective Pass/Fail.

201-8 (4, 4) Intermediate French. Grammar review, translation, oral practice, written composition, and development of reading skills. Reading of material on contemporary France and selections from French literature. Prerequisite: 123, 190, or two years of high school French, or equivalent. Elective Pass/Fail.

220-2 to 4 (2, 2) Intermediate French Conversation. Development of oral skills on the intermediate level. Not usually accepted toward major requirement. Prerequisite: 123b or 190 or equivalent. Elective Pass/Fail.

288-6 (3, 3) French as a Research Tool. Reading of French texts with emphasis on grammar as a tool for reading comprehension; development of reading skills in various fields: humanities, social studies, science; development of interpretive and translation skills in student's own discipline. With consent of student's department, 288b satisfies the graduate school requirement for foreign language as a research tool. Students who have had one year of college French or the equivalent would normally enroll in 288b. This course is intended for graduate students. Undergraduates who wish to enroll are encouraged to consult with the instructor of the course.

300-3 Image of Women in French Literature. Female characters as they are represented in French literature through the centuries; the development of a psychological and sociological point of view of women through the examination of women's roles in French literature. Conducted in English. Elective Pass/Fail.

310-4 Development of French Literature from the Middle Ages Through the Eighteenth Century. Major literary movements and authors as exemplified in representative works. Elective Pass/Fail.

311-3 Modern French Literature. The themes, structures, and language of some major works of poets, novelists, and playwrights from the early Romantics through the Existentialists and Robbe-Grillet. Elective Pass/Fail.

320-4 Advanced Language Skills. A review of grammar and syntax with extensive practice in translation and composition. Reading of French texts as basis for discussion and papers. Prerequisite: 201b or equivalent. Elective Pass/Fail.

321-3 Advanced Conversation. Improvement of self-expression and aural comprehension. Expansion of vocabulary and idioms emphasized through classroom and language laboratory work. Highly recommended for those students with a major in French. Prerequisite: 201b, 220b. Elective Pass/Fail.

330-3 Introduction to Literary Analysis. Examination of the basic elements of literary expression; practice of rudimentary *explications de textes*. Selections for study are taken from important works of French literature and analyses are directed toward developing the students' artistic sensibilities as well as improving their analytical skills. Elective Pass/Fail.

- 350-2 French Phonetics.** Introduction to French phonemics and phonetics involving production of French sounds and English interference. Emphasis on corrective pronunciation. Elective Pass/Fail.
- 370-3 Modern France.** The main philosophical, political, and artistic trends within the nineteenth and twentieth centuries which have contributed to the formation of present day France. Prerequisite: 320 or 321. Elective Pass/Fail.
- 390-1 to 3 Independent Study in French.** Individual exploration of some question, author, or theme of significance within the field of French literature, language, or culture. Prerequisite: 320 and consent of instructor.
- 410-3 Individualized Language Study.** Treatment of problems concerning grammar, idioms, vocabulary, and other language skills in units tailored to the particular needs of the individual advanced level students enrolled in the course. Exercises in writing, understanding, and speaking will be offered with emphasis placed on the active use of the language which the student may need in present or future activities or careers. Elective Pass/Fail.
- 411-3 Contrastive Analysis: French and English.** Study of the phonology, morphology, and syntax of modern spoken and written French, stressing interference areas for English speakers in learning French. Prerequisite: 320 and 321 or equivalent. Elective Pass/Fail.
- 412-3 History of the French Language.** A survey of the phonological and morphological changes from Latin through Vulgar Latin and Old French to Modern French; study of an original Old French text, such as the *Chanson de Roland* or a romance of Chretien de Troyes. Knowledge of Latin not required. Elective Pass/Fail.
- 415-3 Literary Stylistics.** A study of the aesthetics and theory of French Literary expression. Disciplined stylistic analyses of excerpts from representative works of great French authors. Appreciation of distinctive qualities of each writer's genius. Consideration is given to various stylistic methods. Elective Pass/Fail.
- 419-3 Romance Philology.** (Same as Spanish 419.) Historical and comparative study of the major Romance languages: their phonology, morphology, and syntax. Elective Pass/Fail.
- 420-3 Medieval and Renaissance Literature.** Study of the origins of French literature emphasizing the *Chanson de Roland*, *Tristan*, other courtly romances, and the lyric poetry of Villon, culminating with an examination of the development of the humanistic ideas and ideals of the French Renaissance. Elective Pass/Fail.
- 430-4 Baroque and Classicism.** An in-depth examination of artistic and social writings of baroque and classical literary figures such as Corneille, Racine, Moliere, La Fontaine, Descartes, Pascal, Mme de LaFayette, La Bruyere, and La Rochefoucauld. Discussion, reports, papers. Elective Pass/Fail.
- 440-3 Literature of the Enlightenment.** Study and discussion of the novel, theater, and philosophic writing of 18th century France as literature and as expressions of the Enlightenment. Major attention given to Montesquieu, Voltaire, Diderot, and Rousseau. Elective Pass/Fail.
- 450-4 Literary Movements of the 19th Century.** Romanticism, Realism, and Naturalism in the novel and theater followed by an examination of the reaction to these movements and of the influence of symbolism. Elective Pass/Fail.
- 460-4 Studies in Literature of the 20th Century.** Examination of the major themes, forms, techniques, and style of novelists from Gide and Proust to Robbe-Grillet and dramatists from Giraudoux to Ionesco and Beckett. Elective Pass/Fail.
- 470-3 Backgrounds of French Civilization.** A study of the events, figures, and movements in France which have influenced its culture and civilization. Elective Pass/Fail.
- 475-1 to 3 Travel-Study in France.** Travel-study project, planned under supervision of French faculty and carried out in France. Amount of credit depending on scope of study. Elective Pass/Fail.
- 490-1 to 6 Advanced Independent Study in French.** Individual exploration of some question, author, or theme of significance within the field of French literature, language or culture. Prerequisite: 320, 321 and consent of instructor.
- 501-1 to 3 Seminar on a Selected Topic or Author.**
- 510-3 Masterpieces of French Literature.**
- 520-1 to 3 Literature of the Middle Ages.**
- 525-3 Advanced Language Skills.**
- 530-1 to 3 Literature of the Renaissance.**
- 536-1 Teaching French at the College Level.**
- 539-1 to 3 Literature of the 17th Century.**
- 540-1 to 3 Literature of the 18th Century.**
- 550-1 to 3 Literature of the 19th Century.**
- 560-1 to 3 Literature of the 20th Century.**
- 599-1 to 6 Thesis.**

GERMAN (Major, Minor, Courses)

At least one course in the history of Germany or Central Europe is recommended for all students majoring in German.

Bachelor of Arts Degree, College of Liberal Arts

Courses above 100 level	36
200 level: 201a,b	8
300 level: 320-6, 330 or 380; 370	12
400 level: 401; 412 or 413; 445, 460, 465 or 485; Foreign Language 436 is recommended	8-9
German electives (300 or 400 level)	7-8

Bachelor of Science Degree, College of Education or Bachelor of Arts Degree, College of Liberal Arts (with secondary school certification)

Courses above 100 level	36
200 level: 201a,b	8
300 level: 320-6, 330 or 380; 370	12
400 level: 401, 412, Foreign Language 436	9
German electives (300 or 400 level)	7

Minor

Courses above 100 level	18
200 level: 201a,b	8
300 level: 320a,b	6
German electives (300 or 400 level including at least one regularly scheduled course)	4

Courses

- 126-8 (4,4) Elementary German.** The course emphasizes German culture as it is expressed in the language. It concentrates on the four language skills of understanding, speaking, reading, and writing. No previous knowledge of German required. Must be taken in a,b sequence. Purchase of a workbook is required. Elective Pass/Fail.
- 127-2 (1, 1) Elementary German Conversation.** Conversation skills for beginners making use of modern media. No previous knowledge of German required. Must be taken in a,b sequence or as companion course to 126a or b or with consent of instructor. Elective Pass/Fail.
- 201-8 (4,4) Intermediate German.** Intensification of the four basic language skills. Study of the culture and everyday living situations in the German-speaking countries. Must be taken in a,b sequence. Prerequisite: 126b or equivalent. Elective Pass/Fail.
- 202-2 (1,1) Intermediate German Conversation.** Designed to improve the student's speaking ability through use of modern media. Must be taken in a,b sequence or as companion course to 201a or b or with consent of instructor. Prerequisite: 126b or equivalent. Elective Pass/Fail.
- 230-3 Nordic Mythology.** An introduction to the study of the mythology and culture of the Germanic, and especially the Scandinavian peoples during the time of the Vikings. Emphasis on the Poetic Edda and Prose Edda; also historical and archaeological material. All readings in translation. Elective Pass/Fail.
- 288-6 (3, 3) German as a Research Tool.** (a) Practice in recognizing and interpreting most frequent grammatical patterns and basic vocabulary necessary for reading knowledge of German; (b) concentrated training in translation of specialized literature in student's discipline. With consent of student's department, 288b satisfies the graduate school requirement for foreign language as a research tool. Students who have had one year of college German or the equivalent would normally enroll in 288b. This course is intended for graduate students. Undergraduates who wish to enroll are encouraged to consult with the instructor of the course.
- 300-3 German Literature in Translation.** Readings of German authors of particular interest to American students, such as Hesse, Kafka, Brecht, and Mann. Elective Pass/Fail.
- 320-6 (3, 3) Advanced Composition and Conversation.** Devoted to increasing the student's command of German. Intensive practice in oral and written composition. Beginning with rather controlled subject matter and progressing to a wider choice of topics. Conducted primarily in German. To be taken in sequence. Required for majors. Prerequisite: 201b or equivalent. Elective Pass/Fail.
- 321-2 (1, 1) Small Group Conversation.** Improvement of self-expression and aural comprehension. Expansion of vocabulary and idioms through active participation in small-group

informal conversation. Guests are encouraged to attend. Prerequisite: 201b or equivalent. Mandatory Pass/Fail.

330-3 Introduction to German Literature. Survey of masterpieces of German literature including works from various genres and from the major periods of German literary history. Student projects will include demonstration of various techniques of literary criticism. Course is taught primarily in German. Prerequisite: 201b or equivalent. Elective Pass/Fail.

331-3 Faust, Part I and II. Study of both parts of Goethe's *Faust* as a single poetic drama. Close reading of some passages for qualities of literary form and other passages for statements about the human condition in western civilization. Taught in English, readings in bilingual edition. May count toward German major only with consent of instructor. Elective Pass/Fail.

370-3 Contemporary Germany. Study of life in Germany since World War II including the customs and habits, thoughts and beliefs, as well as the broad complex of traditions basic to everyday life. Readings are in English and include literary and journalistic materials as well as written and filmed documentaries. No prerequisite. May count toward German major only with consent of instructor. Offered alternate years only. Elective Pass/Fail.

380-3 Modern German Prose. Introduction to outstanding German prose literature of the 19th and 20th centuries. Attention to historical and social backgrounds. Extensive reading supplemented by lectures and discussions. Conducted in German. Prerequisite: 201b or equivalent. Elective Pass/Fail.

401-3 Early German Literature. Survey of medieval culture and literature. Reading of selections and discussion of major works of the Middle Ages in their esthetic and historical contexts. Conducted in German. Offered in alternate years only. Prerequisite: 330 or 380. Elective Pass/Fail.

412-3 Linguistic Structure of Modern German. The descriptive study of phonology, grammatical structure, and vocabulary of modern German with consideration of its structural differences from English and application to teaching. Appropriate for students with at least two years of German. Conducted in English. Elective Pass/Fail.

413-3 History of the German Language. Development of German from its Indo-European origin to the present in political and cultural context. The main linguistic aspects dealt with are lexical and semantic changes. Appropriate for students with at least two years of German. Conducted in English. Elective Pass/Fail.

416-3 Individualized Language Study. Designed to improve language skills beyond the level of 320. Treatment of problems concerning grammar, idioms, vocabulary, and other language skills tailored to the particular needs of advanced students. Emphasis is placed on the active use of the language which the student may need in present or future activities or careers. Prerequisite: 320B or equivalent. Elective Pass/Fail.

445-3 Age of Goethe. Intensive and extensive study of the authors, works, and movements of the period spanned by Goethe's life (1749-1832). Lectures, reports. Conducted in German. Prerequisite: 330 or consent of instructor. Elective Pass/Fail.

460-3 East and West of the Wall. Literature of the two Germanies. Course will trace the beginnings and the establishment of the two German literatures after World War II. Conducted in German. Prerequisite: 330 or 380. Elective Pass/Fail.

465-3 German Theater Today. Plays performed in German-speaking countries at the present. The role of the theater in German culture. Conducted in German. Prerequisite: 330 or equivalent. Elective Pass/Fail.

485-2 German Lyric Poetry. Development of German lyric poetry from Klopstock and Burger to the present. Conducted in German. Prerequisite: 330 or equivalent. Elective Pass/Fail.

490-1 to 6 (1 to 3, 1 to 3) Independent Study in German. Project-study under supervision of German faculty. Amount of credit depends on scope of study. May be repeated as the topic varies, up to the maximum of six semester hours. Prerequisite: senior or graduate standing and approval of supervising instructor.

493-3 to 9 (3 per topic) Seminars in Special Topics in Literature and Language. Topics vary and are announced in advance; both students and faculty suggest ideas. May be repeated as the topic varies. Primarily for undergraduates. Prerequisite: consent of instructor. Elective Pass/Fail.

501-2 to 4 (2, 2) Seminar in Literature, Culture, or Folklore.

502-2 to 4 (2, 2) Seminar in Germanic Linguistics.

510-3 Middle High German.

512-2 Historical Germanic Dialects.

536-1 Teaching German at the College Level.

560-3 German Literature at the Turn of the 20th Century.

561-3 Modern German Novel.

586-3 Das Komische.

590-3 to 9 (3 per topic) Independent Study on Special Topics in Literature and Language.

599-1 to 6 Thesis.

GREEK (Minor, Courses)
(SEE CLASSICS)

JAPANESE (Minor, Courses)
Minor

Japanese courses above 100 level	18
200 level: 201a,b	10
300 level	8

Courses

131-8 (4, 4) **Elementary Japanese.** Emphasis on basic skills of listening, speaking, reading, and writing. No previous knowledge of Japanese is required. Must be taken in a,b sequence. Elective Pass/Fail.

201-10 (5, 5) **Intermediate Japanese.** Development of listening, speaking, reading, and writing skills on the intermediate level, with special attention to cultural readings. Must be taken in a,b sequence. Prerequisite: 131b. Elective Pass/Fail.

306-2 to 6 (2, 2, 2) **Individual Readings in Japanese.** Readings in modern Japanese fiction and non-literary prose. Designed to give students with some Japanese background proficiency in reading modern Japanese. Exact subject matter will depend on individual student's needs. Prerequisite: 201b.

410-3 **The Linguistic Structure of Japanese.** (Same as Linguistics 412.) Phonology and syntax of the Standard Japanese. Special emphasis on the contrastive analysis between Japanese and English. Typological similarities and lexical borrowings between Chinese and Japanese. Prerequisite: one year of Japanese or introduction to linguistics. Elective Pass/Fail.

LATIN (Minor, Courses)
(SEE CLASSICS)

RUSSIAN (Major, Minor, Courses)

Bachelor of Arts Degree, College of Liberal Arts

Russian courses above 100 level	36
200 level: 201a,b	8
300 level: 306, 320, 330, 305	14
400 level: at least two literature courses	14

Bachelor of Science Degree, College of Education or Bachelor of Arts Degree, College of Liberal Arts (with secondary school certification)

Russian courses above 100 level	36
200 level: 201a,b	8
300 level: 306, 320, 330, 305	14
400 level: at least one literature course and FL 436	14

Minor

Russian courses above 100 level	18
200 level: 201a,b or 278a,b ¹	6-8
300 level: 305, 306, or 320 plus any combination of 300 or 400 level courses	10-12

¹278, Translation Techniques, is designed for students majoring in fields other than Russian.

Courses

- 136-8 (4, 4) **Elementary Russian.** Emphasis on basic skills of listening, speaking, reading, and writing. No previous knowledge of Russian required. Must be taken in a,b sequence. Elective Pass/Fail.
- 201-8 (4, 4) **Intermediate Russian.** Continuation of the language structure with practice in oral and written Russian. Must be taken in a,b sequence. Prerequisite: 136 or two years of high school Russian or equivalent. Elective Pass/Fail.
- 278-6 (3, 3) **Translation Techniques.** Introduction to translation of material from humanities, social sciences, and sciences, accompanied by grammatical structure; discussion of techniques, procedures, methodology, and art of translation. The course is also designed for students majoring in departments other than foreign languages and literatures. Must be taken in a,b sequence. Prerequisite: 136b or two years of high school Russian or equivalent. Elective Pass/Fail.
- 288-6 (3, 3) **Russian as a Research Tool.** Reading of Russian articles with emphasis on grammar as a tool for reading comprehension; development of reading skills in various fields: humanities, social studies, science; development of interpretative and translation skills in student's own discipline. With consent of student's department, 288b satisfies the graduate school requirement for foreign language as a research tool. Students who have had one year of college Russian or the equivalent would normally enroll in 288b. This course is intended for graduate students. Undergraduates who wish to enroll are encouraged to consult with the instructor of the course.
- 305-4 **Advanced Conversation and Composition.** Improvement of self-expression, oral and written comprehension, free composition and conversation; readings based on the history of Russia, as well as readings of magazine and newspaper articles. Prerequisite: 201 or equivalent. Elective Pass/Fail.
- 306-3 **Intermediate Readings in Russian.** Designed to improve skills in reading selections from Russian prose. Prerequisite: 201 or equivalent. Elective Pass/Fail.
- 320-3 **Advanced Language Skills.** A review of fine points of grammar and polishing of student's syntax. Prerequisite: 201 or equivalent. Elective Pass/Fail.
- 330-4 **Introduction to Russian Literature.** Reading and analysis of the texts selected from Russian literature.
- 350-3 **Russian Phonetics.** Analysis of the sounds of Russian and their manner of production; intonation and stress; levels of speech, oral practice. Prerequisite: 201b. Elective Pass/Fail.
- 411-3 **Russian Stylistics.** Writing style in Russian and its application to the development of skill in written expression. Elective Pass/Fail.
- 415-3 **Russian Linguistic Structure.** Structural analysis of present-day Russian with special attention to morphology and syntax. Elective Pass/Fail.
- 430-4 **Business Russian.** A study of the style of commercial language and its application to the development of skill in business correspondence, such as: inquiries, offers, orders, contracts, agreements, as well as documents concerning transport, insurance, and customs. Prerequisite: 201 or 278 or equivalent. Elective Pass/Fail.
- 465-3 **Soviet Russian Literature.** Major fiction writers and literary trends since 1917. Lectures, readings, and reports. Elective Pass/Fail.
- 470-3 **Soviet Civilization.** Present day political, economic, and social institutions of the Soviet Union. Readings from contemporary news media. No previous knowledge of Russian required. Elective Pass/Fail.
- 475-2 to 3 **Travel-Study in USSR.** Specialized course comprising part of the travel-study program in the Union of Soviet Socialistic Republics. Prerequisite: 201 or equivalent. Elective Pass/Fail.
- 480-4 **Russian Realism.** Authors in 19th century Russian literature. Special attention to stylistic devices. Lectures, readings, and individual class reports. Elective Pass/Fail.
- 485-3 **Russian Poetry.** A study of literary trends and representative works of Russian poets. Elective Pass/Fail.
- 490-1 to 3 **Independent Study.** Directed independent study in a selected area. Prerequisite: consent of the Russian section head. Elective Pass/Fail.
- 501-2 **Seminar on a Selected Russian Author.**
- 502-2 **Seminar in Contemporary Russian Literature.**
- 514-3 **History of the Russian Language.**
- 599-1 to 6 **Thesis.**

SPANISH (Major, Minor, Courses)

Bachelor of Arts Degree, College of Liberal Arts

Spanish courses above 100 level	36
200 level: 201a,b or 275	5-6
300 level: 306; 310a,b and 315a,b (any 6 of the 12 hours); 320	12

400 level: 415 (Foreign Language 436 may be counted)	12
Spanish electives	6-7

Bachelor of Arts Degree, College of Liberal Arts (with a minor in secretarial and office specialties, for bilingual secretaries)

Spanish courses above 100 level	36
200 level: 201a,b or 275	5-6
300 level: 305, 306, 320, and 370 or 371	10
400 level: 412	12
Spanish electives	8-9

See secretarial and office specialties for a description of minor requirements.

**Bachelor of Science Degree, College of Education or
Bachelor of Arts Degree, College of Liberal Arts
(with secondary school certification)**

Spanish courses above 100 level	36
200 level: 201 a,b or 275	5-6
300 level: 306; 310a,b and 315a,b (any 6 of the 12 hours); 320	12
400 level: 415; Foreign Language 436	12
Spanish electives	6-7

Minor

Spanish courses above 100 level	18
200 level: 201a,b or 275	5-6
300 level: 320, 306	6
Spanish electives	6-7

Courses

- 140-8 (4, 4) First-Year Spanish.** Emphasis on basic skills of listening, speaking, reading, and writing. No previous knowledge of Spanish required. Must be taken in a,b sequence. Elective Pass/Fail.
- 175-5 First-Year Spanish Short Course.** An intensive course on the first-year level, with emphasis on the basic skills of listening, speaking, reading, and writing, and some introduction to the cultures of Spanish-speaking people. Prerequisite: one year of high-school Spanish or equivalent or special permission of instructor. Elective Pass/Fail.
- 201-6 (3, 3) Second-Year Spanish.** Continuation of grammar and composition. Exercises in language laboratory. Selected readings, with special attention to the role of Hispanic culture in world civilization. Must be taken in a,b sequence. Prerequisite: 140b or 175 or two years of high-school Spanish or equivalent. Elective Pass/Fail.
- 220-4 (2, 2) Spanish Conversation.** Practice in spoken Spanish. Prepared and impromptu group discussions on general topics and everyday situations. Frequent short talks by students. Prerequisite: 140b or 175 or two years of high-school Spanish. Elective Pass/Fail.
- 273-2 Study in Spain or Latin America.** Course taught as part of the summer study abroad program. Prerequisite: one year of college Spanish, or the equivalent. Elective Pass/Fail.
- 275-5 Second-Year Spanish Short Course.** A one-semester course which can be taken in lieu of the Spanish 201a,b sequence. Prerequisite: 175 or 140a,b or equivalent. Elective Pass/Fail.
- 288-6 (3, 3) Spanish as a Research Tool.** (a) Basic grammatical structure and vocabulary necessary to a reading knowledge of the language; (b) finalizes translation skills in the student's discipline. With consent of student's department, 288b satisfies the graduate school requirement for foreign language as a research tool. Students who have had one year of college Spanish or the equivalent would normally enroll in 288b. This course is intended for graduate students. Undergraduates who wish to enroll are encouraged to consult with the instructor of the course.
- 305-2 to 4 (2, 2) Advanced Conversation.** Improvement of self-expression and aural comprehension. Expansion of vocabulary and idioms emphasized through classroom and language laboratory work. Highly recommended for those students with a major in Spanish. Prerequisite: 201b or 275, and 220b. Elective Pass/Fail.
- 306-2 Intermediate Readings in Spanish.** Improves skills in reading Spanish. Prerequisite: 201b or 275 or equivalent. Elective Pass/Fail.
- 310-6 (3, 3) Survey of Spanish Literature.** The literature of Spain from its beginnings in the Middle Ages to our times. Need not be taken in sequence. Prerequisite: 306. Elective Pass/Fail.

- 315-6 (3, 3) Survey of Spanish American Literature.** Spanish literature in America from the conquest to modern times. Need not be taken in sequence. Prerequisite: 306. Elective Pass/Fail.
- 320-4 Third-Year Grammar and Composition.** Required of students with a major in Spanish and any student planning to teach the language. Prerequisite: 201b or 275 or equivalent. Elective Pass/Fail.
- 370-2 Spanish Civilization.** The cultural patterns and heritage of the Spanish people from earliest times to the present. Class discussion in Spanish will be emphasized in order to improve conversational skills. Prerequisite: 201b or 275 or equivalent. Elective Pass/Fail.
- 371-2 Latin-American Civilization.** Latin-American civilization from pre-Columbian times to the present. Class discussion in Spanish will be emphasized in order to improve conversational skills. Prerequisite: 201b or 275 or equivalent. Elective Pass/Fail.
- 412-3 Advanced Grammar and Composition.** Designed to improve language skills beyond the level of 320. Elective Pass/Fail.
- 415-3 The Linguistic Structure of Spanish.** Phonology and grammatical structure of Spanish. Examination of the features of the principal dialects. Elective Pass/Fail.
- 417-3 History of the Spanish Language.** Survey of internal and external history, from Vulgar Latin to Modern Spanish. Elective Pass/Fail.
- 419-3 Romance Philology.** (Same as French 419.) Historical and comparative study of the major Romance languages: their phonology, morphology and syntax. Elective Pass/Fail.
- 430-3 The Golden Age: Drama.** Plays of Lope de Vega, Calderon, Tirso de Molina, and others. Elective Pass/Fail.
- 431-3 Cervantes. *Don Quijote*.** Elective Pass/Fail.
- 434-2 Colonial Literature in Spanish America.** Study of the literature of Spanish America before 1825. Elective Pass/Fail.
- 450-3 Spanish Literature of the 19th Century.** Study of significant literary works of the periods of Romanticism and Realism in Spain. Elective Pass/Fail.
- 460-4 Spanish Literature of the 20th Century.** The main currents and outstanding works in the literature of Spain since 1900. Elective Pass/Fail.
- 485-4 (2, 2) The Spanish American Short Story.** Survey of the genre in Spanish America. (a) From the beginnings through the 19th Century. (b) The 20th Century. Elective Pass/Fail.
- 486-2 Spanish American Drama.** A survey of the development of the genre from the earliest times to the present. Elective Pass/Fail.
- 487-4 (2, 2) The Spanish American Novel.** Survey of the genre in Spanish America. (a) From the beginnings to 1940. (b) From 1940 to the present. Elective Pass/Fail.
- 488-3 Spanish American Poetry from Modernism to the Present.** Survey of the genre from the late 19th century up to the present. Elective Pass/Fail.
- 490-1 to 3 Readings in Spanish.** Directed independent readings in a selected area. Prerequisite: consent of department. Elective Pass/Fail.
- 502-3 to 6 (3, 3) Seminar in Hispanic Linguistics.**
- 503-3 to 6 (3, 3) Seminar in Peninsular Spanish Literature.**
- 504-3 to 6 (3, 3) Seminar in Spanish-American Literature.**
- 521-3 Medieval Spanish Literature.**
- 530-2 to 4 (2, 2) Spanish Literature of the Renaissance and Golden Age.**
- 535-2 to 4 (2, 2) Spanish American Literature before 1900.**
- 540-2 to 4 (2, 2) Spanish Literature of the 18th and 19th Centuries.**
- 560-2 to 4 (2, 2) Spanish Literature of the 20th Century.**
- 565-3 to 6 (3, 3) Spanish American Literature of the 20th Century.**
- 599-1 to 6 Thesis.**

Forestry (Department, Major, Courses)

Four specializations are offered within the major in forestry. General studies requirements and a core of professional courses are similar for most specializations. Courses specifically required in the various specializations may not be taken for pass/fail credit by students majoring in the Department of Forestry. The departmental program is accredited by the Society of American Foresters.

Available to the Department of Forestry for teaching and research in addition to resources present on campus are the following: the Crab Orchard National Wildlife Refuge; the Shawnee National Forest; a number of state parks and conservation areas; and the Kaskaskia Experimental Forest. Together these comprise more than a million acres of forest land, all in the vicinity of the University. Also accessible for forest products utilization teaching and research is a wood products plant located near the campus. Forest scientists of the U.S. For-

est Service (Forestry Sciences Laboratory) are affiliated with the Department of Forestry, and are authorized to participate in the educational activities of the department.

FORESTRY MAJOR—FORESTRY ENVIRONMENTAL ASSESSMENT SPECIALIZATION
This specialization provides training in the assessment of the environmental impact of forest resources development. Students to not attend the summer camp field studies but receive special field training in the preparation of environmental impact statements.

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Forestry with Forest Environmental Assessment Specialization</i>	85
Forestry Core 200, 201, 202, 240, 300, 301, 331, 409	23
Botany 200, 201; Zoology 118; Chemistry 140a, b; Biology 307	(12) ¹ + 7
Agricultural Industries 204; 3 hours in GSB sociology or substitute; GSB 212	(9) ¹ + 1
GSD 101, 118, 153; Mathematics 140, 283	(11) ¹ + 4
Botany 320 and 443 or 444	8
Forestry 310, 311, 312, 320, 405, 410, 411, 416, 430, 452, 452L, 453, 494a	37
Restricted Electives	5
<i>Total</i>	130

¹Hours included in total for General Studies requirements.

FORESTRY MAJOR—OUTDOOR RECREATION RESOURCE MANAGEMENT SPECIALIZATION
The program in outdoor recreation resource management provides interdisciplinary training for management of the nation’s outdoor recreation heritage. The courses offered are among those recommended by the National Recreation and Park Association. The recreation resource management student does not attend the field study session, but instead travels through selected sections of the United States on a three week tour of outdoor recreation and park facilities in August. During this period, the students pay transportation and living expenses which usually do not exceed \$200 per student. Other courses in this program may also require additional fees for materials and field trips.

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Forestry with Outdoor Recreation Resource Management Specialization</i>	75
Forestry Core 200, 201, 202, 240, 300, 301, 331, 409	23
Biology 307; Botany 200, 201; Chemistry 140a, b; Zoology 118	(12) ¹ + 7
Agricultural Industrial 204; 3 hours in GSB political science or substitute; 3 hours in GSB sociology or substitute	(9) ¹
GSC 107, 205; GSD 101, 118, 153; Mathematics 140, 283	(16) ¹ + 4
Plant and Soil Science 328a, b; Political Science 340; Geography 310; Zoology 468a, b	14
Forestry 311, 312, 320, 405, 411, 420, 421, 422T, 423	24
Restricted Electives	3 ²
<i>Total</i>	120

¹ Hours included in total for General Studies requirements.
² To be elected from social and managerial sciences, planning and design, or park arboriculture, or from a combination of these areas.

FORESTRY MAJOR—FOREST SCIENCE SPECIALIZATION

The forest science specialization is available for students desiring to later on enter a graduate program and concentrate in a given area of knowledge. The program provides maximum flexibility to enable students and their adviser to construct individual programs within the fields of study. The program of study may be selected from any subject area within the competence of the Department of Forestry faculty. Students must have a grade point average of 3.00 or higher in university or college level work to be eligible to enroll in this specialization. New students may enroll upon recommendation of an adviser in the Department of Forestry. Students must maintain a minimum grade point average of 3.00 to remain in the specialization. Students and advisory committees of two departmental faculty members will develop programs of study designed to meet the needs and objectives for the area of specialty selected.

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Forestry with Forest Science Specialization</i>	75
Forestry Core 200, 201, 202, 240, 300, 301, 331, 409.	23
Forestry and related electives	52 ¹
<i>Total</i>	120

¹The student and an academic adviser will select courses designed to meet the needs and objectives for the area of specialty selected.

FORESTRY MAJOR—FOREST RESOURCES MANAGEMENT SPECIALIZATION

The program in forest resources management includes instruction leading to careers in forest management and production, multiple-use resource management, and the forest products industries. The specialization includes areas of study recommended by the Society of American Foresters. Emphasis is upon integrated resource management of natural and renewable resources, coordinating forest utilization methods and conservation practices, and preserving our wildlands heritage. A five-week summer camp is required after the junior year to give the student practical field experience. Field study costs per student for living expenses and transportation usually do not exceed \$110. Living costs included here are for those nights spent away from campus. Other costs for equipment and supplies which are required for field study and certain other courses are specified in course descriptions.



General Studies Requirements	45
Requirements for Major in Forestry with Forest Resources	
Management Specialization.....	85
Forestry Core 200, 201, 202, 240, 300, 301, 331, 409.....	23
Biology 307; Botany 200, 201; Chemistry 140a, b;	
Zoology 118.....	(12) ¹ + 7
Agricultural Industries 204, 376, 377; 3 hours in GSB	
sociology or substitute; 3 hours in GSB political science	
or substitute	(9) ¹ + 4
GSD 101, 118, 153; Mathematics 140, 283	(11) ¹ + 4
GSE 101a.....	(1) ¹
Five-week early summer field studies:	
Forestry 300C, 310C, 312C, 320C	6
Forestry 310, 311, 312, 320, 405, 410, 411, 412, 416, 430	28
Restricted electives	13 ²
<hr/>	
Total.....	130

¹Hours included in total for General Studies requirements.
²At least one course (a total of 16 hours) to be selected from each of the following areas: forest science, business administration, law and law enforcement, biological science, physical science.

Courses

200-1 Introduction to Forestry. Acquaints students with the broad field of multiple-use forestry. Special emphasis is given to forestry as a profession. Required field trips cost \$15.00. Elective Pass/Fail.

201-3 Ecology of North American Forests. An introduction to forest ecology concepts, site factors, and forests of North America. Emphasis is placed on the silvics of tree species and the impact of soil, climate, and topography on forest vegetation. Forest site-community relationships in the boreal, northern hardwood-hemlock-white pine, central hardwood, and southern pine forest ecosystems will be discussed. Forestry majors must take 202 concurrently. Saturday field trip may be required. Extra costs total \$20.00 unless paid in 202. Prerequisite: Botany 201 and 202.

202-2 (1, 1) Tree Identification Laboratory. A two-semester course that teaches field and laboratory identification of trees and shrubs using leaf, twig, bark, and fruit characteristics. Saturday field trips may be required. Extra costs total \$20.00 unless paid in 201. Must be taken in a,b sequence, unless otherwise arranged with consent of instructor. Prerequisite: Botany 201 and 202.

240-4 Soil Science. (See Plant and Soil Science 240.)

300-3 Forest Resources Measurements. Introductory measurement, statistical and data processing concepts; volume, growth and yield of forest products; methods of sampling forest resources. Field trips. Prerequisite: Mathematics 140 and 283.

300C-1 Forest Resources Measurements Field Studies. Methods of determining volume and quality of forest products, forest resource inventory procedures, growth and productivity studies. Field trips. Prerequisite: 300.

301-3 Social Influences on Forestry. Study of, and practice in, methods used for effecting social change in forestry and allied natural resource fields. Case studies, readings, and actual practice in techniques are used to develop an understanding of historical and current trends. Prerequisite: a course in sociology and a course in political science.

310-4 Practices of Silviculture. Detailed study of classical concepts and recently developed techniques utilized in silvicultural treatment of forests. Major emphasis to be placed upon establishment, thinning, timber stand improvement, and regeneration of forest. Prerequisite: 331.

310C-2 Silviculture Field Studies. Field experience for the student in the various facets of silviculture including planting, thinning, harvesting, timber stand improvement and site-growth relationships. Offered only at summer camp. Costs for students are given in forestry description. Prerequisite: 331 and 310.

311-3 Resources Photogrammetry. The science and art of obtaining reliable measurement by means of photographs, detection of disease, insects and fire invasion by remote sensors; and delineation of resources boundaries through interpretation.

312-3 Protection of the Forest Environment. The impact, recognition, and control of destructive enemies within the forest environment. Includes fire, insects, disease, pollution, and climatic factors. Prerequisite: 331, Botany 200, Zoology 118, or consent of instructor.

312C-2 Forestry Protection Field Studies. The prevention and suppression of forest fires,

the recognition and control of insect and disease organisms and other destructive agents in the forest. Summer camp only. Cost per student given in the Forestry description. Requires additional expenses of approximately \$20.00 per student. Prerequisite: for forestry resource management option only-331, 202, 312.

313-3 Harvesting Forest Crops. Emphasis is given to lumber sale layouts, sale contracts, and harvest engineering methods. Consideration is given to the environmental impacts of harvesting. Additional cost: \$25. Prerequisite: 310 and 312.

320-2 Recreation in Wildlands Environments. Trends in recreational use of wildland environments and emphasis on state and federal parks and forests. Introductory concepts in recreation management, planning, and interpretation.

320C-1 Forest and Wildlands Recreation Field Studies. Recreation of forest and adjacent lands with emphasis on parks and national forests. Administration; interpretation; trends in use and development. Offered only at spring camp (costs per student are given in the Forestry description). Requires supplemental purchases of approximately \$2 per student.

331-3 Forest Ecosystems. An analysis and integration of tree growth and of forest structure, material and energy flow, and classification in relation to climatic and edaphic factors to provide an ecological basis for management of forest ecosystems. Prerequisite: 201, 202, 240, Biology 307.

341-3 Forestry Practices. The fundamentals of integrated resource management of timberlands. Management systems, tree and stand measurements. Planting and harvesting methods, multiple-use aspects of forest lands. Field trips. Emphasis on small forest ownerships. Not for graduation credit in forest resource s management option.

350-2 Woods as a Raw Material. Structure, identification, and properties of wood. Important species and the significance of wood use to the environment.

381-1 Forestry Seminar. Discussion of problems in or related to forestry. Prerequisite: junior standing, minimum 2.5 GPA, and consent of instructor.

391-1 to 4 Special Problems in Forest Resources. Independent research sufficiently important to require three hours per week of productive work for each hour of credit.

401-3 Fundamentals of Environmental Education. See Agriculture 401.)

402-3 Wildland Hydrology. Fundamentals of hydrology as related to forest and wildland water resources will be emphasized. Considerations will include the hydrologic cycle with emphasis on soil and groundwater regimes, evapotranspiration, surface and subsurface runoff, and the quantity and timing of water yield. Prerequisite: Mathematics 140.

405-2 Forest Management for Wildlife. Interrelations between forest practices and wildlife populations. Emphasis is on habitat requirements of different wildlife species and ways to manipulate the forest to improve wildlife habitats. Prerequisite: forestry major, or consent of instructor.

409-4 Forest Resources Decision-Making. Examines management planning decision-making for multiple-use forests particularly in the public sector. Reviews concepts useful for analyzing flow-resource problems, emphasizing systems approaches, introduces use of modern quantitative methods to evaluate resource use alternatives. Case studies. Prerequisite: 411, Mathematics 140.

410-3 Forest Resources Administration and Policy. Nature of administrative organizations and influences on behavior of organization members. Society influences causing changes in forestry related organizations. Policy formation and implementation, including roles of special interest groups. Prerequisite: 301.

411-3 Forest Resources Economics. Introduction to forest economics: Application of micro- and macro-economic principles to forest timber and non-timber production; capital theory; benefit-cost analysis; and economics of conservation. Prerequisite: Agriculture Industries 204 and Mathematics 140.

412-2 Tree Improvement. Basic theories and techniques of obtaining genetically superior trees for forest regeneration. Prerequisite: senior standing.

414-3 Information Management. The collection of physical, biological, and social variables in the field of forestry through sampling survey. The procedures of data manipulation and calculation and the presentation of graphs and tables.

416-3 Forest Resource Management. The application of business procedures and technical forestry principles to manage forest properties. Emphasis on integrated resource management for tangible and intangible benefits. Field trips and supplemental purchases approximately \$25.00 per student. Prerequisite: summer camp or consent of instructor.

417-2 Forest Land-Use Planning. Principles of location theory as a basis for determining land use; supply of forest land; population pressure and demand; conservation principles; determination of forest land values; institutional factors influencing forest land-use; forest taxation; special taxes, and capital gains. Taught in alternate years. Prerequisite: 411 or consent of instructor.

418-2 Marketing of Forest Products. The role of marketing in the forest industries; review of economic principles; product policy, planning the product line, pricing, marketing channels, marketing programs, marketing organization, and marketing research as influences on the marketing of lumber, wood products, pulp, and paper. Taught in alternate years. Prerequisite: 411 or consent of instructor.

420-3 Park and Wildlands Management. The management of state and federal parks and

recreation areas. A systems approach toward management and decision-making will be emphasized. Requires supplemental purchases of approximately \$5.00 per student. Prerequisite: 320C or 422T.

421-3 Recreation Land-Use Planning. Principles and methods for land-use planning of park and recreation environments with emphasis on large regional parks. Focus on planning process and types of information to gather and organize. Application in group field projects. Prerequisite: 320, 420, or consent of instructor.

422T-2 Park and Wildlands Management — Field Trip. A study of park conditions, visitors, and management practices at selected county, state, and federal park systems in the United States. Course requires a field trip and supplemental purchases costing approximately \$100.00 per student. Prerequisite: 320 or 320C and consent of instructor.

423-3 Environmental Interpretation. (See Agriculture 423.)

429-4 Wildland Watershed Analyses. A lecture/laboratory course designed to provide a practical knowledge of the equipment, procedures, and tests used in determining the quality and quantity of waters flowing within and out of wildlands. Prerequisite: Chemistry 140a.

430-3 Wildland Watershed Management. Emphasis is placed on the principles, technical problems, procedures, alternatives, and consequences encountered in managing wildland watersheds for the production of quality water in harmony with other uses. Prerequisite: 331, 402.

431-3 Regional Silviculture. Designed to evaluate the various silvicultural practices as they are commonly employed in various regions of the United States. Offered alternate years. Prerequisite: 310C.

451-2 Natural Resources Inventory. Theory and practical problems in biometrics to obtain estimates of natural resource populations. Use of computers and other advanced techniques. Case studies of inventory procedures. Field trip cost — maximum \$20. Prerequisite: 300 or consent of instructor.

452-2 Forest Soils. Characterization and fundamental concepts of forest soils and their relationship to forest communities and forest management practices. Emphasis is on the origin of forest soil material, soil forming processes, and the chemical, physical, and biological properties of soils as related to forests and forest management. Prerequisite: 240 or Plant and Soil Science 240 and concurrent enrollment in Forestry 452L.

452L-2 Forest Soils Laboratory. Companion laboratory for 452. Emphasis is on methods to characterize and evaluate the chemical, physical, and biological properties of forest soils. Prerequisite: 240 or Plant and Soil Science 240 and concurrent registration in Forestry 452.

453-2 Environmental Impact Assessment in Forestry. Methods of assessing the environmental impact of land-use systems on forest resources and assessing the impact of forest management systems on environmental quality are presented. Case studies culminating in the preparation of environmental impact statements are emphasized. Field trip cost, \$20. Prerequisite: senior standing in a natural resource major.

454-2 to 8 Forest Ecology Field Studies. A study of forest communities, soils, and site conditions in one of the following ecosystems: (a) Boreal; (b) lake states; (c) Southern Appalachians; (d) Southern pine. Course requires a field trip of about 10 days. Each trip is two semester credits; a maximum of 6 credits may be applied toward graduate credit. Estimated cost \$125.00 per trip. Prerequisite: senior standing in natural resources or biological sciences, courses in tree identification, forest ecology, and soils, and consent of instructor.

460-2 Forest Industries. Analysis of raw material requirements, the processes and the products of forest industries. The environmental impact of each forest industry will also be discussed.

492-1 to 4 Special Studies for Honor Students. Research and individual problems in forestry. Prerequisite: consent of the department chairperson and a 3.0 minimum grade point average.

494-1 to 6 Practicum. Supervised practicum experience in a professional setting. Emphasis on administration, supervision, teaching and program leadership in community, school, park, forest, institution and public or private agencies. Students should enroll according to their curriculum specialization: (a) Forest environmental assessment, (b) Outdoor recreation resource management, (c) Forest resources management. Prerequisite: consent of instructor.

500-2 Principles of Research.

501-1 Graduate Seminar.

511-2 Advanced Forest Resources Economics.

512-2 Tree Selection and Breeding.

516-2 Advanced Forest Management.

520-2 Advanced Park Planning.

521-2 Recreation Behavior in Wildlands Environments.

530-2 Forest Site Evaluation.

531-2 Biological Productivity of Forests.

588-1 to 6 International Graduate Studies.

590-1 to 4 Readings in Forest Resources.

593-1 to 4 Individual Research.

599-1 to 6 Thesis.

Geography (Department, Major, Courses)

The Department of Geography offers three programs to undergraduate students. The Bachelor of Arts and the Bachelor of Science are offered through the College of Liberal Arts and the Bachelor of Science degree is offered through the College of Education. A minor is required of all geography majors and should be arranged in consultation with the department. Junior college transfer students interested in geography are encouraged to visit the department to determine possibilities for waivers, proficiencies, and transfer credit substitution.

Honors in geography is a special three semester program available to majors with an overall grade point average of 3.00 or better. Interested students should apply during the junior year to obtain departmental consent prior to initiation of an honors program.

The core of the major program involves 300- and 400-level courses. Geography 300, the first course in a major's program, gives a basic foundation in the topics and fields of research within geography. It acquaints students with the viewpoints and methods of geography, the concepts and theories in geography, and maps and quantitative methods, the basic techniques and tools used by the geographer. In addition to Geography 300, at least three 300-level and three 400-level courses are required. Offered are 400-level courses in resource management and physical environment systems, urban and regional planning, and geographic techniques.

The minor requirement for geography majors may be formed in either of two ways. It may be a regular minor from another department or it may be an interdisciplinary selection of courses created in consultation with the department.

Students minoring in geography must take Geography 300 or GSB 103, three 300-level courses and one 400-level course. Geography 300 has been approved as a substitute for GSB 103 for the General Studies requirement. Social studies students with a 9-hour concentration must take Geography 300 or GSB 103 and complete their concentration with electives from geography.

Bachelor of Arts or Bachelor of Science Degree, College of Liberal Arts

GEOGRAPHY MAJOR—GENERAL

These courses provide the base for those seeking a broad understanding of the field of geography and who have interests in preparing for graduate study or in applying geography in teaching, industry or government.

<i>General Studies Requirements</i>	45
<i>Supplementary College Requirements</i> (See page 78.)	(4) + 8-14
<i>Requirements for Major in Geography</i>	30-32
Geography 300 or GSB 103	3
Any three: Geography 302, 304, 306, 310, or one regional course	8-9
Any 400 level courses	11-12
Electives in Geography selected with the approval of the department	6-8
<i>Minor (or selection of courses complimentary to major)</i>	15
<i>Electives</i>	14-20
<i>Total</i>	120

GEOGRAPHY MAJOR—ENVIRONMENTAL STUDIES AND PLANNING SPECIALIZATION

These courses are for those interested in entering the planning field or in pre-

paring for graduate study in urban or regional planning or some aspect of environmental analysis.

<i>General Studies Requirements</i>	45
<i>Supplementary College Requirements</i> (See page 70.)	(4) + 8-14
<i>Requirements for Geography Major with Environmental Studies and Planning Specialization</i>	30
Geography 300, 302, 310, 410, 421, 424, 425, 432, and 470a or 471	
<i>Minor Equivalent (15 hours)</i>	15
Many courses offered in other departments support the geography major with an emphasis in environmental planning. For a complete list see the geography undergraduate program director or the College of Liberal Arts Advisement Center.	
<i>Electives</i>	16-22
<i>Total</i>	120

Bachelor of Science Degree, College of Education

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Geography</i>	32-34
Geography 300 or GSB 103 and 443	6
Any three: 302, 304, 306, 310, or one regional course	8-9
Any 400 level courses	11-12
Electives in Geography selected with the approval of the department	5-7
<i>Professional Education Requirements</i>	24
See Teacher Education Program, page 71.	
<i>Minor (or selection of courses complimentary to major)</i>	15 ¹
<i>Electives</i>	2-4
<i>Total</i>	120

¹Students who intend the use of the minor for teacher certification must complete a minimum of 18 semester hours in the minor.

Minor

COLLEGE OF LIBERAL ARTS

A minor in geography requires	15-16
Geography 300 or GSB 103	3
Any three: 302, 304, 306, 310 or one regional course	8-9
400 level courses	3-4

COLLEGE OF EDUCATION

A minor in geography requires	18-20
Geography 300 or GSB 103	3
Any two: 302, 304, 306, 310, or one regional course	5-6
400 level courses	7-8
Geography 443	3

Courses

202-2 Contemporary World Geography: Selected Regions and Places. A geographic study of selected regions and places of particular or current interest in the world. Some attention given to world overview and place names.

212-2 Maps and Mapping. History of cartography; properties, uses, and sources of maps and air photos.

224-3 Geography of Natural Hazards. Damage from natural hazards in the United States is on the rise while loss-of-life has been declining. Losses from earthquakes, floods, hurricanes, tornadoes, drought, hail and urban snow in the United States are reviewed. The range of alternatives to cope with natural hazards are appraised; and special attention is

given to problems characteristic of all natural hazards—warnings, relief and rehabilitation, insurance, and land-use management.

258-1 to 5 Work Experience in Geography. Work experience in tasks specifically related to the field of geography such as are found in cartography and map work, climatology, and resource management. Prerequisite: geography major and consent of department. Mandatory Pass/Fail.

300-3 Introduction to Geography. The nature of geography, the kinds of problems which it investigates, the methods which it uses. Charges not to exceed \$5 for field trips.

302-3 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 people. Field trip and laboratory work. Charges not to exceed \$5 for field trips. Prerequisite: 300 or consent. Elective Pass/Fail.

304-3 Economic Geography. Study of the spatial distribution and interaction of economic activities. Introduction to locational theory. Prerequisite: 300 or consent. Elective Pass/Fail.

306-3 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: 300 or consent. Elective Pass/Fail.

310-3 Introductory Cartography. Properties of maps and air photos, their use and sources; map symbols, map projections and map construction. Introduction to the use of quantitative techniques as applied in geographic study. Laboratory. Charges not to exceed \$2 for supplies. Prerequisite: 300 or consent. Elective Pass/Fail.

326-3 Geography of Urban Environments. Explores the historic and present relationship between people and the urban environment, and between urban places and the sites which they occupy. Systems of measuring environmental quality are reviewed along with methods of assessing and forecasting change in the total urban environment. Elective Pass/Fail.

331-2 The Human Use of Climate. Introduces the basic concepts in the functioning of the climatic environment at the earth's surfaces and develops a holistic view of the way parts and processes of the earth interact through exchanges of energy and water with reference to questions of the human use of the earth. Elective Pass/Fail.

332-3 Oceanography. A systematic review of the world's oceans, with study of the nature of ocean water, the role of oceans in the Hydrologic Cycle, characteristics of ocean basins, the transport of ocean water, materials and energy exchanges in the oceans, and ocean management and resource problems. Elective Pass/Fail.

360-3 Geography of Illinois. Introduces and explores some of the spatial elements of the physical and human geography of the State of Illinois through a comparative analysis of the urban and rural lifespaces. Specific geographic issues and problems are selected by the students for group discussion and analysis. Charges not to exceed \$5 for field trips. Elective Pass/Fail.

362-2 Regional Geography of Europe. Introduces present-day Europe. Survey of the area and an investigation of problems and issues affecting the region. Elective Pass/Fail.

363-2 Regional Geography of Mediterranean Lands and Southwestern Asia. Geography of northern Africa and the near East in a systematic context. Settlement and land use patterns, cultural history and diversity, and contemporary problems. Elective Pass/Fail.

364-2 Regional Geography: Soviet World. Introduction to and survey of the Soviet world and investigation of problems and issues affecting the region. Elective Pass/Fail.

365-2 Regional Geography of Subsaharan Africa. (Same as Black American Studies 380.) Analysis and explanation of emerging spatial pattern of socio-economic development in Africa as most meaningful to the geographer in assessing the continent's transition from traditional to modern political, social, and economic systems. Elective Pass/Fail.

366-2 Regional Geography: Eastern and Southern Asia. Introduces present-day Eastern and Southern Asia. Survey of the area and an investigation of problems and issues affecting the region. Elective Pass/Fail.

367-2 Regional Geography of South America. Analysis of the landscapes of tropical and Andean South America. Historical background of current patterns and problems. Present and future development problems in terms of natural resources, economic, and agriculture systems, and ethnic and settlement patterns. Elective Pass/Fail.

368-2 Regional Geography of Middle America. Interrelationships of groups of humans and their physical and social environments in Middle America. Emphasizes historical depth of perspective. Clarifies the origin of problems in the region. Elective Pass/Fail.

369-2 Regional Geography of Oceania. Introduces present day Oceania. Survey of the area and investigation of specific problems and issues affecting the region. Elective Pass/Fail.

404-3 Spatial Analysis. The purpose of this course is to equip the student with a series of perspectives and tools with which to view spatial phenomena. Emphasis is placed on methodological approaches to the analysis of areal distributions and phenomena. Longitudinal analysis of data is included. Prerequisite: 300. Geography 410 is advisable or consent of instructor. Elective Pass/Fail.

406-2 Advanced Social Geography. 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 or consent. Elective Pass/Fail.

410-4 Techniques in Geography. Geographic applications of basic and advanced statistical and mathematical techniques, including basic descriptive statistics, hypothesis testing, regression and correlation, analysis of variance, and nonparametric statistics. Special emphasis on areal measures: nearest neighbor analysis, etc. Prerequisite: 300 or consent. Elective Pass/Fail.

416-4 Specialized and Computer Mapping. Introduction to computer mapping, mapping from air photos, specialized cartographic problems based on individual student interests. Laboratory. Charges not to exceed \$2 for supplies. Prerequisite: 310 or consent. Elective Pass/Fail.

418-3 Management of Spatial Data Bases. Introduces students to the use of specialized computer programs for the collection, storage, analysis, and mapping of spatial data. A simplified methodology makes the techniques available to students with no previous computer experience. Elective Pass/Fail.

421-2 Urban Geography. Examination of extracity relationships—theory and structure; intra-city relationships—theory and structure, and selected urban problems. Offered once annually. Prerequisite: 300 or consent. Elective Pass/Fail.

422-4 Economics in Geography and Planning. (Same as Economics 425.) Concepts, symbols, language, theory, and elementary mathematics of economics and geography. Individual's preferences, production functions, the firm, markets, optimality, externalities, and welfare economics. Elementary mathematics of time and intertemporal criteria. Prerequisite: 300 or consent of instructor. Elective Pass/Fail.

424-4 Natural Resources Planning. Literature in resource management problems. Emphasis on theory, methods of measurement and evaluation concerning implications of public policy. The role of resources in economic development and regional planning, water and related land resource problems, and environmental quality from a multi-disciplinary perspective. Prerequisite: 304 or consent. Elective Pass/Fail.

425-4 Water Resource Planning Simulation. A review of water resource planning theory and practice from a physical, technological, economic, social, and geographical viewpoint. Students design a comprehensive water resource plan including flood control, water supply, water quality, and recreation for a city of 175,000 population. This plan is "Played" against a 50-year trace of hydrologic parameters in a computer simulation. Prerequisite: 424 or consent. Elective Pass/Fail.

427-3 Environmental Perception and Planning. Deals with a description and assessment of the relevance of normative and descriptive theories of decision-making and theories of choice for public policy and environmental management. Studies of the perception of urban environments and other landscapes such as wilderness areas, and perception of and human response toward natural hazards will be considered. Prerequisite: 224 or consent. Elective Pass/Fail.

430-3 Theory of Environment. Exploration of the hypothesis that the physical environment works on local hydrology, soils, and natural vegetation, agriculture, and landforms, through energy and moisture exchanges. Emphasis on model building for comparison of subsystems, to rate effectiveness of contrasting environments, and to project these consequences to environmental management questions. Prerequisite: 302 or consent. Elective Pass/Fail.

431-2 Medical Geography. Deals with the distribution of diseases and attempts to use the operational concepts of human ecology as a point of departure. A brief historical outline and an introduction to public health, epidemiology, and related fields is provided. Problems of communicable and chronic diseases, nutritional deficiency, geochemical relations, biometeorology and medical climatology, environmental pollution, and seasonal disease calendars are emphasized. Taught by Department of Geography staff. Prerequisite: 300 or consent. Elective Pass/Fail.

432-4 Physical Environments of Cities. Energy and moisture budget concepts are developed from basic principles. Microclimatic data, instrumentation and applications stress urban examples. Models of climatic effects and modeling of people's effects concern city climates mainly. Charge not to exceed \$5 for field trips. Prerequisite: 302 or 430 or consent. Elective Pass/Fail.

433-3 Advanced Physical Geography. Topics may include landforms, climate, soil or water. Varies with the interest of the instructor. Prerequisite: 302 or consent. Elective Pass/Fail.

434-4 Water Resources Hydrology. Microclimatic factors which affect the hydrologic events of various climatic regions are treated extensively. Methods of estimating geographic variations in hydrologic relations to climatic and microclimate especially evapotranspiration, are compared and evaluated. Consequences of alternative land uses on

climate and hydrology are considered regionally. Charges are not to exceed \$10 for field trips. Prerequisite: 302 or 430 or consent. Elective Pass/Fail.

438-3 Applied Meteorology. Analysis of meteorological patterns approached through study of several case histories. Evaluation of meteorological data, air mass and frontal analysis, development of weather forecasts, study of meteorological instruments, clouds, and precipitation patterns. Charges not to exceed \$5 for field trips, \$5 for supplies. Prerequisite: GSA 330 or consent of instructor. Elective Pass/Fail.

439-3 Climatic Change—Inevitable and Inadvertent. The geologic time-scale perspective of major natural events that have affected the theoretical steady-state climate, and factors in contemporary societal practices that have brought about inadvertent climatic modification. An assessment of the means and extremes of parameter values in the geologic time-scale perspective studied will be compared with the documented and present-day climatic parameter means and extremes. Approaches to prognoses for the Earth's future climatic state will be made. Charges not to exceed \$10 for field trips. Elective Pass/Fail.

440-2 Tutorial in Geography. Prerequisite: geography major, senior standing.

443-3 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. Charges not to exceed \$3 for field trips. Prerequisite: 300. Elective Pass/Fail.

470-6 to 9 (3, 1 or 2, 2 to 4) Urban Planning. (Same as Political Science 447.) (a) Planning concepts and methods. Charges not to exceed \$8 for field trips. (b) Field problems. (c) Planning and public administration internship (for undergraduate credit only). Prerequisite: consent of department. Elective Pass/Fail.

471-3 Regional Planning. A study of the viewpoints, methodology, and experiences of various types of regional planning in the United States; some attention given to state and national scale planning. Prerequisite: 300 or consent. Elective Pass/Fail.

487-6 (1, 2, 3) Honors in Geography. (a) Honors tutorial; (b) Honors reading; (c) Honors supervised research. Must be spread over the last two years of the undergraduate's career. May be taken in either a,b,c or b,a,c sequence. Prerequisite: consent of department. Elective Pass/Fail.

490-2 to 4 Readings in Geography. Supervised readings in selected subjects. Prerequisite: geography major, advanced standing. Elective Pass/Fail.

500-4 Principles of Research.

510-4 Multivariate Techniques in Geography.

511-2 Philosophy of Geography.

514-2 College Teaching of Geography.

520-2 to 4 Seminar in Physical Systems Evaluation.

521-2 to 4 Seminar in Resource Planning.

522-4 Seminar in Economics in Geography and Planning II.

524-2 to 4 Seminar in Social Geography.

527-2 to 4 Seminar in Urban and Regional Planning.

570-2 to 4 Planning Internship.

591-2 to 4 Independent Studies in Geography.

593A-2 to 24 (2 to 6 per semester) Research in Physical Geography.

593B-2 to 24 (2 to 6 per semester) Research in Economic Geography.

593C-2 to 24 (2 to 6 per semester) Research in Urban and Regional Planning.

593D-2 to 24 (2 to 6 per semester) Research in Social Geography.

596-2 to 4 Field Course.

599-2 to 6 Thesis.

600-1 to 32 (1 to 16 per semester) Dissertation.

Geology (Department, Major, Courses)

In the field of geology a student may work toward either a Bachelor of Arts or Bachelor of Science degree.

The Bachelor of Arts degree requires a major in geology but is a flexible program, permitting a student to combine training in geology with courses in other areas of interest, such as peripheral sciences, management, or pre-law. A minor is optional. Having obtained a Bachelor of Arts degree, students may continue their education toward a Master of Science degree in geology, although it may be necessary to absolve deficiencies in physics and mathematics.

The Bachelor of Science degree requires a major in geology and courses in biology, chemistry, mathematics, physics, and science electives. This degree will ordinarily be pursued by students desiring to do graduate work in geology or to become professional geologists.

Bachelor of Arts Degree, College of Science

<i>General Studies Requirements</i>	45 ¹
<i>Supplementary College of Science Requirements</i>	5
Mathematics 110a,b or 111	(4) + 1
Foreign Languages	(4) + 4
Biological Sciences (Not General Studies)	(6) ³
<i>Requirements for Major in Geology</i>	41-46
Geology 220, 221, 302, 310, 315, 325, 374, 425, and 450 or 454 ⁴	30-34
Chemistry 222 or 224 and 225	7-8 ²
Physics 203a, 253a or 205a, 255a	4 ²
<i>Electives</i>	24-29
<i>Total</i>	120

¹The 45 hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Studies courses.
²Courses will also meet the physical science requirement for the College of Science.
³If courses which have been approved as General Studies substitutes are taken, they will count as a part of the 45 hours in General Studies.
⁴The summer field geology course, Geology 454, should be taken between the junior and senior years.

Bachelor of Science Degree, College of Science

<i>General Studies Requirements</i>	45 ¹
<i>Supplementary College of Science Requirements</i>	5
Mathematics 110a,b or 111	(4) + 1
Foreign Languages	(4) + 4
Biological Sciences (Not General Studies)	(6) ⁴
<i>Requirements for Major in Geology</i>	67-68
Geology 220, 221, 302, 310, 315, 325, 374, 415, 425, 454 ³	37
Geology electives	5
Mathematics 150	4
Chemistry 222 or 224, 225	7-8 ²
Physics 203a,b, 253a,b, or 205a,b, 255a,b,	8 ²
Electives in supporting sciences or technology (to be approved by geology undergraduate adviser)	6
<i>Electives</i>	2-3
<i>Total</i>	120

¹The 45 hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Studies courses.
²Courses will also meet the physical science requirement for the College of Science.
³The summer field geology course, Geology 454, should be taken between the junior and senior years.
⁴If courses which have been approved as General Studies substitutes are taken, they will count as a part of the 45 hours in General Studies.

Minor

A minor consists of 16 hours, determined by consultation with the geology adviser.

Courses

Courses with a laboratory may require purchase of a laboratory manual and a supply fee. All courses requiring field trips may have a field trip cost of approximately \$2 to \$7.

220-3 Physical Geology. Introduction to the structure and composition of the earth, and concept of geologic time, and the physical and chemical processes that operate to modify

- the earth and its surface. Speculations concerning the origin and early development of the earth. Two lectures and one three hour laboratory. One Saturday field trip required. Prerequisite: high school or college chemistry. Elective Pass/Fail.
- 221-3 Historical Geology.** Principles and methods of interpreting Earth's history. General view and selected examples of Earth's physical, biological, and chemical history. Laboratory and field trips required. Prerequisite: 220; a biology course recommended. Elective Pass/Fail.
- 302-4 Fundamentals of Structural Geology I.** An introduction to structural geology including a study of the forces involved in the deformation of the earth's crust, with special emphasis on the recognition and interpretation of the resultant geologic features. Laboratory and two Saturday field trips required. Prerequisite: 220, Mathematics 110. Recommended: Physics 203, 204, or 205 or concurrent enrollment. Elective Pass/Fail.
- 310-4 Mineralogy.** Rudiments of crystal structure, morphology and symmetry. Introduction to crystal chemistry. Study of the properties, chemistry, occurrence and identification of common rock-forming and economically important minerals. Lecture-laboratory. Prerequisite: 220, Chemistry 222, Elective Pass/Fail.
- 315-3 Igneous and Metamorphic Petrology.** The characteristics and classification of igneous and metamorphic rocks, their origin and geologic distribution. Laboratory. Field trip required. Prerequisite: 310; 415 recommended. Elective Pass/Fail.
- 325-4 Sedimentology and Stratigraphy.** The characteristic features of sedimentary rocks and the physical and chemical processes responsible for their origin and diagenesis. The classification of stratigraphic units, methods of correlation, and paleogeologic reconstruction. Laboratory and field trips required. Prerequisite: 220, 221, 310; 415 recommended. Elective Pass/Fail.
- 330-3 Geology of Illinois.** For non-majors and beginners. The physical nature of Illinois, its landforms, rocks and soil, geologic history of its formation, active processes and hazards today. Resource development, land and water use and management. Laboratory provides for individual interests in collecting, photography, ecology, planning, etc. Elective Pass/Fail.
- 374-3 Geomorphology.** Study of the erosional and depositional processes operating at the earth's surface and the landforms resulting from these processes. Relationship of processes and landforms to the geologic framework is examined. Laboratory. Prerequisite: 220. Elective Pass/Fail.
- 400-2 Earth Science Seminar.** Designed to integrate the basic concepts of earth science gained through courses taken in several departments. Focus on one or more local problems such as development and management of Cedar Creek Reservoir. Prerequisite: GSA 110, upper class standing or consent of department. Elective Pass/Fail.
- 413-3 Quantitative Methods in Geology.** An introduction to quantitative methods in a geological and earth sciences context. Topics introduced include sampling plans for geological studies, non-parametric tests of geological data, comparisons of geological samples, analysis of sequential geological data. Laboratories will deal with numerical examples from all areas of geology. Prerequisite: advanced standing and consent of instructor. Elective Pass/Fail.
- 414-1 to 2 Paleobotany.** (See Botany 414.) Elective Pass/Fail.
- 415-3 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. Lecture, laboratory. Prerequisite: 310, Physics 203b, 204b, or 205b. Elective Pass/Fail.
- 416-3 X-ray Crystallography.** (Same as Chemistry 416.) 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. Prerequisite: 310, Mathematics 150 or consent. Elective Pass/Fail.
- 417-3 Isotope Geochemistry.** Stable and radioactive isotopes and the applications of isotopic studies to igneous and metamorphic petrology, ore deposits, sedimentology, surface processes, geothermometry, and geochronology. Introduction to isotopic techniques and mass spectroscopy. Laboratory or research project required. Prerequisite: 310, 315 and 325 or consent. Recommended: Physics 203, Mathematics 150 and Geology 419.
- 418-3 Low Temperature Geochemistry.** The application of chemical principles to geologic processes that occur on and near the earth's surface. Lecture, laboratory. Prerequisite: 310, Chemistry 222 or equivalent. Elective Pass/Fail.
- 419-4 Ore Deposits.** The geological and other factors that govern the exploration for and occurrence of metalliferous mineral deposits. Study of the geological settings of the major types of ore deposits. Lecture, laboratories, and field trips. Prerequisite: 302, 315. Elective Pass/Fail.
- 420-3 Petroleum Geology.** 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 and natural gas. Prerequisite: 221, 302. Elective Pass/Fail.
- 425-4 Invertebrate Paleontology.** Principles of paleontology and a survey of the impor-

tant invertebrate phyla and their fossil representatives. Laboratory. Field trips required. Prerequisite: 221, a biology course. Elective Pass/Fail.

428-3 Paleocology and Environments of Deposition. Characteristics, distribution, and classification of recent and ancient environments. Criteria for recognizing ancient environments. Sedimentological and paleocological approaches. Recognition of ancient environments and environmental associations. Laboratory. Field trips required. Prerequisite: 425, 325 or concurrent enrollment. Elective Pass/Fail.

430-3 Physiography of North America. A regional study of North American landforms and their origins. The approach designed to give interaction among students, stimulus in organization and presentation of material and library competence. Plan a trip for optimum view of North American physiography. Prerequisite: 220. Elective Pass/Fail.

435-3 Hydrogeology. A problem-solving oriented course which covers the analysis and interpretation of the distribution, origin, movement, and chemistry of ground water. Laboratory. Prerequisite: 220, Mathematics 250. Elective Pass/Fail.

436-4 Elementary Exploration Geophysics. Theory and practice of geophysics as applied to the exploration and development of natural resources. Laboratory involves use of geophysical instruments and interpretation of data. Field trips required. Prerequisite: 220, Mathematics 150. Elective Pass/Fail.

437-3 Field Course in Geophysics. Use of geophysical equipment for collection, analysis and interpretation of seismic, gravity, magnetic, electrical, and other types of geophysical data. Prerequisite: 436 or consent.

440-1 to 4 Advanced Topics in the Geological Sciences. Individual study or research or advanced studies in various topics. Prerequisite: advanced standing and consent of instructor. Elective Pass/Fail.

445-3 Museum Studies in Geology. History, nature and purpose of geology in museums, relationships of geology to other museum disciplines, application of geologic methods to museum functions, preparation and preservation of specimens; nature, acquisition and utilization of geologic collections in museums, role of research in museums.

449-1 to 2 Internship. Credit for professional experience in the geological sciences. Arrangements made with chairperson. Prerequisite: advanced standing. Elective Pass/Fail.

450-2 Introduction to Field Geology. Introduction to field techniques, principles of geologic mapping and map interpretation. Field trip fee \$5.00. Prerequisite: 302, 315 or concurrent enrollment. Elective Pass/Fail.

454-6 Field Geology. Advanced field mapping in the Rocky Mountains, including problems in stratigraphy, structure, petrology, paleontology, geomorphology, and economic geology. Transportation cost approximately \$100.00, supplies \$6.00. Prerequisite: 302, 315; 450 recommended. Elective Pass/Fail.

455-3 Engineering Geology. (Same as Engineering 455.) An examination of problems posed by geology in the design, construction, and maintenance of engineering works. Topics studied include ground water, land subsidence, earthquakes, and rock and soil mechanics. Two term papers and a field trip required. Prerequisite: 220 or consent. Elective Pass/Fail.

460-3 Geological Data Processing. Computer applications to geological problems including the processing and programming of data and the interpretation and evaluation of results. Lecture, laboratory. Prerequisite: Engineering 222 or Computer Science 202. Elective Pass/Fail.

462-3 Fundamentals of Structural Geology II. Intermediate topics in structural geology including strain theory, field strain analysis, geometry of complex mesoscopic structures and introduction to dislocations, deformation history, and microfabric analysis. Hypotheses and orogenesis are discussed and evaluated. Lecture and assigned problems only. Prerequisite: 302 or equivalent.

465-3 Evolution of Orogenic Belts. A combination of lectures and seminars in which the structural and petrological development of specific orogenic belts is investigated in detail. Prerequisite: 302, 315 or equivalent. Elective Pass/Fail.

470-3 Earth Science for Teachers. Designed to help each teacher improve knowledge and skills of the earth sciences, develop units, laboratories, and resources for the classroom. Subjects range from rocks and landforms to weather; from local geology to specific resource people. Prerequisite: teaching experience. Elective Pass/Fail.

476-3 Pleistocene Geology. Deposits, stratigraphy, and history of the Pleistocene epoch. Evidence for differentiating and dating the glacial and interglacial sequence examined including deep sea cores, soils, magnetic studies. Required field trips. Prerequisite: 220, 221. Elective Pass/Fail.

478-3 Environmental Geology. Identification of geological conditions and processes which affect people's use of the environment: earth materials and structure, climate, water, topography, active geologic processes, hazards; impact of extraction, construction, water collection and control, and waste disposal. Introduction to aims and responsibilities of government regulatory agencies, environmental groups, and industry. Lecture, laboratory, field trips, individual projects, and reports. Prerequisite: 220 or equivalent and advanced standing.

480-3 Geology of Coal. Geology as related to exploration, development and mining of coal;

stratigraphy, sedimentation and structure of coal deposits; type of coal basins and their tectonic setting; concepts of cyclical deposition in coal basins; origin of splits and partings in coal seams; relationship of modern environments and ancient coal-forming environments; structural problems relevant to exploration and mining of coal; methods of resource evaluation. Three 1-hour lectures/week; five ½ day field trips.

482-3 Coal Petrology. Structural features and microscopy of coal seams. Origin and alteration of coal constituents. Includes field trips, study of coal specimens, and techniques. Prerequisite: 220 and 221 or consent of instructor. Elective Pass/Fail.

484-3 Palynology. (Same as Botany 484.) Taxonomy, morphology, stratigraphic distribution, and ecology of fossil pollen, spores, and associated microfossils. Prerequisite: 220, 221, or consent of instructor. Elective Pass/Fail.

500-1 to 2 Teaching for Geology Graduate Students.

510-3 Advanced Sedimentation.

513-2 Advanced Geologic Data Analysis.

516-3 Industrial Rocks and Minerals.

518-3 Clay Mineralogy.

520-3 Igneous Petrology.

521-3 Metamorphic Petrology.

522-3 Sedimentary Petrology—Siliciclastics.

523-3 Sedimentary Petrology—Carbonates.

526-3 Advanced Topics in Applied Paleocology.

527-3 Micropaleontology.

529-1 to 3 (1 per topic) Advanced Topics in Applied Invertebrate Paleontology.

535-3 Advanced Hydrogeology.

537-3 Applied Seismology.

538-3 Gravity and Magnetism.

542-2 (1, 1) Seminar in Geology.

565-3 Rock Deformation and Structural Systems.

578-3 Fluvial Geomorphology.

579-3 Advanced Geomorphology.

582-1 to 6 (1 to 3 per semester) Advanced Coal Petrology.

599-1 to 6 Thesis.

Guidance and Educational Psychology

(Department, Major [Graduate Only], Courses)

The Department of Guidance and Educational Psychology does not offer an undergraduate major but offers courses for undergraduate credit which serve as electives for students in other programs.

Courses

100-2 Decision Making for Career Development. Examination of factors relating to career decision making. Emphasis on the continuous use of learned processes and information in vocational development. Supplementary group guidance and counseling sessions required. Charges may be assessed to cover the cost of administering and scoring occupational interest surveys to be given during the course. These charges should be less than \$10.00.

307-3 Educational Psychology. The basic factors involved in the teaching-learning process including student characteristics, motivation, learning, and teacher-student relationships. The course activities are intended to prepare the student with a basic foundation in educational psychology for the purpose of teaching.

380-1 to 4 Practicum in Instructional Roles. One semester hour of credit for every three modules selected. Application of educational psychology in a practical teacher-learner situation. Class members conduct actual instructional activities with individuals or groups of students. Field activities are required and the students may be required to purchase additional materials not to exceed \$20. Prerequisite: consent of instructor.

412-3 Human Behavior and Mental Health. A study of the principles of human needs, mechanisms of adjustment, and factors and conditions in life that tend to affect mental health. Prerequisite: junior or senior standing.

422-3 Assessment and Classroom Models. Classroom tests, measurement, standardized tests, grading, and the research knowledge in the application of ability grouping, team teaching, open education, and individualization.

442-3 Introduction to Counseling and Guidance Systems. The following topics will be covered: purposes of counseling and guidance; counselor roles in various settings; approaches to counseling; guidance activities; and application of the above.

481-1 to 12 Seminar. Conducted by staff members and distinguished guest lecturers on pertinent topics. Prerequisite: consent of instructor and department.

491-1 to 6 Special Research Problems—Individual Study. For majors. Formulating, investigating, and reporting on a problem in the area of guidance. Prerequisite: advanced standing and consent of department.

494-3 Child Counseling Practicum. A combined seminar, laboratory, and field experience representing the central focus of the program in elementary counseling. Enables the student to practice the role of the counselor under close supervision. During the semester, the student is required to spend 30-50 hours in actual counseling and consulting. Prerequisite: 537 and 3 additional hours from substantive course work in the guidance and counseling program.

494B-3 Adolescent and Adult Counseling Practicum. Practice of counseling skills with an adolescent or an adult population in varied settings. The professional setting depends on the student's interest area. Individual and group supervision are provided. Use of tape recorder is required. Prerequisite: 538 and 3 additional hours from substantive course work in the guidance and counseling program.

494C-3 Career Planning Practicum. Supervised experience in handling career development experiences at elementary, secondary, or college levels. Application of theoretical models to program development is stressed, including presentation of relevant lessons, handling of group guidance activities, and conducting individual career development counseling sessions. Intern experience in public school or college settings equal to one day per week is required. Prerequisite: 542 and 3 additional hours from substantive course work in the guidance and counseling program.

494D-3 to 6 (3, 3) Practicum in School Psychology. Observation and participation in case conferences related to the development of psycho-educational assessment and planning, including teacher and parent consultations, field observations, and psychometric applications. Prerequisite: consent of instructor.

502-3 Basic Statistics.

506-4 Inferential Statistics.

507-4 Multiple Regression.

511-3 Instructional Psychology.

512-3 Affective and Cognitive Behaviors at the School Level.

513-3 Psychological Trends in Education.

515-3 The Psychological Aspects of Instructional Design.

518-3 Psychology of the Classroom.

521-3 Analysis of Classroom Behavior—Consultative Practices for School Personnel.

530-4 Standardized Testing: Use and Interpretation.

531-3 Principles of Measurement.

532-3 Individual Intelligence Theory.

533-4 Individual Measurement and Practice.

537-4 Counseling with Children: Theory, Techniques, and Practice.

538-4 Interpersonal Relations: Theory and Practice.

540-3 Problems, Issues, and Trends in School Guidance and Counseling.

542-4 Career Development Procedures and Practices.

543-3 Group Theory and Practice.

546-4 Personality Assessment.

547-3 Implementation of Guidance Services.

551-3 The Supervision of Practicum.

555-3 to 6 (3, 3) Seminar in School Psychology.

562-6 (3, 3) Human Development in Education.

567-2 to 9 (2 to 6 per semester) Topical Seminar in Educational Psychology.

568-1 to 12 (1 to 6 per semester) Topical Seminar in Counseling and Guidance.

570-3 Humanistic and Behavioral Theories in Education.

580-2 to 12 (2 to 6 per semester) Doctoral Seminar in Educational Measurement and Statistics.

592-1 to 8 (1 to 6 per semester) Independent Study and Investigation.

593-1 to 4 Individual Research.

594-1 to 6 Advanced Practicum.

595-4 to 8 (4, 4) Internship in the Psychology of Teaching.

599-1 to 6 Thesis.

600-1 to 32 (1 to 16 per semester) Dissertation.

Health Education (Department, Major, Courses)

The Department of Health Education offers two specializations within the health education major and three programs of minimal professional preparation. The two specializations are:

1. Health Education in Secondary Schools. For those planning to teach or supervise health education in the secondary schools.

2. Health Education in Elementary Schools. For those planning to teach or supervise health education in the elementary schools.

The three minimal professional preparations are:

1. Health Education in Secondary Schools. For those certified to teach in Illinois secondary schools who wish minimal preparation to teach health education.
2. Health Education in Elementary Schools. For those certified to teach in Illinois elementary schools who wish minimal preparation to teach health education.
3. Driver Education. For those planning to teach driver education in Illinois secondary schools.

These specializations in general, constitute minimal preparation for the positions listed. Consequently, all candidates are strongly urged to complete additional work in the field.

Bachelor of Science Degree, College of Education

<i>General Studies Requirements (must include GSE 201)</i>	45
<i>Requirements for Major in Health Education</i>	32
Health Education in Secondary Schools Specialization	
Health Education 305, 312, 313S, 326, 334, 355, 401, 405, 471 plus 7 elective hours with Health Education 301 as a recommended elec- tive.	
Health Education in Elementary Schools Specialization	
Health Education 305, 312, 313S, 334, 350, 355, 401, 405, 450, and Curriculum, Instruction, and Media 213 plus 3 elective hours with Health Education 301 as a recommended elective.	
<i>Professional Education Requirements</i>	24
See Teacher Education Program, page 71.	
<i>Electives</i>	19
<i>Total</i>	120

The three minimal professional preparations requirements for Illinois teachers are:

Health Education in Secondary Schools: Health Education 301, 305, 312, 334, 355, 405, and 460

Health Education in Elementary Schools: Health Education 301, 305, 312, 334, 350, 355, 405

Driver Education: Health Education 302S, 313S, 442S, 443S, 475S, plus three hours of electives from the following: Health Education 323S, 334, 445S, 470S, 480S, 481S, 495S

Courses

301-3 Advanced Concepts of Health. Interrelatedness and interdependence of health as a total concept. Concepts of health and health education within the context of an option-expanding world are examined. Emphasizes role of the individual in assuming responsibility for one's own health behavior as well as education for a health-activated citizenry.

302S-3 Driver and Traffic Safety Education—Introduction. A beginning course that deals with the highway transportation system, traffic problems, the driving task, perception and implementation of the driver education classroom program. Observation of the teaching environment is included. Prerequisite: a valid driver's license.

305-3 Principles and Foundations of Health Education. An introductory professional course in the field, designed to implement the evolving concept that health education is both content and process; major concepts for a variety of teaching-learning approaches in school and other community settings are considered; health careers and opportunities in field are described.

311-3 Human Growth and Development. An overview of human development from conception through senescence. Designed for professional personnel who will be concerned with planning health programs for groups representing broad age ranges. Emphasis will be on physical, mental, and social dimensions of growth and development.

312-3 Emotional Health. Concepts of positive emotional development in terms of influence in the classroom and other community settings.

313S-3 Introduction to Safety Education. Introduces the principles and fundamentals of safety education. Concerns safety as a social problem and considers major accident areas, accident causes, liability and analyzes possible solutions to accident problems.

323S-3 Methods and Materials in Safety Education. Learning strategies used in teaching safety for elementary and secondary school levels. Emphasizes selection and design of materials participation and demonstration.

326-2 Measurement, Testing, and Evaluation in Health Education. Approaches to construction, selection, and use of various kinds of test instruments, primarily in the cognitive domain. Other types of evaluative techniques introduced.

330-3 Consumer Health. Federal and state legislation affecting consumer health; official watchdog agencies on consumer health; non-official agencies (AMA, CU, etc); health and medical protection by insurance, group practice, prepayment, etc, false and misleading advertising in health and medicine; cultists' and faddists' effect on consumer health.

334-2 to 3 Standard First Aid. Provides students with first aid knowledge and skill competencies necessary to care for injuries and meet emergencies. The two hour course provides American National Red Cross standard first aid and personal safety program certification. The three hour course leads to instructor authorization in the American National Red Cross program and includes ANRC procedure. Students enrolling in the two hour course will meet in class session two periods per week; students enrolling in the three hour course will meet an additional hour per week.

350-3 Health Education in the Elementary School Curriculum. Acquaints the prospective teacher in the elementary school with fundamental processes, techniques and instructional materials related to health education.

355-3 Introduction to Community Health. Organization and administration in local, state, and national official and non-official health agencies, their purposes and functions, and an overview of methods for meeting community health needs and for solving community health problems.

400-3 Health Appraisal of School Children. The teacher as a member of the health team in recognizing common health deviations. Emphasis on helping each child realize full health potential.

401-3 Epidemiological Approaches to Disease Prevention and Control. Principles and practices in the cause, prevention, and control of diseases in various community settings.

402-3 Death Education. Designed to prepare educators to conduct learning experiences about death and dying in a variety of school, college, medical care, and community settings. Stress will be placed on developing brief, functional curricula and usable, imaginative teaching-learning materials, and on evaluating resource materials for use in educating at various levels of maturity.

405-3 Sex Education. Examines various programs of sex and family life education in schools, recognizing a range of community attitudes.

407-3 Drug Education. Meets requirements of Illinois state law for education concerning drugs including alcohol for grades K-12. Explores motivations behind use and abuse of drugs. Offers experiences in development of curriculum and teaching approaches and material.

434-3 Advanced First Aid and Emergency Care. Meets the needs of those in positions where a complexity of first aid and emergency care procedures are needed. American National Red Cross and Illinois Heart Association cardiopulmonary resuscitation instructor authorizations provided. Consent of instructor required.

442S-5 Driver and Traffic Safety Education—Practicum. Provides prospective teachers with simulation, range, and on-road teaching experience with beginning drivers. Students may be required to purchase materials not to exceed \$15. Prerequisite: 302S.

443S-3 Driver and Traffic Safety Education—Program Administration. Emphasizes administration, reimbursement, scheduling, public relations, planning, and evaluation of driver education programs. Prerequisite: 442S or consent of instructor.

445-2 to 6 (2 to 3, 2 to 3) Contemporary Specialized Laboratory Techniques. Provides teachers and other highway safety personnel with instructional experience in (a) motorcycle safety, (b) emergency evasive and pursuit driving. Prerequisite: 302 or consent of instructor. Maximum of 6 semester hours may be obtained either graduate or undergraduate.

450-3 Health Programs in Elementary Schools. Orientation of teachers to health programs and learning strategies. Designed for elementary education majors.

460-3 Health Programs in Secondary Schools. Orientation of teachers to health programs and learning strategies. Designed for secondary education majors. Open to non-health education majors only.

461-3 Health Education Summer Conference. A different focal theme each year; e.g., mood modifying substances, ecology, human sexuality, emotional and social health dimensions. Information, ideas, and concepts are translated into teaching-learning materials and approaches; continuing opportunity for interaction between prospective and experienced teachers.

- 462-3 Health Education Summer Conference.** Conference style and format are similar but themes change.
- 463-3 Health Education Summer Conference.** Conference style and format are similar but themes change.
- 470S-3 Highway Safety as Related to Alcohol and Other Drugs.** Relationship between alcohol and other drugs and traffic accident causes. A review of education programs designed to minimize drug related accidents. Prerequisite: advanced standing or consent of instructor.
- 471-2 Health Education Instructional Designs.** Analysis of existing health education curricula with emphasis on student development of instructional designs and modules. Students will prepare, utilize, and critique materials. Prerequisite for student teaching in health education. Prerequisite: 305.
- 475S-3 Traffic Law Enforcement and Planning.** Acquaints safety and driver education teachers and highway safety personnel with purposes of traffic law enforcement and engineering, and methods used to fulfill these purposes. Emphasis is placed upon ways of improving existing services and coordinating efforts of official and non-official agencies concerning traffic problems. Prerequisite: 302S or consent of instructor.
- 480S-3 Traffic and Driver Education Program Development.** Acquaints students with curriculum innovation, current philosophy, learning and teaching theories, and instructional designs. Students will develop learning packages and modules. Prerequisite: 443S or consent of instructor.
- 481S-3 Traffic and Safety Education—Evaluation Techniques.** Emphasizes methods of evaluation as applied to traffic and safety education programs. Prerequisite: 480S or consent of instructor.
- 483-3 Community Health Administration in the United States.** Background and development of community health administration structures in the United States; the dynamics and trends evolving from current health and medical care programs and practices.
- 485-3 International Health.** Health beliefs, values, and practices of peoples in various cultures as related to a total way of life of potential value to both prospective teachers and students in other fields.
- 488-1 to 3 Environmental Dimensions of Health Education.** Application of the principles of learning to understanding people interacting with their environment. Emphasis placed upon individual and community responsibilities for promoting environmental health. Rural and municipal sanitation programs and practices are included.
- 489-3 Introduction to Vital Statistics.** An introduction to bio-statistics; examination of theories of population projections; collection, organization, interpretation, summarization, and evaluation of data relative to biological happenings with emphasis on graphic presentation.
- 490-2 to 6 Field Experiences in School, Community Health or Safety Education.** Field observation, participation, and evaluation of current school or community health education or safety programs in agencies relevant to student interests. Prerequisite: consent of instructor.
- 491-3 Health Teaching/Learning: School and Community.** Teaching and learning strategies at secondary school levels and in other community group settings. Opportunities to examine and observe a variety of educational strategies applicable to health education.
- 495S-3 Driver Education for the Handicapped.** Methods and techniques in the use of assistive equipment and program materials for teaching handicapped persons how to drive. Prerequisite: advanced standing or consent of instructor.
- 499-3 Rx: Education in Health Care Settings.** Designed for members and potential members of the health care team to explore educational concepts and strategies applicable to a variety of health care settings. Includes rights and responsibilities of consumer and professional, determinants of health behavior, contrasting models of health care, communication skills, media and materials and planning, implementing and evaluating educational programs. Open to medical and dental personnel, nurses, health educators, dietitians, therapists, pharmacists, social workers, and related professionals.
- 500-4 Community Organization for Health Education.**
- 510-3 Curriculum in Health Education.**
- 511-3 Health Education Conference Practicum.**
- 515-3 Review of Current Literature in Health Related Fields.**
- 520-3 Special Projects in Health Education.**
- 526-3 Evaluative Approaches to Health Education.**
- 530S-3 Research in Traffic Safety.**
- 533A-4 Human Ecology I.**
- 533B-4 Human Ecology II.**
- 536-3 Professional Preparation in Health Education.**
- 550S-3 Current Developments in Traffic and Safety Education.**
- 555S-3 Traffic Safety Management.**
- 572-3 Coordination and Supervision of School Health and Safety Programs.**
- 590-8 Practicum in Community Health.**

597-2 (1, 1) Seminar in Health Education.
598-3 Institute: Writing Research Proposals.
599-1 to 6 Thesis.
600-1 to 32 (1 to 16 per semester) Dissertation.

Higher Education (Department, Major [Graduate Only], Courses)

The Department of Higher Education does not offer an undergraduate major or minor but it does offer certain courses for undergraduates who wish to learn about higher education, its history, institutions and organization, and current issues. Undergraduates interested in this area are advised by their regular academic advisers.

Courses

399-4 (2, 2) **Problems of Higher Education in the United States.** An introduction to the broad understanding of higher education in the United States designed to provide perspective. (a) Historical development with an emphasis on such basic concepts as lay control, academic freedom, and institutional response to social needs. (b) A problem approach is utilized to develop an understanding of faculty, student, and administration roles in solving problems, with an emphasis upon the instruments of governance in colleges and universities as well as upon the meaning of accountability, control, and support of higher education. This course is open to any interested student. Need not be taken in sequence. Elective Pass/Fail.

402-1 to 3 **Principles of Student Personnel Group Work.** Acquaints the student with group work possibilities and functions in higher education. Elective Pass/Fail.

431-3 **Workshop in Adult and Community Education.** (See Educational Leadership 431.)

501-2 **Introduction to Research in Higher Education.**

510-3 **Higher Education in the United States.**

512-3 **Higher Education in Selected Nations.**

513-3 **Organization and Administration in Higher Education.**

515-3 **College Student Development: Operations and Policies.**

516-3 **College Students and College Cultures.**

518-3 **College Teacher and College Teaching.**

521-3 **Curriculum Design and Policy.**

525-3 **Philosophy of Higher Education.**

526-3 **The Community College.**

528-3 **Finance in Higher Education.**

535-1 to 14 (a-h-1 to 3 each; i-1 to 6) **Higher Education Seminar I.**

545-1 to 16 (a-g-1 to 3 each; h-1 to 8) **Higher Education Seminar II.**

550-1 to 4 **Higher Education Seminar III.**

589-1 to 4 **Higher Education Research Seminar.**

590-1 to 6 **Individual Readings.**

591-1 to 6 **Individual Study.**

592-1 to 6 **Special Problems (Individual).**

595-1 to 6 **Internship in Higher Education.**

599-1 to 6 Thesis.

600-1 to 32 (1 to 16 per semester) Dissertation.

History (Department, Major, Courses)

A major in history consists of a minimum of thirty-two semester hours of history courses. Students who plan advanced study in preparation for college teaching or other professional work are advised to take added work.

Courses may be chosen from all departmental offerings except for GSB 105. Pass/Fail grades do not carry credit toward the major or minor in history. A number of different patterns are available for students anticipating various futures. Students should consult with departmental advisers to choose the pattern that fits their needs. The basic regulation is that, for a course to count toward the major, it must be approved in advance by one of the advisers in the department. Normally the department will accept a substantial part of the credits in history taken in other accredited institutions up to a total of 16 hours. In every case,

transfer students must have taken at least 16 semester hours in history at Southern Illinois University at Carbondale.

Advisers are available in the Department of History to assist students in planning their programs in accordance with current University and departmental regulations. Normally courses must represent at least two areas of history (United States, European, and Third World) with a minimum of three courses in two areas, or two courses in each of the three areas. Students must also complete a minimum of three courses at the 400 level and they must write a research paper in conjunction with any 400-level history course which will become a part of their permanent file.

All history majors should meet with the department's undergraduate advisers each semester to keep up to date the records of their progress toward the degree and to receive advance approval of their courses. Transfer students should report to the department prior to their first semester of attendance. A C average in the major is required for graduation. A 2.25 average in the major is required before student teaching will be approved by the department.

Students with exceptional scholarly promise may be invited into the departmental honors program which begins with a colloquium and continues with an honors seminar and thesis prepared under the direction of a member of the department. Graduation with departmental honors in history is given to those who successfully complete the program.

Bachelor of Arts Degree, College of Liberal Arts

<i>General Studies Requirements</i>	45
<i>Supplementary College Requirements (See page 78.)</i>	(4) + 8-14
<i>Requirements for Major in History</i>	32 ¹
Two courses in American history, two courses in European history, and two courses in Third World: Latin American, Asian, and/or African history, or three courses in each of two of the above fields	18-24
History electives	8-14
<i>Electives</i>	29-35
These may include 26 hours in professional education for teacher certification.	
<i>Total</i>	120

Bachelor of Science Degree, College of Education

<i>General Studies Requirements</i>	45 ²
<i>Requirements for Major in History</i>	32 ¹
Two courses in American history, two courses in European history, and two courses in Third World: Latin American, Asian, and/or African history, or three courses in each of two of the above fields	18-24
History electives	8-14
<i>Professional Education Requirements</i>	26
See Teacher Education Program, page 71.	
Curriculum, Instruction, and Media 469 is required.	
<i>Electives</i>	17
<i>Total</i>	120

¹At least three courses must be taken at the 400 level.

²See catalog section titled Curriculum, Instruction, and Media for specific certification requirements in General Studies and other areas.

Minor

A minor in history consists of 16¹ semester hours. The student is advised to balance courses between at least two of the three fields of American, European, or Third World history. Transfer students, in order to have a minor in history, must have taken at least eight semester hours in history at Southern Illinois University at Carbondale.

¹For the purposes of teacher certification the minor must be 18 semester hours.

Courses

200-3 Problems in the History of World Civilization. Seminar focusing on selected topics in world history. Prerequisite: President's Scholars status or consent of instructor. Elective Pass/Fail.

205-6 (3, 3) History of Western Civilization. (a) From ancient times through the sixteenth century; (b) The seventeenth century to the present. A brief survey of the major developments and trends in European history from ancient times through the 20th Century. Elective Pass/Fail.

303-1 to 3 Topics in Comparative History. A comparative study of recurring themes in the history of diverse societies and civilizations. Topics will vary and will be announced in advance. Topics to be covered include the problem of slavery, technology and society, war, and civilization. Elective Pass/Fail.

310-4 Ancient Civilizations. A comparative study of ancient near eastern and classical civilizations of the Fertile Crescent and the Mediterranean Basin: Mesopotamia, Egypt, Palestine, Greece, and Rome. Elective Pass/Fail.

313-4 Great Ideas in History: Ancient Greece to Early Modern Times. An introduction to the ideas and culture of western civilization over a period of two thousand years, from the ancient Greeks to the Reformation. The great ideas in philosophy, religion, political theory, and other literature are stressed, and attention given to related trends in painting, sculpture, architecture and music. Slides of art works are shown and tapes of music are played. Elective Pass/Fail.

315-4 Mediaeval Europe. The emergence of Europe from the Age of Constantine to the Black Death, with emphasis on the political, socio-economic, and cultural forces which were at work creating Europe. Elective Pass/Fail.

320-4 Early Modern Europe. The development of Europe from the 16th Century through the Age of the French Revolution. Elective Pass/Fail.

323-3 History and Artistic Creativity. A selected exploration of the specific conditions in Western history, from the Renaissance to the present, which have encouraged and given direction to creativity in the arts. Elective Pass/Fail.

325-3 Europe Since 1815. The development of Europe from the Age of the French Revolution to the present day. Elective Pass/Fail.

330-6 (3, 3) English History. (a) England to 1688; (b) England since 1688. Political, social, economic, and cultural history of England. Elective Pass/Fail.

336-3 Fascist Dictatorships in Contemporary Europe: Italy, Germany and Spain. Mussolini's fascism, Hitler's national socialism, and Franco's falangist authoritarianism in historical context. Prerequisite: sophomore standing or consent of instructor. Elective Pass/Fail.

338-3 Eastern Europe. An historical survey of the East European area from the Baltic to the Balkans, with emphasis on the modern era. Elective Pass/Fail.

339-3 Contemporary Soviet Civilization. Developments in the Soviet Union since World War II, with coverage of similarities and dissimilarities of the U.S. and the USSR, their conflict and cooperation. Discussion of Soviet cultural minorities and the stature of the Soviet Union in the Third World.

350-2 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. Elective Pass/Fail.

354-3 The United States Since 1945. America enters the atomic age; a study of American society since the end of the Second World War and the role played by the United States in the world. Elective Pass/Fail.

355-2 American Political Extremism. A study of American political and social extremist movements and groups, both of the right and the left, from the revolution to the present.

362-6 (3, 3) Black American History. (Same as Black American Studies 311.) (a) Black American History to 1865; (b) Black American History since 1865. The role of Blacks and contribution in the building of America and their ongoing fight for equality.

- 364-3 The Great Depression in the United States.** Causes and effects of the great depression and of governmental measures for relief, recovery, and reform during the years 1929-1942. Elective Pass/Fail.
- 365-3 History of Social Welfare in America.** Discussion of the changing attitudes and problems which Americans have applied to the problems of social welfare from the colonial period to the present. Focuses on the condition of the poor, the attitudes toward the poor, and the institutions, public and private, which were created to meet the obligations of social welfare. Elective Pass/Fail.
- 366-2 to 3 American Indian History.** A comprehensive history of American Indians from prehistoric times to the present.
- 367-3 History of Illinois.** The history of the state from 1818 to the present.
- 368-3 Women in American History.** Covers the role of women in colonial society, the impetus for an organized women's rights movement in the 19th century and how it related to general reform movements, and gains and setbacks in the industrial-urban society of the 20th century.
- 369-3 History of the American Family.** A survey of the American family from its origins to the present, focusing on the variety of families—English, African, later immigrants, middle class, and poor. During the course students will write their own family histories, thereby applying what they have learned to their own lives.
- 370-6 (3, 3) History of Latin America.** (a) Colonial Latin America. (b) Independent Latin America. An introduction to the political, economic, social, and cultural development of Latin America from Precolumbian times to the present. Elective Pass/Fail.
- 380-6 (3, 3) History of East and South Asia.** (a) China and Japan; (b) India and Southeast Asia. The first semester focuses on China and Japan from early times to the present; the second semester concentrates on India and Southeast Asia in modern times.
- 385-3 Islamic Civilization.** A survey of the development of the Islamic world from Mohammed to the present. Emphasis on continuing themes of Moslem civilization and their effects in the modern world.
- 387-6 (3, 3) History of Africa.** (Same as Black American Studies 314.) (a) History of West Africa. A study of West African peoples from earliest times to the present, including the era of kingdoms, the role of Islam, African-European relations, colonialism, and African nationalism. (b) History of East-Central Africa. From earliest times to the present, including migrations and kingdoms, African-Arab-European relations, colonialism, and African nationalism. Elective Pass/Fail.
- 390-3 History in Fiction.** A comparative study of fictional accounts and of analyses written by historians over selected periods or topics.
- 393-3 Twentieth Century Military History.** An introduction to the problem of armed conflict throughout history with particular emphasis on the twentieth century and the transformation of warfare during the era of the World Wars. Prerequisite: sophomore standing or consent of instructor. Elective Pass/Fail.
- 395-3 Honors.** Great ideas and works of history, with discussion of conflicting interpretations of major historical problems. Prerequisite: junior standing and consent of department.
- 396-2 to 8 Independent Study in Classics Program.** (See Classics 496.)
- 415-3 European Rural Society, 400-1100 A.D.** Monks, priests, peasants, barons, and kings; an historical sociology of the ecclesiastical and feudal regimes which replaced classical civilization after the fall of the Roman Empire in the West. Elective Pass/Fail.
- 416-3 European Urban Society, 1000-1550 A.D.** Merchants, bankers, craftsmen, lawyers, and bureaucrats: a sociological and economic analysis of the origins and development of early modern European urban institutions. Elective Pass/Fail.
- 417-4 Cultural History of the Middle Ages.** Selected problems in the development of mediaeval culture, the mediaeval universities, and the transmission of ancient ideas to the modern world. Elective Pass/Fail.
- 418-3 Renaissance.** The focus is on the Renaissance in Italy and in particular on its relation to the social and economic context in which it developed. The spread of humanism and humanistic values to other areas of Europe will also be considered. Elective Pass/Fail.
- 420-3 Reformation.** Concentrates on the movement of religious reforms in the 16th Century. Emphasis on its roots in the past, particularly in earlier expressions of popular piety and to the wider social and political effects in the 16th and 17th centuries. Elective Pass/Fail.
- 421-6 (3, 3) Absolutism and Revolution: Europe 1600-1815.** (a) 1600-1715; (b) 1715-1815. The development of enlightened despotism, the rise of the revolutionary movement, and the Napoleonic period. Elective Pass/Fail.
- 422-6 (3, 3) Intellectual History of Modern Europe.** (a) 1600-1815; (b) Since 1815. The first semester will cover the Age of Reason, the Enlightenment, and Early 19th Century Romanticism. The second semester will cover the period from Marx and Darwin to the Contemporary World. Elective Pass/Fail.
- 423-3 Diplomatic History of Modern Europe.** A study of the European state system and the diplomacy of the major powers, with emphasis on events since 1870.
- 424-6 (3, 3) Social and Revolutionary Movements in Nineteenth Century Europe.** (a) 1815-1871; (b) 1871-1914. Changing social and political structure of Europe caused by the impact

- of industrialization and the French Revolution. The consequences of these developments in terms of the emergence of new social forces and the development of movements for social and political revolution. Elective Pass/Fail.
- 425-6 (3, 3) Twentieth Century Europe.** (a) World War I to World War II; (b) World War II and after. Problems in the political, social, and military history of Europe in the 20th Century.
- 430-3 The British Empire-Commonwealth.** The rise of the British Empire and its subsequent development into a commonwealth of self-governing nations.
- 431-3 British Constitutional History.** The development of the English constitutional system from its origins to modern times. Elective Pass/Fail.
- 432-4 History of France.** Social, economic, political, and intellectual evolution from mediaeval origins to the present day. French contributions to western culture. Elective Pass/Fail.
- 433-3 History of Germany.** German state and society from the Middle Ages to the present day. Elective Pass/Fail.
- 434-3 History of Scandinavia.** Denmark, Norway, Sweden, Finland, and Iceland. Related history of the Baltic and North Sea regions, from prehistoric times to the present. Elective Pass/Fail.
- 435-3 History of Modern Italy.** Italy in the 19th and 20th centuries. Emphasis is on continuing problems: the tensions between agricultural south and industrial north, Italy's role as a Great Power, and the persistence of centrifugal forces in Italian politics. Elective Pass/Fail.
- 436-6 (3, 3) History of Spain.** (a) To 1700; (b) Since 1700. Institutional, intellectual, socio-economic, and political history from the Middle Ages to the present. Elective Pass/Fail for (b) only.
- 437-6 (3, 3) History of Russia.** (a) Imperial Russia from Peter the Great to the emancipation of the serfs; (b) Russia since emancipation: modernization and revolution. The study of Russian history from Peter the Great to the present. Elective Pass/Fail.
- 440-3 Tudor-Stuart England.** England from 1485 to 1714. The social, economic and political development of Britain during the crucial two centuries from late feudal anarchy to world power.
- 450-4 American Colonial History.** The discovery, settlement, and development of the colonies before the American Revolution.
- 451-3 Jeffersonian and Jacksonian America, 1789-1850.** Origin and development of democratic institutions and the emergency of sectional conflict in the pre-Civil War Era. Elective Pass/Fail.
- 452-6 (3, 3) United States History 1850-1896.** (a) Civil War era; (b) the origins of modern America; reconstruction and nationalization: 1865-1896. The study of the background to the Civil War, the Civil War, Reconstruction, and the Gilded Age.
- 453-6 (3, 3) Twentieth Century American History.** (a) 1896-1921; (b) 1921-1945. The history of the United States since 1896 with emphasis upon political history and behavior.
- 460-6 (3, 3) Social and Intellectual History of the United States.** (a) To 1860; (b) since 1860. The development of American society and a study of the various types of economic, social, and political thought that have influenced it.
- 461-6 (3, 3) Constitutional History of the United States.** (a) To 1877; (b) from 1877. Origin and development of the American Constitution from the English background to the present time. Stress is placed on the political, social, and economic forces which influenced the American constitutional system. Elective Pass/Fail.
- 462-4 Problems in Black American History.** Developments which formed the foundation for the "Black Revolution" of the present time.
- 463-6 (3, 3) History of American Diplomacy.** (a) To 1914; (b) Since 1914. General consideration of American foreign policy and the emergence of the United States as world power. Elective Pass/Fail.
- 464-6 (3, 3) American Economic History.** (a) To 1869; (b) Since 1869. The growth of the American economy from the colonial period to the present. Emphasis is placed on the historical forces which influenced the American economic system.
- 465-6 (3, 3) History of the South.** (a) The Old South; (b) The New South. Social, economic, political, and cultural developments of the South.
- 466-6 (3, 3) History of the American West.** (a) To 1850; (b) Since 1850. The American frontier and its impact on American society from the colonial period to the 20th Century.
- 470-3 Colonial Latin America: Policies and Practices.** Theory and operation of the Spanish and Portuguese colonial systems in the New World. Elective Pass/Fail.
- 471-6 (3, 3) History of Mexico.** (a) 19th Century; (b) Revolutionary Mexico. Significant political, economic, diplomatic, social, and cultural aspects of Mexican life from independence to the present time with emphasis upon the Mexican Revolutions. Elective Pass/Fail.
- 472-3 The Caribbean Area.** A history of the Caribbean from Columbus to Castro. Elective Pass/Fail.
- 473-3 Argentina and Chile.** A narrative and comparative history of these two leading Latin American nations with emphasis on the period since independence. Elective Pass/Fail.

- 474-3 Andean South America.** The political, economic, social and cultural development of the Andean nations from Precolumbian times to the present. Elective Pass/Fail.
- 475-3 History of Brazil.** The political, social, cultural and economic development of Latin America's largest nation. Elective Pass/Fail.
- 476-3 Dictatorships in Latin America.** A political, economic, social and military study of the domestic and international aspects of dictatorship. Elective Pass/Fail.
- 480-6 (3, 3) History of Chinese Civilization.** (a) Traditional China; (b) Modern China. The first semester provides a full coverage of traditional China and emphasis on classical philosophies, religions, historical writings, literature, arts and science. The second semester deals with the transformation of China into the modern ages. Elective Pass/Fail.
- 484-3 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. Elective Pass/Fail.
- 485-3 History of the Middle East.** A study of the Middle East from the 7th through the 16th centuries concentrating on the following major themes: the development of Islamic civilization, the mediaeval Muslim world, the disintegration of the Arab caliphate, the rise of the Ottoman Turks, and the development of the Ottoman Empire.
- 490-1 to 4 Special Readings in History.** Supervised readings for students with sufficient background. Prerequisite: Registration by special permission only.
- 491-3 Historiography.** Writings of historians from Herodotus to Toynbee. Elective Pass/Fail.
- 492-4 Historical Research and Writing.** Methods of historical investigation, criticism and composition. Open not only to history majors but with permission of instructor to those in other disciplines interested in history as a research tool.
- 493-1 to 6 Problems in History.** Topics vary with instructor. May be repeated for a maximum of six semester hours provided registrations cover different topics. Topics announced in advance.
- 494-3 Quantitative Research in History.** An introduction to the application of quantitative data and social science methods to historical research.
- 495-4 History Honors.** Principles of historical method, research, and writing for senior honor students only. Not for graduate credit. Prerequisite: consent of department.
- 496-3 to 12 Internship in History.** Supervised field work in public or private agencies or operation where history majors are frequently employed, such as archives and libraries, government offices, communications media, and museums. Prerequisite: consent of the department.
- 497-3 Historical Museums, Sites, Restorations and Archives.** The historical development of the museum from the Academy, the Lyceum, and the Great Museum of Alexandria. Discussion of the museums that have developed in the last three centuries with emphasis on the United States will include historical sites such as battlefields, forts, historic buildings, restorations, historical monuments, and major archives. Field trips to some of these sites form part of the course.
- 498-3 Problems of the History Museum.** Examines the general background and function of the museum in its contemporary setting with special emphasis on tasks of the individual who wishes to work in a historical museum or in an interpretative center. Given in cooperation with the University Museum. Prerequisite: consent of instructor.
- 515-3 to 6 (3, 3) Studies in Mediaeval and Renaissance History.**
- 516-4 to 8 (4, 4) Seminar in Mediaeval and Renaissance History.**
- 520-3 to 6 (3, 3) Studies in Early Modern European History.**
- 521-4 to 8 (4, 4) Seminar in Early Modern European History.**
- 522-3 to 6 (3, 3) Studies in Modern European History.**
- 523-4 to 8 (4, 4) Seminar in Modern European History.**
- 530-4 Seminar in English History.**
- 550-4 Seminar in American Colonial History.**
- 551-4 The Age of Jefferson.**
- 552-4 Reform Movements in the Pre-Civil War Period.**
- 553-4 Seminar in Twentieth Century United States History.**
- 554-4 New Viewpoints in American History.**
- 555-4 to 8 (4, 4) Seminar in American History.**
- 561-4 Seminar in American Constitutional History.**
- 563-4 Seminar in American Diplomatic History.**
- 566-4 Seminar in American Frontier History.**
- 567-4 Seminar in Illinois History**
- 570-4 to 8 (4, 4) Seminar in Latin American History.**
- 580-4 Seminar in Modern China.**
- 590-1 to 8 (1 to 3 per semester) Readings in History.**
- 591-2 to 5 Independent Investigation.**
- 593-4 Seminar in Contemporary History.**
- 599-1 to 6 Thesis.**
- 600-1 to 30 (1 to 16 per semester) Dissertation.**

Home Economics Education

(SEE VOCATIONAL EDUCATION STUDIES)

Human Development (Division, Courses)

Courses

400-1 Orientation Seminar in Human Development. Includes a discussion of programs, information, and research presented by faculty and students. Introduction to library facilities.

481-2 to 6 Readings. Supervised readings on selected topics in the area of concentration. (a) Child and family; (b) Family economics and management; (c) Food and nutrition. Prerequisite: consent of instructor.

500-2 Research Methods.

501-3 Human Development Through Life Cycle.

502-3 Professional Services for Diverse Family Structures.

503-3 Impact of Public Intervention on Family Life.

515-1 to 3 Seminar.

572-1 to 5 Special Problems.

593-1 to 3 Research Paper or Project.

599-1 to 6 Thesis.

Human Resources (College, Courses)

Courses

101-3 Human Needs and Resources. Survey of social problems, institutions, theories and strategies for meeting the needs of individuals, groups, and communities in American society.

111-1 Home Economics Careers. (See Vocational Education Studies 119.)

258-1 to 30 Work Experience Credit. Credit for work experience relevant to the particular departmental programs: prior to entrance into the University; work experience incorporated into instructional programs through internship; cooperative work experience programs between the department and the Office of Student Work and Financial Assistance. Credit hours to be granted to be determined by the division director.

259-1 to 24 Occupational Education Credit. Credit for educational experiences in technical schools and institutes, junior college technical and occupational programs and employee training relevant to the particular departmental programs. Credit hours granted to be determined by the division director.

305-1 to 4 College of Human Resources Honors Seminar. Readings and group discussions in areas of current interest. Prerequisite: junior standing, GPA of 3.0 overall.

306-1 to 4 College of Human Resources Honors Seminar. Varying topics studied in breadth and depth. Maximum opportunity for student participation in the exploration of the subject. Prerequisite: junior standing, GPA of 3.0 overall.

387-1 to 6 College of Human Resources Special Problems-Honors. Directed study in specialized problems associated with human resources. Prerequisite: junior standing. GPA of 3.0 overall.

388-1 to 6 College of Human Resources Research and Investigations-Honors. Supervised research and investigation in the area of human resources. Prerequisite: junior standing, GPA of 3.0 overall.

410-3 Resources of the Elderly. Recognition and examination of needs, situations, and issues affecting elderly persons; resources and sources of benefits available. Emphasis on techniques and application of information through interaction with the elderly. Prerequisite: two courses in behavioral sciences.

Industrial Technology (Major, Courses)

The industrial technology major has as its objective the training of qualified

personnel who can develop and direct the manufacture and distribution of products.

The program is a balanced curriculum of studies drawn from a variety of disciplines relating to industry. Included in the curriculum is the study of materials and manufacturing processes, principles of distribution, and concepts of industrial management and human relations. Communication skills, humanities, and social sciences are studied to develop overall abilities. Knowledge of physical sciences, mathematics, design, and technical skills gained from the program allow the graduate to cope with technical and production problems.

The industrial technology curriculum is flexible enough to provide the means whereby graduates of two-year occupational programs may obtain a Bachelor of Science degree within two years. A graduate of a two-year industrially-oriented occupational program, such as aviation, architecture, automotive, construction, drafting, data processing, electrical, machine tool, mechanical, mid-management, mining supervision, and welding may have an excellent preparation to pursue a Bachelor of Science degree with a major in industrial technology.

Students with work related experience may receive credit toward the degree via Industrial Technology 258.

Additional flexibility in earning credit toward the degree is provided through off-campus courses and cooperative work experience. Cooperative work experience is available to students who qualify with provision that meaningful employment is available in the participating industries.

Off-campus courses for students in the industrial technology program are offered in geographical locations with a high population density whenever it is apparent that there is a need and potential enrollment to justify scheduling a class, it is possible to obtain a faculty member to teach the class, and adequate laboratory and library facilities are available.

A capstone option may be available in the industrial technology major. The option is explained in Chapter 3 of this bulletin. The program is available to students holding associate degrees of at least 60 semester hours in non-baccalaureate-oriented programs or equivalent certification with a minimum grade point average of 2.25. For the industrial technology major, the associate degree or equivalent certification should be in an industry-related field. This option permits qualified students to fulfill their degree requirements by completing 60 semester hours of work approved by the capstone adviser. Each individual's program of study may differ according to the previous academic work, industrial experience, and future career plans.

The industrial technology program is accredited by the National Association of Industrial Technology.

Bachelor of Science Degree, School of Engineering and Technology

INDUSTRIAL TECHNOLOGY MAJOR

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Industrial Technology</i>	75
Physics 203a, b; 253a, b	(6) + 2
GSD 118	(2)
Mathematics 111	(4) + 1
Engineering 222	2
Psychology 320 or Administrative Sciences 301 or Administrative Sciences 385	3
Engineering Technology 103, 104, 244, 245a	12
Industrial Technology 307, 309, 310, 358, 365, 375, 382, 390, 425, 440, 465	35
Technical electives	20

Groups of electives selected from the areas of manufacturing, technical sales, supervision, industrial design, industrial safety, and other technical fields.

Total	120
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INDUSTRIAL TECHNOLOGY MAJOR—OCCUPATIONAL ALTERNATIVE SPECIALIZATION

For students from two-year industry-related occupational programs in a community college or technical institute. Also, students with related work experience may receive credit and qualify for this alternative.

General Studies Requirements	45
Requirements for Major Industrial Technology	75
Physics 203a, b; 253a, b.	(6)+2
GSD 118.	(2)
Mathematics 111.	(4)+1
Engineering 222 or Industrial Technology 450	2-3
Industrial Technology 105, 307; 308, 358, 365, 375, 382, 440, 465	28
Technical electives.	41-42

Total	120
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INDUSTRIAL TECHNOLOGY MAJOR—MINING SPECIALIZATION

The course requirements for the mining technology specialization are specifically planned to complement the mining technology background of the community college or technical institute associate degree graduate.

In preparing the subject matter for the mining courses every effort has been made to include topics proposed by local mining companies. The main thrust of the overall program is directed toward increased coal production.

Topics included in the course work center around mining methods, mine management studies, quality control, production control, government regulations, safety, productivity-increase methods, current mining problems, mine surveying, geology, mathematics, social sciences, humanities, English composition, technical writing and the physical sciences.

General Studies Requirements	45
Requirements for Major in Industrial Technology	75
Geology 220.	(3)
Physics 203a, b; 253a, b.	(6)+2
GSD 118.	(2)
Mathematics 111.	(4)+1
Engineering 222.	2
Engineering Technology 103, 104, 263.	9
Industrial Technology 307, 330-4, 360, 365, 375, 382, 420, 439, 460, 465	34
Technical electives.	27

Total	120
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Courses

Safety glasses, a suitable calculator or slide rule, and textbooks are required for most of the following courses.

105-2 Technical Drawing. Basic principles of technical drawing including orthographic (multiview) projection; point-line-plane relationships, and pictorial drawing. Two hours of lecture and two hours of laboratory per week. Drawing supplies and workbook required cost approximately \$15. Elective Pass/Fail.

200-2 Introduction to Industrial Technology. Introduces the student to the Industrial Technology field. Survey of organization, planning, materials management, process control, personnel relations, facilities planning, manufacturing information systems, and job opportunities.

258-2 to 30 Work Experience Credit. Credit granted for past work experience while employed in fields related to the student's educational objective. Credit is established by departmental evaluation.

259-2 to 50 Occupational Credit. For occupational credit earned at junior colleges and technical institutes. Credit is established by departmental evaluation.

307-3 Analytical Problems in Technology. Methods of formulation and solution of special problems encountered in industry and technology using advanced techniques. Prerequisite: Mathematics 111 or equivalent.

308-4 Fundamentals of Industrial Processes. Introduction to the basic processes, equipment, and materials used in industry. Includes plastics, metal removal, casting, metal forming, and materials joining. Credit is not given if the student has credit for both 309 and 310.

309-4 Industrial Processes I. A comprehensive study of plastic processes, resins, equipment, and materials. Study of metal removal processes emphasizing economics, cutting theory, and non-traditional methods. Laboratory.

310-4 Industrial Processes II. Comprehensive study of metal casting, processes, testing instruments, and production equipment. Analysis of metal forming processes with emphasis on the newer techniques of explosive, ultrasonic, and powder metallurgy. Study of metal joining techniques. Laboratory.

318-3 Municipal Hydraulics. A study of the field of applied hydraulics as related to municipal water systems. Emphasis will be placed on the construction of systems to supply adequate volumes for fire flow requirements.

319-2 to 30 Industrial Internship. Industrial experience includes job skills, manufacturing processes, technical information, and labor-management relationships with supervised instruction, conferences, and examinations. Prerequisite: consent of instructor.

320-3 Surface Mining Operations. The elements of surface mining, methods and equipment, surface mine terminology, pit development, and equipment selection. Field trips. Prerequisite: appropriate background.

330-1 to 4 Current Mining Problems. Guest lecturers provide timely information on current mining technology problems. Special investigations of mining techniques. Emphasis on state and federal regulations.

335-3 Metallurgy and Heat Treatment. Analysis of metal structures and principles and processes of heat treatment. Laboratory. Prerequisite: Mathematics 111.

340-3 Numerical Control. Principles of numerically controlled processes, equipment and programming. Includes APT computer language. Laboratory.

341-3 Maintenance. Principles and practices of maintenance department organization, preventative procedures, and typical equipment problems. Also, includes related topics such as plant protection, custodial services, and maintenance of power plants.

342-3 Industrial Finishing. Methods and equipment of industrial coating and surface treatment processes, with emphasis in process selection for economy and function. Prerequisite: 308.

351-3 Industrial Metrology. Error analysis. Measurement standards and inspection systems.

354-3 Plastics Technology. Advanced study of plastic processes concentrating on test methods, material selection, and an in-depth study of an assigned plastic process. Laboratory.

358-3 Materials Handling and Plant Layout. Methods and equipment of materials handling. Plant layout techniques. Students are assigned a plant layout project. Prerequisite: 382 or Administrative Science 318, or consent of instructor.

360-3 Mine Production. A study of mining methods, production, techniques and automated process control. Flow sheets. Production economics. Mine management studies. Government regulations. Prerequisite: appropriate background.

362-3 Industrial Packaging. Analysis of packing principles, equipment, and processes such as paper, glass, metal containers, and plastics.

365-3 Quality Control. Analysis of control charts, acceptance sampling procedures, inspection systems, reliability and quality experiments.

369-3 Industrial Design. Introduction to the basic design concepts including design process developments, design phases, and communications. Emphasis on factors influencing design, design analysis, and creative thinking.

375-3 Production and Inventory Control. Production and inventory control systems with emphasis on cost analysis. Applicable operations research techniques.

379-3 Machine and Tool Design. Emphasis on metal processing equipment design. Prerequisite: 369 recommended.

382-3 Motion and Time Study. Principles and practices of motion and time study including process charts, operation charts, motion summary, and time standards.

385-3 Purchasing. Provides a comprehensive knowledge of modern procurement practices

and policies. It combines analysis of the fundamental purchasing principles with analytical descriptions of the latest developments and techniques.

390-2 Cost Estimating. Study of the techniques of cost estimation for products, processes, equipment, projects, and systems.

395-3 Technology Design. An elective project on a technical subject selected by the student with advice from the instructor. Stimulates original thought and creativity.

420-3 Coal Analysis and Inspection. A study of methods and equipment for the inspection and analysis of coal including the techniques for the design of coal-quality experiments. Laboratory. Prerequisite: 365 or appropriate background.

425-3 Advanced Process Design and Control. Extension of other process courses offered. Meets the need of those students who enter the field of manufacturing by giving more emphasis on planning, estimating, and control of industrial processes. Laboratory. Prerequisite: 309, 310.

439-3 Bulk Materials Handling. Study of the various types of equipment used in the mining industry. Estimation of costs and output of equipment used for excavating and transporting earth materials. Prerequisite: appropriate background.

440-3 Manufacturing Policy. Review of all areas covered by the industrial technology program. Includes problems for solution which simulate existing conditions in industry. Students present their solutions to the class and to the instructor in a formal manner. Prerequisite: 358, 365, 375, 382, or consent of instructor.

441-3 Mine-Safety Technology. An in-depth study of the technological implications of the Federal Coal Mine Health and Safety Act. Emphasis is placed on the technology required to operate safely underground coal mines. Prerequisite: appropriate background.

450-3 Industrial Systems Analysis. Teaches the systems required for successful industrial operations. The role of the computer in system design and application is emphasized.

460-5 Mining Technology. Mining methods; mine ventilation and pumping systems; mine structures; power distribution; coal-mine development and exploitation. Prerequisite: 360 or appropriate background.

465-4 Industrial Safety. Principles of industrial accident prevention; accident statistics and costs; appraising safety performance; recognizing industrial hazards and recommending safeguards. Includes a study of the Occupational Safety and Health Act and the Coal Mine Health and Safety Act. Prerequisite: senior standing.

466-3 Occupational Safety and Health Standards. Covers the standards, inspection procedures, and compliance requirements covered in the latest revisions of the Occupational Safety and Health Act of 1970. Emphasis is placed on developing the student's ability to detect violations of the standards and recommend corrective safety actions.

492-1 to 6 Special Problems in Industry. Special opportunity for students to obtain assistance and guidance in the investigation and solution of selected industrial problems. Not for graduate credit. Prerequisite: consent of instructor.

Interior Design (Major, Courses)

The interior design program is a part of the Division of Comprehensive Planning and Design.

The interior design curriculum is planned to assist students in preparing to serve the interior design and architectural professions in the areas of public building, commercial, and residential planning. This includes spatial concepts, interior systems, office landscape, traffic and communication, and human factors. An in-depth understanding of the relevancy of the curriculum to the profession is given the students through lectures and critiques by visiting interior designers, architects, and adjunct professors.

Employment opportunities exist in interior design studios and architectural firms; in major corporations as in-house planners and designers; as interior decorators; and in various retail organizations and furnishing manufacturers.

The Interior Design program is accredited by the Foundation for Interior Design Education Research.

The Division of Comprehensive Planning and Design provides the faculty, studios, and as many other facilities as possible, but all other costs including supplies, equipment, and required field trips that are necessary to the successful completion of the program are borne by the student. Interior design education is relatively expensive, and because of the individual nature of the creative laboratory work, it is impossible to predict the exact cost for each student. A reasonable estimate of initial cost would be \$150.00 for equipment, supplies, and books.

Much of this equipment is non-expendable but there will be additional supply costs for other courses in the program.

Bachelor of Science Degree, College of Human Resources

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Interior Design</i>	75
School of Technical Careers 215a, b	6
Art 200, 207	5
Clothing and Textiles 104	2
Interior Design 231, 300, 332a, b, 350, 381, 382, 383, 384, 390, 391a, b, c, 393, 394, 470, 491	51
Electives	11
Recommended electives: GSC 101, Administrative Sciences 170, Finance 271, Journalism 340, Cinema and Photography 320, Interior Design 331, 371, Theater 207	
<i>Total</i>	120

Courses

131-4 Introduction to Design, Home Furnishings and Interiors. Analysis of the visual environment, principles and elements of design and their relation to selection and arrangement of furniture and use of various media in design of residential interiors. Not open to interior design majors. Lecture and laboratory. Elective Pass/Fail.

231-3 Introduction to Interior Design. Introduction to principles of two- and three-dimensional design through the application of purposeful experiments with emphasis on functional uses of form and their relationship in space. Various media, application and viewpoints are used. To be taken concurrently with School of Technical Careers 215A. Lecture and Laboratory.

300-2 Display and Exhibition Design. Application of design principles and use of graphics in display. Studies in two- and three-dimensional display and exhibition; model-making techniques. Incidental expenses for supplies and materials. Prerequisite: 131 or 231 or consent of chairperson. Elective Pass/Fail.

331-3 Textile Design. Study of textile design and hand printing methods in textile production including block print, silk screen, batik, and tie dye. Simple weaving techniques. Lecture and laboratory. Prerequisite: 131, or 231, or consent of instructor. Elective Pass/Fail.

332-6 (3, 3) Construction Methods and Materials for Interior Designers. Study of construction methods and materials of buildings and standard graphic methods of presentation for interior designers. (a) residential (b) small commercial. Lecture and laboratory. Prerequisite: 232 or consent of chairperson.

350-3 Basic Materials. A study of construction and finishing materials other than those of a structural nature including production methods, limitations, quality control, application, and uses. Lecture. Prerequisite: concurrent enrollment in 332 or consent of chairperson.

371-4 Professional Internship. Supervised internship in interior design providing professional development of the intern through actual working conditions. Prerequisite: interior design majors within four semesters of graduation and consent of chairperson. Mandatory Pass/Fail.

381-2 History of Interior Design through the 19th Century. Furnishings and interiors from antiquity to the late 19th Century. Lecture.

382-2 History of 20th Century Interior Design. History of interiors, furnishings, and designers from the late 19th century to the present. A study of the relationship between the design of contemporary interiors and architecture and architects. Lecture.

383-2 Design and Fabrication of Furniture. Anthropometrics and systems analysis as related to the design, construction, and production of furniture. Includes working drawings and models. Lecture/laboratory. Recommended to be taken concurrently with 382. Prerequisite: School of Technical Careers 215B or Architectural Technology 111 or consent of chairperson.

384-3 Systems in Architectural Interiors. Technical survey of mechanical equipment in buildings with emphasis on lighting and illumination design. Consideration will also be given to environmental comfort, acoustics, sanitation, and code requirements. Lecture. Prerequisite: 332A.

390-3 Design Presentation and Delineation. Methods, materials, and media are explored to find the most satisfactory way to present interior design to clients, including creation of three-dimensional delineation of interior designs in varied media. Lecture and laboratory. Prerequisite: 231 and School of Technical Careers 215B.

391-12 (4, 4, 4) Intermediate Interior Design. Interior design of total environment concepts integrating interior and architectural functions through increasingly complex projects. (a) Residential. Prerequisite: 390 and concurrent enrollment in 332a. (b) Restaurant and commercial. (c) Office and public building planning. Prerequisite for 391b or c: 391a and concurrent enrollment in 332b or consent of chairperson.

393-3 Architectural Analysis for Interior Designers. A study of architectural components as they relate to the proximate interior environment. Includes architectural planning of interior and exterior elements. Prerequisite: 332b and 390 or consent of chairperson.

394-3 Contract Interior Design and Professional Practice. Residential and contract interiors and business principles of interior design, including systems, forms, and logistics of money and materials. Lecture and laboratory. Prerequisite: 391b or c or consent of chairperson.

470-3 Interior Design Seminar. Development of systematic approach involving systems analysis, human factors engineering, environmental variables. Prerequisite: eight hours in interior design or consent of chairperson.

491-4 Advanced Interior Design. Systematic analysis of human factors as determinants of design solutions for large-scale interiors. Lecture and laboratory. Prerequisite: 391c, 394 or consent of chairperson.

Journalism (School, Major, Courses)

The School of Journalism prepares academically sound, technically proficient, capable, and responsible graduates for professional journalistic careers. These careers, depending upon the level and direction of studies, may be found in news-editorial and advertising positions on newspapers, magazines, cable com-



munications systems, and other news media; in other advertising careers; and in public relations, media management, photojournalism, teaching, and research.

Two specializations, news-editorial and advertising, are accredited by the American Council on Education for Journalism, the agency approved by the U.S. Department of Health, Education and Welfare to accredit in journalism education. Early in the junior year the student must decide upon a specialization, either of which provides a number of electives which permit the student to explore other areas in journalism.

ADVERTISING SPECIALIZATION

Students electing the advertising specialization develop their abilities to analyze problems and identify the roles advertising and other communications can play in solving them; develop tools of planning, executing, and controlling advertising campaigns; and develop skills in the use of language and other message forms for specific purposes. A core of courses totaling 21 hours is required of all students, leaving 9 to 13 hours for work in one or more of the nine areas of interest mentioned in the following paragraph. This program helps prepare students to enter a wide variety of positions with advertising agencies, in the media, and related fields.

NEWS-EDITORIAL SPECIALIZATION

Students who elect the news-editorial specialization gain thorough professional training in both theory and practice in a number of related fields. These include daily and weekly newspapers, magazines, telecommunications, media management, photojournalism, public relations, research, and teaching. A core of courses totaling 24 semester hours is required of all students, leaving 6 to 10 hours for work in one or more of these nine areas of interest.

Bachelor of Science Degree, College of Communications and Fine Arts

The academic requirements for the Bachelor of Science degree in journalism include 30 to 34 hours in journalism as approved by the School of Journalism and 26 to 30 hours in journalism as approved by the School of Journalism and 26 to 30 hours in junior-senior level class work in the College of Liberal Arts, the College of Science, or other areas approved by the faculty.

Students will also complete a 15-hour minor in an area approved by the School of Journalism. The minor must be declared by the time the student has accrued 90 semester hours. Students who select a minor within the College of Liberal Arts may include those hours in their 26-30 senior level hours.

<i>General Studies Requirements</i>	45
<i>Requirements for a Major in Journalism</i>	30-34
Journalism 300, 310, 370	9
Required for the Advertising Specialization: 372, 374, 376, 479	12
or	
Required for the News-Editorial Specialization: 311, 312, 442,	
and two of the following: 390, 391, 411.....	15
Journalism electives to complete 30-34 hours	
<i>Minor</i>	15
<i>Approved electives</i> (Must include Marketing 304 for	
Advertising Specialization).....	26-30
<i>Total</i>	120

PHOTOJOURNALISM SPECIALIZATION

A photojournalism specialization, administered jointly by the School of Journal-

ism and the Department of Cinema and Photography, prepares students to become photographer-reporters and photo editors and to work in related positions in the mass media. Journalism majors enrolled in the specialization will be required to take the following courses: Journalism 300, 310, 311, 313, 370, 442 and either 312 or 315; Cinema and Photography 407, and 408; plus additional journalism hours for a total of 30-34.

Bachelor of Science Degree, College of Education

Students who plan to teach journalism must follow the program set forth by the College of Education, fulfill the requirements of the sequence of their choice in journalism, and complete Journalism 420. See Teacher Education Program, page 71.

Other Requirements

Journalism students must demonstrate a working knowledge of typewriting based upon a minimum rate of 30 words a minute. This proficiency must be demonstrated (by proof of a passing grade in a typing course or an examination given by the School of Journalism) before they register for Journalism 310. If they cannot meet this requirement, they must enroll in a typing course and receive a grade of *C* or better.

A student receiving a grade of *D* or lower in a journalism sequence course must repeat that course and receive a grade of *C* or better before advancing in that sequence.

Moderate fees will be assessed for supplies and materials in some courses.

Subject to the approval of the school's director, undergraduate students may receive as much as nine hours of journalism credit toward their degrees for courses not taken in residence.

Minor

A total of 15 hours of journalism courses constitutes a minor for nonjournalism majors.

Courses

300-3 Mass Media in Modern Society. Develops an awareness of the pervasive nature of the mass media in our society and an understanding of how the media operate, with emphasis on contemporary social and economic problems in the media.

305-3 Introduction to Mass Communication Theory and Research. Overview of issues and concepts in mass communication today, development of problems from theory and practice. Introduction to language and basic techniques of survey and experimental research, including use of the computer for data processing.

310-3 Writing for the Mass Media. Study in the fundamentals of news writing, the techniques of news gathering and reporting, and the principles of editing with experience in the gathering, writing, rewriting, and editing of news copy. Prerequisite: typing speed of at least 30 words per minute.

311-3 Reporting and News Writing. Purposes and effects of different orientations to the information gathering and news writing processes; information sources, interviewing, writing, and editing practices; laboratory in reporting, writing, and editing for the news media. Prerequisite: 310.

312-3 Editing and Makeup. Principles of editing are combined with graphic concepts and techniques which interrelate printing processes, photography, writing of cutlines, picture page preparation, and page makeup, copyfitting, head schedules, newspaper organization, and the work flow on the ad and editorial sides. Prerequisite: 311.

313-3 Introduction to Photojournalism. (Same as Cinema and Photography 313.) Fundamentals of publications photography. Includes basic camera technique, black and white film and print processing methods, selection and display of photographs, and evaluation of pictorial communication effects. Student supplies own photographic materials and, where possible, an adjustable camera. Prerequisite: consent of department. Open only to journalism majors. Students are responsible for purchase of supplies not to exceed \$25.

315-3 Graphic Communication. History of printing and typographic development, modern reproduction processes, technological developments, selection and use of appropriate

graphic images in communication, and production techniques for publications. Students are responsible for purchase of supplies not to exceed \$15.

340-2 Publicity Methods. Guidance and practice in writing for newspapers, magazines, and broadcast media about students' fields of specialization. Includes practical work as publicist for university and community groups. Non-majors only. Closed to students who have passed 310.

341-3 Public Relations. Current methods of planning and executing public relations policies, evaluating the media, and preparing campaigns. Promotional tools and press relations.

350-3 Community-Suburban Journalism. 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. Prerequisite: 311.

351-3 Community Newspaper Management. Organization, operation, and policy of the revenue departments of the community and suburban weekly and small daily newspapers with special attention to the circulation procedures, retail, general and classified advertising problems, and other phases of management. Prerequisite: 350.

360-3 Magazine Production and Design. The editorial and production functions of the magazine. Application of the principles of article and art layout to total editorial content. Printing production and selection of materials. A field trip is required. Cost should not exceed \$20.

361-3 Specialized Publications. The function and operation of industrial, trade, business, professional, fraternal, literary, scholarly, and fad publications. Problems of management and production and the relationship of personnel through editorial policies and practices.

362-3 Magazine Article Writing. Investigation of free-lance and staff-written magazine articles with emphasis on the relationship between types of magazines and article content, research methods, and writing style. Two major articles of publishable quality required. Prerequisite: 311.

370-3 Principles of Advertising. An introduction to the processes of advertising and their functions in a marketing-communications environment; includes research, media, and message elements of advertising campaigns, governmental regulations, and social and economic considerations.

372-3 Advertising Media and Management. Analysis of economic, social, and marketing factors and their use in developing advertising objectives and strategies. Examination of mass media systems as vehicles of advertising communication and the planning, buying, and scheduling of advertising media programs. Prerequisite: 370, Marketing 304.

374-4 Advertising Copy, Layout, and Production. Examination and practice in the development of advertising message strategies and the writing and design of advertising messages for television, radio, newspaper, magazine, outdoor, direct mail, etc. Students are responsible for purchase of supplies not to exceed \$15. Prerequisite: 372.

376-3 Advertising Campaigns. Application of advertising principles and techniques to the solution of a specific advertising problem facing a cooperating advertiser or advertising agency; problem analysis, development of strategy, media planning, message development, campaign presentation. One field trip is required for a campaign presentation. Cost should not exceed \$20. Prerequisite: 374.

390-3 Critical and Persuasive Writing. The roles and responsibilities of the editor, editorial writer, and opinion columnist with emphasis upon editorial writing and critical thinking. Editorial problems, methods, policies, style, and the fundamentals of persuasion and attitude change form the basis for study. Prerequisite: 311.

391-3 Feature Writing. Identification, research, and application of creative writing techniques with emphasis on newspaper articles. Analysis of reader appeal; study of feature story structure; development of style by practice in writing feature stories. Prerequisite: 311.

392-3 Reporting for Electronic Media. Researching, writing, and producing local news and public affairs presentation for CATV systems. Prerequisite: 310.

400-3 History of Journalism. Development of American newspapers, magazines and radio-television with emphasis on cultural, technological, and economic backgrounds of press development. Current press structures and policies will be placed in historical perspective.

401-3 International Communication. An analysis of the development, structure, functions, and current status of media systems in other countries. Emphasis given to studying factors that facilitate or restrict the flow of intranational and international communication.

411-3 Public Affairs Reporting. Covering government and other public agencies, including the city hall, courts, county offices, business, finance, agriculture, labor, and other specialized beats. One field trip is required. Cost should not exceed \$20. Prerequisite: 311.

420-3 School Publications. Designed for the prospective high school or junior college journalism teacher or publication director. Deals with practical production problems of school newspapers and yearbooks.

- 442-3 The Law of Journalism.** Legal limitations and privileges affecting the mass media to include the law of libel, development of obscenity law, free press and fair trial, contempt of court, right of privacy, advertising and antitrust regulations, copyright, and access to the press. Prerequisite: senior standing.
- 450-3 Mass Media Management.** Basic economic and management theory and application of theory to the management process in the mass media. Individual projects involving analysis of management of a selected medium. Prerequisite: consent of instructor.
- 451-3 Current Media Problems.** Readings and weekly seminar discussions on the role of the journalist in seeking solutions to the problems facing the mass media in the last third of the Twentieth Century. Involves questions of economics, structure, ethics, effects.
- 479-2 Social Issues and Advertising.** Analysis of social issues involving advertising; economic relationships, government and self-regulation, cultural effects, influence on media content and structure, role in democratic processes, international, and other problems and controversies. Prerequisite: senior standing.
- 490-1 to 6 (1 to 2, 1 to 2, 1 to 2) Readings.** Supervised readings on subject matter not covered in regularly scheduled courses. Prerequisite: written consent of instructor and area head.
- 494-1 to 3 Practicum.** Study, observation, and participation in publication or broadcast activities. Not for graduate credit. Prerequisite: consent of instructor and area head.
- 495-1 to 12 (1 to 6, 1 to 6) Proseminar.** Selected seminars investigating media problems or other subjects of topical importance to advanced journalism majors. Seminars will be offered as the need and the interest of students demand. Prerequisite: senior standing.
- 500-3 Research Methodology in Mass Communication I.**
- 501-2 Research Methodology in Mass Communication II.**
- 504-3 Foundations of Mass Communication Theory.**
- 505-2 Theoretical Issues in Mass Communication.**
- 506-3 Significant Studies in Mass Communication Research.**
- 510-2 Literature of Journalism.**
- 511-3 Studies in Journalism History.**
- 512-2 Press Freedom and Censorship.**
- 520-2 Communication and National Development.**
- 530-2 Historical Research in the Mass Media.**
- 540-3 Legal and Governmental Research in the Mass Media.**
- 550-1 to 12 (1 to 4, 1 to 4, 1 to 4) Topical Seminar.**
- 560-3 Seminar: Critical and Persuasive Writing.**
- 592-1 to 6 (1 to 2, 1 to 2, 1 to 2) Individual Research.**
- 599-1 to 6 Thesis.**
- 600-1 to 32 Dissertation.**

Language Arts and Social Studies (Major)

Bachelor of Science Degree, College of Education

General Studies Requirements	45
Requirements for Major in Language Arts and Social Studies.	46 ¹
Language Arts Requirements.	25
GSD 101, 117, 153 (7) + 1	
GSC 200 (3)	
GSC 365 or English 471 or 472	3
English 290, 300, 302a or 302b, 309, 481	15
Curriculum, Instruction, and Media 361	3
Curriculum, Instruction, and Media 445	3
Social Studies Requirements	21
GSB 300, 301, U.S. history elective (6) + 3	
World history, 205a or 205b plus three hours at 300 or 400 level	6
GSB 212, Political Science 213	7
GSB 211 or an elective in either world history or political science (3)	
GSA 330, Geography 300 (3) + 3	
GSB 203, 202, or 104 (3)	
Curriculum, Instruction, and Media 469	2

<i>Professional Education Requirements</i>	24
See Teacher Education Program, page 71.	
<i>Electives</i>	5
Curriculum, Instruction, and Media 393, 402, 407, 455, or 462 strongly recommended.	
<i>Total</i>	120

¹Although the hours shown in parentheses are required for the major, they also will count toward the 45 hour requirement in General Studies.

Latin American Studies (Major)

Southern Illinois University at Carbondale traditionally has had a strong interest in Latin America. An unusually large number of faculty specialists offer many courses related to that region and Morris Library contains an outstanding collection of Latin American materials. The University initiated its Latin American Studies Program in 1958 to prepare students for careers in business, education, and government and to serve others who desired more information about the nations south of the United States. An interdisciplinary program, it includes training in language, the social sciences, and humanities. Beyond the minimum core of courses required for the major, maximum flexibility is provided to tailor the curriculum to the needs and interests of the individual student.

Latin American studies majors also complete a minor or other approved coherent program (usually 15 to 18 hours) in a standard discipline or career specialty.

The College of Liberal Arts grants the Bachelor of Arts degree with a major in Latin American studies. The Latin American Studies Advisory Committee supervises the program. Interested students should consult the adviser for the Latin American studies major.

Bachelor of Arts Degree, College of Liberal Arts

<i>General Studies Requirements</i>	45
<i>Supplementary College Requirements</i> (See page 78.)	4-10
<i>Requirements for Major in Latin American Studies</i>	35
Required Core Curriculum	20
History 370a, b; Political Science 366; Anthropology 310b; Spanish 201a, b and 306	
Latin American Electives	15
Students may choose among 60 courses offered by thirteen departments to fulfill this requirement.	
<i>Minor</i>	15-18
<i>Electives</i>	12-21
<i>Total</i>	120

Law Enforcement (Program, Major)

(ALSO SEE CORRECTIONAL SERVICES)

Law enforcement today demands a wide range of knowledge and ability to meet the complexities of modern society. This program is designed both for the individual entering the profession and for persons already serving in law enforcement who wish to upgrade their skills.

Students in this program will not be taught "police skills" that are taught in a police academy, such as firearms or personal defense. They will learn methods of

crime control, criminal behavior, methods of crime detection, community problems in law enforcement, criminal law, and police administration. They will develop an understanding of people and of interpersonal relationships.

The student will spend one term prior to graduation working under supervision with a police agency.

Police officers may enroll in the program on a part-time basis with the assurance that faculty members will help them to arrange classes compatibly with their duty schedules.

Full transfer of credit is guaranteed to students who have completed certificate programs in law enforcement at cooperating community colleges.

An advisory committee made up of persons active in law enforcement assists the program. Current members are: Capt. Joe Ginter, commanding officer, Illinois State Police District 13, DuQuoin; W. Charles Grace, Jackson County Public Defender, Murphysboro; Howard Hood, Jackson County State's Attorney, Murphysboro; and James Rush, director of criminal justice planning, Greater Egypt Regional Planning and Development Commission, Carbondale.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in a combination with community college or other acceptable extra-institutional educational experience.

Associate in Art Degree, School of Technical Careers

Requirements for Major in Law Enforcement

GSB 202, 203, 212	11
GSD 101, 118, 153	8
Political Science 213	3
Sociology 372.....	4
Correctional Services/Law Enforcement 103, 105, 108, 115, 205, 209, 210, 215, 220, 221	36
Electives.	5
<hr/>	
Total	67

Courses

(SEE CORRECTIONAL SERVICES/LAW ENFORCEMENT)

Liberal Arts (College, Courses)

Courses

- 101-1 to 9 (1 to 3 per semester) **Interdisciplinary Studies.** This course may be offered in a variety of forms, including readings, lectures, or field study; the subject matter of the course will vary. Initiated by at least two faculty members from different departments. Approval by the dean is required during the semester prior to its offering. May be repeated to a total of nine credits. Elective Pass/Fail.
- 105-3 **Law in American Society.** Faculty from the Departments of Economics, History, Philosophy, Political Science, Psychology, and Sociology consider the ways in which law affects American society. Topics such as students' rights, civil disobedience, crime, obscenity, and labor-management relations will be explored through lectures, discussion groups, guest speakers, and media presentations. Recommended for students who want to explore how the law works in society, and who want to consider possible careers in law. Elective Pass/Fail.
- 257-1 to 30 **Concurrent Work Experience.** For giving elective credit for concurrent work experience and internships related to liberal arts subjects when credit has been approved by department.
- 258-1 to 30 **Work Experience.** For giving elective credit for previous work experience related to liberal arts subjects when credit has been established by department evaluation.
- 259-2 to 45 **Transfer Credit.** For transfer of elective credits in liberal arts subjects when credit has been established by department evaluation. Prerequisite: junior standing.
- 300-1 to 3 **Individual Interdisciplinary Readings.** Readings of an interdisciplinary nature elected by the student with sponsorship by faculty from different disciplines. Concurrent

registration in 301 or 302 beyond a total of three hours per semester requires the dean's permission. Prerequisite: advance approval by the dean. Elective Pass/Fail.

301-1 to 3 Individual Interdisciplinary Research. Research of an interdisciplinary nature elected by the student with sponsorship by faculty from different disciplines. Concurrent registration in 300 or 302 beyond a total of three hours per semester requires the dean's permission. Prerequisite: advance approval by the dean. Elective Pass/Fail.

302-1 to 3 Individual Interdisciplinary Field Study. Field study of an interdisciplinary nature elected by the student with sponsorship by faculty from different disciplines. Concurrent registration in 300 or 301 beyond a total of three hours per semester requires the dean's permission. Prerequisite: advance approval by the dean.

303-1 to 9 (1 to 3 per semester) Interdisciplinary Studies. Offered in a variety of forms, including lectures, readings, research, or field study. Initiated by at least two faculty members from different departments. Approval by the dean is required during the semester prior to its offering. May be repeated to equal a total of nine credits. Elective Pass/Fail.

310-3 Values in the Living World—Life, Normalcy, and the Natural. Intended for students who are interested in examining individual and social values which pertain to those professions based upon the biological sciences; e.g., medicine, nursing, zoology, forestry, etc. Elective Pass/Fail.

311-3 Values in the Communication Arts. The aim of this course is to examine, by means of readings, films and guest lecturers, some value perspectives of contemporary American life. This will be done in terms of ethical-aesthetic ideals and actual practices to be encountered in the public's most accessible and influential media; i.e., cinema, radio, television, and journalism. Elective Pass/Fail.

312-3 Applied Values in Society. A consideration of value problems and dilemmas faced by individuals in social science-based professions such as counseling, social welfare, administration of justice, etc. Among the problems to be considered are agency or corporate loyalty vs. individual conscience; individual good vs. social good; and professional ethics vs. individual ethics. Elective Pass/Fail.

Linguistics (Department, Major, Course)

The objective of the undergraduate major in linguistics is to provide broad, general training in theoretical and applied linguistics. The major is designed to help students achieve an awareness of the language systems of the past, and appreciation of human modes of communication, a fundamental understanding of the ever-changing linguistic environment in which they live, and the processes by which language is acquired. Moreover, education in linguistic methods trains a student to think analytically, to evaluate hypotheses, and to propose new solutions. The analytical models of linguistics have, since the 1930's, been recognized by other disciplines (notably anthropology, psychology, and sociology) as significant research paradigms. Linguistic theory has also been enriched by insights and models from other disciplines. Students who have not taken courses in their cognate fields are encouraged to use their elective hours to explore the related areas of anthropology, computer science, English, foreign languages, mathematics, philosophy, psychology, sociology, speech communication, speech pathology and audiology, and statistics.

The major in linguistics consists of a minimum of 32 semester hours comprising: (1) 16-18 semester hours in a core of basic courses in general linguistics, 300 or 401, 301, 402a, 403 or 405, 408; and (2) various structured alternatives, dependent on whether the student is more interested in theoretical or applied linguistics. Students concentrating on theoretical linguistics are required to take 9 semester hours of 415, 440, and either 430 or 450, plus 6 or 7 semester hours of departmental electives. Students concentrating on applied linguistics are required to take 8 semester hours of 453, 454, 455, plus 8 semester hours of 456, 415, and 445.

There is a foreign language requirement, potentially overlapping the College of Liberal Arts requirements, as follows: (1) one year of an uncommon or non-Western language, or (2) two years of any foreign language. Students planning graduate study in linguistics should take three years of foreign language study.

Bachelor of Arts Degree, College of Liberal Arts

<i>General Studies Requirements</i>	45
<i>Supplementary College Requirements</i> (See page 78.)	(4) + 8-14
<i>Requirements for Major in Linguistics</i>	32
Linguistics 300 or 401, 301, 402a, 403 or 405, 408	16-18
Theoretical Linguistics Electives: Linguistics 415, 440, 430 or 450, plus departmental electives	15-16
or	
Applied Linguistics Electives: Linguistics 453, 454, 455, 456, 415, 445	16
<i>Foreign Language Requirements</i> (overlapping with college requirements)	10-16
<i>Electives</i>	13-25
<i>Total</i>	120

Minor

The Department of Linguistics offers two minors: one in linguistics and one in uncommon languages.

LINGUISTICS

The minor in linguistics (a minimum of 15 hours) draws upon the basic courses of the Department of Linguistics. It introduces the student to the structure of language, the historical development of languages, and the relation of language to the rest of culture. A minor in linguistics would be of special interest to students in anthropology, computer science, English, foreign languages and literatures, mathematics, philosophy, psychology, sociology, speech communication, and speech pathology and audiology.

Requirements for the minor in linguistics: (1) 300 or 401; (2) at least two courses (6-8 hours) from among the following: 301, 402a, 403, 405, 408; (3) additional courses from among the following to complete at least 15 hours: 402b, 402c, 404, 415, 430, 431, 440, 450, 453, 497.

UNCOMMON LANGUAGES

The minor in uncommon languages consists of a minimum of 15 hours at 200-level or above of an uncommon language offered by the Department of Linguistics. For specific languages, see course offerings.

Students interested in linguistics should also consider taking GSD 104 or GSB 330 to help satisfy the General Studies requirements.

Courses

100-6 (3, 3) Oral English for Foreign Students. Four class hours of oral English and one hour in-class composition. An elective of foreign students admitted to the University in a graduate or undergraduate program. Cannot substitute for Linguistics 101, 102, or 103, but may be taken concurrently. May be taken singly.

101-3 Basic English Composition for Foreign Students. Instruction in the basic methods of English composition, focusing on the particular problems of foreign students. Techniques of analyzing, summarizing, outlining, documenting, synthesizing, and revising. Basic English grammar relevant to composition problems of foreign students. Equivalent to GSD 101. Limited to foreign students selected by proficiency exam on entrance.

102-2 Expository Writing for Foreign Students. Principles of expository essay style; study and practice in various techniques of expository writing. Directed at the particular problems of foreign students. Advanced study of English grammatical structures. Equivalent to GSD 117. Limited to foreign students. Prerequisite: 101 or equivalent.

103-2 Technical Writing for Foreign Students. Principles of scientific and technical writing in English as a second language. Study and practice of the techniques of technical report writing. Directed at the particular problems of foreign students. Advanced study of

grammatical tools and organization required for technical prose. Equivalent to GSD 118. Limited to foreign students. Prerequisite: 101 or equivalent.

210-10 (5, 5) Elementary Uncommon Languages. Introduction to the basic skills of listening, speaking, reading, writing, and the fundamentals of grammar. Must be taken in sequence. (a-b) Arabic, (c-d) Hebrew, (e-f) Persian, (g-h) Vietnamese, (i-j) Lao, (k-l) Cambodian.

290-3 Advanced English Composition for Foreign Students. Designed for foreign graduate and undergraduate students who need further work in composition in English as a foreign language (EFL) beyond their entering TOEFL scores or successful completion of Linguistics 101 and either 102 or 103. Both group activities and individualized supervision will be provided. Prerequisite: 101 and either 102 or 103; or graduate status. Mandatory Pass/Fail.

300-3 Introduction to Descriptive Linguistics. An introductory survey of synchronic, descriptive linguistics: assumptions, methods, goals, terminology, and data manipulation. Elective Pass/Fail.

301-3 Introduction to Historical and Comparative Linguistics. An introductory survey of historical and comparative linguistics: assumptions, methods, goals, terminology, and data manipulation. Elective Pass/Fail.

320-3 Intercultural Communication. (See Speech Communication 320.)

321-3 Survey of Vietnamese Literature. Readings and analysis of selected works of Vietnamese literature from the beginning to the present time.

401-4 General Linguistics. Basic concepts and methods of general linguistics. Fundamentals of the nature, structure, and functioning of language. Data manipulation and problem solving. Elective Pass/Fail.

402-7 (3, 3, 1) Phonetics. (a) Theory and practice of articulatory phonetics. (b) Theory and practice of instrumental phonetics. Prerequisite: 402a. (c) Transcription laboratory. Prerequisite: 402a. May be taken singly. Elective Pass/Fail.

403-3 English Phonology. Study of English phonology, both American and British, including phonetics, phonemics, and prosodics. Prerequisite: 300 or 401, and 402a, or consent of department. Elective Pass/Fail.

404-3 American Dialects. Regional variation and social stratification of American English. Phonological and syntactic differences among the major dialects of American English. Prerequisite: one previous course in linguistics. Elective Pass/Fail.

405-4 Phonological Theories. A survey of various phonological theories involving the phoneme from the 19th century up to the present, including theoretical issues arising therefrom and relationships among the theories. Limited data analysis within the perspective of the different theories. Prerequisite: 300 or 401, and 402a. Elective Pass/Fail.

408-4 Syntactic Theory. Basic concepts and formalisms of transformational generative grammar. Data manipulation and problem-solving in English syntax. Prerequisite: 300 or 401, or consent of department. Elective Pass/Fail.

410-10 (5, 5) Intermediate Uncommon Languages. Review of the structure of modern spoken language. Introduction to written language. Emphasis on conversational style. The first semester carries undergraduate credit only. (g-h) Vietnamese, (i-j) Lao, (k-l) Cambodian. Prerequisite: 210 or equivalent.

411-3 The Linguistic Structure of Chinese. (See Chinese 410.)

412-3 The Linguistic Structure of Japanese. (See Japanese 410.)

415-3 Sociolinguistics. History, methodology, and future prospects in the study of social dialectology, linguistic geography, multilingualism, languages in contact, pidgin and creole languages, and language planning. Prerequisite: one previous course in linguistics or consent of department. Elective Pass/Fail.

420-8 (4, 4) Advanced Uncommon Languages. Advanced conversation and reading of third-year level materials in preparation for classes conducted in the language. (g-h) Vietnamese, (i-j) Lao, (k-l) Cambodian. Prerequisite: 410 or equivalent.

422-3 Contemporary Vietnamese Prose. Open to advanced students. Short stories, novels, and essays (main trends and evolution). Emphasis on works of prominent authors since 1920, such as Nguyen V. Vinh, Pham Quynh, H. N. Phach, Nguyen T. Thuat, P. K. Binh, Khai Hung, and the recent generation. Prerequisite: 321 and 410.

423-2 Vietnamese Poetry. Classical and modern poetry. Emphasis on masterpieces and leading figures such as Nguyen Trai, Nguyen Binh Khiem, the authors of Chinh Phry Ngam and Cung Oan, Nguyen Huy Tu, Nguyen Du and the Kim Van Kieu, Nguyen Cong Tru, and the new poetry with the impact foreign poetry had on it. Prerequisite: 321 and 410.

424-2 Modern Vietnamese Drama. Hat boi (Vietnamese Opera), Hat cheo (Popular Theater from North Vietnam), Cai luong (Modernized Opera and Musical), Thoai kich (Modern Theater), and Kich tho (Lyric Theater). Emphasis on the main plays, the stage techniques, and the literary and social meaning of those various forms of Vietnamese theater. Prerequisite: 321 and 410.

430-3 to 6 (3, 3) Grammatical Structures. Detailed analysis of the structure of particular languages. May be repeated to a total of six hours credit with consent of department.

- Prerequisite: one previous course in linguistics or consent of department. Elective Pass/Fail.
- 431-3 Structure of the English Verb.** An analysis of the English verb system. Special study of the modals and non-finites. Elective Pass/Fail.
- 440-1 to 6 (1 to 3 per topic) Topics in Linguistics.** Selected topics in theoretical and applied linguistics. May be repeated to a total of six hours credit with consent of department. Prerequisite: one previous course in linguistics or consent of department. Elective Pass/Fail.
- 445-4 Psycholinguistics and Language Teaching I.** A broad spectrum introduction to psycholinguistics and its applications to language teaching and learning. Although both first and second language acquisitions are covered for completeness, emphasis is placed on topics relevant to second language acquisition.
- 450-3 to 6 (3, 3) Language Families.** A synchronic survey of particular language families or sub-families. May be repeated to a total of six hours credit with consent of department. Prerequisite: one previous course in linguistics or consent of department. Elective Pass/Fail.
- 453-4 Methods in Teaching English as a Second Language.** Introduces the basic methods of teaching English as a second language, specifically as part of bilingual programs, and presents the theoretical premises and background from the fields of general linguistics, contrastive linguistics, psycholinguistics, education, and sociolinguistics. Elective Pass/Fail.
- 454-2 Observation and Practice in TESL.** Lessons in teaching English as a second language are modeled and demonstrated live and via video-tape. In addition to micro-teaching and other peer-teaching, students observe ESL/EFL classes and laboratories and do tutoring and practice teaching under supervision as schedulable. Enrollment limited to undergraduates. Mandatory Pass/Fail.
- 455-2 Materials in TESL.** Examination and criticism of currently used textbooks in ESL and bilingual education programs, as well as other printed materials and visual and mechanical aids in teaching English as a second language. Prerequisite: 453 or consent of department. Elective Pass/Fail.
- 456-1 Contrastive Linguistics Practicum.** Examination of the interference of other languages, particularly Spanish, into the English of ESL learners on the levels of phonetics, phonology, morphology, syntax, lexicon, semantics, and orthography. Study of written and spoken errors, diagnosis of errors and development of techniques for correction. Prerequisite: 453 or consent of department. Elective Pass/Fail.
- 497-1 to 8 Readings in Linguistics.** Directed readings in selected topics. Prerequisite: consent of department and undergraduate status.
- 501-3 Contrastive Linguistics.**
- 504-3 Dialectology.**
- 506-4 Historical Linguistics.**
- 510-3 History of Linguistics.**
- 530-3 to 6 (3, 3) Historical Grammatical Structures.**
- 540-1 to 12 (1 to 3 per topic) Studies in Linguistics.**
- 550-4 to 8 (4 per topic) Seminar in Linguistics.**
- 570-3 Theory and Methods of EFL/ESL.**
- 571-2 Language Laboratories in EFL/ESL.**
- 572-2 Materials Preparation in EFL/ESL.**
- 575-2 EFL/ESL Testing.**
- 580-3 Seminar in Special Problems of EFL/ESL.**
- 581-2 Practicum in EFL/ESL: Oral English.**
- 585-2 Practicum in EFL/ESL: Written English.**
- 593-1 to 4 Research in Linguistics.**
- 596-3 Stylistics.**
- 597-1 to 8 Readings in Linguistics.**
- 599-1 to 6 Thesis.**

Marketing (Department, Major, Courses)

Marketing deals with all activities required to link production of goods and services with their use. The emphasis in all courses is upon the development of an analytical approach to the creative solution of marketing problems. The department will assist students in arranging suitable course sequences to prepare for careers in such fields as retailing, sales management, industrial marketing, physical distribution, promotional management, international marketing, and marketing administration.

Bachelor of Science Degree, College of Business and Administration

<i>General Studies Requirements</i>	45-46
<i>Professional Business Core (See page 66.)</i>	47-48
<i>Requirements for Major in Marketing</i>	21
Marketing 329, 363, 390, 493	12
Marketing Electives	9
<i>Electives</i>	5-7
<i>Total</i>	120

Courses

- 304-3 Marketing Management.** Management of the firm's marketing function within a dynamic operating environment. Includes study of such functions as product development, promotion, channel selection, logistics and market research. Prerequisite: one course in accounting and one course in economics and junior standing or higher, or consent of the department.
- 305-3 Behavioral and Social Aspects of Marketing.** Examines underlying psychological, sociological, and economic factors which influence consumer behavior. Studies the impact of marketing activities on society, consumerism and legislation affecting the marketplace. Prerequisite: junior standing or higher, or consent of the department.
- 329-3 Marketing Channels.** The methods and processes used in the distribution of consumer and industrial products and services. Emphasis is upon the ways in which certain basic distribution functions are carried out in an integrated channel system. The role of a variety of manufacturers, wholesalers and retailers as parts of this system is analyzed. Prerequisite: 304 and junior standing or higher, or consent of the department.
- 335-3 International Marketing.** Analysis of international operations. Emphasis on the factors influencing marketing to and within foreign countries and the alternative methods of operations open to international firms. Prerequisite: 304 or consent of instructor and junior standing or higher, or consent of the department.
- 341-3 Transportation.** Organization and economic aspects of the United States transportation system, including rail, highway, air, pipeline, and water transportation. Regulatory problems of transportation. Current transportation developments and situations. Prerequisite: 304 and junior standing or higher, or consent of the department.
- 350-3 Entrepreneurship and Venture Initiation.** Deals with principles involved in locating market opportunities and developing growth plans for businesses requiring a relatively low initial capital investment. Taught from the point of view of the owner-manager relying heavily upon case examples of successful entrepreneurship. Prerequisite: 304 or consent of department.
- 363-3 Promotional Concepts.** The role of promotional activities in the firm's marketing function — advertising, personal selling, sales promotion and publicity. The relationship of consumer behavior to the area of promotion. Prerequisite: 304 and junior standing or higher, or consent of the department.
- 390-3 Marketing Research and Analysis.** The basic procedures and theories appropriate to solving various types of marketing problems in the context of business organization and decision models. Prerequisite: 304 and Administrative Sciences 208 and junior standing or higher, or consent of the department.
- 401-3 Retail Management.** Designed to present the basic principles in decision areas such as location, layout, organization, personnel, merchandise control, sales promotion, advertising, etc. Retail merchandising through managerial perspective. Prerequisite: 304 and junior standing or higher, or consent of the department.
- 438-3 Sales Management.** Analysis of the management of the sales effort within the marketing system. Philosophies, concepts, and judgment criteria of the sales function in relationship to the total marketing program. Prerequisite: 304 and junior standing or higher, or consent of the department.
- 439-3 Industrial Marketing.** Analysis of decision criteria related to the marketing of industrial products. Emphasis on program development, formulation of a marketing mix, and the behavioral relationships in the modern industrial organization. Prerequisite: 304 and junior standing or higher, or consent of the department.
- 452-3 Physical Distribution Management.** Integration of physical distribution activities of the firm into a system. Transportation and location as elements of the system. Inventories and service as constraints upon the system. Planning, operation, organization, and management of the system. Prerequisite: 304 and junior standing or higher, or consent of the department.
- 463-3 Advertising Management.** Advertising from the viewpoint of business management. Develops an understanding of the role of advertising under various conditions.

Problems of integrating advertising strategy into the firm's total marketing program. Prerequisite: 304 and junior standing or higher, or consent of the department.

493-3 Marketing Policies. A comprehensive and integrative view of marketing policy formulation. Marketing decisions analyzed and discussed. Prerequisite: 329, 363, and 390 (not more than one to be taken concurrently); junior standing or higher, or consent of the department.

495-3 Quantitative Techniques in Marketing. An introduction to and survey of mathematical tools of decision making in marketing situations. Application of these techniques to the analysis of marketing problems is emphasized. Prerequisite: 304 and Mathematics 117 or 140 and junior standing or higher, or consent of the department.

499-1 to 6 (1 to 3, 1 to 3) Marketing Insights. Provides the student an opportunity to participate in an internship program, independent study, or seminar coinciding with his areas of interest. May be repeated for credit only when topics vary. Prerequisite: junior standing or higher, and approval of the department chairperson in the semester prior to enrollment.

Mathematics (Department, Major, Courses)

Students intending to major in mathematics must plan schedules of mathematics courses numbered above 299 with a mathematics adviser. At least a C is required in all mathematics courses used to satisfy departmental requirements.

Bachelor of Arts Degree, College of Liberal Arts

General Studies Requirements	45
Supplementary College Requirements (See page 78.)	(4) + 8-14
Requirements for Major in Mathematics	37
Mathematics 150 (151 or 159 may substitute), 250 (259 may substitute), 251, 221.....	(4) + 10
Computer Science 202	(3)
Mathematics electives: seven courses at the 300-400 level, of which at least four are at the 400 level, excluding 301, 311, 313, 314, 400, 411, 432, 453, but including 319 (or 419) and 352 (or 452)	21
Foreign Language (French, German, or Russian recom- mended)	(8)
Six hours in one of the following areas, selection to be after the approval of the department: (a) engineering, (b) computer sci- ence, (c) any department in the College of Science, (d) econom- ics, (e) College of Business and Administration	6
Electives	24-30
Total	120

Bachelor of Science Degree, College of Science

General Studies Requirements	45 ¹
College of Science Requirements	12
Foreign Language (listed under major)	
Biological Sciences (not General Studies)	6
Physical Sciences (not General Studies)	6
Requirements for Major in Mathematics	38
Mathematics 150 (151 or 159 may substitute), 250 (259 may substitute), 251, 221.....	(4) + 10
Computer Science 202	3
Mathematics electives: seven courses at the 300-400 level, of which at least four are at the 400 level, excluding 301, 311, 313, 314, 400, 411, 432, 453, but including 319 (or 419) and 352 (or 452)	21

Foreign Language (French, German, or Russian recommended)	(4) + 4
<i>Electives</i>	25
<i>Total</i>	120

¹The 45 hour requirement may be reduced by taking College of Science requirements which are approved substitutes for General Studies courses.

Bachelor of Science Degree, College of Education

Students in the College of Education with a major in mathematics must plan schedules of mathematics courses numbered above 199 with a mathematics adviser. Grades must be at least a *C* in mathematics courses numbered 150 or above used to satisfy these requirements.

<i>General Studies Requirements</i>	45 ¹
<i>Requirements for Major in Mathematics</i>	33-34
Mathematics 150 (151 or 159 may substitute), 250 (259 may substitute)	(4) + 4
Mathematics 221	3
A student may take some of the above courses by proficiency examination or may substitute honors calculus for calculus.	
Computer Science 202	3
Mathematics 311, 319, (or 419), 335, and 352 (or 452)	13
Mathematics 319E and 352E	2
At least 3 additional mathematics courses numbered above 399	8-9
<i>Professional Education Requirement</i>	24
See Teacher Education Program, page 71.	
<i>Electives</i>	17-18
<i>Total</i>	120

¹See Catalog section titled Secondary Education for specific certification requirements.

Unconditional admission into the Teacher Education Program in mathematics requires a 2.5 average in mathematics courses numbered above 149, including a grade of *C* or better in at least two mathematics courses numbered above 299 (not including Mathematics 311, 313, 314, 400, 411, or 432 or courses formerly numbered 321, 410, 411, 412.)

Approval for student teaching requires a grade of *C* or better in Mathematics 311 and a 2.25 average in mathematics courses numbered above 299, including a grade of *C* or better in at least four other mathematics courses (not including Mathematics 313, 314, 400, 411, or 432 or courses formerly numbered 321, 410, 411, 412). Students with a minor in mathematics must also meet this requirement to student teach in mathematics.

Minor

A non-teaching minor consists of Mathematics 150, or 140, or equivalent and 12 hours of mathematics credit at the 200 level or above, including at least one course at the 400 level (excluding 301, 311, 313, 314, 400, 411, and 432). Courses should be approved by a mathematics departmental adviser. Elementary and secondary education students interested in a mathematics minor should see a mathematics departmental education adviser to obtain a current list of specific requirements. A grade of *C* or better must be earned in all courses used to meet minor requirements.

Honors

Mathematics 159 and 259 provide honors material in calculus and analytic geometry for properly qualified freshman and sophomore students. Mathematics 395 and 495 are used for individual honors work for upper level undergraduates in mathematics.

Courses

101-1 Mathematics Review for Pre-Law. Sample questions and problems related to mathematics and law school admission examinations. Fall only. Two hours weekly for half-semester. Mandatory Pass/Fail.

110-5 (3, 2) College Algebra and Trigonometry. A two-semester sequence version of the course Mathematics 111. Students with two or more years of high school algebra and no trigonometry should begin with 110b. Credit is not given for both 110 and 111. Prerequisite: GSD 107 or one and one-half years of high school algebra or the equivalent. Elective Pass/Fail.

111-5 College Algebra and Trigonometry. For students with one and one-half years of high school algebra who intend to take 150. The algebra of functions; exponential, logarithmic, and trigonometric functions; functions of two variables. Credit is not given for both 110 and 111. Prerequisite: GSD 107 or one and one-half years of high school algebra or the equivalent. Elective Pass/Fail.

114-4 Algebraic and Arithmetic Systems. Whole numbers, integers, rational numbers, and real numbers; numeration systems; algorithms; number theory; elementary algebra. Successful completion of this course requires a passing grade on a basic skills test of minimal mathematical proficiency. This course can be used to satisfy the mathematics requirement in General Studies. Prerequisite: one year of high school algebra or GSD 106 or equivalent.

116-5 Finite Mathematics and Algebra. Topics from intermediate algebra and college algebra, systems of linear equations, matrix algebra, Gauss-Jordan row reduction, elementary probability theory, emphasis on business applications. Credit is not given for both 116 and 139. If there is prior credit in GSD 107, 110a, or 111, only 3 hours of credit for 116 may be applied to graduation requirements. This course can be used to satisfy the mathematics requirement in General Studies. Prerequisite: one year of high school algebra or GSD 106.

117-5 Finite Mathematics and Calculus. A continuation of 116. Linear programming, topics in algebra, elementary differential calculus, max-min problems emphasizing business applications, partial derivatives, elementary integral calculus with applications in economics. Credit hours for both 117 and 139, for both 117 and 140, or for both 117 and 141 may not be applied to fulfillment of degree requirements. No credit hours for 117 may be applied to fulfillment of degree requirements if there is prior credit in 150. Prerequisite: 116.

139-3 Finite Mathematics. Set concepts and operations, combinations, permutations, elementary probability theory including Bayes formula, linear systems of equations, matrix algebra, Gauss-Jordan row reduction, introduction to linear programming. Credit is not given for both 116 and 139 nor for both 117 and 139. Prerequisite: GSD 107 or one and one-half years of high school algebra.

140-4 Short Course in Calculus. Techniques of differentiation, increasing and decreasing functions, curve sketching, max-min problems in business and social science; partial derivatives, LaGrange multipliers, elementary techniques of integration. Credit hours for both 117 and 140 or for both 140 and 141 may not be applied to fulfillment of degree requirements. No credit hours for 140 may be applied to fulfillment of degree requirements if there is prior credit in 150. Prerequisite: GSD 107 or one and one-half years of high school algebra.

141-4 Short Course in Calculus for Biological Sciences. Basic techniques of differentiation and integration. Population and organism growth problems solved by using calculus. Translation of physical problems in the biological sciences into mathematical problems. Credit hours for both 141 and 117 or for both 141 and 140 may not be applied to fulfillment of degree requirements. No credit hours for 141 may be applied to fulfillment of degree requirements if there is prior credit in 150. Prerequisite: 111 or equivalent.

150-4 Calculus I. Treatment of the major concepts and techniques of single-variable calculus, with careful statements but few proofs. Differential and integral calculus of the elementary functions with associated analytic geometry. Students interested in honors credit should see Mathematics 159. If there is prior credit in 140, 117, or 141, only 2 hours of credit for 150 may be applied to graduation requirements. Prerequisite: 111 or equivalent. Elective Pass/Fail.

151-5 Calculus I with Algebra. Designed to include a modest review of high school algebra and trigonometry as well as all course material in 150. Credit is not given for both 150 and

151 nor for both 159 and 151. Prerequisite: three years of high school mathematics including two years of algebra, and one-third year of trigonometry, and an ACT score greater than 50, or consent of department.

159-4 Honors Calculus I. Honors version of 150. Careful treatment of the major concepts and techniques of single-variable calculus. Credit is not given for both 150 and 159. Prerequisite: consent of department.

221-3 Introduction to Linear Algebra. Vector spaces, linear functions, systems of equations, dimensions, determinants, eigenvalues, quadratic forms. Prerequisite: 150. Elective Pass/Fail.

250-4 Calculus II. Develops the techniques of single-variable calculus begun in Calculus I and extends the concepts of function, limit, derivative, and integral to functions of more than one variable. The treatment is intuitive, as in Calculus I. Techniques of integration, introduction to multivariate calculus, elements of differential equations. Students interested in honors credit should see Mathematics 259. Prerequisite: 150. Elective Pass/Fail.

251-3 Calculus III. Further topics in calculus. Definite integrals over solid regions, applications of partial derivatives, vectors and vector operators, derivative of vector function, line integrals, Green's theorem. Prerequisite: 250. Elective Pass/Fail.

258-1 to 12 Work Experience. As an instructional aide, the student will do tutoring under the direction of an established teacher and under the supervision of a representative of the Department of Mathematics. Prerequisite: consent of department. Mandatory Pass/Fail.

259-4 Honors Calculus II. An honors version of 250. Develops the techniques of single-variable calculus and extends the concepts of function, limit, derivative, and integral to functions of more than one variable. Credit is not given for both 250 and 259. Prerequisite: 159 or consent of department.

280-3 Introduction to Probability Theory. Probability as a mathematical system, random variables and their distributions, limit theorems, topics in statistical inference. Prerequisite: 150 (250 recommended). Elective Pass/Fail.

282-3 Introduction to Statistics. Designed to introduce beginning students to basic concepts, techniques, and application of statistics. Topics to include the following: organization and display of data, summation notation, measure and dispersion, permutations, combinations and elementary probability, binomial, normal and Poisson distribution, random sampling, hypothesis testing, student t-distribution, correlation and regression, nonparametric statistics, Chi-square distribution. Prerequisite: three semester hours of college mathematics beyond general studies mathematics; e.g., any of the following courses: 111, 117, or 139 would satisfy the prerequisite. Elective Pass/Fail.

283-3 Introduction to Applied Statistics. Experiment motivated in that the statistical concepts are developed to answer questions that arise from experiments that the class performs. Statistical concepts discussed are descriptive statistics, sampling distributions, expectation, correlation, probability sampling, randomization and control in experimentation, least squares estimation, confidence intervals, nonparametric tests. Also the student is given experience in writing up experiments. Prerequisite: 140 or equivalent. Elective Pass/Fail.

301-3 Introduction to Discrete Structures. (Same as Computer Science 342.) Sets, relations, and functions. Elements of graph theory with emphasis on algorithms and applications to computing problems. Boolean algebras with applications to computer logic and logical design. Prerequisite: 111 and Computer Science 202 or consent of either department.

305-3 Introduction to Ordinary Differential Equations I. Solution techniques for differential equations with emphasis on second order equations, applications to physical sciences, numerical methods. Prerequisite: 250. Elective Pass/Fail.

306-3 Introduction to Ordinary Differential Equations II. Laplace transforms and Fourier series with applications to ordinary and partial differential equations. Systems of first order differential equations, stability. Prerequisite: 305 or consent of instructor. Elective Pass/Fail.

311-4 Teaching of Secondary Mathematics. 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. Three lectures and two laboratory hours per week. Does not count toward a mathematics major for Bachelor of Arts degree students. Prerequisite: 319, 319E, and 335.

313-3 Mathematical Insights. Introduction to the conceptual aspects of modern mathematics. Starting with simple questions about such things as sets, area, and games, the student is led to an appreciation of the necessity for preciseness in a mathematical theory. Prerequisite: completion of the general studies mathematics requirement. Elective Pass/Fail.

314-3 Topics in Mathematics for Elementary Teachers. Measurement, metric system; geometric figures, transformations; symmetry, congruence, similarity; combinatorics, probability. This course may not be used to satisfy requirements for a mathematics major. Prerequisite: 114 or consent of department.

319-3 Introduction to Abstract Algebra. Basic properties of groups and rings: Binary

operations, groups, subgroups, permutations, cyclic groups, iso-morphisms, Cayley's theorem, direct products, cosets, normal subgroups, factor groups, homomorphisms, rings, integral domains. Prerequisite: 250; plus for secondary education majors, concurrent enrollment in 319E. Elective Pass/Fail.

319E-1 Modern Algebra as Applied to the Secondary Schools. Two hours per week. The applicability of the concepts of modern algebra, particularly the field axioms and the function concept, to the secondary curriculum. Prerequisite: concurrent enrollment in 319. Elective Pass/Fail.

335-3 Concepts of Geometry. An elementary introduction to various geometric systems to acquaint the students with the inter-relationship between geometries of current interest. Topics include axiom systems, absolute plane geometry, Euclidian geometry, and non-Euclidean geometry. Prerequisite: 221 or 250. Elective Pass/Fail.

351-3 Vector Analysis. The algebra of vectors; vector valued functions; the gradient, divergence, and curl operators in cartesian coordinates; volume, surface, and line integrals; the Gauss and Stoke's theorems; Green's identities; curvilinear coordinates and coordinate transformations; coordinate-free definitions for the gradient, divergence, curl, and Laplacian operators; invariance properties of these operators. Prerequisite: 250. Elective Pass/Fail.

352-3 Introduction to Analysis. A rigorous treatment of concepts introduced in elementary calculus, such as real number system, limits and continuity, derivatives, integration, transcendental functions. Prerequisite: 250; plus for secondary education majors, concurrent enrollment in 352E. Elective Pass/Fail.

352E-1 Analysis as Applied to the Secondary Schools. Two hours per week. Sequences, series, infinite decimals, continuity. Applications to the secondary curriculum. Prerequisite: concurrent enrollment in 352. Elective Pass/Fail.

361-3 Numerical Calculus. (See Computer Science 361.)

383-3 Introduction to Linear Models. Elementary course in multiple linear regression and analysis of variance, emphasizing applications as opposed to theory. Students learn to read print-outs of standard canned statistical packages (e.g., SPSS). Linear models, response surfaces, time series, elementary design techniques, least squares prediction, F-tests in Anova, the use of canned programs. Not for mathematics majors. Prerequisite: 282 or 283 and 116 or 139; or consent of instructor.

395-1 to 6 Readings in Mathematics. Supervised reading in selected subjects. Prerequisite: 3.00 grade point average in mathematics and consent of chairperson.

400-2 History of Mathematics. An introduction to the development of major mathematics 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 mathematics from 600 B.C. Prerequisite: 319 and 352 or consent of instructor. Elective Pass/Fail.

405-3 Intermediate Ordinary Differential Equations. Topics selected from linear systems, existence and uniqueness for initial value and boundary value problems, oscillation, and stability. Prerequisite: 306. Elective Pass/Fail.

406-3 Eigenfunction Methods in Applied Mathematics. Inner product spaces; orthonormal systems; Bessel's inequality; quadratic forms; Hermitian operators; eigenfunctions and eigenvalues; minimization properties of eigenfunctions; the spectral theorem for a Hermitian matrix; functions of matrices; Sturm-Liouville differential operators; convergence properties of Fourier Series; the Legendre, Laguerre, Hermite, and Tchebycheff families of orthogonal polynomials; functions of a Sturm-Liouville operator; Green's functions; the Laplacian operator in 1, 2, and 3 dimensions. Prerequisite: 221 and 305. Elective Pass/Fail.

407-3 Introduction to Partial Differential Equations. First order linear and quasilinear partial differential equations, characteristics, second order linear partial differential equations, classification of types, boundary value and initial value problems, well posed problems, the wave equation, domain of dependence, range of influence, Laplace's equation and Dirichlet problems, the maximum principle. Poisson's integral, fundamental solution of the heat solution. Prerequisite: 305. Elective Pass/Fail.

411-1 to 6 (1 to 3, 1 to 3) Mathematical Topics for Teachers. Variety of short courses in mathematical ideas useful in curriculum enrichment in elementary and secondary mathematics. May be repeated as topics vary. Does not count toward a mathematics major. Elective Pass/Fail.

417-3 Applied Matrix Theory. Matrix algebra and simple applications, simultaneous linear equations, linear dependence and independence of vectors, rank and inverses, determinants, eigenvalues and eigenvectors, quadratic forms, applications. This course may not be counted toward a graduate degree in mathematics. Prerequisite: 139 or 221 or consent of department. Elective Pass/Fail.

419-4 Algebraic Structures I. Groups, subgroups, normal subgroups and homomorphism theorems, permutation groups, finite direct products, finite abelian groups, p-groups and Sylow's theorem, normal and subnormal series, Jordan Holder theorem. Rings and subrings, divisibility theory in integral domain, polynomial rings. Prerequisite: 319 or consent of department. Elective Pass/Fail.

- 421-3 Linear Algebra.** Fields, vector spaces over fields, triangular and Jordan forms of matrices, dual spaces and tensor products, bilinear forms, inner product spaces. Prerequisite: 221. Elective Pass/Fail.
- 425-3 Theory of Numbers.** Properties of integers, primes, divisibility, congruences, quadratic forms, diophantine equations, and other topics in number theory. Prerequisite: 319 or consent of department. Elective Pass/Fail.
- 426-3 Introduction to Mathematical Logic.** (Same as Philosophy 426.) General introduction to the method of mathematical logic, forming of denials, the statement calculus including the deduction and completeness (with respect to truth tables) theorems, and the predicate calculus including the deduction theorem, deduction techniques; (in the predicate calculus) normal forms and equality, first order theories, first order number theory, consistency, truth (in the model-theoretic sense), completeness theorem (with respect to the model-theoretic definition of validity), independence, categoricity, decidability, and a brief introduction to Gödel's theorem. Prerequisite: 301, 319, 352, or Philosophy 320. Elective Pass/Fail.
- 432-4 Philosophy of Mathematics.** (See Philosophy 432.) Prerequisite: Philosophy 320 or 15 hours of mathematics. Elective Pass/Fail.
- 433-3 Introduction to Topology.** Study of continuity, convergence, compactness, and completeness in the context of metric spaces. Prerequisite: 352 or consent of department. Elective Pass/Fail.
- 435-3 Elementary Differential Geometry.** An introduction to modern differential geometry through the study of curves and surfaces in \mathbb{R}^3 . Local curve theory with emphasis on the Serret-Frenet formulas; global curve theory including Fenchel's theorem; local surface theory motivated by curve theory; global surface theory including the Gauss-Bonnet theorem. Prerequisite: 251 and 221. Elective Pass/Fail.
- 437-3 Elementary Algebraic Topology.** Topological spaces; continuous maps. Finite products. Connectivity. Compactness. Manifolds. Classification of surfaces. Homotopic maps. Fundamental group. Covering spaces. Lifting theorem. Prerequisite: 319. Elective Pass/Fail.
- 445-3 Boolean Algebra and Logical Design.** (Same as Computer Science 445.) Boolean algebra with applications to computer logic and circuit design. Simplification algorithms. Sequential circuits and sequential machines. Introduction to error-correcting codes. Prerequisite: 319, 301 or Computer Science 342.
- 449-3 Combinatorics and Graph Theory.** (Same as Computer Science 449.) An introduction to graph theory and combinatorial mathematics with computing applications. Topics include permutations and combinations, generating functions, recurrence relations, the principle of inclusion and exclusion. Polya's theory of counting, graph theory, transport networks, matching theory, block designs. Prerequisite: 301, or consent of Mathematics Department.
- 451-3 Introduction to the Theory of Computing.** (See Computer Science 451.)
- 452-4 Advanced Calculus.** Fundamental concepts of analysis; infinite series, functions and series of functions, uniform convergence, functions of bounded variation, Riemann-Stieltjes integral, functions of several variables, implicit functions and extreme values. Prerequisite: 352 or consent of department. Elective Pass/Fail.
- 453-3 Topics in Applied Mathematics.** (Same as Molecular Science 400M.) Selected topics in applied mathematics for students in the physical, biological, and engineering sciences: functions of several independent variables, Jacobians and implicit functions, Lagrange multipliers, Stokes theorem and the divergence theorem, initial and boundary value problems in ordinary and partial differential equations, approximate solutions of initial value problems, Eigenfunction methods for solving boundary value problems. Does not count toward a mathematics major. Prerequisite: 251 or consent of instructor.
- 455-3 Introduction to Complex Analysis and Applications.** Complex numbers, analytic functions, line integrals, the Cauchy-Goursat theorem and its implications, power series, Laurent series, polar and essential singularities, analytic continuation, contour integration, and the residue theorem, conformal mapping, asymptotic expansions. Prerequisite: 251. Elective Pass/Fail.
- 457-5 Methods of Quantitative Analysis.** (Same as Business Administration 451.) Introductory survey of basic quantitative methods necessary for graduate study in business; designed for students with deficiencies in methods of quantitative analysis. Course consists of introduction to calculus, matrix algebra, and probability. Extensive use is made of business examples. Prerequisite: enrollment in Master of Business Administration program or consent of instructor.
- 460-3 Transformation Geometry.** Geometry as the study of properties invariant under congruences, similarities, affine transformations, and projectivities. Prerequisite: 221 and 319. Elective Pass/Fail.
- 471-3 Introduction to Optimization Techniques.** (Same as Computer Science 471.) Nature of optimization problems. General and special purpose methods of optimization, such as linear programming, classical optimization, separable programming, integer programming, and dynamic programming. Prerequisite: 221, 250, Computer Science 202.
- 472-3 Linear Programming.** (Same as Computer Science 472.) Nature and purpose of the

- model. Development of the simplex method. Application of the model to various problems. Introduction to duality theory. Transportation and network flow problems. Postoptimality analysis. Prerequisite: 139 or 221; and Computer Science 202.
- 473-3 Reliability Theory.** Formulation of the concept of reliability in terms of probability theory. Failure distributions and failure rates. Elements of renewal theory. Age and block replacement policies, optimal replacement policies for classes of failure distributions. Prerequisite: consent of department. Elective Pass/Fail.
- 475-6 (3, 3) Numerical Analysis.** (Same as Computer Science 464.) An introduction to the theory and practice of computation with special emphasis on methods useful with digital computers. Topics include the solution of nonlinear equations, interpolation and approximation, numerical differentiation and integration, solution of differential equations, matrix calculations and the solution of systems of linear equations. Must be taken in a,b sequence. Prerequisite: 221, 250, Computer Science 202.
- 480-4 Introduction to Probability.** This is a comprehensive introduction to probability theory at a level suited to most upper division undergraduates and first year graduate students. Topics include: event spaces, probability functions, combinatorics, generating functions, conditional probability, independence, random variables, probability distributions, expectations, moments, characteristic functions, inversion formulae, sums of independent random variables, the multivariate normal distributions, the central limit theorem, the weak and strong laws of large numbers, Monte Carlo applications. Prerequisite: 250. Elective Pass/Fail.
- 481-3 Elements of Stochastic Processes.** An introduction, including normal, Poisson, and Markov processes. Prerequisite: 480. Elective Pass/Fail.
- 483-3 Introduction to Mathematical Statistics.** A development of the elements of statistical theory. Probability axioms, probability distributions, moments and moment generating functions. Statistical inference, estimation, testing hypotheses. Not for graduate credit in mathematics. Prerequisite: 250. Elective Pass/Fail.
- 486-3 Design of Experiments.** A mathematical model development of the statistical design and analysis of experiments with emphasis on practical applications. Includes completely randomized, randomized block, Latin square, split plot, incomplete block, and response surface designs, as well as factorial and fractional factorial experiments. Prerequisite: 483. Elective Pass/Fail.
- 487-3 Nonparametric Methods in Statistics.** A discussion of confidence intervals and tests of hypotheses where no functional form is postulated for the population. Prerequisite: 483 or 480. Elective Pass/Fail.
- 488-3 Linear Statistical Models.** An introduction to the general linear model in both the univariate and multivariate cases and its applications. Included is a basic discussion of linear models, estimable functions, estimation spaces, error spaces, and such applications as regression analysis, growth curve analysis, discriminant analysis and canonical analysis. Prerequisite: 221 and 483. Elective Pass/Fail.
- 495-1 to 6 Special Topics in Mathematics.** Individual study or small group discussions in special areas of interest under the direction of a member of the faculty. Prerequisite: consent of chairperson and instructor. Elective Pass/Fail.
- 501-3 Real Analysis.**
- 505-3 Ordinary Differential Equations.**
- 506-1 to 9 Advanced Topics in Ordinary Differential Equations.**
- 507-3 Partial Differential Equations.**
- 508-3 Integral Equations.**
- 510-3 Mathematical Logic.**
- 512-3 to 12 (3 per topic per semester) Topics in Mathematical Logic.**
- 514-4 General Statistical Analysis.**
- 515-4 Linear and Multivariate Statistical Methods.**
- 516-8 (4, 4) Statistical Analysis in the Social Sciences.**
- 520-3 Algebraic Structures.**
- 522-3 to 9 per topic (3, 3, 3) Advanced Topics in Algebra.**
- 525-3 Number Theory.**
- 526-3 to 9 per topic (3, 3, 3) Advanced Topics in Number Theory.**
- 528-3 Formal Languages and Automata.**
- 529-3 Theory of Computability.**
- 530-3 General Topology.**
- 531-3 Algebraic Topology.**
- 532-3 to 9 per topic (3, 3, 3) Advanced Topics in Topology.**
- 536-3 Differential Geometry.**
- 537-3 to 9 per topic (3, 3, 3) Advanced Topics in the Topology and Geometry of Manifolds.**
- 550-1 to 6 per topic (1 to 3 per semester) Seminar.**
- 551-3 Introduction to Functional Analysis.**
- 552-3 to 9 per topic (3, 3, 3) Special Topics in Analysis.**
- 553-3 to 9 (3, 3, 3) Special Topics in Functional Analysis.**
- 555-3 Complex Variables.**
- 560-3 Calculus of Variations.**

567-6 (3, 3) **Econometrics I and II.**

572-3 to 9 per topic (3, 3, 3) **Advanced Numerical Analysis.**

580-3 **Statistical Theory.**

581-3 **Probability.**

582-3 to 6 per topic (3, 3) **Advanced Topics in Probability and Statistics.**

595-1 to 6 per topic **Special Project.**

599-1 to 6 **Thesis.**

600-1 to 30 **Dissertation.**

Medical Education Preparation (Courses)

Courses

400-1 to 6 (1 per semester) **Medprep Seminar.** Seminar on social, professional, and scientific issues of interest to students planning a career in medicine or dentistry. Topics: (a) Orientation; (b) Medical/dental seminar. Required of medprep participants. May be taken for graduate credit only with written permission of the relevant department and the graduate dean. Prerequisite: restricted to medprep students. Must be taken in a,b sequence. Mandatory Pass/Fail.

401-1 to 20 (1 to 2 per area) **Medprep Basic Skills.** Focus on skills critical for academic success in preprofessional and professional training. Areas: (a) Learning Skills; (b) Science process skills; (c) Quantitative skills; (d) Perceptual motor skills; (e) Interpersonal skills; (f) Reading skills; (g) Written communication skills; (h) Vocabulary skills; (i) Speed reading; (j) Other. All areas required or proficiency demonstrated within the first year in program. Not for graduate credit. Prerequisite: restricted to Medprep students. Areas c, d, e, f, g, and i are Mandatory Pass/Fail.

402-1 to 12 (1 to 2 per topic) **Medprep Special Problems.** Seminars, workshops, lectures, and field experiences related to preparing the student for medical/dental school and careers in medicine or dentistry. Topics: (a) MCAT/DAT orientation; (b) Research seminar; (c) Clinical experience; (d) Independent research; (e) Independent readings; (f) Other. Topic (b) required of all medprep participants. May be taken for graduate credit only with written permission of the relevant department and graduate dean. Prerequisite: restricted to medprep students. Topic (c) Mandatory Pass/Fail.

403-1 to 15 (1 to 2; 1 to 2; 1 to 2; 1 to 2; 1 to 2; 1 to 2; 1 to 3) **Medprep Biology Tutorial.** Depending on individual need content will be remedial, supplementary to concurrent biological science courses, or additional permitting acceleration. Sections will be (a) Genetics; (b) Anatomy, (c) Physiology, (d) Embryology, (e) Microbiology, (f) Zoology, (g) Special. May be taken for graduate credit only with written permission of the relevant department and the graduate dean. Prerequisite: restricted to Medprep students or consent of instructor.

404-1 to 14 (1 to 2; 1 to 2; 1 to 2; 1 to 2; 1 to 3; 1 to 3) **Medprep Chemistry Tutorial.** Depending on individual need content will be remedial, supplementary to concurrent preprofessional chemistry courses (Chemistry 222a,b; 344 and 346; and 450) or additional permitting acceleration. Sections will be (a,b) Inorganic; (c,d) Organic; (e) Biochemistry; (f) Other. May be taken for graduate credit only with written permission of the relevant department and the graduate dean. Prerequisite: restricted to Medprep students.

405-1 to 4 (1 to 2, 1 to 2) **Medprep Physics Tutorial.** Depending on individual need content will be remedial, supplementary to concurrent preprofessional physics courses or additional permitting acceleration. Sections will correspond to two semester physics sequences. May be taken for graduate credit only with written permission of the relevant department and the graduate dean. Prerequisite: restricted to Medprep students.

Microbiology (Department, Major, Courses)

Microbiology deals with the study of microorganisms, examining various forms, their classification, growth, reproduction, heredity, biochemistry, ecology, and their relationship to other living organisms including humans. The following program of study prepares one for laboratory or teaching positions after the bachelor's degree or for graduate study leading to advanced degrees. Students who anticipate the pursuit of higher degrees in microbiology are strongly urged to continue their study of chemistry through physical chemistry, which is an entrance requirement to graduate study in microbiology at many institutions.

Opportunities for specialized training in diagnostic bacteriology, virology, immunology, genetics, biochemistry, and industrial processes are available.

Bachelor of Arts Degree, College of Science

General Studies Requirements	45 ¹
Supplementary College of Science Requirements.....	5
Mathematics 110a,b or 111 (or its equivalent), or 140.....	(4) + 1
Foreign Languages.....	(4) + 4
Requirements for Major in Microbiology	65-69
Microbiology 301, 302	7
Microbiology electives: senior level work consisting of 16-20	
lecture credits and a minimum of 9 laboratory credits	25-29
Two from: Biology 305, 306, 307, 308, 309	6 ²
Chemistry 222a,b, 344, 345, 346, 347	19 ²
Physics 203a,b and 253a,b	8 ²
Electives	1-5
Total.....	120

¹The 45 hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Studies courses.
²These courses will meet the biological and physical science requirements for the College of Science and may be substituted for a maximum of 12 hours in General Studies.

Minor

A minor in microbiology consists of 16 semester hours, to include 301, 302, and other courses determined by the student in consultation with his microbiology adviser.

Courses

- 201-4 **Elementary Microbiology.** Basic concepts of microbiology, classification, metabolic activity and the effect of physical and chemical agents on microbial populations. Host-parasite interactions. Infectious agents, particularly as they affect the oral cavity; methods of transmission and control. Prerequisite: for students of dental hygiene.
- 301-4 **Principles of Microbiology.** Morphology, structure, metabolism, population dynamics, and heredity of the microbial agents with emphasis on pure culture methods of study of bacteria, viruses, and related organisms. Three hours lecture, three hours laboratory. Fall and Spring. Prerequisite: one year of college chemistry and GSA 115, or equivalent. Elective Pass/Fail.
- 302-3 **General Microbiology.** Methods of differentiation and classification of bacteria; their biochemical activities; genetics and biological and physiological interrelationships. Two hours lecture and three hours laboratory. Prerequisite: 301. Elective Pass/Fail.
- 403-2 **Medical Bacteriology Lecture.** A 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 humans. Two hours lecture. Fall semester. Prerequisite: 301.
- 404-2 **Medical Bacteriology Laboratory.** Procedures for the collection and handling of medical specimens for microbial examination and for cultivation and identification of the pathogenic organisms by their morphological, biochemical, and serological characteristics and the fundamental role of the bacteriologist in the diagnosis of infectious diseases. Four hours laboratory. Fall semester. Prerequisite: 403 or concurrent enrollment.
- 421-3 **Foods and Industrial Microbiology Lecture.** The relationships of microorganisms to the preparation and preservation of foods; their application to the industrial production of beverages, foods, antibiotics, and other commercial products. Consideration of sanitation, pollution, and recycling of waste products into useful materials. Pure food and drug regulations. Three hours lecture. Prerequisite: 301.
- 422-2 **Foods and Industrial Microbiology Laboratory.** Methods for preparation, preservation, sanitary inspection, and analyses of foods and industrial products. Four hours laboratory. Prerequisite: 421 or concurrent enrollment.
- 425-4 (2, 2) **Biochemistry and Physiology of Microorganisms Lecture.** Chemical composition, cellular structure, and metabolism of microorganisms. Prerequisite: organic chemistry.
- 426-4 (2, 2) **Biochemistry and Physiology of Microorganisms Laboratory.** Prerequisite: 425a,b or concurrent enrollment.
- 441-3 **Virology Lecture.** General properties; classification and multiplication of bacterial and animal viruses; lysogeny; immunological and serological reactions; relation of viruses to cancer; consideration of selected viral diseases of animals. Prerequisite: 301 and 302.

- 442-2 Virology Laboratory.** Tissue culture methods, multiplication and assay of animal and bacterial viruses, purification, electron microscopy, interference, immunity. Five hours laboratory. Prerequisite: 441 or concurrent enrollment.
- 451-3 Immunology Lecture.** Natural and acquired immunity. Antigens, antibodies, and antigen-antibody reactions in vitro and vivo. Three hours lecture. Prerequisite: 403.
- 452-2 Immunology Laboratory.** Natural defense mechanism and immune response, preparation of antigens and antibodies, serological reactions, conjugated antibodies, electrophoresis, immunological reactions in vivo. Five hours laboratory. Prerequisite: 451 or concurrent enrollment.
- 453-3 Clinical Microbiology and Immunology Lecture.** Lectures dealing with the fundamentals and clinical applications of microbiology and immunology and the properties, pathogenesis, and control of bacterial, viral and mycotic infections in people. Three hours lecture. No limit on enrollment. Prerequisite: 403, 441, and 451.
- 454-2 Clinical Microbiology and Immunology Laboratory.** Methods and procedures in the clinical diagnosis of microbiologic and immunologic diseases in people. Four hours laboratory. Enrollment limited to 12. Prerequisite: 404, 442, and 452, consent of instructor, and 453 or concurrent enrollment.
- 460-3 Genetics of Bacteria and Viruses Lecture.** Genetic mechanisms, mutation, transformation, recombination, transduction, lysogeny, phenotypic mixing, and reactivation phenomena. Three hours lecture. Prerequisite: 301.
- 461-3 Genetics of Bacteria and Viruses Laboratory.** Genetic mechanisms, mutation, transformation, recombination, transduction, lysogeny, phenotypic mixing, and reactivation phenomena. Six hours laboratory. Prerequisite: 460 or concurrent enrollment.
- 462-2 Fungal Genetics Lecture.** Mendelian and molecular genetics of molds and yeasts. Mutant induction, sexual crosses, tetrad analysis, linkage, and mapping. Two hours lecture. Prerequisite: Biology 305.
- 463-2 Fungal Genetics Laboratory.** Four hours laboratory. Prerequisite: 462 or concurrent enrollment, and consent of instructor.
- 490-1 to 3 Undergraduate Research Participation.** Investigation of a problem either individually or as part of a research group under the direction of a member of the faculty. Prerequisite: 3.0 grade point average in microbiology and consent of instructor.
- 500-1 Seminar.**
- 502-3 Evolution of Genetic Thought**
- 504-3 Methods of Microbiological Research.**
- 505-1 Special Topics in Microbiology.**
- 511-1 to 7 Research.**
- 520-2 Advanced Microbial Physiology and Control Mechanisms.**
- 528-1 to 3 Readings in Microbiology.**
- 540-3 Advanced Virology.**
- 541-3 Advanced Virology Laboratory.**
- 542-3 Molecular Virology.**
- 543-3 Molecular Virology Laboratory.**
- 551-3 Advanced Immunology.**
- 562-2 Molecular Genetics.**
- 564-2 Bacterial Sexuality.**
- 599-1 to 3 Thesis.**
- 600-1 to 12 Dissertation.**

Mining Engineering (Major [Graduate Only] Courses)

Courses

- 401-1 Introduction to Mining Engineering** A broad treatment of the importance of coal and its products in the modern society. Analyzing the markets for coal and its products. Mining operations and related environmental impacts. Prerequisite: graduate or senior standing in engineering disciplines.
- 410-3 Mine Extraction Systems.** Study of coal property evaluation. Surface and underground mining methods. Mining production and its ancillary systems and subsystems. Prerequisite: graduate or senior standing in engineering disciplines.
- 411-2 Mine Machinery.** Analysis and design of underground and surface mining machinery. Equipment and parts selection. System development. Preventive maintenance. Prerequisite: 410.
- 413-2 Mine Power Systems.** Study of electrical, hydraulic, and pneumatic mine power systems. Selection and design of power systems and their components. Related economics and decision making criteria. Prerequisite: 410, and Engineering 385, or equivalent, instructors consent.
- 415-2 Surface Mining and Land Reclamation.** Study of surface mining methods and their elements. Surface mine design. Land reclamation. Economics of mining and reclamation. Prerequisite: graduate or senior standing in engineering disciplines.

420-2 Coal Preparation and Waste Treatment. Impurities in coal and their impact on the market. Impurities liberation and separation methods. Product preparation. Coal washability characteristics. Flow sheet development. Recovery of coal from tailings, slurry ponds and mine waste. Economics of coal preparation. Prerequisite: graduate or senior standing in engineering disciplines.

421-2 Coal Conversion and Combustion Processes. Overview of major present-day and proposed processes converting coal to other energy forms (gaseous or liquid fuels, coke, steam, electricity, etc.). The physical and chemical properties of coal and the chemical reaction relationships which affect the conversion process paths. Process design aspects of coal-fed boilers, coal coking ovens, and coal gasification/liquefaction reactor systems. Environmental and cost considerations related to the construction of coal conversion plants. Prerequisite: graduate or senior standing in scientific discipline.

431-3 Strata Control and Rock Mechanics. Introduction to rock mechanics. Stress distribution around circular, elliptical, rectangular, and ovaloidal mine openings. Static and dynamic physical properties of rocks. Classification of rocks. Artificial roof support systems, rock bolting, theories of roof bolting. Elementary strata control in coal mine design. Prerequisite: Engineering 311.

455-2 Mine Safety Engineering. Analysis of mine hazards and accidents; sealing and recovery of coal mines; design of mine emergency plans and safety methods. Prerequisite: 410, graduate or senior standing in engineering disciplines.

470-2 Experimental Methods in Rock Mechanics. Supplement theoretical knowledge gained in 431 with laboratory experiments. Physical property tests for specific gravity, moisture, density porosity of rocks. Unconfined and confined compressive strength, tensile strength, shear strength, photoelasticity, static and dynamic strain measurement systems, field instrumentation techniques. Prerequisite: 431.

511-2 Advanced Strata Control.

519-2 Advanced Mine Environment and Pollution Control.

520-2 Mine Ventilation Design and Environmental Control.

521-2 Material Handling and Mine Drainage.

530-3 Mine Management.

550-1 to 3 Internship.

571-3 Design of Earth and Underground Structures in Coal Mining.

580-1 to 2 Seminar.

592-1 to 5 Special Investigations.

599-1 to 6 Thesis.

Molecular Science (Major [Doctoral Only], Courses)

Courses

400-7 (2, 5) Physical Basis of Molecular Science. A survey of topics in physics and chemistry relevant to molecular science. (a) Topics are drawn from classical mechanics. Corequisites: 400M. Prerequisite: consent of molecular science program chairperson. (b) Topics are drawn from classical electromagnetic theory, thermodynamics, statistical thermodynamics, chemical kinetics, and quantum mechanics. Prerequisite: 400M and 400a or consent of molecular science program chairperson.

400M-3 Mathematical Basis of Molecular Science (Same as Mathematics 453) Selected topics in applied mathematics for students in molecular science. Functions of several independent variables, Jacobians and implicit functions, Lagrange multipliers, Stokes theorem and the divergence theorem, initial and boundary value problems in ordinary and partial differential equations. Approximate solution of initial value problems, Eigenfunction methods for solving boundary value problems. Prerequisite: consent of the molecular science program chairperson.

500-5 The Biological Basis of Molecular Science.

592-1 Colloquy in Molecular Science.

597-2 to 30 Selected Topics in Molecular Science.

598-2 to 16 Special Projects in Molecular Science.

600-1 to 36 (1 to 16 per semester) Dissertation.

Mortuary Science and Funeral Service (Program, Major, Courses)

This program is the only mortuary science program offered in a public university in Illinois. The program was developed in response to a request from the Illinois Funeral Directors Association. The Association's members recognized the need

for a school of higher education to educate funeral service practitioners. The program is fully accredited by the American Board of Funeral Service Education and the Illinois Department of Registration and Education.

This program also is designed to accommodate students transferring from community colleges at the end of the first year. Enrollment of beginning students is limited by size of faculty and physical facilities with new students admitted only in the fall semester. Additional application information is required other than that required for admission to the University.

The program requires two academic years of study and one summer of internship in a funeral home for completion. In addition to technical courses which prepare the student for the profession, the student will take a number of courses which will lead to an understanding of the psychological, sociological, and theological implications of death.

Charge for laboratory costs will be approximately \$15.00.

Faculty members are licensed funeral directors and embalmers with experience in the profession. Professional courses are offered in the program's own preparation room-laboratory. Graduates of the program will have satisfied requirements for the trainee license and will be eligible to write the State and/or National Board examinations and to begin serving their traineeship. Career opportunities are excellent and to date, all graduates who desired placement have been employed.

Persons active in the profession serve on the program's advisory committee. Current members are: Joseph McCracken, McCracken Funeral Home, Pana; Hugh Kenny, Chicago Funeral Directors Services Association; Richard Yurs, Yurs Funeral Home, St. Charles; Dwight LeMasters, Mitchell Funeral Home, Marion; William Froelich, Jr., Froelich Memorial Home, Gridley; Daniel A. Justen, Peter M. Justen and Son Funeral Home, McHenry; Joseph W. Schilling, Schilling Funeral Home, Mattoon, William Huffman, Huffman Funeral Home, Carbondale; Charles Rankin, Rankin Funeral Home, Salem; James R. Wilson, Wilson Funeral Home, Marion; and Robert W. Ninker, executive secretary, Illinois Funeral Directors Association, Springfield.

This associate degree program can be completed in two academic years, plus one summer session, at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Art Degree, School of Technical Careers

Requirements for Major in Mortuary Science and Funeral Service

GSA 115	3
GSB 202	3
GSD 101	3
GSD 117, 118, or 119	2
GSD 153	3
Accounting 110	3
Secretarial and Office Specialties 208	3
Mortuary Science 101, 102, 108, 225a, b, 230, 250a, b, 255, 256, 257, 375a, b, 380	55
Elective (in Health Education)	2

Total..... 78

Courses

101-3 Orientation to Funeral Service. Students will trace the history of funeral services from ancient times through modern practices with emphasis on the development of funeral practices in the United States. Students study the customs of various cultures throughout the world including customs in the United States. They will demonstrate a knowledge of funeral service organizations and will discuss topical areas of current discussion. Lecture three hours.

102-4 Restorative Art. Students will study the anatomical structure of the cranial and facial areas of the human skull. They will describe the facial proportions and markings. The student studies the methods and techniques used to restore facial features that might have been destroyed by traumatic and pathological conditions. They will demonstrate a knowledge of color and cosmetology theory. Laboratory assignments will include modeling, applying cosmetics, making hair restorations and casting facial features. Lecture two hours. Laboratory two hours.

108-3 Funeral Service Psychology. Designed to acquaint the student with an overview of psychology in funeral service as applied to death, grief, and mourning. Students will examine interpersonal and public relations as they affect the funeral service practitioner in relationship with the public served. Lecture three hours.

225-8 (4, 4) Embalming Theory and Practice. (a) The student will be introduced to techniques of embalming through a study of the body, sanitation, embalming agents, instruments, and methods of embalming. The student studies the theory, practices, and techniques of sanitation; and restoration and preservation of deceased human remains. Laboratory experience will consist of embalming deceased remains and of other related activities. Lecture three hours. Laboratory two hours. (b) The student will study the anatomy of the circulatory system, the autopsied case, the cavity embalming, the contents of the thoracic and abdominal cavities, and the treatment of "special cases" that might be encountered in the embalming process. Laboratory experience is a continuation of 225a. Lecture three hours. Laboratory two hours. Must be taken in a,b sequence.

230-4 Mortuary Anatomy. The student will study the structure and function of the human body as a whole including: general organization, structural organization, tissues, skeletal system, nervous system, circulatory system, physiology of circulation, glands, respiratory system, digestive system, genito-urinary system, integument, and special senses. Lecture four hours.

250-8 (4, 4) Mortuary Management. (a) The student will examine the problems involved in the practice of funeral management. Included are the funeral director's responsibilities from the first call until the completion of the last service rendered the family, funeral home operation and records, ethics and professional regulations. Lecture four hours. (b) The student will trace the laws and regulations that govern the practice of funeral service, and study the Illinois License Law, Vital Statistics Act, transportation rules, and Social Security regulations. The funeral directors' responsibilities and relationships to local boards of health and the State Department of Public Health are emphasized. Lecture four hours.

255-5 Embalming Chemistry. The student will study the chemistry of the body, sanitation, toxicology, chemical change in deceased human remains, disinfection, and embalming fluids. Laboratory experiments will complement lecture material. Lecture four hours. Laboratory two hours.

256-4 Introductory Microbiology. The student will survey microbiology: morphology, structure, physiology, populations of microbial organisms, microbial destruction, immunology, and pathogenic agents. Lecture four hours.

257-4 Pathology. Students will be introduced to the study of the cause, course, and effects of diseases upon the human body with stress on ways in which tissue changes affect the embalming process. Lecture four hours. Prerequisite: 230 or equivalent.

375-10 (5, 5) Funeral Service Internship. (a) Students will spend one summer in a university approved funeral home learning in actual practice situations: functional organization, procedures, and policies of the establishment. They will perform duties and services as assigned by preceptor and coordinator to include surveillance of and participation in the execution of total services rendered to a family. (b) They will be given an opportunity to learn embalming techniques by active participation in the preparation room. Service reports and assignments are required to be completed by the student. Prerequisite: all other requirements of the Mortuary Science curriculum must be met. Must take a and b concurrently.

380-2 Funeral Service Seminar. Formal discussions are held to evaluate the experience and progress of the participants in the internship program. Preparations are made for the board examinations. Prerequisite: concurrent enrollment in 375. Mandatory Pass/Fail.

Museum Studies (Minor)

Museum studies is available as an undergraduate interdisciplinary minor. The purpose of the minor is to introduce students to various aspects of museum work, to acquaint them with the opportunities and problems faced by museums and museum personnel, and to create career opportunities for students who might seek employment in a museum. Emphasis will be placed on actual work situations in such diverse museum functions as exhibition, curation, cataloging, acquisition, and administration.

Minor

The museum studies minor consists of 18 hours, with 12 hours of required core courses and 6 hours of electives. Within the core courses listed below students must take six hours offered by one department and six hours from at least two other departments. Students may then elect six hours from either the other core courses or electives listed below.

Core Courses: Anthropology 450a and 450b; Art 447; Geology 445; History 497 and 498.

Electives: Anthropology 404 and 460; Art 207 and 499; Business Administration 440; Geology 440; History 490 and 493.

Music (School, Major, Courses)

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 this school of music is a member.

Students who wish to major in music are assumed to have acquired extensive experience in performing with school groups and/or as a soloist, basic music reading ability, and a strong sensitivity to music and a desire to communicate it to others. Those without such a background will have to complete additional preparation, which may extend the time to graduation beyond four academic years. Music credits earned at other accredited institutions will apply toward requirements, but the transferring student remains subject to evaluation by the appropriate music faculty for proper placement in the music curriculum.



All students in the Bachelor of Music degree program must maintain satisfactory membership in one of the following ensembles: Music 011, 013, 014, 017, 020, 021, or 022 every term in residence. The choice of major ensemble must be compatible with the student's applied field. Instrumental music education students must enroll in Music 011 for a minimum of one semester. All junior and senior students with a major or minor in music must maintain satisfactory membership every session in one of the above ensembles, or in one of the following: Music 341, 346, or 414. Students are exempt from this requirement during the session of student teaching. Students also may elect additional large or small ensembles, not to exceed three in any one session.

Each student with a major or minor in music must designate a principal applied field and complete the credits specified within the selected specialization. Changes in the principal applied field are permissible so long as the student accumulates the required credit total and meets the required level of proficiency.

Credits in one's principal applied field are based on private lessons with a member of the faculty, weekly participation in Studio Hour (Mondays, at 10:00 a.m.), and recorded attendance each semester at seven campus recitals or concerts, approved for the purpose by the School of Music faculty, in which the student is not a participant. Students who fail to fulfill either the Studio Hour or attendance at campus recitals or concerts requirement will receive a grade of Incomplete, which can be removed only by making up the deficiency during the ensuing semester. A student who wishes to attempt the performance specialization in applied music must have prior approval of the appropriate faculty jury, and thereafter enrolls for and receives two lessons per week for 4 credits per semester.

A student may elect private instruction in a second field or fields, but this is for one credit per semester since the studio hour and recital attendance requirements pertain only to the principal applied field.

Students not majoring or minoring in music may elect private applied music instruction if they can exhibit sufficient ability, they are participating simultaneously in one of the University performing groups, and faculty loads will allow. Registration is at one credit per semester, with no studio hour or recital attendance requirement. Those wishing such instruction should arrange for an interview and audition with the appropriate instructor.

Students specializing in music education should apply for admission to the Teacher Education Program as soon as they have accumulated 30 semester hours of credit. After being admitted, they must complete a series of specific requirements in order to qualify for student teaching and for the Illinois teaching certificate. Additional information is given under Education, Professional Education Experiences, and Curriculum, Instruction, and Media in this chapter.

Financial Information

Special grants and awards are available to students enrolled in the School of Music who are qualified and in need of financial assistance. Opportunities for employment in the student work program are excellent. In addition, there are scholarships (tuition awards) and loan programs available through the Office of Student Work and Financial Assistance.

Beyond the general university tuition and fees, there are no additional charges for music lessons or use of practice rooms, nor for rental of instruments used in classes or performing groups; however, students are responsible for purchase of their own textbooks, solo literature, and incidental supplies for music lessons and classes. Such costs normally range from \$20 to \$50 per semester.

Bachelor of Music Degree, College of Communications and Fine Arts

<i>General Studies Requirements.</i>	45
Including GSA 361 and Music 102 and 105a as GSC substitutes	

<i>Requirements for Major in Music</i>	75
Theory: Music 104a,b; 105a,b; 204; 205; 207; 321; 322	(3) ¹ + 16
History-Literature: Music 102; 357a,b	(2) ¹ + 6
Major performing ensembles (8 semester)	8 ²
Partial Recital: Music 398	1
Beginning Piano: Music 030 (or waiver by examination)	4 ³
Specialization (see below)	40
<i>Total</i>	120

MUSIC MAJOR—PERFORMANCE SPECIALIZATION, INSTRUMENTAL (STANDARD ORCHESTRAL AND BAND INSTRUMENTS, AND GUITAR)

Music 140-440, principal field, 8 semesters	28
Music 498	2
Music 407, 421, 461, or any of 470 series	6
Approved music electives	4
	<hr/>
	40

MUSIC MAJOR—PERFORMANCE SPECIALIZATION, KEYBOARD (PIANO, ORGAN, AND HARPSICHORD)

Music 030 not required ³	
Music 140-440, principal field, 8 semesters	28
Music 498	2
Music 461	3
Music 407, 421, or any of 470 series	4
Music 341	2
Approved music electives	5
	<hr/>
	44

MUSIC MAJOR—PERFORMANCE SPECIALIZATION, VOICE

Music 140-440, principal field, 8 semesters	28
Music 498	2
Music 407, 421, 461, or any of 470 series	4
Approved foreign language, 2 semesters	(4) ¹ + 4
Music 363	2
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	40

MUSIC MAJOR—MUSIC HISTORY-LITERATURE SPECIALIZATION

Music 140-340, principal field, 6 semesters	12
Music 407, 421	4
Music 472 or 499	2
Music 475, 476, or 477	6
Approved foreign language, 3 semesters	(4) ¹ + 8
Approved electives (suggest Music 410, 414, 482, and fourth semester of foreign language)	8
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	40

MUSIC MAJOR—MUSIC THEORY-COMPOSITION SPECIALIZATION

Music 140-340, principal field, 6 semesters	12
Music 407, 421	4
Music 280, 380	8
Music 480, 481, or 499	4

Music 470 series	5
Approved music electives, 300 level or above	7
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	40

MUSIC MAJOR—MUSIC BUSINESS SPECIALIZATION

<i>General Studies Requirements</i>	45
Including GSA 361 and Music 102 and 105a as GSC substitutes	
<i>Requirements for Major in Music with Music Business Specialization</i>	75
Accounting 221, 222	6
Administrative Sciences 304	3
Economics 215	3
Finance 271	3
Marketing 304, 363, 401, 438	12
Music 104a, b, 105a, b.	8
Music 305	2
Music 324	1
Music 374, 375	6
Music 420	1-2
Music 040-240, 4 semesters	4-8
Music 030, 2 semesters (or waiver by examination)	2
Music 031 (or waiver by examination)	1
Six semesters chosen from 011, 013, 014, 017, 020, 021, 022	6
Music 032-1, 033-1, 034-1, 035-1, 036-1	5
Music electives	7-12
Electives selected from GSA 101, GSC 371, Music 036, Music 373, Physics 325, 355, or intern-cooperative training.	
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<i>Total</i>	120

**Bachelor of Music Degree, College of Communications and Fine Arts or
Bachelor of Music Education Degree, College of Education**

MUSIC MAJOR—MUSIC EDUCATION SPECIALIZATION⁴

<i>General Studies Requirements</i>	45
Including GSA 361; GSB 202, GSB 212 or 300, and Music 102 and 105a as GSC substitutes	
<i>Requirements for Major in Music</i>	57
Theory: Music 104a,b; 105a,b; 204, 205; 207; 321; 322	(3) ¹ + 16
History-Literature: Music 102, 357a,b.	(2) ¹ + 6
Major performing ensembles, 7 semesters ²	7
Music 140-340, principal field, 6 semesters	12
Music 398	1
Music 031 (or waiver by examination)	1
Music 304	2
Music education specialization	12
Music 030 ³	2
Music 032, 033, 034, 035	4
Music 305, 318, 324	6
Or	
Music 030	4
Music 317, 325	4
Music 306 or 032-036 series	2
Music 363	2
<i>Professional Education Requirements</i>	24
	<hr/>
<i>Total</i>	126

Bachelor of Arts Degree, College of Liberal Arts

This program provides a strong cultural background in music, as well as the necessary basis for various part-time and musically related careers. Additional study is ordinarily necessary to qualify for regular full-time music positions.

Required courses are Music 102, 104a,b, 105a,b, 204, 205, 207, 357a,b; four semesters of 140 and 240, eight hours; performing ensembles, four semesters, four hours; and music electives, six hours for a total of 40 hours. Students must comply with the studio hour and recital attendance requirements listed under general requirements in music. GSC foreign language does not satisfy the GSC requirements in College of Liberal Arts.

Minor

The minor in music includes Music 102, 030a,b, 104a,b, 105a,b, 357a,b; two semesters of performing ensembles, two hours; and two semesters of 040 or 140, four hours for a total of 24 credits. Students must comply with the studio hour and recital requirements listed above.

¹GSC substitutions.

²Exception for performing ensembles in music education specialization.

³Exceptions for Music 030 (and consequent credit hour adjustment) in keyboard performance and instrumental music education specializations.

⁴These programs meet the requirements for the Illinois Special Teaching Certificate in music.

Courses

011-1 to 8 (1 or 2, 1 or 2, 1 or 2) Marching Salukis. Fall semester only. Open to all students with experience in bands. Performs at all home football games, and one or two away. Counts as a "major ensemble," one of which must be taken each semester by resident music majors.

012-1 to 4 (1, 1, 1, 1) Laboratory Band. Spring semester only. Open to all students with experience in bands. Opportunity to extend experience on one's secondary instrument, if desired. Performs at all home basketball games and functions as laboratory group for conducting students.

013-1 to 16 (1 or 2 per semester) Symphonic Band. Open to all students with experience in bands. Performs standard band literature. Two or three concerts per year. Counts as "major ensemble," one of which must be taken each semester by resident music majors.

014-1 to 16 (1 or 2 per semester) Concert Wind Ensemble. A select group which performs advanced contemporary literature. Three concerts and tour per year. Counts as a "major ensemble," one of which must be taken each semester by resident music majors. Prerequisite: audition prior to first registration.

015-1 to 16 (1 or 2 per semester) Jazz Ensemble. For students experienced with popular literature. Concerts and tours when feasible. Prerequisite: audition prior to first registration.

016-1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) Brass and Percussion Ensemble. A select group, performing literature scored for this instrumentation. Two or three concerts per year and tour as feasible. Prerequisite: audition prior to first registration.

017-1 to 16 (1 or 2 per semester) Symphony. Open to all experienced string, woodwind, brass, and percussion players. Plays standard and advanced orchestral literature, performs three or four concerts per year. Counts as a "major ensemble," one of which must be taken each semester by resident music majors. Prerequisite: audition prior to first registration.

018-1 to 4 (1, 1, 1, 1) String Orchestra. Fall semester only. Open to all string players concurrently enrolled in Symphony. Rehearses symphony parts and string orchestra literature.

019-1 to 4 (1, 1, 1, 1) Laboratory Orchestra. Spring semester only. Open to all experienced string, woodwind, brass, and percussion players with consent of instructor. Performs opera and orchestral-choral works.

020-1 to 16 (1 or 2 per semester) University Chorus. Open to all students who desire to sing. Study and performance of major choral-orchestral literature. Two concerts per year. Counts as a "major ensemble," one of which must be taken each semester by resident music majors. No audition required.

021-1 to 16 (1 or 2 per semester) S.I.U. Chorale. Open to all experienced singers. Emphasis on advanced contemporary literature. Three or four concerts per year and tours as feasible. Counts as a "major ensemble," one of which must be taken each semester by resident music majors.

022-1 to 16 (1 or 2 per semester) University Choir. A select group which performs advanced

choral literature of all eras. Three or four concerts per year and tours as feasible. Counts as a "major ensemble," one of which must be taken each semester by resident music majors. Prerequisite: audition prior to first registration, and each succeeding fall.

023-1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) Southern Singers. Open to all experienced singers. Emphasis on light, popular literature. Two or three appearances per year.

024-1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) Male Glee Club. Open to all male students who desire to sing. Serious and lighter glee club material. Frequent appearances on and off campus.

025-1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) Women's Choral Ensemble. Open to all women who desire to sing. Two or three appearances per year.

030-4 (1, 1, 1, 1) Piano Class. (a) Level 1, (b) Level 2, (c) Level 3, (d) Level 4. Designed to develop functional command of basic keyboard skills needed in the further study of music and the teaching of music. Take in sequence unless assigned advanced placement by instructor. Prerequisite: major or minor in music, elementary education, early childhood education, or consent of instructor.

031-2 (1, 1) Voice Class. (a) Level 1, (b) Level 2. Designed to develop functional command of basic vocal skills needed in teaching music. Prerequisite: consent of instructor.

032-3 (1, 1, 1) String Techniques Class. (a) Upper Strings; (b) Lower Strings; (c) Mixed Strings. Designed to develop essential techniques and principles which can be used in teaching young string pupils. Students begin with one instrument and shift to another at mid-term. Take a, b, or c in any order. Prerequisite: music major or minor.

033-4 (1, 1, 1, 1) Woodwind Techniques Class. (a) Flute and Single Reeds, (b) Double Reeds, (c) Mixed Woodwinds, (d) Recorder. Designed to develop essential techniques and principles which can be used in teaching young woodwind pupils. Students begin on one instrument and shift to another at mid-term, except for (d). Take a, b, c, or d in any order. Prerequisite: music major or minor or consent of instructor.

034-3 (1, 1, 1) Brass Techniques Class. (a) Upper Brass; (b) Lower Brass; (c) Mixed Brass. Designed to develop essential techniques and principles which can be employed in teaching young brass pupils. Students begin with one instrument and shift to another at midterm. Take a, b, or c in any order. Prerequisite: music major or minor.

035-1 Percussion Techniques Class. Designed to develop basic techniques and principles which can be employed in teaching young percussion pupils. Prerequisite: music major or minor.

036-2 (1, 1) Guitar Class. (a) Level 1, (b) Level 2. Designed to develop basic techniques and principles which can be employed in teaching music. Prerequisite: major or minor in music, elementary education, or early childhood education, or consent of instructor.

040, 140, 240, 340, 440, 540-1, 2, or 4 Applied Music. Offered at six levels in the areas listed below. May be repeated for credit as long as passing grade is maintained. Student must be concurrently enrolled in one of the performing groups. Prerequisite for 040: satisfactory completion of beginning class instruction offered in that area, or the equivalent. Prerequisite for 140: three or more years of prior study or performing experience, or two semesters of C or better at 040 level. Prerequisite for 240, 340, 440, 540: two semesters of C or better at previous level, or consent of applied jury. Music majors and minors enroll for two credits on their principal instrument, taking one half-hour private lesson and studio class, Mondays at 10:00. Those with prior approval by their applied jury for the specialization in performance enroll for four credits, taking two half-hour private lessons and the studio class each week. Non-music majors or minors, and those music majors taking a second instrument, enroll for one credit, taking one private or class lesson per week. Six hours of individual practice per week required for each lesson. For shorter sessions, credit is reduced or lesson time is increased proportionately.

a. Flute	h. Trombone	o. String Bass
b. Oboe	i. Baritone	p. Voice
c. Clarinet	j. Tuba	q. Piano
d. Bassoon	k. Percussion	r. Organ
e. Saxophone	l. Violin	s. Harpsichord
f. Horn	m. Viola	t. Guitar
g. Trumpet	n. Cello	u. Recorder

101-3 Music Fundamentals. Rudiments of music for those with little or no musical background. One lecture and one piano laboratory session per week. Provides basic music vocabulary and keyboard competency for 300, 301, 302, and 303.

102-2 Survey of Music Literature. Characteristic forms and styles. Analysis and listening. Examples from the leading composers of each era. Prerequisite: music major or minor.

104-2 (1, 1) Aural Skills. A laboratory course designed to complement 105a and b. Practice in recognition and singing of basic pitch and rhythm materials, and their realization in standard musical notation. For those planning a major or minor in music. Take a and b in sequence, or, with prior consent of instructor, concurrently.

105-6 (3, 3) Basic Harmony. Study of traditional diatonic tonal materials and standard notational practice. Includes keyboard skills. For those with performing experience and planning a major or minor in music. Take a and b in sequence. Prerequisite: concurrent registration in 104 and 030, or equivalent aural and keyboard skill.

- 107-1 Applied Harmony for Fretted Instruments.** Application of basic harmonic functions to the fretted instruments including guitar. Prerequisite: concurrent enrollment in guitar (140-540t) or consent of instructor.
- 140-1, 2, or 4 Applied Music.** (See 040.)
- 204-1 Advanced Aural Skills.** Continuation of 104. Designed to complement 205. Prerequisite: 104b.
- 205-3 Advanced Harmony.** Study of chromatic tonal materials, including keyboard skills. Prerequisite: 104b and 105b, and concurrent registration in 204.
- 207-2 Contrapuntal Techniques.** Basic contrapuntal principles and skills, especially as applied to 18th and 19th century styles. Extensive writing practice, and analysis of stylistic models. Introduction to major contrapuntal forms. Prerequisite: 205 and 204, or take 204 concurrently.
- 240-1, 2, or 4 Applied Music.** (See 040.)
- 250-3 The History and Literature of the Guitar and Related Fretted Instruments.** A survey of the history and literature of the guitar and related fretted instruments from the Renaissance to the present with emphasis on interpretation.
- 257-12 Intern-Work Experience.** Practical experience in music retailing, wholesaling, and publishing under the supervision of professional firms. Open only to candidates for the Bachelor of Music degree with emphasis in music business.
- 280-2 to 4 (2, 2) Beginning Composition.** Application of contemporary compositional techniques. Prerequisite: 105b or consent of instructor.
- 300-2 Teaching Music in the Primary Grades.** For non-music majors only, who may be expected to teach music in grades K-3. Methods and materials for instruction. Prerequisite: 101 or equivalent.
- 301-2 Teaching Music in the Intermediate Grades.** For non-music majors only, who may be expected to teach music in grades 4-6. Methods and materials for instruction. Prerequisite: 101 or equivalent.
- 302-2 Music in Special Education.** For non-music majors only, with an interest in pursuing a career in special education. Prerequisite: 101 or equivalent.
- 303-3 Music for Pre-Schoolers.** Methods and materials for teaching music to pre-school children. Recommended for majors in the Department of Child and Family and in early childhood education. Prerequisite: 101 or equivalent.
- 304-2 The General Music Program.** A survey of problems and methods in teaching music in the schools, with scheduled observations of school music programs in operation. Special attention to the teaching of comprehensive musicianship through the general music program in the junior high school. Prerequisite: admission to teacher education program.
- 305-2 Instrumental Music in the Schools.** Administration of the school instrumental music program. Emphasis upon teaching instruments and the management and instruction of instrumental organizations. Prerequisite: 304.
- 306-2 Music Specialist in the Elementary Schools.** Principles and methods employed in supervising and teaching the elementary school music program. Designed for music majors and minors. Prerequisite: 304.
- 317-3 Choral Conducting and Methods.** Score reading, baton techniques, and rehearsal techniques, organization and management problems of school choral groups. Prerequisite: music major or minor and junior standing.
- 318-3 Instrumental Conducting.** Score reading, baton techniques, and rehearsal management. Supervised application in ensemble. Prerequisite: music major or minor and junior standing.
- 321-2 Form and Analysis.** Comprehensive study of harmonic and formal structures and typical stylistic traits of 18th and 19th century music. Prerequisite: 204 and 207.
- 322-3 Principles of 20th Century Music.** Comprehensive study of harmonic techniques and other stylistic traits of major 20th century idioms. Prerequisite: 321.
- 324-1 Instrumental Arranging.** Practice in scoring of transcriptions, arrangements, and original compositions for standard instrumental groups. Prerequisite: 205.
- 325-1 Choral Arranging.** Practice in scoring arrangements and/or original compositions for choral groups. Prerequisite: 205.
- 331-1 Jazz Improvisation.** Ear training, phrasing in extemporaneous playing, use of chord symbols and chord progressions, special effects peculiar to jazz playing and styles of playing. Prerequisite: 205.
- 340-1, 2, or 4 Applied Music.** (See 040.)
- 341-1 to 8 (1 or 2 per semester) Accompanying Laboratory.** Experience, under supervision, in accompanying soloists and groups. Counts as a "major ensemble" for juniors and seniors.
- 346-1 to 16 (1 or 2 per semester) Opera Workshop.** Open to all experienced singers and stage technicians. Performs one major work and two or more excerpt programs per year. Normal registration is for two credits; four credits with permission for those with major roles; eight credits for full-time summer workshop. Counts as a "major ensemble" for juniors and seniors.
- 347-1 to 12 Music Theater Workshop.** For experienced singers, actors, dancers, and instrumentalists. Normally offered during summer as a full-time course, for eight credits, or one

credit per show for the orchestral players. Three or four musicals are rehearsed and presented. Prerequisite: audition.

357-6 (3, 3) Music History. Study of musical examples and techniques evolving from the ancient period to the present. May take a or b in either order. Prerequisite: 102 and junior standing.

363-2 (1, 1) Pronunciation and Diction for Singers. (a) English and French, (b) German and Italian. Establishment of proper pronunciation as applied to vocal literature. Prerequisite: one or more semesters of private or class voice instruction. Elective Pass/Fail.

364-2 The Alexander Technique of Body Control. A controlled discipline to counteract tension habits that are harmful to correct use of the body, particularly as they relate to music, speech, dance, and theater.

365-1 to 48 Chamber Music. Groups of two to sixteen performers as organized and sponsored by individual faculty members. Includes duo-piano teams, and piano in combination with other performers. Regular weekly rehearsals of appropriate music and public performance as feasible.

a. 1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) **Chamber Music-Vocal.**

b. 1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) **Chamber Music-String.**

c. 1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) **Chamber Music-Woodwind.**

d. 1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) **Chamber Music-Brass.**

e. 1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) **Chamber Music-Percussion.**

f. 1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) **Chamber Music-Keyboards.**

370-2 American Folk Music. American folk music from its foreign heritage to its current manifestations.

372-3 The Music of Black Americans. (Same as Black American Studies 362.) The study of the music created and produced by black people in the United States. Content ranges from work songs and spirituals through contemporary classical music. Although jazz is not ignored, primary focus is on other styles and genres. Some emphasis upon the environmental forces which shaped the music. Historically oriented.

373-3 Rock and Pop Music. Study of "rock" and other popular American music. Evolution of both black and white folk music is shown. Rock is studied as the merging of aspects of these two folk mainstreams. Major figures in rock are studied. Lectures, "live" and recorded demonstrations, films, and individual projects will be used.

374-3 Music Merchandising I. A study and investigation of domestic and international copyright protection, the publishing and distribution of music, and investigation of recorded music. Prerequisite: sophomore standing and permission of instructor.

375-3 Music Merchandising II. Continuation of 374, emphasizing continued study of the record industry, performed music and performance rights, musical instruments manufacture, and an investigation of wholesale and retail procedures. Prerequisite: 374.

380-2 to 4 (2, 2) Intermediate Composition. Continuation of 280. Original composition in the smaller forms for piano, voice, string quartet, and other small combinations. Prerequisite: 280-4.

398-1 to 2 (1, 1) Partial Recital. Preparation and presentation of a partial recital in any applied field. Prerequisite: prior or concurrent registration in 340 and approval of applied jury.

399-5 (1, 1, 1, 1, 1) Graduate Preparatory Seminar. (a) Music analysis, (b) Aural techniques, (c) Pre-Baroque, (d) Baroque and Classical, (e) Romantic and Modern. Designed to supply understanding and skills where deficiencies have been shown by the graduate proficiency examinations in music. Part or all may be taken in any sequence. Prerequisite: prior assignment by graduate committee in music.

400-1 to 2 (1, 1) Performance Techniques. Individual instruction in any secondary applied field. Designed to provide added depth of preparation for teaching instrumental and vocal music. Prerequisite: completion of 340 level or the equivalent in some field of applied music.

407-2 Modal Counterpoint. Study of Renaissance contrapuntal techniques. Extensive writing practice, and analysis of stylistic models. Prerequisite: 207.

410-6 (3, 3) Ethnomusicology. (Same as Anthropology 410h,i.) (h) Oceania, Asia, and Africa, (i) Middle East, Europe, and the New World.

414-1 to 8 (1 to 2 per semester) Collegium Musicum. For experienced singers and instrumentalists. Emphasis upon practical study of historical music literature of the Medieval, Renaissance, and Baroque eras. Counts as a "major ensemble" for juniors and seniors.

420-1 to 2 (1, 1) Instrument Repair. A shop-laboratory course dealing with the selection, tuning, adjustment, maintenance, and repair of musical instruments.

421-2 Advanced Analysis. Structure, form, and design in music as the coherent organization of all of its factors. Analysis of works chosen from a variety of styles and genres. Prerequisite: 321.

430-1 Jazz Arranging. Methods of scoring for popular groups. Practice in scoring arrangements and/or original compositions for jazz ensembles. Prerequisite: 324 or prior consent of instructor.

440-1, 2, or 4 Applied Music. (See Music 040.)

447-4 (2, 2) Electronic Music. (a) Introduction to classical studio equipment and techniques; use of voltage controlled equipment. Individual laboratory experience available. (b)

Emphasis upon creative projects, more sophisticated sound experimentation, and analysis. Enrollment limited. Must be taken in a,b sequence. Prerequisite: 280 or GSA 361 or consent of instructor.

453-2 to 4 (2 per semester) Advanced Topics in Choral Music. Practicum in the selection, rehearsal, and performance of appropriate literature. Study of techniques for achieving proficient performance and musical growth. Designed for experienced teachers and advanced students.

454-2 to 4 (2 per semester) Advanced Topics in Instrumental Music. Practicum in the selection, rehearsal, and performance of appropriate literature. Study of techniques for achieving proficient performance and musical growth. Designed for experienced teachers and advanced students.

455-2 to 4 (2 per semester) Advanced Topics in Elementary School Music. Practicum in the selection and use of materials for the elementary school program. Study of techniques for achieving balanced musical growth. Designed for experienced teachers and advanced students.

456-4 (2, 2) Music for Exceptional Children. (Same as Special Education 456.) (a) Theories and techniques for therapeutic and recreational use of music with physically and mentally handicapped children. Includes keyboard, autoharp, guitar, and tuned and untuned classroom instruments. (b) Applications for the gifted, emotionally disturbed, and culturally disadvantaged child. Take in sequence. Prerequisite: 302 or prior consent of instructor.

460-3 Music Aesthetics and Appreciation. The significance of music for people. Critical theories in the writings of philosophers of music and art from Plato through Dewey and Cage are related to principles and methods for communicating an understanding of music in schools and in society.

461-3 Applied Music Pedagogy. Specialized problems and techniques employed in studio teaching of any particular field of musical performance. Study of music literature appropriate for the various levels of performance. Opportunity, as feasible, for supervised instruction of pupils. Meets with appropriate instructor, individually or in groups.

468-2 to 4 (2, 2) Music Productions. Practicum in the techniques for staging operas and musicals.

472-2 Chamber Music Literature. A study of literature for the principal types of chamber music groups.

475-3 Baroque Music. The development of vocal and instrumental music in the period 1600-1750, from Monteverdi to Bach and Handel. Oratorio and Cantata, the influence of opera, sonata, suite, and concerto. Prerequisite: For undergraduate enrollment: 357a or b. For non-music majors: prior consent of instructor.

476-3 Classical Music. Development of the sonata, symphony, concerto, and chamber music in the 18th and early 19th centuries, with emphasis on the music of Haydn, Mozart, and Beethoven. Prerequisite: For undergraduate enrollment: 357a or b. For non-music majors: prior consent of instructor.

477-3 Romantic Music. Development of the symphony and sonata forms, chamber music, and vocal music in the 19th and early 20th centuries. Rise of nationalism and impressionism. Prerequisite: For undergraduate enrollment: 357a or b. For non-music majors: prior consent of instructor.

479-2 to 4 (2 per topic) Solo Performance Literature. Topics presented will depend upon the needs of students and upon instructors scheduled. Areas: (a) piano literature, including an introductory study of harpsichord music; (b) organ literature, in relation to the history of the instrument; (c) song literature; (d) guitar and lute literature; (e) solo string literature; (f) solo wind literature.

480-2 to 4 (2, 2) Advanced Composition. Original composition involving the larger media. Individual instruction. Prerequisite: 380-4.

481-1 to 4 Readings in Music Theory. Assigned readings and reporting of materials pertaining to a particular phase of music theory in historical perspective. Approximately three hour's preparation per week per credit (adjusted for shorter sessions). Prerequisite: 321 and 322 or prior consent of instructor.

482-1 to 4 Readings in Music History and Literature. Assigned readings and reporting of materials pertaining to a particular phase of history or literature. Approximately three hours preparation per week per credit. Prerequisite: 357a and b, or prior consent of instructor.

483-1 to 4 Readings in Music Education. Assigned readings and reporting of materials pertaining to a particular phase of music education. Approximately three hours preparation per week per credit (adjusted for shorter sessions.)

498-2 to 4 (2, 2) Recital. Preparation and presentation of a full solo recital in any applied field. Prerequisite: prior or concurrent registration in 440 and approval of applied jury.

499-1 to 8 Independent Study. Original investigation of selected problems in music and music education with faculty guidance. Project planned to occupy approximately three hours preparation per week per credit (adjusted for shorter sessions). Prerequisite: prior consent of selected instructor.

500-1 to 6 Independent Investigation.

501-3 Music Bibliography and Research.
502-4 (2, 2) Analytic Techniques.
503-3 Scientific Evaluation and Research in Music.
509-2 History and Philosophy of Music Education.
535-2 Contemporary Idioms.
540-1, 2, or 4 Applied Music.
545-3 Pedagogy of Music Theory.
550-2 School Music Administration and Supervision.
556-2 to 4 (2, 2) Advanced Conducting.
566-1 to 12 (1 or 2 per semester) Ensemble.
567-1 to 8 Music Theater Workshop.
568-1 to 16 (1 to 8 per semester) Opera Workshop.
570-3 History of Opera.
573-3 Medieval Music.
574-3 Renaissance Music.
578-3 Twentieth Century Music.
580-2 to 4 (2, 2) Graduate Composition.
595-2 Music Document.
598-4 Graduate Recital.
599-2 to 6 Thesis.

Nursing

(SEE ASSOCIATE DEGREE NURSING)

Nursing (Preprofessional Program)

The Nursing Division of Southern Illinois University at Edwardsville offers an educational program leading to a Bachelor of Science degree with a major in nursing. The curriculum is designed to prepare qualified individuals to function competently as beginning professional nurse practitioners; to participate in providing a broad scope of health care in a variety of settings; to obtain a foundation for continued growth and graduate education. The curriculum assists students in developing the behaviors and abilities necessary to function therapeutically with people while achieving greater self-direction, self-realization, and professional identity in an era characterized by change.

Up to two years of the program may be completed at Southern Illinois University at Carbondale. During the first two years, the student must successfully complete all courses prerequisite to the nursing major. The student must then transfer to Southern Illinois University at Edwardsville. Information concerning these courses is available at the Pre-Major Academic Advisement Center.

All students are strongly urged to seek academic advisement for each semester in attendance. The grade of *C* or above is required in all nursing courses, all science courses, and General Studies Area A.

Occupational Education

(SEE VOCATIONAL EDUCATION STUDIES.)

Philosophy (Department, Major, Courses)

The student electing to major in philosophy should consult the department's director of undergraduate studies, who will then assign an adviser. Prospective students are advised to take at least one philosophy course at the 100 or 200 level.

Bachelor of Arts Degree, College of Liberal Arts

<i>General Studies Requirements</i>	45
<i>Supplementary College Requirements</i> (See page 78.)	(4) + 8-14
<i>Requirements for Major in Philosophy</i>	28
Philosophy 304 and 305	6
At least two of the following: Philosophy 300, 306, 320, 340, 342	6
At least two 400-level philosophy courses	6-8
Philosophy electives to complete 28 hours, 6 of which may be selected from the 100 and 200 level	8-10
<i>Minor</i>	15
<i>Electives</i>	18-24
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<i>Total</i>	120

Minor

A minor in philosophy requires 15 hours, 6 of which may be selected from philosophy courses offered at the 100 and 200 level and 6 of which should be selected from the courses listed above for the major. Philosophy 304 and 305 are recommended.¹

Honors

Honors in philosophy will be granted to eligible majors who successfully complete two semesters of Philosophy 397, maintain a 3.25 average in philosophy and a 3.00 overall grade point average, and have their written work in one Undergraduate Philosophy Seminar approved by a faculty committee.

Courses

- 200-3 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. Elective Pass/Fail.
- 206-3 Philosophies of the Person.** A survey and examination of selected theories of human nature, beginning with ancient and medieval philosophies and continuing into modern times with some consideration of scientific and ideological accounts. Elective Pass/Fail.
- 300-3 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. Elective Pass/Fail.
- 301-3 Philosophy of Religion.** (Same as Religious Studies 301.) 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. Elective Pass/Fail.
- 304-3 Ancient Philosophy.** Survey of western philosophy from the pre-Socratics, Plato, and Aristotle through the Middle Ages. Elective Pass/Fail.
- 305-3 Modern Philosophy.** A survey of western philosophy from Bacon and Descartes through Kant. Elective Pass/Fail.
- 306-3 Nineteenth Century Philosophy.** Survey of 19th century European philosophy. Topics to be selected from the following: Hegel's philosophy; the subsequent reactions to Hegelianism in the forms of positivism, Marxism, and existentialism; British utilitarianism and idealism; neo-Kentian philosophies; and evolutionist philosophies. Elective Pass/Fail.
- 313-3 Classical Chinese Philosophy.** Historical and comparative study of Confucianism, Taoism, Maoism, and Legalism. Elective Pass/Fail.
- 314-3 Modern Chinese Philosophy.** Historical and comparative study of Mahayana Buddhism, Neo-Confucianism, and Maoism. Elective Pass/Fail.
- 320-3 Deductive Logic.** Main forms of deductive inference. Emphasis on the use of the symbolism of modern logic to evaluate inferences. Elective Pass/Fail.
- 340-3 Ethical Theories.** Nature of ethics and morality, ethical skepticism, emotivism, ethical relativism, and representative universalistic ethics. Bentham, Mill, Aristotle, Kant, Blanshard, and Brightman. Elective Pass/Fail.

¹Students completing a minor in philosophy for purposes of obtaining teacher certification in the State of Illinois must complete a minimum of 18 semester hours in the minor area.

342-3 Legal and Social Philosophy. Discussion of contemporary institutions designed to achieve socially desirable goals (e.g., guaranteeing equality of opportunity, protecting individual liberties, assuring a fair distribution of wealth, minimizing violent behavior) and the philosophical theories that serve as the foundation for the continued existence or reform or abolition of these institutions (e.g., the theories of Hobbes, Marx, Mill, and Marcuse). Elective Pass/Fail.

355-3 Philosophy of Education. (See Educational Administration and Foundations 354.) Elective Pass/Fail.

371-3 Introduction to Contemporary Phenomenology. Introductory survey of individual thinkers and questions in the contemporary phenomenological tradition: Husserl, Sartre, Merleau-Ponty, Levinas, and Ricoeur. Elective Pass/Fail.

375-3 Philosophical Foundations of Ecology. Study of the conceptual foundations of the ecological or environmental outlook, the differences that may exist between those foundations and other philosophical frameworks, and the possible changes in general patterns of thought that may result from the increasing importance and widening application of ecological sciences. Elective Pass/Fail.

378-3 Introduction to Marxist Theory. An introduction to Marxist historical method and its effects on social theory, politics, aesthetics, literary criticism, psychology, philosophy, and economics. Classical texts from Lukacs to Althusser and examinations of critical questions in the social sciences provide the topics of the course.

389-3 Existential Philosophy. Surveys the two main sources of existentialism, the life philosophies of Kierkegaard and Nietzsche and the phenomenology of Husserl, and introduces the major philosophical themes of representative thinkers: J.P. Sartre, M. Heidegger, G. Marcel, and others. Elective Pass/Fail.

397-8 (4,4) Undergraduate Philosophy Seminar. Small group discussion of topics in philosophy.

400-3 Philosophy of Mind. An investigation of the philosophic issues raised by several competing theories of mind, focusing on the fundamental debate between reductionistic accounts (e.g. central state materialism, identity theories of the physical and mental) and views which reject such proposed reductions. Traditional and contemporary theories will be examined. Designed for students in the life and social sciences with little or no background in philosophy as well as philosophy students. Elective Pass/Fail.

415-3 Logic of Social Sciences. (Same as Sociology 415.) Logical and epistemological examination of the social sciences 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. Elective Pass/Fail.

420-3 Advanced Logic. Study of topics in logical theory and/or formal logic not treated in 320. Prerequisite: 320. Elective Pass/Fail.

425-3 Philosophy of Language. (Same as Speech Communication 465.) Introduction to basic problems in the philosophy of language, including alternative theories of meaning and reference and the relation between meaning and intention. Elective Pass/Fail.

426-3 Introduction to Mathematical Logic. (See Mathematics 426.)

432-4 Philosophy of Mathematics. (Same as Mathematics 432.) Philosophical problems of mathematics. Epistemological issues raised by non-Euclidean geometry. Representative writers on foundations, including nominalists, intuitionists, logicians and formalists. Ontological commitment, conventionalist theories of mathematical truth, logical paradoxes, and alternative set theories; significance of the theorems of Godel and Skolem-Lowneheim. Prerequisite: 320 or 15 hours mathematics. Elective Pass/Fail.

435-4 Scientific Method. Critical survey of influential descriptions of scientific method, with emphasis on natural sciences. Topics include statistical and inductive probability, crucial experiments, explanation and prediction, interpretation of scientific terms and sentences, role of reasoning in discovery, and value judgments in research. Elective Pass/Fail.

441-4 Philosophy of Politics. (Same as Political Science 403.) 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: 340 or GSC 102 or consent of instructor. Elective Pass/Fail.

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. Elective Pass/Fail.

446-3 Philosophical Perspectives on Women. Survey of five different views of the relation of the concept of women to the philosophical concept of Human Nature. Elective Pass/Fail.

460-4 Philosophy of Art. The definition of art, its relation to science, culture and morals; the various types of art defined. Familiarity with at least one of the fine arts is assumed. Elective Pass/Fail.

470-6 (3, 3) Greek Philosophy. (a) Plato; (b) Aristotle. Prerequisite: 304 or consent of instructor. Elective Pass/Fail.

471-4 Medieval Philosophy. Prerequisite: 304 or consent of instructor. Elective Pass/Fail.

472-4 The Rationalists. Study of one or more of the following: Descartes, Malebranche, Spinoza, Leibniz, Wolff. Prerequisite: 305 or consent of instructor. Elective Pass/Fail.

- 473-6 (3, 3) **The Empiricists.** (a) Locke; (b) Hume. Prerequisite: 305 or consent of instructor. Elective Pass/Fail.
- 474-9 (3, 3, 3) **19th Century Philosophers.** (a) Kant; (b) Hegel; (c) Marx. Prerequisite: 306 or consent of instructor.
- 475-3 **Chinese Philosophy.** Confucianism, Taoism, or Buddhism. Emphasis on comparison of philosophy East and West. Elective Pass/Fail.
- 477-4 **Latin American Philosophy.** A survey of philosophic thought in Latin America from colonial times through 19th century positivism and the reactions against it, up to recent trends. Reading of original texts in English translation. Discussions and reports. Elective Pass/Fail.
- 478-4 **Latin American Thought.** Elective Pass/Fail.
- 482-3 **Recent European Philosophy.** Philosophical trends in Europe from the end of the 19th Century to the present. Phenomenology, existentialism, the new Marxism, structuralism, and other developments. Language, history, culture and politics. Elective Pass/Fail.
- 486-3 **Early American Philosophy.** From the Colonial period to the Civil War. Elective Pass/Fail.
- 487-3 **Recent American Philosophy.** Thought of Howison, Royce, Peirce, James, Dewey and others. Elective Pass/Fail.
- 490-2 to 8 **Special Problems.** Hours and credits to be arranged. Courses for qualified students 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. Prerequisite: consent of department.
- 491-1 to 3 **Undergraduate Directed Readings.** Supervised readings for qualified students. Open to undergraduates only. Prerequisite: consent of instructor.
- 496-2 to 4 **Independent Studies in Classics** (See Classics 496.)
- 500-3 **Metaphysics.**
- 501-3 **Philosophy of Religion.**
- 503-3 **Philosophical Ideas in Literature.**
- 512-3 **Philosophy of Culture.**
- 515-3 **Theory of Nature.**
- 524-6 (3, 3) **Analytic Philosophy.**
- 528-3 **Social and Economic Philosophy.**
- 530-3 **Theory of Knowledge.**
- 531-3 **Whitehead.**
- 542-3 **Political and Legal Philosophy.**
- 545-3 **Ethics.**
- 550-3 **Theory of Value.**
- 560-3 **Aesthetics.**
- 562-3 **Philosophy of Human Communication.**
- 570-3 **American Idealism.**
- 575-3 to 9 (3 per topic) **Contemporary Continental Philosophy.**
- 577-6 (3, 3) **Pragmatism.**
- 581-3 **Plato.**
- 582-3 **Aristotle.**
- 587-3 **Kant.**
- 588-3 **Hegel.**
- 590-2 to 12 (2 to 4 per topic) **General Graduate Seminar.**
- 591-1 to 16 **Readings in Philosophy.**
- 595-2 **Teaching Philosophy.**
- 599-2 to 6 **Thesis.**
- 600-3 to 32 (3 to 16 per semester) **Dissertation.**

Photographic and Audio-Visual Technology (Program, Major)

The photographic and audio-visual technology major in the School of Technical Careers is unique in that all students complete a first year of core courses. The second year students may specialize in ultimate technical photographic laboratory curriculum or technical audio-visual curriculum.

Technical photographic courses are designed to prepare students as photographic laboratory technicians or photo finishers in industrial and commercial photographic processing agencies. Emphasis is placed on quality black and white and color photographic processes and materials. Students will study still photographic techniques in lecture/laboratory sessions and tour industrial and commercial photographic processing agencies to obtain practical understanding of

commercial systems. The student should expect to invest approximately \$400 for the production of a portfolio and for the purchase of special photo chemicals and supplies. Students are to provide their own fully adjustable cameras.

Technical audio-visual courses are designed to prepare students to work with industrial, university, and public school audio-visual delivery systems. Graphic production courses will enable students to broaden their marketable skills by developing technical skills essential to the production of basic graphics for audio-visual systems. Emphasis is placed on the technical quality of the work. Students should expect to invest approximately \$300 for test equipment, tools, and graphic supplies.

The following representatives of the profession serve on an advisory committee which helps to keep the program responsive to the needs in the field. Current advisers are: Oscar Fisher, president, Oscar Fisher Company, Newburgh, N. Y., Gary Rossman, Photo Marketing Association, Jackson, Mich.; Sam Fox, president, Ethol Chemical Company, Chicago, Ill.; Norbert Dompke, president, Root Photographers, Chicago, Ill.; John Bellezza, sales manager, Root Photographers, Chicago, Ill.; L. N. Grubb, production manager, Elko Photo Products Company, Kansas City, Mo.; David Goldstein, president, D. O. Industries, Rochester, N. Y.

Students selecting either specialization will find job opportunities throughout industry for quality technicians. Graduates are limited only by their own talent, motivation, and willingness to move to where jobs are available. Job pay is directly commensurate with the technician's ability, resourcefulness, and drive.

A minimum of 66 credit hours is required for the major in photographic and audio-visual technology with specialization in either photographic laboratory or audio-visual technology. This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Art Degree, School of Technical Careers

PHOTOGRAPHIC AND AUDIO-VISUAL TECHNOLOGY MAJOR—TECHNICAL PHOTOGRAPHIC LABORATORY SPECIALIZATION

GSD 101.....	3
Electronics Technology 250, 251	5
Secretarial and Office Specialties 101a	3
School of Technical Careers 102, 103, 115a, 153a	8
Photographic and Audio-Visual Technology 111, 113, 115, 209, 211, 215, 221, 251.....	48
Total.....	67

PHOTOGRAPHIC AND AUDIO-VISUAL TECHNOLOGY MAJOR—TECHNICAL AUDIO-VISUAL SPECIALIZATION

GSD 101.....	3
Electronics Technology 250, 251, 252	7
School of Technical Careers 102, 103, 153a	6
Photographic and Audio-Visual Technology 111, 113, 115, 209, 217, 219, 275, 279.....	50
Total.....	66

Courses

111-4 Photo Processing I. Introduction to photo processing via the medium of black and white photography. Students will receive extensive darkroom work, film processing chemistry, and technical photographic assignments essential to the production of quality black and white prints. Lecture two hours, lab four hours.

113-4 Photo Processing II (Process Camera). Students will concentrate on technical operations of the process camera as a tool in total graphic production. Work is to include line copy, halftones, experimental techniques, and introduction to color separation. Emphasis will be placed upon selection of camera-ready copy as well as film, chemistry, and processing for special purpose photography. Lecture two hours, lab four hours.

115-6 Audio-Visual Equipment-Operation. In this introductory course, students will acquire a working knowledge of the projectors, recorders, and auxiliary equipment common to educational and industrial audio-visual operations. Emphasis is placed upon the proper set up and operation of equipment, integration of the equipment for special purposes, and care of software. Lecture three hours, lab six hours.

209-3 to 9 Graphics I (Basic Skills). Students will develop basic skills essential to the production of projected, non-projected, and print media. Mechanical lettering, drafting tools, image assembly, and reproduction processes are several of the included topics. Lecture 1 to 3 hours, lab 2 to 12 hours.

211-1 to 8 (1 to 3, 1 to 5) Photo Processing III (Color Positive). Students will process color reversal films by both traditional hand-processing methods and commercial lab techniques. Emphasis will be placed on quality control in film processing and distribution of final product. (a) Lecture one to three hours. (b) Lab two to ten hours. Prerequisite: 111.

215-6 Photo Processing IV (Color Negative). Students will process and print color negatives using commercial lab techniques. Emphasis will be placed on quality control in film processing, chemical replenishing, and distribution of final product. Lecture three hours, lab six hours. Prerequisite: 211.

217-6 Maintenance and Repair of Audio-Visual Equipment. Routine maintenance, troubleshooting, and repair of mechanical or electrical problems comprise the major topics of the course. Students will use basic test equipment in conjunction with equipment manufacturers repair manual to diagnose and correct malfunctions in the various types of audio-visual equipment. Lecture three hours, lab six hours. Prerequisite: 115.

219-1 to 8 (1 to 3, 1 to 5) Graphics II — Design, Planning Production. Building upon the skills acquired in Graphics I, the student will design and produce graphic materials for specific purposes. Working with thermal, photographic, diazo, stencil, and lithographic processes, a student will produce all required art work as well as the final product. (a) Lecture one to three hours, (b) lab two to ten hours. Prerequisite: 209.

221-6 Photo Processing V. Advanced black and white photo processing. Students will refine skills necessary for quality film processing and printing requirements of both small individual photo labs and commercial labs. Emphasis will be on methods essential to meet specialized customer requirements. Lecture three hours, lab six hours. Prerequisite: 113, 211.

251-1 to 12 (1 to 3, 1 to 9) Photo Lab Management. Students will study the personnel and financial aspects of operating a commercial photo lab. Field trips will be taken to industrial, commercial, and general photo agencies to obtain first-hand knowledge of operations. An industrial planning package is required by each student. (a) Lecture one to three hours, (b) lab two to eighteen hours. Prerequisite: program advisor's committee consent.

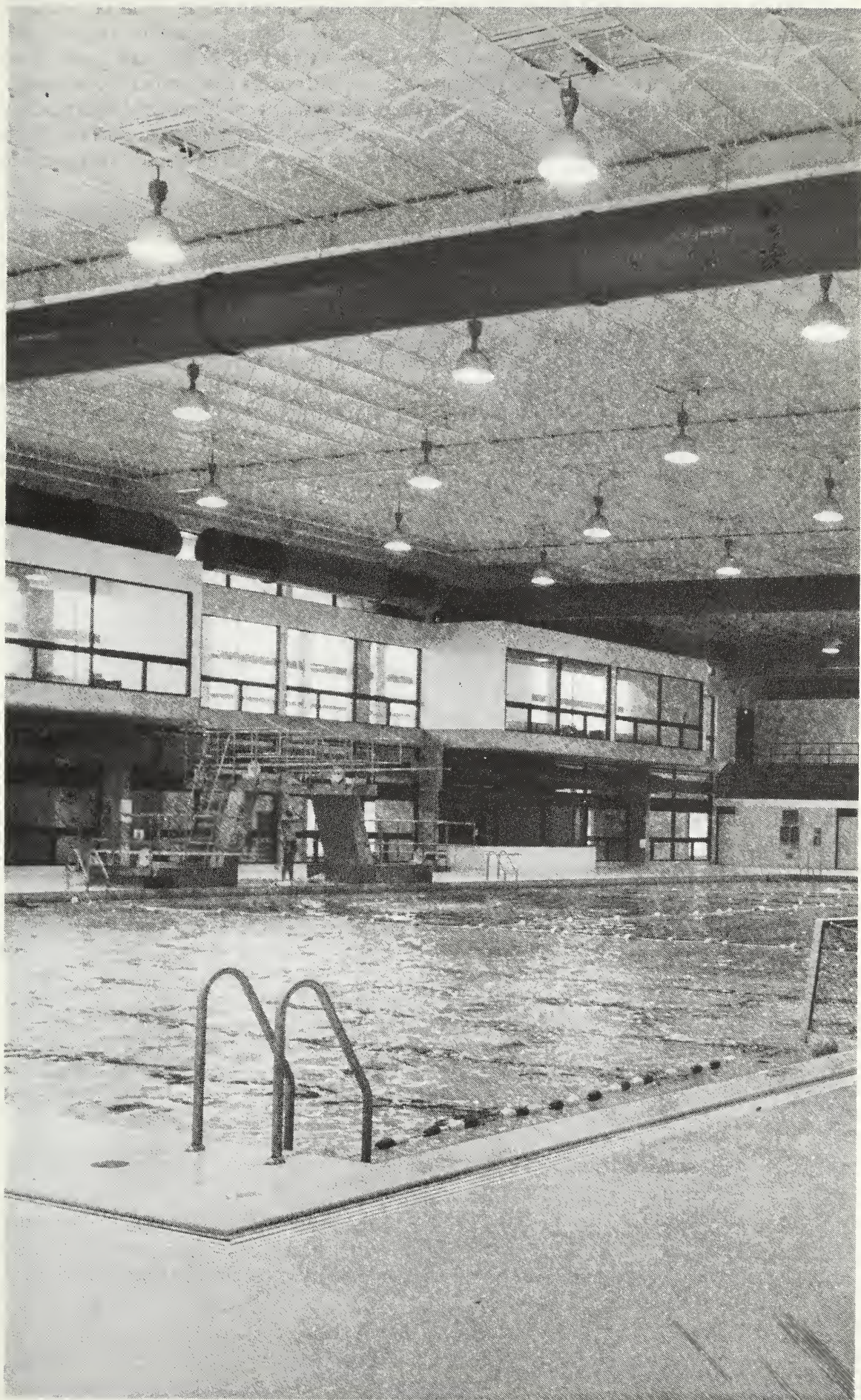
275-6 Production of Multi-Media Materials. In addition to development of new skills which tie together various media processes, the student will apply knowledge of planning and production to produce a media package for a specific use. This requires a thorough knowledge of all graphic and photographic processes, equipment uses and limitations, as well as the specific needs of the user. Lecture three hours, lab six hours. Prerequisite: 217, 219.

279-1 to 9 (1 to 3, 1 to 6) Practicum. The planning, staffing, and operation of a total-media production facility is the major project within the course. Visits to educational and industrial facilities will be scheduled to enable students to see first-hand the problems and strong points of various organizations. Preparation of a market analysis and personal resume will also be required. (a) Lecture one to three hours, (b) lab two to twelve hours. Prerequisite: 47 hours in photographic and audio-visual technology.

313-3 Photography and Television for Law Enforcement. Students will use basic camera techniques and darkroom procedures essential to the use of photography as a tool to record and recall evidence. Instruction will be given on the use of portable television systems as surveillance and recording instruments.

Physical Education (Department, Major, Courses)

The major in physical education for men or physical education for women qualifies graduates for positions as teachers, coaches, or specialists in public or private elementary and secondary schools, colleges, and universities, as well as in other social agencies which utilize physical activities as a medium for education. Courses are designed to meet the requirements of state departments of education



and other agencies which have adopted professional standards. The laboratory and classroom experiences in this program consist of the basic and applied sciences; classes in physical skills include a large variety of team and individual activities from sport, exercise, and dance; and courses in methods of teaching.

Additional experience may be gained through membership in professional organizations, participation on intramural and inter-collegiate teams, and through practicum experiences with service classes or with recreational and school groups.

Specializations, minors, or emphases are also available in the following areas: adapted physical education, aquatics, athletic coaching, athletic training, teaching physical education in elementary schools, and teaching physical education in elementary and secondary schools. Requirements are based upon the interests and needs of the student and are consistent with certification standards. Students not interested in teacher certification may develop a special major with approval of the designated departmental representative.

In all programs, students are in contact with faculty whose reputations are nationally and internationally known and whose achievements encompass research, teaching, and service.

Bachelor of Science Degree, College of Education

<i>General Studies Requirements</i>	45	
GSA 209, GSE 201, and 2 GSE-Physical Education courses ¹		
<i>Requirements for Major in Physical Education for Men or Physical Education for Women</i>	(2) + 46	
Physical Education 115a, b, c, d, e; three hours required from 116a, b, c, d, e, f; one hour required from 117a, b, c; one hour required from 118a, b, c, d, e, 230; one hour required from 119a, b, c; one hour required from 120a, b, c, d, e, f; 210; 211; 212; 214; 300; 301; 303; 305; 320; 326; 370; and one hour required from each of four of the following five areas: 215a, b, c, d; 216a, b, c, d, e; 217a, b, c; 218a, b; 220a, b, c, d.		(2) + 38
Physiology 300	3	
Physical education electives	5	
<i>Electives</i>	5	
<i>Professional Education Requirements</i>	24	
See Teacher Education Program, page 71.		
<hr/> <i>Total</i>	<hr/> 120	

¹Physical education activity courses may substitute for GSE courses.

Minor in Physical Education

A minor in physical education for men or women may be completed provided the student obtains approval of the departmental representative for the sequence of courses.

Minor in Athletic Training

Students in physical education with a minor in athletic training must complete the following requirements for retention in the minor: (1) 2.5 grade point average; (2) *B* in Physiology 300; (3) *B* in Physical Education 225; and (4) complete 200 hours of clinical experience each year supervised by a certified trainer at Southern Illinois University at Carbondale.

Requirements for the minor are listed below.

<i>General Studies Requirements</i>	12
GSA 208 and 209, GSB 202, GSD 153, and GSE 201	



Physical Education Requirements	19
Physical Education 225, 303, 305, 320, 325, 326, 327, 355d, 494a, b	
Other Requirements	18
Psychology 303, Health Education 334 and 434, Food and Nutri- tion 100, Physical Therapy Assistant 209, Physiology 300	

Minor in Dance

A minor in dance may be completed provided the student obtains approval of the departmental representative for the sequence of courses.

115-(1 per part) Development of Skill and Identification of Teaching Techniques of Physical Activities. (a) Aquatics. Prerequisite: GSE 101a or consent of instructor. (b) Rhythms and dance. (c) Exercise and conditioning. (d) Track and field. (e) Tumbling and gymnastics.

116-(1 per part) Development of Skill and Identification of Teaching Techniques of Team Sports. (a) Basketball. (b) Field hockey. (c) Flag football. (d) Soccer. (e) Softball. (f) Volleyball.

117-(1 per part) Development of Skill and Identification of Teaching Techniques of Racquet Sports. (a) Badminton. (b) Handball/racquetball. (c) Tennis.

118-(1 per part) Development of Skill and Identification of Dance. (a) Contemporary. (b) Folk. (c) Social. (d) Square. (e) Tap. Prerequisite: 115b.

119-(1 per part) Development of Skill and Identification of Teaching Techniques of Combatives and Weight Training. (a) Self defense. (b) Weight training. (c) Wrestling.

120-(1 per part) Development of Skill and Identification of Individual and Dual Activities. (a) Archery. (b) Boating. Prerequisite: maintaining safe position in deep water for ten minutes. (c) Bowling. (d) Fencing. (e) Golf. (f) Orienteering.

125-(1 per part) Intermediate Sport Skills. (a) Fencing. Prerequisite: 120d, GSE 104f, or consent. (b) Golf. Prerequisite: 120e, GSE 104h, or consent. (c) Sailing. Prerequisite: consent. (d) Tennis. Prerequisite: 117c, GSE 104n, or consent.

135-(1 to 3 per part) Advanced Level Sport Skills. (a) Distance Running. (b) Folk dance. (c) Gymnastics. (d) Kodokan Judo. (e) Orienteering. (f) Scuba. (g) Self defense. Prerequisite: consent of instructor.

170-(1.5 to 3 per part) Varsity Sports. (a) Football. (b) Basketball. (c) Track. (d) Tennis. (e) Gymnastics. (f) Baseball. (g) Golf. (h) Swimming. (i) Cross country. (j) Wrestling. Prerequisite: participation as member of a varsity team.

200-2 Body Mechanics and Exploratory Movement in Physical Activities for Primary Children. Provides a comprehensive coverage of the educational elements in basic movement education, its interpretation, analysis, terminology, structure, methods of teaching, and evaluative techniques. Observatory experiences provided.

201-3 Fundamental Skills and Activities of Low Organization for Children. Presents the entire scope of the physical education program for children in the intermediate grades. Course objectives, program planning, facilities, supplies and equipment, the basic activities representative of a comprehensive sports and games program, and the design of progress reports. Observatory experiences provided.

202-3 Physical Activities for Children and Youth. Developing activities for motor perceptual development and skill acquisition appropriate for different age levels of children and youth. Tennis shoes required. Dress must permit ease of movement. Prerequisite: at least sophomore standing.

205-1 Physical Problems of the School Age Student. Reviews the common physical disabilities which occur in children. Examines both acute and chronic injuries and diseases with reference to the type of physical activities best adopted by the physical problems. Prerequisite: Physiology 300.

207-2 History of Physical Education. The background and development of physical education.

208-3 Instructor of Swimming. Designed to prepare the student to teach beginning swimming through lifesaving to pre-school through adult groups.

210-2 Motor Learning. Presents the basic learning principles which underlie motor skill performances associated with physical activity and sports and examines the variables affecting skill learning. Prerequisite: at least sophomore standing.

211-1 Method of Teaching Secondary School Physical Education. Involves a clinical experience as pre-student teaching in which the assignment may be to instructional classes in school or college or to children in community sponsored programs. Prerequisite: 210, and at least sophomore standing.

212-1 Teaching Practicum. Laboratory experience with children in a school, or recreational setting or assisting in a GSE course at the University. Laboratory experience may also be arranged with special populations of children. Prerequisite: 211. Mandatory Pass/Fail.

213-2 Stage Movement. (Same as Theater 213.) Experiences in movement and improvisation for the performing artist.

214-3 Methods of Teaching Elementary Physical Education. 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. Second level (advanced course 314). Tennis shoes and appropriate dress for activity required. Open only to physical education majors. Prerequisite: 210, and at least sophomore standing.

215-(1 per part) Methods of Teaching Physical Education Activities. (a) Conditioning and weight training. (b) Swimming. (c) Track and field. (d) Tumbling and gymnastics. Prerequisite: 211, and the corresponding 115 course.

216-(1 per part) Methods of Teaching Team Sports. (a) Basketball. (b) Field hockey. (c) Soccer. (d) Softball. (e) Volleyball. Prerequisite: 211, and corresponding 116 course.

217-(1 per part) Methods of Teaching Racquet Sports. (a) Badminton. (b) Handball/racquetball. (c) Tennis. Prerequisite: 211, and corresponding 117 course.

218-(1 per part) Methods of Teaching Dance. (Same as Theater 309.) (a) Contemporary. (b) Folk, square, social. Prerequisite: 211, and corresponding 118 course.

220-(1 per part) Methods of Teaching Individual and Dual Activities. (a) Archery. (b) Bowling. (c) Golf. (d) Wrestling. Prerequisite: 211, and corresponding 120 course.

223-1 Techniques of Teaching Recreational Sports. Analysis and methods of teaching recreational sports. Prerequisite: 210.

225-1 Introduction to Athletic Training. Designed for the non-physical education major who desires to acquire the minimum essentials for athletic training. Principle of training and conditioning, the injury conditions in various body parts, and primary treatment procedures.

230-2 to 16 (2, 2, 2, 2, 2 to 8) Classical Ballet. (a) Beginning technique of classical ballet (first half). An introduction to the traditional techniques of the classic dance as an academic craft and style that serves as a basis for logical physical training of the dancer and a medium of expression for the dancer, choreographer, and teacher. Terminology employed to represent definite positions, steps, and movements to permit transmission of ideas in dance-terms to offer the beginner an initial chart for understanding of traditional steps and complete phrases in the classical ballet idiom. Exercises designed to stretch, strengthen and define line and form. Course must be taken in sequence. Women are required to have a leotard, pink tights, pink or black ballet slippers. Men are required to have a leotard or T-shirt, tights, white or black ballet slippers. (b) Beginning technique of classical ballet (second half). Continued study of the beginning syllabus with emphasis placed on centre practice. See 230a for requirements. Prerequisite: 230a or consent of instructor. (c) Intermediate Techniques of classical ballet (first half). Progressive training toward mastery of body mechanics of the classical ballet syllabus, a continuation of syllabus work and terminology with attention paid to the centre practice — adagio, allegro, and movements en l'air. See 230a for requirements. Prerequisite: 230b or consent of instructor. (d) Intermediate techniques of classical ballet (second half). See 230a for requirements. Prerequisite: 230c or consent of instructor. (e) Advanced techniques of the classical ballet. Study of the advanced classical ballet syllabus. Attention paid to the advanced students' individual progress in centre practice — adagio, allegro, steps en l'air, and enchainments. Application of the classical techniques as a means of expression as an art form. Prerequisite: 230d or consent of instructor.

240A-2 Beginning Techniques of Contemporary Dance. Prerequisite: 118a or GSE 103d.

240B-2 Intermediate Techniques of Contemporary Dance. Prerequisite: 240A.

240C-2 to 10 Advanced Techniques of Contemporary Dance. Prerequisite: 240B.

257-1 to 5 Current Work Experience. The student receives credit for current work experiences. Credit is awarded for many practical experiences and must be related to physical education and in process. Prerequisite: at least C average in physical education after 12 hours. Mandatory Pass/Fail.

258-1 to 5 Work Experience. The student receives credit for past work experiences. Credit is awarded for many practical experiences and must be related to physical education and already completed. Prerequisite: at least C average in physical education courses after 12 hours. Mandatory Pass/Fail.

273-4 (2, 2) History of the Dance. (a) The study of dance from primitive sources through the 19th century. (b) Dance as an art form in the 20th century.

300-2 Principles of Physical Education. Designs a structure of knowledge which underlies the practice of physical education with particular reference to a philosophical framework which embraces the moral and ethical values related to the function of personnel in the environment of physical education and competitive sport.

301-2 Organization and Administration of Physical Education. Consideration of the special problems related to the organization and administration of the curriculum, facilities and equipment, personnel management, budget making, legal liability, and public relations.

302-2 Kinesiology of Normal and Pathological Conditions. Force system, its relation to the mechanic of muscle action. Analysis of muscular-skeletal forces involved in physical activities. Prerequisite: Physiology 300.

303-3 Kinesiology. Force system, its relation to the mechanics of muscle action. Analysis

of muscular-skeletal forces involved in physical education activities. Prerequisite: Physiology 300.

304-2 Mechanical Basis of Human Movement. Applies body mechanics with application of mechanical laws and principles to performance in physical activities.

305-2 Physical Education for Special Populations. Understanding the characteristics, limitations, and activity needs of students with physical, mental, or emotional limitations; and procedures for organizing and conducting a physical education program for such special students. Prerequisite: at least junior standing.

306-1 Advanced Swimming, Skill and Analysis. Prerequisite: GSE 101b or equivalent.

307-2 Water Safety Instructor. Methods of teaching swimming and lifesaving. American Red Cross Water Safety Instructor certificate may be earned. Bathing cap recommended. Pool suit supplied or one piece nylon tank suit required. Prerequisite: 306 and current Red Cross advanced lifesaving certification. Elective Pass/Fail.

308-2 to 10 (2, 2, 2, 2, 2) Instructor of Aquatics. (a) Handicapped. (b) Skin diving. (c) Scuba diving. (d) Canoeing. (e) Swimming. Prerequisite: consent of instructor.

310-2 Aquatics Facilities Management. Learning experiences designed to aid in the development of aquatic specialists who can efficiently work toward satisfactory solutions to the problems inherent in functional design, operation, and maintenance of aquatic facilities that are associated with schools, municipalities, and other organizations.

311-2 Lifeguarding. The skills and techniques for preparing selected individuals related to the aquatic lifeguarding task and training in the specifics of being a part of the aquatic lifeguarding system. Prerequisite: pass swimming test.

312-3 Dance Philosophies.

313-3 Dance Composition. Introduction to choreography as an art form with special emphasis given to the use of space, time, and energy. Prerequisite: 118a or 213.

314-2 Advanced Methods of Teaching Elementary Schools (Physical Education). Prerequisite: 202 or 214.

320-3 Physiological Basis of Human Movement. Immediate and long range effects of muscular activity on the systems. Integrative nature of body functions and environmental influences on human performance efficiency. Laboratory to be arranged. Prerequisite: GSA 209 or equivalent.

324-2 Advanced Methods of Teaching Special Populations. Prerequisite: 305.

325-2 Training Room Techniques. Intended for the student who wishes to complete a specialty as athletic trainer. Provides knowledge concerning the organization and administration of a training room, the installation and use of its modalities, and general procedures on training room operational functions. Prerequisite: Physiology 300.

326-2 Emergency Care and Prevention. 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. Lecture and laboratory sessions. Prerequisite: Physiology 300.

327-2 Medical Aspects of Athletic Injury. The student will acquire an advanced understanding of the proper prevention and rehabilitation of athletic injuries. The student will also understand medical and surgical procedures and their consequent factors to be considered in treatment programs. Prerequisite: 326.

329-2 Principles and Procedures of Coaching Women's Sports. An examination of the history, values, and trends in extracurricular sports programs for girls and women. A review of regulations and standards as determined by the governing bodies for women's sports and in-depth study of coaching procedures. Prerequisite: competitive experience and junior standing.

330-1.5 to 9 (3, 3, 3) or (3, 3, 1.5, 1.5) Techniques and Theory of Coaching. (a) Basketball. (b) Football. (c) Swimming. (d) Baseball. (e) Track and field. (f) Wrestling. (g) Tennis. (h) Gymnastics. (i) Golf. (j) Badminton. (k) Field hockey. (l) Softball. (m) Volleyball.

345-2 Psycho-Socio Aspects of Physical Education. Provides an overview of the key sociological and psychological concepts that are applicable to athletics and to physical activity. This course is intended as an introduction to the disciplines of sociology of sport and sport psychology. Prerequisite: junior standing.

355-2 to 8 (2, 2, 2, 2) Practicum. (a) Aquatics. (b) Special Populations. (c) Coaching. (d) Athletic Training.

360-.5 to 2 (.5 per part) Theory of Officiating. (a) Badminton. (b) Basketball. (c) Field hockey. (d) Football. (e) Gymnastics. (f) Softball. (g) Competitive swimming. (h) Synchronized swimming. (i) Track and field. (j) Volleyball. (k) Wrestling. Prerequisite: the corresponding activity course.

362-1 to 2 Teaching Physical Education Activities. Teaching various activities in the area of sport with specific emphasis on current methods and approaches to learning physical education skills. Elective Pass/Fail.

365-2 Management of Interschool Athletics. A treatment of the philosophy and background of athletics in the total high school educational program; the national and state associations which guide athletic administration; the duties and responsibilities of the athletic director; and the many factors responsible for the control and administration of desirable programs.

- 369-2 Improving Teaching Through Testing (Workshop).** Teaching aids, diagnostic measures, practices, and standardized tests for a variety of physical skills. Principles of programmed learning applied to psychomotor tasks.
- 370-3 Measurement and Evaluation in Physical Education.** The theory of measurement in physical education, the selection and administration of appropriate tests of motor skills and the interpretation of results. Projects required. Prerequisite: junior standing.
- 375-2 Introduction to Research in Physical Education.** Prerequisite: junior standing.
- 379-2 Advanced Dance Composition.** Prerequisite: 115b or 313.
- 400-3 Evaluation in Physical Education.** Historical background of measurement in physical education; selection and evaluation of contemporary testing devices (predominantly tests of motor skill); structure and use of tests; administering the testing program; and statistical manipulation and interpretation and application of results.
- 402-2 Organization and Administration of Intramural and Extramural Activities.** Planning intramural programs of sports. Planning and coordinating extramural activities commonly associated with physical education.
- 403-2 Developmental Movement Experiences Designed for the Special Child.** Movement performance as applied to children of special populations. Study of movement theory and its application to developmental needs and motor-perceptual performance.
- 404-2 The Teaching of Sports.** Principles of learning applied to selected sports; progressions, teaching methods, and related summaries of research.
- 407-2 Advanced Theory and Techniques in the Prevention and Rehabilitation of Athletic Injuries.** The application of scientific principles to the theoretical and practical methods of preventing and treating athletic injuries.
- 408-2 Physical Fitness: Its Role and Application in Education.** An analysis of physical fitness as it relates to the total well-being of people. Specific units on the fitness parameters, hypokinetic disease and physical inactivity, stress, current level of fitness, training programs, and the beneficial aspects of regular exercise. Major emphasis is placed upon incorporating current thinking on physical fitness into the development of teaching models.
- 409-3 Social Aspects of Sport and Physical Activity.** This course presents an analysis of the social implications of sport on society and includes consideration of sports in relation to sexual identification, women, minority groups, politics, political activism, social deviance, and other related areas.
- 410-3 Behavioral Foundations of Coaching.** Behavioral problems of the athlete and the coach and possible solutions to such problems. Application of behavioral principles and theories as a basis for understanding the interaction between coach and student in the athletic environment.
- 415-1 to 6 (1 per topic) Workshop in Sports.** A concentrated experience in the latest theories and techniques of selected sports activities. Emphasis is placed on individual and team drills, instructional materials and improved teaching methods. One semester hour for each workshop. A total of four hours only of such workshop experience may be credited toward the master's degree. Workshop titles are: (a) Baseball, (b) Basketball, (c) Field Hockey, (d) Football, (e) Gymnastics, (f) Soccer, (g) Softball, (h) Swimming, (i) Track and Field, (j) Volleyball.
- 416-3 Current Theories and Practices in the Teaching of Dance.** Designed to aid a critical evaluation and analysis of dance as an educational tool, from creative dance for children through dance in the University curriculum. Specific techniques, creative ideas, class organization, and general evaluation will be included. All students will be expected to design and instruct a lesson under supervision of the instructor. Notebook required. Prerequisite: GSE 113d or Physical Education for Women 115h and 240.
- 418-2 Administration of Aquatics.** The study of comprehensive aquatic programs, their implementation and coordination.
- 420-3 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. Requires purchase of laboratory manual. Prerequisite: GSA 209 or equivalent.
- 444-2 to 6 Contemporary Dance Workshop.** Dance technique and theory, composition, improvisation, and production. Advanced study of the problems of choreography and production in their presentation as theater. Public performance is required. Prerequisite: one year of technique and theory or equivalent.
- 493-2 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, (f) History and Philosophy. Written report required. Prerequisite: consent of adviser and department chairman.
- 494-2 (1, 1) Practicum in Physical Education.** Supervised practical experience at the appropriate level in selected physical education activities in conjunction with class work. Work may be in the complete administration of a tournament, field testing, individual or group work with special populations, administration of athletics or planning physical education facilities. Prerequisite: consent of adviser.

500-3 Techniques of Research.
501-3 Curriculum in Physical Education.
503-2 Seminar in Physical Education.
505-2 to 6 (2 per topic) Topical Seminar in Physical Education.
506-2 Topical Seminar in the Assessment of Motor Performance.
508-2 Administration of Athletics.
510-2 Motor Development.
511-2 Analysis of Human Physical Movement.
512-2 Biomechanics of Human Motion.
513-3 Perceptual Motor Learning of Physical Skills.
515-3 Body Composition and Human Physical Performance.
517-2 Athletic and Physical Education Facilities Design, Construction, and Maintenance.
520-3 Metabolic Analysis of Human Activity.
530-2 Seminar in Research in Motor Performance.
590-1 to 4 Readings in Physical Education.
592-3 Research Projects in Physical Education.
599-3 to 6 Thesis.
600-1 to 32 (1 to 16 per semester) Dissertation.

Physical Therapist Assistant (Program, Major, Courses)

The Physical Therapist Assistant program, which has been accredited by the American Physical Therapy Association, is designed to prepare the student to work under the direction of a licensed physical therapist to treat disabilities resulting from birth defects, disease, or injury. Following the prescriptions of a physician, the therapist helps the patient to develop strength, mobility, and coordination, and provides relief from pain.

Students will learn massage, exercise, ultra sound, hydrotherapy and other therapeutic techniques in actual practice in the University's Clinical Center. They will work with professional therapists in learning such complex procedures as administering manual muscle tests, electrical muscle and nerve tests, and other evaluative measures.

Before graduation the student will serve a twelve-week internship in two separate hospitals away from the university campus.

The program is served by an advisory committee which provides supportive expertise. Current members are: David Collins, chief physical therapist, St. Mary's Hospital, Decatur; Virginia Daniel, chairman, department of physical therapy, School of Related Health Sciences, Chicago Medical College; Dr. Harold Kaplan, department of physiology, Southern Illinois University at Carbondale, Dr. Bruce Safman, medical director, department of physical medicine, Mercy Hospital, Urbana; Ruffin Walden III, chief physical therapist, Memorial Hospital, Springfield; Barbara Freeman, physical therapist assistant, Springfield; and Kathy Breitwiser, student, Carbondale.

The student should expect to spend approximately \$100.00 for uniforms and insurance.

Increasing numbers of elderly and chronically ill persons and the rapid expansion of health care programs in both urban and rural areas have created an urgent demand for trained physical therapists. Employment opportunities are available in hospitals, rehabilitation centers, and extended care facilities.

Physical therapy provides a unique service and requires a close interpersonal relationship with the patient. The candidate must possess the following qualities to work with people. 1) good mental and physical health, 2) stamina, 3) good coordination and manual dexterity, and 4) spirit of cooperation.

The prospective student should plan to make early application for admission to this program because enrollment is limited by size of faculty and physical facilities.

This associate degree program can be completed in two academic years, plus one summer session, at Southern Illinois University at Carbondale or in combina-

tion with community college or other acceptable extra-institutional educational experience.

Associate in Art Degree, School of Technical Careers

Requirements for Major in Physical Therapist Assistant

GSA 101, 106, 208, 209.	10
GSB 202	3
GSD 101, 152	5
Health Education 334.	3
Physiology 300	3
Physical Education 302, 320, and 325 or 326	7
Psychology 301, or 303, or 304, or 305.	3
Zoology 118.	4
Physical Therapist Assistant 100, 113, 202, 203, 204, 205, 207, 208, 209, 213, 214, 321, 322.	35
Electives	3
<hr/>	
Total.	72

Courses

- 100-2 Physical Therapy Orientation.** Students will be able to describe the historical background, professional ethics, and legal aspects of physical therapy practice. They will be able to understand and utilize specialized medical terminology. They will be able to prepare treatment areas and patients for treatment. They will be able to understand the relationship of physical therapy to total health care. Lecture one hour. Laboratory two hours.
- 113-1.5 Therapeutic Modalities I.** The student will be able to demonstrate procedures used in the safe application of local heat and cold such as hot and cold packs, infra-red, and paraffin bath, and will also be able to demonstrate safe hydrotherapy procedures such as whirlpool and contrast baths. Lecture one hour. Laboratory two hours. Eight weeks.
- 202-2 Physical Rehabilitative Techniques.** The student will be able to demonstrate rehabilitative procedures such as bed positioning, range of motion exercises, transfer activities and gait training, and will understand the concepts of total rehabilitation. Lecture one hour. Laboratory two hours.
- 203-1 Pathology.** The student will be able to understand the fundamental basis of disease. Emphasis will be placed on those conditions treated through physical therapy procedures. The student will be able to describe the process of inflammation and repair bone and soft tissue injuries. Lecture one hour. Prerequisite: GSA 209.
- 204-2 Physical Therapist Assistant, Practicum I.** Students will be able to carry out routine physical therapy assisting procedures with selected patients. They will be able to demonstrate previously learned skills in massage, hydrotherapy, range of motion exercises, activities of daily living, and the safe application of heat and cold. They will also be able to assist in maintaining records and equipment. Lecture one hour. Laboratory three hours. Prerequisite: 113, 202, 207.
- 205-2 Physical Therapy Science.** The student will be able to describe selected medical and surgical conditions from the standpoint of etiology, clinical signs and symptoms, and physical therapy treatment. Lecture two hours. Prerequisite: 100, GSA 209, Physiology 300.
- 207-1.5 Massage.** The student will be able to demonstrate massage techniques for specific conditions through role playing and supervised application of massage to selected patients, and will understand the scientific principles of massage and be aware of indications and contraindications for massage. Lecture one hour. Laboratory three hours. Eight weeks. Prerequisite: concurrent enrollment in 100.
- 208-3 Therapeutic Exercise I.** Design to teach basic exercises for individual muscles or muscles groups, including breathing and postural exercises. Successful students will learn to select exercises for specific results; i.e., increasing strength, coordination, endurance, and range of motion. They will also learn normal motor development reflexes. Lecture two hours. Laboratory three hours. Prerequisite: Physiology 300.
- 209-3 Therapeutic Exercise II.** Successful students will be able to administer therapeutic exercise techniques for specific clinical conditions through demonstrations and supervised application of exercise for selected patients. They will understand the scientific principles of therapeutic exercise and acquire the skills to effectively and safely utilize exercise equipment. Lecture two hours. Laboratory two hours. Prerequisite: 208, Physiology 300.
- 213-2 Therapeutic Modalities II.** The student will be able to demonstrate procedures used in the safe application of local heat and cold such as diathermy, ultra violet, and ice massage and understand their physiologic effects. The student will be able to describe the

indication and contraindications for the use of heat and cold. Lecture one hour. Laboratory two hours. Prerequisite: GSA 101.

214-3 Physical Therapist Assistant, Practicum II. Successful students will be able to carry out more complex physical therapy assisting procedures with selected patients. They will be able to demonstrate previously learned skills in therapeutic exercise, electrical muscle stimulation, and the safe application of such modalities as ultra sound, diathermy, and ultra violet. They will be able to assist in maintaining records and develop cooperative spirit with other members of the department. Lecture one hour. Laboratory five hours. Prerequisite: 204, 208, 213.

321-10 (5, 5) Clinical Internship. The successful student will be able to apply previously learned theories and techniques of patient care through closely supervised practicum experience in two large general hospitals. (a) First six week internship. (b) Second six week internship. Must be taken in a,b sequence. Prerequisite: completion of all other requirements with a minimum grade average of 2.0.

332-2 Clinical Seminar. Students will be able to discuss with the coordinator of the program patient care and problems encountered during internship. They will have the opportunity to evaluate their educational experience at Southern Illinois University at Carbondale and their clinical internship experience. Prerequisite: concurrent enrollment in 321. Mandatory Pass/Fail.

Physics and Astronomy (Department, Major [Physics], Courses)

The undergraduate major in physics leading to the Bachelor of Sciences degree provides for a mastery of basic principles and methods of classical and modern physics and for flexibility in application through a breadth of coverage. Students considering a major in physics are urged to consult with the undergraduate adviser of the physics department. An applied physics/experimental physics optional curriculum is provided by selecting from the courses marked with an asterisk in the list of courses required for a major in physics.

Bachelor of Science Degree, College of Science

<i>General Studies Requirements</i>	45 ¹
<i>Supplementary College of Science Requirements</i>	11
Foreign Languages (French, German, or Russian recommended)	(4) + 4
Biological Science (Not General Studies)	6 ³
Mathematics 111	(4) + 1
<i>Requirements for Major in Physics</i>	72-73
Chemistry 115 ² and 222a, or 222a,b, or 224, 225.	7-8
Mathematics 150, 250, 251, 305, and 306 or 406 or 407.	17
Physics	48
Physics 205a, b, c and 255a, b, c.	12
Physics 301, 310, 320, 345, 410, 420, 430.	20
16 hours from 324*, 328*, 350*, 351*, 424*, 425, 428*, 431, 432, 445, 450*, 460a*, 460b*, 470, 470*	
*Applied/experimental option, concentrating on laboratory courses	16
<i>Total</i>	128-129

¹The 45 hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Studies courses.

²For students who do not pass a proficiency examination in chemistry.

³If courses are selected which are approved General Studies substitutes the hours earned will reduce the 45 hour requirement in General Studies.

Bachelor of Science Degree, College of Education

For this degree the requirements differ from those for the Bachelor of Arts degree in the following respects: No foreign language is required, but 4 hours of General Studies foreign language may be counted toward the GSC requirement in the College of Education. Twenty-two hours of 300 or above physics courses,

including 310, 320, 430, 431, and 432 and 4 hours of laboratory courses selected from 350, 351 and 450 are required for the major in physics. To obtain the degree of Bachelor of Science in the College of Education students must satisfy requirements of that college. See Teacher Education Program, page 71.

Audio Marketing

Students interested in preparing themselves for positions related to audio-marketing within the high-fidelity industry are encouraged to take the following courses, which will provide skills needed for a career in high-fidelity sales:

Science Courses: GSA 101, Physics 325, 355

Music Courses: GSC 100, GSA 361

Business Courses: Accounting 210 or 221; GSB 211, Economics 214, 215; Marketing 304, 401

Minor

A minor in physics requires 17 hours and must include Physics 203a, b and 253 a, b, or 205a, b and 255a, b and either 205c and 255c or 302 and 255c; 324 and 350 or 328 and 351 (no calculus prerequisite). Students having completed calculus (through Mathematics 251) may select 345 and those taking differential equations may select from 310, 410, and 320, 420, to meet requirements.

Recommended electives:

Chemistry: 226, 340, and 460 or 462

Engineering: 222, 313, 361

Electrical Sciences and Systems Engineering: 421, 426

GSB: 211

Geology: 416, 435, 436

Mathematics: 221, 306, 406, 407, 421, 452, 455, 475, 480, 481, 483

Courses

102-1 Everybody's Einstein. A non-mathematical presentation of Einstein's relativity theories on a popular level.

203-6 (3, 3) College Physics. Designed to meet preprofessional requirements and the needs of all students in the sciences, except physics and engineering. (a) Mechanics, heat, and sound; (b) Electricity, magnetism, light, and quantum physics. Three lectures, one quiz session. Prerequisite: Mathematics 110b or 111. Elective Pass/Fail.

205-9 (3, 3, 3) University Physics. (a) Introduction to mechanics of rigid bodies and fluids; wave motion, heat, kinetic theory, and thermodynamics. Prerequisite: Mathematics 150 or concurrent enrollment. (b) Continuation of 205a. Electricity and magnetism, geometrical optics, diffraction, interference, quantum physics. Three lectures, one quiz session. Prerequisite: 205a. (c) Introduction to concepts in modern atomic, molecular, and nuclear physics: particles and waves, relativity and quanta. Three lectures per week. Prerequisite: 203 or 204 or 205a,b. Elective Pass/Fail.

206T-1 College Physics. Same as the first half of 206b, with topical order of heat, sound, and light.

207T-3 College Physics Laboratory. Same as the first half of 207b, with topical order of heat, sound, and light.

211T-1 University Physics. Same as first half of 211b, with topical order of heat, sound, and light.

212T-3 University Physics Laboratory. Same as first half of 212b, with topical order of heat, sound, and light.

253-2 (1, 1) College Physics Laboratory. One three-hour laboratory period per week, taken concurrently with 203. Elective Pass/Fail.

255-3 (1, 1, 1) University Physics Laboratory. (a), (b) Laboratory courses that accompany 205a, b respectively. Prerequisite: concurrent enrollment in 205. (c) One three-hour laboratory period per week. Experiments relating to concepts of modern physics. Prerequisite: 203 or 204 or 205a, b and 205c or 302 or concurrent enrollment. Elective Pass/Fail.

301-2 Theoretical Methods in Physics. Introduction to theoretical methods of general usefulness in intermediate and advanced undergraduate physics, with particular emphasis on applications of these methods to selected topics. Required of all physics majors prior to taking 310 or 320. Prerequisite: 203a or 204a or 205a, Mathematics 250 or consent of instructor. Elective Pass/Fail.

302-3 Astronomy—Honors. Current knowledge of the universe and the gathering of that knowledge. Includes properties of the solar system and theories of its origin, the structure

- and evolution of stars. Supplemented by occasional hours of evening observation. Prerequisite: one of 203a, 204a, 205a, plus Mathematics 111, or consent of instructor. Elective Pass/Fail.
- 310-3 Mechanics I.** Motions of systems of particles and rigid bodies: gravitation, moving coordinate systems. Prerequisite: 301 or Mathematics 305 or concurrent enrollment. Elective Pass/Fail.
- 320-3 Electricity and Magnetism I.** The theory of electric and magnetic fields; electrostatic fields in vacuum and in material media, special methods for the solution of electrostatic problems, energy, and force relations in electrostatic fields; stationary electric fields in conducting media, electric currents, magnetic fields, magnetic properties of matter. Prerequisite: 301 or Mathematics 305 or concurrent enrollment. Elective Pass/Fail.
- 324-2 Electric Circuits.** An introduction to electrical circuits and electronics for science students. Basic terminal characteristics and application of semiconductor and vacuum devices as circuit elements in power supplies, amplifiers, and oscillators. Prerequisite: 203 or 204 or 205, Mathematics 111. Elective Pass/Fail.
- 325-3 Advanced High-Fidelity.** A study of the more advanced scientific concepts in high fidelity including Quadraphonic sound, FM and AM modulation, Noise Reduction Systems, Equalizers, as well as discussions on the important technical parameters of tuner, tape decks, speakers, microphones, amplifiers, cartridges, turntables, and headphones. Prerequisite: GSA 101.
- 328-2 Light.** Light propagation, reflection, refraction, interference, diffraction, polarization, and optical instruments. Prerequisite: 203 or 204 or 205. Elective Pass/Fail.
- 345-3 Thermodynamics and Statistical Physics.** Thermal behavior of macroscopic matter, the laws of thermodynamics; basis for thermodynamics in statistical mechanics; basic methods and applications of classical and quantum statistical mechanics. Elementary kinetic theory of matter. Prerequisite: 301, Mathematics 251. Elective Pass/Fail.
- 350-2 Electric Circuits Laboratory.** A laboratory course in practical and precision measurements on electrical and electronic circuit elements, passive and active, including semiconductor devices, electron tubes, and the basic circuits employing them in power supplies, amplifiers, and oscillators. Prerequisite: 324 or concurrent enrollment. Elective Pass/Fail.
- 351-1 Optics Laboratory.** Advanced experiments in geometrical and physical optics. One three-hour laboratory per week. Prerequisite: 328 or concurrent enrollment. Elective Pass/Fail.
- 355-1 Advanced High-Fidelity Laboratory.** The lab accompanies Physics 325 and allows students to perform all of the electronic measurements necessary to characterize high fidelity components. Measurements will include such specifications as distortion, frequency response, stereo separation, power levels, FM sensitivity, selectivity, etc. Prerequisite: concurrent or previous enrollment in 325.
- 401T-1 Mechanics.** Same as first half of Physics 401.
- 410-3 Mechanics II.** Lagrange's equations, mechanics of continuous media, inertia and stress tensors, rotation of rigid bodies, small vibrations, and advanced principles. Prerequisite: 310 or consent of instructor. Elective Pass/Fail.
- 415T-2 Modern Physics.** Same as 415B and second half of 430, offered during the second half of the fall semester (415A-3 quarter hours plus 415B-two semester hours equals 430-four semester hours.)
- 420-3 Electricity and Magnetism II.** Induced electromotive force, quasisteady currents and fields, Maxwell's equations, electromagnetic waves and radiation, with applications. Prerequisite: 320 or consent of instructor. Elective Pass/Fail.
- 424-3 Electronics.** Electronic circuit analysis and design principles, basic transistor circuits for amplification; op-amps; feedback; integrated circuits; power supplies oscillators; modulation and detection; electronic switching and basic digital electronics. Prerequisite: 324 or consent of instructor. Elective Pass/Fail.
- 425-3 Solid State Physics I.** Structure of a crystalline solid; lattice vibrations and thermal properties; electrons in metals; band theory; electrons and holes in semiconductors; optoelectronic phenomena in solids; dielectric and magnetic properties; superconductivity. Prerequisite: 310, 320, 345, and 430 or consent of instructor. Elective Pass/Fail.
- 428-3 Modern Optics.** Advanced course in modern optics covering such topics as interference and interferometers, diffraction, coherence, holography, optics of solids, laser and non-linear optics; recent developments in optical instrumentation for research. Prerequisite: 328 and 420. Elective Pass/Fail.
- 430-3 Quantum Mechanics I.** An introduction to quantum mechanics including its experimental basis and application in atomic physics. Prerequisite: 310 and 320. Elective Pass/Fail.
- 431-3 Atomic and Molecular Physics I.** Atomic spectra and structure; molecular spectra and structure; application to lasers. Prerequisite: 430. Elective Pass/Fail.
- 432-3 Nuclear Physics I.** Basic nuclear properties and structure; radioactivity, nuclear excitation, reactions, nuclear forces; fission and nuclear reactors; controlled nuclear fusion. Prerequisite: 430. Elective Pass/Fail.

- 445-3 Statistical Mechanics I.** An introductory course in the principles and applications of classical and quantum statistical mechanics. Elementary kinetic theory of matter. Prerequisite: 340 and 430 or concurrent enrollment. Elective Pass/Fail.
- 450-1 Modern Physics Laboratory.** Introduces students to experimental research and encourages them to develop and carry out experiments. Prerequisite: 205c, either of 350 or 351, or consent of instructor. Elective Pass/Fail.
- 460-8 (4, 4) Physical and Applied Acoustics.** Coordinated lecture and laboratory study in acoustical phenomena. Topics include vibration analysis, wave mechanics, two and three dimensional propagation and applications in physics, materials science, engineering, architecture, music, and environmental science. Emphasis on laboratory and field techniques with modern computer analysis. Prerequisite: 301 or Mathematics 305 or concurrent enrollment. Elective Pass/Fail.
- 470-1 to 3 Special Projects.** Each student chooses or is assigned a definite investigative project or topic. Prerequisite: 310, 320. Elective Pass/Fail.
- 480-3 Topics in Classical Physics.** Assists experienced teachers to improve their understanding of classical physics and the strategy of presenting it. Emphasis on demonstration of phenomena as basic strategy in the introduction to new material. Attention given to the design of demonstration apparatus. Related laboratory experience is an integral part of the course. Prerequisite: consent of department. Elective Pass/Fail.
- 481-3 Topics in Modern Physics.** Assists experienced teachers to extend their understanding of modern physics. Lectures and demonstrations aim at improvement of the means of presenting the ideas of modern physics. Related laboratory experience is an integral part of this course. Prerequisite: consent of department. Elective Pass/Fail.
- 482-2 (1, 1) In-Service Institute for Teachers of Physics.** A series of lectures, demonstrations, discussions, and films to assist teachers of high school physics in meeting their classroom problems and responsibilities. Prerequisite: consent of department. Elective Pass/Fail.
- 500-6 (3, 3) Mathematical Methods in Physics.**
- 510-4 Classical Mechanics.**
- 511-3 Mechanics of Deformable Bodies and Fluids.**
- 520-7 (4, 3) Electromagnetic Theory.**
- 530-6 (3, 3) Quantum Mechanics II.**
- 531-6 (3, 3) Advanced Quantum Mechanics.**
- 535-6 (3, 3) Atomic and Molecular Physics II.**
- 545-6 (3, 3) Statistical Mechanics II.**
- 560-6 (3, 3) Nuclear Physics II.**
- 565-6 (3, 3) Solid State Physics II.**
- 570-1 to 4 Special Projects in Physics.**
- 571-6 (3, 3) X-Ray Diffraction and the Solid State.**
- 575-2 to 4 Selected Topics in Physics.**
- 581-1 to 3 Graduate Seminar.**
- 599-1 to 6 Thesis.**

Physiology (Department, Major, Courses)

The Department of Physiology offers training in mammalian physiology, cellular and comparative physiology, pharmacology, biophysics, and human anatomy. The undergraduate major in physiology provides general rather than specialized training in physiology. To become a professional physiologist usually requires the completion of an advanced degree in the field. An undergraduate major in physiology would provide an excellent foundation for those planning a career in teaching or research as well as for those planning a career in a medical field such as medicine, dentistry, veterinary science, nursing, or medical technology. Students considering a major in physiology are urged to consult with the undergraduate adviser of the Department of Physiology.

Bachelor of Arts Degree, College of Science

General Studies Requirements	45
College of Science Requirements	5
Foreign Languages	(4) + 4
Mathematics 110a, b or 111 (or equivalent), or 140.	(4) + 1

<i>Requirements for Major in Physiology</i>	57
Physiology Courses	24
Physiology 410a,b	10
Physiology electives	14
To be chosen from courses offered in the Department of Physiology, except 258 and 259.	
Physical Sciences	27
Chemistry 222a,b, 344, 345, 346, 347	19
Physics 203a,b and 253a,b	8
Biological Sciences	6
Two from Biology 305, 307, 309	
<i>Electives</i>	13
<i>Total</i>	120

Minor

A minor in physiology requires a minimum of 16 hours of course work, 10 hours of which must be selected from the courses offered in the Department of Physiology, except 258 and 259. The remaining course work may be derived from closely related areas with prior approval of the department.

Junior-Senior Honors Program

Juniors who have shown outstanding ability in biology courses and related subjects in their freshman and sophomore years may apply for acceptance into the honors program. Honors students do independent study in the physiological sciences (Physiology 491) during their junior and senior years.

Courses

- 210-4 Introductory Human Physiology.** Beginning course in human physiology designed for majors in physiology and other biological sciences, and recommended to premedical and other students considering health professions. Three lectures per week and one two-hour laboratory. Not open to students who have taken GSA 209. Prerequisite: one year of biological science and a reasonable knowledge of chemistry.
- 211-3 Principles of Laboratory Animal Use in Teaching and Research.** An introductory course designed for physiology and other life science majors and students in related fields. Basic principles and practices of laboratory animal medicine including health care, nutrition, reproduction, and procedural methods of animals used in life science education and research and an understanding of the laws and regulations governing the use of laboratory animals.
- 258-2 to 8 Work Experience Credit.** Under special circumstances, practical experience in laboratories or other work directly related to physiology can be used as a basis for granting credit in physiology. Credit for past work experience is sought by petition to the chairperson of the department and requires approval of the dean of the College of Science. Credit for on-going work experiences requires approval by the chairperson of the department prior to enrollment.
- 259-2 to 8 Occupational Education Credit.** Under special circumstances, advanced training in a paramedical or other field directly related to physiology can be used as a basis for granting credit in physiology. Such credit is sought by petition to the chairperson of the department and requires approval of the dean of the College of Science.
- 300-3 Human Anatomy.** Lectures, demonstrations, and observations of the prosected body. Course primarily for students of physical education, with emphasis on musculoskeletal and nervous systems. Three lecture hours per week. Not open to students who have taken 301.
- 301-4 Survey of Human Anatomy.** Lectures, demonstrations, and observations of the prosected body, plus experiences in the anatomy laboratory. Course is designed for students in nursing, mortuary science, biological science, and related disciplines. Three lecture hours and one two-hour laboratory per week. Not open to students who have taken 300.
- 401-10 (5, 5) Advanced Human Anatomy.** Dissection of the human body. Primarily for students with a major in physiology or other biological sciences. Two hours lecture, six hours laboratory per week. Prerequisite: due to limited facilities, permission of the instructor is required.
- 402-5 (3, 2) Concepts of Anatomy.** A detailed survey of human anatomy for preprofessional students with an interest in the biomedical disciplines, including radiographic, cross-

sectional, and histological correlates. Three lectures per week fall semester, two lectures per week spring semester. Should be taken in a, b sequence. Not open to students who have had 401. Prerequisite: senior standing or consent of instructor.

410-10 (5, 5) Mammalian Physiology. Physical and chemical organization and function in mammals, with emphasis on the human. Physiology of blood and circulation, respiration, digestion, metabolism, excretion, endocrines, sensory organs, nervous system, muscle. Primary course for all students majoring in physiology or related sciences. Three lectures and two two-hour laboratory sessions per week. May be taken in any sequence. Prerequisite: college level chemistry and physics and at least junior standing.

411-4 (2, 2) Experimental Animal Surgery. (a) Covers animal care and preparation, anesthesia, etc.; one lecture and one two-hour laboratory per week. (b) Provides training and practice in surgical procedures. Two two-hour laboratories per week. Must be taken in a,b sequence.

414-3 Anatomy and Physiology of Speech and Hearing Mechanisms. (Same as Speech Pathology and Audiology 314.) Structure and function of the vocal apparatus and hearing. Primarily for students in speech pathology and audiology. Two hours lecture and one two-hour laboratory per week. Prerequisite: consent of instructor required for graduate students.

420-6 (3, 3) Principles of Pharmacology. Action of drugs and other chemical substances on the living organism; pharmacodynamics, chemotherapy, toxicology, and therapeutics. Pharmacologic action of analgesics, emetics and antimetics; pharmacology of the nervous system; pharmacology of the muscles; antihistaminics; drugs that affect the eye; drugs that combat infectious diseases. Two lectures and one two-hour laboratory per week. May be taken in any sequence. Prerequisite: organic chemistry and basic courses in biology, or consent of instructor.

430-4 (2, 2) Cellular Physiology. The nature and mechanisms of function of the living cell. Chemical and physical analysis of function at the cellular level. Two lectures per week. Prerequisite: organic chemistry.

433-4 Comparative Physiology. Variations of physiological processes in animal phyla, and comparison of these with human physiology. Three lectures and one discussion period per week. Prerequisite: one year of biological science.

440-4 Introduction to Biophysics. Historical and mathematical background for treating biological phenomena as expressions of physical laws. Four lectures per week. Calculus not required. Students with calculus should take 540. Prerequisite: one year of college physics, one year of physiology.

460-2 Electron Microscopy. Lecture course designed to introduce the student to the theory and principles of electron microscopy. Two lecture hours per week. Prerequisite: senior standing or permission of instructor.

461-3 Biomedical Electronics. Practical experience with modern electronic circuits and devices used for biomedical purposes, with circuit construction and troubleshooting practice. Two lectures and one two-hour laboratory per week. Prerequisite: consent of instructor.

491-3 to 8 Independent Research for Honors. Supervised readings and laboratory research in physiology directed by a member of the physiology faculty. Undergraduate honors students only. By special arrangement with the instructor in the physiology department with whom the student wishes to work.

492-1 to 3 Special Problems in Physiology. Supervised readings and laboratory research in physiology directed by a member of the physiology faculty. Open to undergraduate students only. By special arrangement with the instructor in the physiology department with whom the student wishes to work.

500-1 to 6 (1 per semester) Advanced Seminar in Physiology.

520-3 Advanced Endocrinology.

530-3 Advanced Cellular Physiology.

531-2 Advanced Cellular Physiology Laboratory.

533-4 Advanced Comparative Physiology.

540-3 Advanced Biophysics.

560-2 Physiological Techniques.

570-3 to 43 Advanced Physiological Topics.

590-1 to 4 Readings or Research in Current Physiological Topics.

599-1 to 6 Thesis Research.

600-1 to 32 Dissertation Research.

Plant and Soil Science (Department, Major, Courses)

The department of Plant and Soil Science includes crop production, horticulture, and soils. There are many widely varied opportunities for students with an interest in plants or soils. Students may choose a general option within the depart-

ment and select most of their upper division credits from a wide choice of electives throughout the School of Agriculture and the University. If interests are more specialized, students may elect the science option and specialize in one particular area, or may elect a specialization which will combine a broad background in plants and soils with selected business courses and business related electives. A specialization in environmental studies would familiarize the student with environmental problems relating to plants and soils.

Students selecting the landscape horticulture specialization can prepare for interesting careers in landscaping or gardening in parks, playgrounds, residential or industrial areas, road and street parkway improvement and maintenance, and in other public and private work to make the environment more pleasing and useful.

Opportunities for individual program development within the various options may be realized through work experience, internships, special studies, and seminars; however, no more than 30 hours of such unstructured coursework may be counted toward the degree. Students in all specializations are urged to make use of them to meet the goals and needs of their respective programs.

Students in all specializations must complete the plant and soil science core courses. These courses are 200, 220, 240, and one hour of 381.

There may be extra expenses for field trips, manuals, or supplies in some courses.

Bachelor of Science Degree, School of Agriculture

	SPECIALIZATIONS		
	General	Science	Business
<i>General Studies Requirements</i>	48	49	48
GSA 101 or physics substitute ¹	—	3	—
Chemistry 140a substituted for GSA 106-3	4	—	4
Chemistry 222a	—	4	—
Botany 200 and 201 substituted for GSA 115-3	4	4	4
Agricultural Industries 204 substituted for GSB 211	3	3	3
GSB 202	—	—	3
GSD 101	3	3	3
GSD 107	4	—	4
GSD 117 or 118 ²	2	2	2
GSD 153	3	3	3
Mathematics 110 or 111	—	5	—
<i>Requirements for Major in Plant and Soil Science</i>	53	64	64
Courses in two other departments in agriculture	6	6	6
Botany 320	4	4	4
Chemistry 140b	4	—	4
Chemistry 222b, 340, and 341	—	10	—
Plant and Soil Science 200, 220, 240, 381-1	11	11	11
Other Plant and Soil Science courses ³	17	17	17
Other Agriculture electives	11	6	6
Mathematics, physical sciences, or biological sciences	—	10	—

Accounting 210, Administrative Sciences 301, Marketing 304, or Agricultural Industries 360	—	—	9
Business electives and supporting courses	—	—	7
Electives	19	7	8
Total	120	120	120

¹Physics 203a, 205a may be substituted.
²GSD 118 is highly preferred.
³Plant and soil science electives must include 15 hours of structured coursework at the 300 or 400-level, with no less than 9 hours at the 400-level.

PLANT AND SOIL SCIENCE MAJOR—LANDSCAPE HORTICULTURE SPECIALIZATION

General Studies Requirements	48
Chemistry 140a substituted for GSA 106-3	4
Botany 200 and 201 substituted for GSA 115-3	4
Agricultural Industries 204 substituted for GSB 211	3
GSB 202	3
GSD 101	3
GSD 107	4
GSD 117 or 118 ¹	2
GSD 153	3
Requirements for Major in Plant and Soil Science with a Specialization in Landscape Horticulture	66-68
Agricultural Industries 376	2
Biology 307	3
Botany 320 and 456 or 457	7-8
Chemistry 140b	4
Geography 470a	3
Plant and Soil Science 200, 220, 240, 322, 327, 328a,b, 381-1, 420, 428a,b, 432 or 434	34-35
Agriculture electives	10
Zoology 316	3
Electives	4-6
Total	120

¹GSD 118 highly preferred.

PLANT AND SOIL SCIENCE MAJOR—ENVIRONMENTAL STUDIES SPECIALIZATION

General Studies Requirement	49
Chemistry 224 or chemistry substitute ¹	5
Botany 200 and 201 substituted for GSA 115-3	4
GSA 330	3
Economics 214 substituted for GSB 211	3
GSB 212, 220	7
GSC 221	3
GSD 101	3
GSD 118	2
GSD 153	3
GSD 107	4
Requirements for Major in Plant and Soil Science with a Specialization in Environmental Studies	68

Agriculture 333	2
Animal Industries 455	2
Agricultural Industries 401, 440	6
Plant and Soil Science 200, 220, 240, 381-1, 419, 420, 441, 447, 468	27
Agriculture electives, Plant and Soil Science 328a and 346 highly recommended.	9
Thermal and Environmental Engineering 314	4
Economics 215, 333	6
Political Science, 325, 340.	6
Chemistry 225 ¹	2
Botany 320	4
<i>Electives</i>	3
<i>Total</i>	120

¹Chemistry 222a, b may be substituted.

Minor

A minor in plant and soil science is also available. A total of 16 hours within the department is required. Of the required hours, one course must be selected from 200, 220, or 240. An adviser within the department should be consulted before selecting this field as a minor.

Courses

- 100-2 Plants for Society.** How plants have affected the development and culture of society. Interrelationship between plants and people. Importance of plants for beauty, food, fiber, medicine, and drugs. Not applicable to a major or minor in plant and soil science, but may be used as agriculture elective. Elective Pass/Fail.
- 140-2 Soils for Society.** The importance of soil in everyday life. Soil as a medium for plants grown for food, fiber and leisure. The importance of soil in reducing harmful chemicals and wastes and improving our environment. Not applicable to a major or minor in plant and soil science, but may be used as agriculture elective. Elective Pass/Fail.
- 200-3 Principles of Field Crop Production.** Production of important field crops of the world with greatest emphasis on U.S. and midwestern field crops; crop production changes and adjustments, crop distribution over U.S., and crop groups and classifications, special agronomic problems, crop enemies, crop ecology, fertilizer and liming practices, tillage, crop improvement through breeding. Field trip (no cost).
- 220-3 General Horticulture.** General principles of plant propagation, vegetable growing, fruit growing, landscape gardening, and floriculture. Field trip (no cost). Seniors cannot enroll without consent of department.
- 225-2 Genetics for the Amateur Gardener.** An introduction to the essential principles of genetics and plant hybridization utilizing common garden and house plants.
- 228-2 Floral Arrangements.** Theory and practice in the art of flower and plant arrangement for the home, show, and special occasions. History, elements, and principles of design and use of color.
- 238-2 Home Gardening.** Vegetable gardening techniques for the home gardener. Both inorganic and organic methods are used together with the latest recommended varieties for the small garden.
- 240-4 Soil Science.** (Same as Forestry 240.) Basic and applied chemical physical and biological concepts in soils. The origin, classification and distribution of soils and their relationship to humans and plant growth. Prerequisite: a course in chemistry; geology suggested.
- 257-1 to 10 Work Experience.** Credit for on-campus work experience in the areas of plant and soil science, or credit through a cooperative program developed between the department and the Office of Student Work and Financial Assistance. Credit awarded based on 4 hours of work per week during the semester for each hour of credit. Prerequisite: consent of instructor. Mandatory Pass/Fail.
- 258-1 to 30 Prior Work Experience.** Credit for work experience prior to University entrance in the areas of plant and soil science. Credit awarded based on 7.5 hours credit per year of career related full-time employment. Proportionately lesser amounts of credit authorized for shorter employment period. No grade for prior work experience. Prerequisite: consent of chairperson.

300-5 (2, 3) Field Crop Production. Principles of growth and production of field crops and their utilization. (a) Primarily corn and soybeans. (b) Small grains primarily wheat and grain sorghum with laboratory demonstrating principles discussed in both a and b including research projects, and grading and utilization of grain. Laboratory field trips, approximately \$5. Prerequisite: an introductory crops course or consent of instructor. Elective Pass/Fail.

305-4 Plant Genetics. Principles of genetics and evolution of plants, elementary plant breeding, and the interaction between plant breeding and industry. Prerequisite: a course in biology or botany. Elective Pass/Fail.

310-3 Morphology of Crop Plants. Cellular structure, vegetative and reproductive development, and grass morphology of major crop plants. Utilization of crop plant parts. Prerequisite: one course in introductory biology or equivalent. Elective Pass/Fail.

322-3 Turfgrass Management. Principles and methods of establishing and maintaining turfgrass for lawns, recreational areas, and public grounds. Identification of basic plant and soil materials and management of turfgrasses in variable environments. Prerequisite: a biology course.

325-3 Garden Flowers. Culture, identification, and use of flowering bulbs, annuals, biennials, and perennials in the home flower garden. Prerequisite: an introductory course in biology or consent of instructor. Elective Pass/Fail.

327-3 Landscape Plant Materials. Identification, usage and adaptability to the landscape of woody (deciduous and evergreen) and ornamental shrubs, trees and vines. Use of plant keys. Prerequisite: an introductory botany course or consent of instructor.

328-4 (2, 2) Appreciation of Landscape Design. (a) Introduction to theory and principles of landscape design as applied to the modern home. Property selection and climate control. (b) Laboratory. Practical application in modern methods of property planning including the individual components of the completed landscape plan and selection of plants. Prerequisite: 327 or equivalent, and a course in drafting.

338-3 Flower Shop Management. Requirements for establishing and operating a retail flower shop. Business management, floral design, and marketing. Prerequisite: 228, a course in economics, or consent of instructor.

346-2 Soil and Water Conservation. How soil erosion occurs, evaluation of the various factors affecting it, its effects on humans, food production and pollution; and practical means of control. Prerequisite: a course in soils suggested.

347-1 Laboratory Practices in Soil and Water Conservation. Effects of soil properties and rainfall characteristics on erodibility of soils. Laboratory work in land surveying, relief mapping and a study of structures related to soil and water conservation.

359-1 to 6 Intern Program. Supervised work experience program in either an agricultural agency of the government or agri-business. Prerequisite: junior standing and approval of department. Mandatory Pass/Fail.

380-4 (2, 1, 1) Plant and Soil Evaluations. (a) Grain grading to include crop and weed identification and seed identification and analysis; (b) Comparative evaluation and judging of horticultural crops to include flowers, fruits, vegetables, woody ornamentals. Field trip costing approximately \$25. (c) Soil evaluation to include identification of genetic horizons, their physical characteristics and classification. Field trips (no cost). These courses are not required for participation in SIU judging team activities. Elective Pass/Fail.

381-1 to 2 (1, 1) Plant and Soil Science Seminar. Discussion of special topics and/or problems in the various areas of plant and soil science. Prerequisite: junior standing.

390-1 to 4 Special Studies in Plant and Soil Science. Assignments involving research and individual problems. Prerequisite: consent of department chairperson.

391-1 to 4 Honors in Plant and Soil Science. Independent undergraduate research sufficiently important to three hours per week of productive effort for each credit hour. Prerequisite: junior standing, GPA of 3.0 with a 3.25 in the major, and consent of department chairperson.

400-2 Trends in Agronomy. A discussion session format will be employed as a means of acquainting students with recent literature and allowing them to remain current with latest developments in their area of specialty. Prerequisite: senior standing.

405-3 Plant Breeding. Principles of plant breeding emphasized together with their application to the practical breeding of agronomic, horticultural, and forest plants. Field trip costs approximately \$10. Prerequisite: 305 or equivalent. Elective Pass/Fail.

408-3 World Crop Production Problems. Ecological and physiological factors influencing production in various areas of the world. Natural limitations on world crop production. Non-agricultural factors influence world crop output. Prerequisite: 200. Elective Pass/Fail.

409-3 Crop Physiology and Ecology. The effects and significance of physiological and ecological parameters on crop yields. Prerequisite: Botany 320 or consent of instructor.

419-3 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. Field trip costs approximately \$5.00. Prerequisite: Botany 200 or one course in biology or equivalent.

420-4 Crop Pest Control. Study of field pests of forest, orchard, field, and garden crops; pest control principles and methods; control strategy; and consequences of pest control

operations. Prerequisite: introductory biology or crop science course and/or consent of department.

422-3 Turfgrass Science. Basic concepts of physiology, growth, and nutrition of turfgrasses and their culture. Application of turfgrass science to management of special turf areas such as golf courses, athletic fields, and sod farms; and to the turfgrass industry. Field trips cost approximately \$15. Prerequisite: 240 and 322 or equivalent or consent of instructor.

423-3 Greenhouse Management. Principles of greenhouse management controlling environmental factors influencing plant growth; greenhouses and related structures; and greenhouse heating and cooling systems. Field trips costing approximately \$5. Prerequisite: 220 or consent of instructor.

424-3 Floriculture. Production, timing, and marketing of the major floricultural crops grown in the commercial greenhouse. Each student will have an assigned project. Field trip costing approximately \$25. Prerequisite: 423 or consent of instructor.

428-6 (3, 3) Advanced Landscape Design. Theory and principles of residential landscape design. Practice in drawing residential landscape plans. (a) Emphasis on arrangement of unit areas. (b) Emphasis on details of design and selection of plants. Prerequisite: 328-4 or consent of instructor.

430-4 Plant Propagation. Fundamental principles of asexual and sexual propagation of horticultural plants. Actual work with seeds cuttings, grafts, and other methods of propagation. Field trip costing approximately \$5. Prerequisite: 220.

432-4 Nursery Management. Principles and practices involved in the propagation, production, and marketing of ornamental landscape plant materials. Emphasis on plant production with field trips to various production areas costing approximately \$40. Prerequisite: 220 and 327a, or consent of instructor.

434-3 Woody Plant Maintenance. Care and management of ornamental shrubs and trees commonly used in the landscape. Topics to include trimming, pruning, fertilization, transplanting, and diagnosis of woody plant problems. Prerequisite: 327 or Forestry 201 and 202 or consent of instructor.

436-4 Fruit Production. Deciduous tree and small fruit growing, physiology, management practices, marketing. Prerequisite: 220 or consent of instructor.

437-4 Vegetable Production. Culture, harvesting, and marketing of vegetables; with morphological and physiological factors as they influence the crops. Field trip costing approximately \$5. Prerequisite: 220 or consent of department.

441-3 Soil Morphology and Classification. Development, characteristics, and identification of soils; study of profiles; and interpretation and utilization of soil survey information in land use planning. Field trip costing approximately \$5. Prerequisite: 240 or consent of instructor.

442-3 Soil Physics. A study of the physical properties of soils with special emphasis on soil and water relationships, soil productivity, and methods of physical analysis. Prerequisite: 240.

443-3 Soil Management. The soil as a substrate for plant growth. Properties of the soil important in supplying the necessary mineral nutrients, water and oxygen and for providing an environment conducive to plant root system elaboration. Soil management techniques that are important in optimizing plant growth. Prerequisite: 240. Elective Pass/Fail.

447-3 Fertilizers and Soil Fertility. Recent trends in fertilizer use and the implications of soil fertility build up to sufficiency and/or toxicity levels; the behavior of fertilizer material in soils and factors important in ultimate plant uptake of the nutrients; the plant-essential elements in soils and ways of assessing their needs and additions; tailoring fertilizer for different uses and management systems; implication of excessive fertilization in our environment. Prerequisite: 240; concurrent enrollment in 448 suggested. Elective Pass/Fail.

448-2 Soil Fertility Evaluation. A laboratory course design to acquaint one with practical soil testing and plant analysis methods useful in evaluating soil fertility and plant needs. One hour lecture, two hours laboratory. Prerequisite: 240; 447 or concurrent enrollment; or consent of instructor.

454-3 Microbial Processes in Soils. 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. The role of soil organic matter in interacting with fertilizers, pesticides, and environmental waste products is included. Prerequisite: 240 or one course in microbiology. Elective Pass/Fail.

460-3 Radioisotopes, Principles and Practices. Lectures on the principles of radioisotope technology as applied to agricultural and biological sciences. Prerequisite: general chemistry and biochemistry or equivalent.

468-3 Weeds—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 costing approximately \$5. Prerequisite: an introductory biology course. Elective Pass/Fail.

518-3 Principles of Herbicide Action.

520-3 Growth and Development of Plants.
524-2 Advanced Plant Genetics.
547-2 Soil-Plant Nutrient Relationships.
560-3 Field Plot Technique.
581-1 to 4 (1, 1, 1, 1) Seminar.
588-1 to 8 International Graduate Studies.
590-1 to 4 Readings.
592-1 to 3 Special Problems.
593-1 to 4 Individual Research.
599-1 to 6 Thesis.

Political Science (Department, Major, Courses)

The study of political science is concerned with predicting, explaining, and evaluating the political behavior, beliefs, laws, and organizational arrangements of people in a variety of settings. A major in political science provides rigorous social science training. A variety of courses afford a student an opportunity to study, in depth, individual and group behavior, political, administrative, and judicial processes, comparative national and subnational governmental systems, intergovernmental relations and conflict resolution, and normative and empirical political theory. The student who is interested in the public sector will find discussions of such topics as voting behavior, American foreign policy, and the decisions and opinions of Supreme Court justices to be challenging experiences.

A major in political science provides excellent training for the public service, scientific polling and political analysis, management training programs, and teaching, particularly at the secondary level. A political science major also provides an excellent foundation for professional graduate training in law, journalism, public administration or public affairs, as well as for graduate work in political science which is essential for a career in higher education. For the non-vocationally oriented student, political science is an excellent major for anyone with a keen interest in politics and public affairs.

A student planning to major in political science should consult with the academic adviser of the department as early as possible in order to plan an orderly and coherent program. All members of the department are available for consultation on their academic specialties.

Students majoring in political science must take GSB 212. Political Science 200, 213, GSB 250, and GSB 270 are background courses for many advanced courses in the department. In fulfilling General Studies requirements or in choosing electives, political science majors should select courses from economics, psychology, sociology, anthropology, geography, and history. Mathematical or statistical training is highly recommended because of the trend toward empirical research and analysis in political science. Such training will also enhance vocational opportunities. Depending on special interest, a student should also consider courses in foreign languages or computer programming. Such courses are particularly important for the student who is planning to enter graduate school.

Qualified students are encouraged to inquire about individualized courses of study such as Political Science 390, 392, 395, and 494. The interested student should contact the academic adviser of the department or a member of the faculty.

At least seventeen hours in political science courses must be earned at senior level institutions.

Courses taken as Pass/Fail will not be counted as fulfilling the requirements for a major in Political Science.

Bachelor of Arts, College of Liberal Arts

General Studies Requirements	45
Supplementary College Requirements (See page 78.)	(4) + 8-14

<i>Requirements for Major in Political Science</i>	34
GSB 212, or equivalent	
Additionally, political science electives, including 200 and 300 GSB courses offered by the department, to total 34 hours. Courses shall be distributed so that a minimum of one course is taken in 5 of the following 6 areas: scope, methods, and political theory; American politics; public law; public administration; comparative politics; and international relations. GSB 212 does not satisfy an area requirement. A minimum of three of the electives must be taken at the 400 level.	
<i>Electives</i>	27-33
<i>Total</i>	120

Bachelor of Science Degree, College of Education

A major in political science for education requires 34 credit hours of work in the department. This work must be distributed among the subfields of the discipline in the same manner as the 34-hour requirement described above for the Bachelor of Arts degree.

Every student enrolled in this program should seek regular advisement in the Department of Political Science to insure that department requirements will be fulfilled.

Students obtaining a Bachelor of Science degree in the College of Education must satisfy all requirements of that college. See Teacher Education Program, page 71. Professional education and other certification requirements may be found in the section of this catalog titled Curriculum, Instruction, and Media. All students enrolled in a teacher education program are required to take a special methods course. Since there is no methods course in political science, Curriculum, Instruction and Media 469 is available for political science majors to meet the requirement. A student enrolled in the teacher education program is required to have a 2.50 grade point average in political science in order to be recommended for student teaching by the department.

Minor

A minor in political science consists of 16 hours to be approved by the department adviser.¹

¹Students completing a minor in political science for purposes of obtaining teacher certification in the State of Illinois must complete a minimum of 18 semester hours in the minor area.

Courses

The numbers preceding the following course titles have been designed to group courses by subject matter as well as level. A summary explaining the numbering system follows:

COURSE	LAST TWO DIGITS OF COURSE NUMBER
Scope, Methods, and Political Theory	00-09
American Politics	10-29
Public Law	30-39
Public Administration	40-49
Comparative Politics	50-69
International Relations	70-89
Miscellaneous	90-99

Courses

200-3 Introduction to the Discipline of Political Science: Scope. Examination of the philosophy, methodology, theories, approaches and relevant generalizations of the study of poli-

tics and of the scope and subfields of political science. Not open to seniors without instructor's consent. Elective Pass/Fail.

213-3 State and Local Government. Structure, functions, and decision-making processes of subnational governments in the United States. Prerequisite: GSB 212. Elective Pass/Fail.

214-3 Illinois Government. The politics, structure, and function of state and local governments in Illinois with stress upon the historical development of the political culture, current issues and events in the light of the historical background, and the interrelationship of politics, structure, and policy. Prerequisite: 213 or sophomore standing. Elective Pass/Fail.

300-3 Introduction to the Discipline of Political Science: Methods. An examination of the research methods and data analysis techniques used by political scientists in their analysis of political questions and problems. Prerequisite: None, 200 recommended. Elective Pass/Fail.

303-3 Introduction to Political Theory. Normative and testable theories in political science are introduced and interrelated. Guidelines for applying those theories to empirical and ethical problems are discussed. Prerequisite: 200 recommended. Elective Pass/Fail.

316-3 Political Socialization. (Same as Sociology 316.) An inquiry into interdisciplinary empirical theory and research on political learning relevant to (1) who (2) learns what (3) from whom (4) under what circumstances (5) with what effects. Prerequisite: 200 or GSB 212 or instructor's consent. Elective Pass/Fail.

317-3 Public Opinion and Electoral Behavior. The nature and function of public opinion as it is related to electoral behavior. Additional sociological and psychological bases of voting behavior will be studied. Prerequisite: None; 200 recommended. Elective Pass/Fail.

318-3 Political Campaigns and Elections. (Same as Speech Communication 318.) Analysis of modern political campaigns and the role they play in a democracy. Emphasis will be on recent developments in the planning and execution of campaigns by mass media and communication specialists and the role of the political parties and the public opinion polls in this process. Prerequisite: GSB 212. Elective Pass/Fail.

319-3 Political Parties. Nature, structure, and functions of political parties, with particular attention to the roles and activities of political parties in the United States. Attention also given to voting behavior and elections. Prerequisite: GSB 212. Elective Pass/Fail.

321-3 The Legislative Process. Review of theory and research on representation, demands, support, decision making, outcomes, and other aspects. Emphasis on United States Congress and state legislatures. Prerequisite: GSB 212. Elective Pass/Fail.

324-3 Politics and Public Policy. The public policy-making process in the United States evaluated and a wide range of public policy programs analyzed. Prerequisite: GSB 212. Elective Pass/Fail.

325-3 Politics and Environmental Policy. Prompted by the conservation lobbies, United States and state legislatures moved to preserve the biosphere and to create a healthier human environment. The course will cover the traditional common law remedies to protect the citizens and their property from the hazards of pollution and new broader constitutional and/or statutory right to a clean, healthy, and pleasant environment. Prerequisite: None; GSA/B 220 or GSA/B/C 221 or Political Science 340 recommended. Elective Pass/Fail.

328-3 Field Research in Public Policy. Students study public policy of their choice, individually or in teams, using field research techniques such as interviewing, direct observation, and inspection of public records. The policy studied is then evaluated in light of student-developed concepts of the public interest. Prerequisite: GSB 212. Elective Pass/Fail.

330-3 Introduction to the Legal Process. The legal process in operation, including basic procedural elements, and a sampling of the law of manufacturing liability, contract law, and labor law. Recommended for pre-law. Prerequisite: GSB 212. Elective Pass/Fail.

331-3 Development of the American Constitution. An analysis of the origins and evolution of the Constitution from the Colonial Period to the present. Prerequisite: GSB 212. Elective Pass/Fail.

332-3 Law and Politics of Civil Rights. Course focuses on civil rights (e.g. voting, housing, employment, education) in terms of congressional statutes, the judicial rulings which led up to them, the administrative development and judicial interpretation of the statutes. Prerequisite: GSB 212 recommended. Elective Pass/Fail.

334-3 Administration of Justice. The organization and work of the American judicial system. Recommended for pre-law students. Prerequisite: GSB 212. Elective Pass/Fail.

340-3 Introduction to Public Administration. An introduction to the study of public bureaucracy. Theoretical, political, and practical issues of organization, staffing, financing, and other matters are surveyed. United States administration and organizational behavior are stressed. Prerequisite: GSB 212. Elective Pass/Fail.

352-3 Politics of Developing Areas. A survey, theoretical and descriptive, of the impact upon politics of the process of development, and the role of the governmental system in the direction and control of development. Prerequisite: none; GSB 250 recommended. Elective Pass/Fail.

353-3 Comparative Communist Systems. General introduction to the political systems of

communist states with special emphasis on Eastern Europe. Attention given to the role of ideology, the character and role of the party, and major decision making structures and processes. Elective Pass/Fail.

366-3 Introduction to Latin American Government and Politics. A general introduction to Latin American government as the institutionalized political expression of Latin American civilization and culture. Does not require a reading knowledge of Spanish or Portuguese. Elective Pass/Fail.

373-3 International Organization. Development and organization of international government and administrative systems, with emphasis on the United Nations. Prerequisite: none; GSB 270 recommended. Elective Pass/Fail.

382-3 The New Politics of Europe. International politics of Europe. Comparative analysis of the foreign policies of the major states. Topics studied include nationalism, unification, and security, western Europe's relations with the developing world, Eastern Europe, the USSR, and the U.S. Elective Pass/Fail.

383-3 International Relations of Communist States. History and analysis of the foreign policies principally of the Soviet Union and China, with some attention to Eastern Europe, North Korea, North Vietnam, and Cuba. Prerequisite: 353 or GSB 250 or consent of instructor. Elective Pass/Fail.

390-1 to 6 Readings in Political Science. In-depth, introductory and advanced readings in areas not currently covered in other political science courses. Student must choose a faculty member to direct reading and must obtain consent prior to registration. Name of faculty member must be filed with the undergraduate adviser of the department at registration. Prerequisite: consent of instructor prior to registration.

392-1 to 6 Honors Seminar in Political Science. Honors. Significant topics chosen for discussion by students and instructor. Prerequisite: President's Scholar and junior standing, or a 3.0 cumulative GPA, or consent of instructor.

395-1 to 12 Internship in Public Affairs. Supervised field work in the office of a governmental agency, political party, interest group, legal agency, or other public affairs-oriented organization. A faculty-supervised paper is required in which the student relates the academic and internship experiences. Students must choose a faculty member to direct internship and obtain consent prior to registration. Name of faculty member must be filed with undergraduate adviser of the department at registration. This course is open only to students registered in the College of Liberal Arts or the College of Education. Students must be confirmed political science majors or minors who have taken at least two courses in the department with a minimum grade point average of 2.5. No more than six hours may be counted toward a departmental major. A written description identifying the specific organization, the projected tasks, and responsibilities of the intern should be prepared prior to meeting with the faculty sponsor.

403-4 Philosophy of Politics. (See Philosophy 441.) Elective Pass/Fail.

404-3 History of Political Theory. Shall survey different theorists and perspectives which have contributed significantly to the development of the ongoing tradition of political theory up to modern times. Prerequisite: 303 or consent of instructor. Elective Pass/Fail.

405-3 Democratic Theory. An examination of various species and aspects of democratic thought, including the liberal tradition and its impact upon the United States. Prerequisite: GSB 212 or consent of instructor. Elective Pass/Fail.

406-3 Socialist Thought. An examination of socialist thought regarding social structure, economic institutions, and political power. Prerequisite: senior or graduate standing or consent of instructor. Elective Pass/Fail.

408-3 Contemporary Political Theory. Shall explore the theorists and perspectives which have contributed to contemporary views of the political world. Prerequisite: 303 or consent of instructor. Elective Pass/Fail.

413-3 Modern Federalism. The structure and function of federal systems of government with emphasis on recent revisions in American federalism and comparison of the American federal structure with federalism in other nations. Elective Pass/Fail.

414-3 Political Systems of the American States. The state level of government viewed with emphasis upon recent developments and current research. Prerequisite: 213. Elective Pass/Fail.

415-3 Urban Politics. An examination of the environment, institutions, processes, and functions of government in an urban society with particular emphasis on current problems of social control and the provision of services in the cities of the U.S. Prerequisite: 213. Elective Pass/Fail.

416-3 Senior Seminar in Politics. Seminar for advanced undergraduate students to examine in depth a wide variety of topics; to be taught by different instructors. Available for use as the honors seminar. Graduate students not admitted. Prerequisite: 200 recommended. Elective Pass/Fail.

417-3 Political Psychology. An examination of various psychological theories as they relate to the development and change of political attitudes, leadership behavior, and mass political participation. Prerequisite: 200 recommended. Elective Pass/Fail.

418-3 Political Communications. (See Speech Communication 451.) Elective Pass/Fail.

419-4 Political Sociology. (See Sociology 475.)

422-3 American Chief Executive. 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. Prerequisite: GSB 212. Elective Pass/Fail.

426-3 Politics of Social Welfare. 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. Elective Pass/Fail.

427-3 The Politics of National Defense. A comparative study of the growth of the relationship of the armed forces with the civilian sector of the body politic, the selection, training, and professionalization of the officer corps, the control of the armed forces by the executive and legislature, the growth of strategic doctrine, insurgency and counterinsurgency warfare, and the analysis of the role of the armed forces as a governing group in a large number of non-western states. Prerequisite: GSB 212 or 250 or Political Science 352. Elective Pass/Fail.

428-3 Government and Labor. (See Economics 436.) Elective Pass/Fail.

429-3 Race, Ethnicity and Politics. (Same as Black American Studies 445.) An analysis of race and ethnicity as significant variables in political life. Topics receiving attention include various forms of political participation, leadership behaviors, organizational development, political strategies, and the effect of law in producing social change. Comparative cross-national emphases will vary with the instructor. Prerequisite: GSB 212. Elective Pass/Fail.

433-8 (4, 4) Constitutional Law. (a) This, the initial course in a two-course sequence, will be concerned with the basic structure and power relationships in the American constitutional system and, in addition, will cover the 19th and early 20th century bulwarks of constitutional *laissez faire*, the contract clause and "substantive" due process. In brief, the course will cover judicial review, judicial restraint, separation of powers, the federal system, national powers, state powers, constitutional amendments, and restraints on economic powers, the contract clause and "substantive" due process. Prerequisite: GSB 212. Political Science 330 is recommended. Elective Pass/Fail. (b) This is the second course in the constitutional law sequence. The course will be wholly concerned with those provisions of the Constitution which protect individual rights and liberties against governmental encroachment. In brief, the course will cover constitutional provisions and case precedents relating to citizenship, freedom of speech, assembly, and association, freedom of religion, rights of persons accused of crime, protection against racial, ethnic, and other forms of discrimination, legislative apportionment and the electoral process. Prerequisite: GSB 212. Political Science 433a is highly recommended. Elective Pass/Fail.

435-3 Judicial Process. An examination of the process by which judges in both trial and appellate courts at federal and state levels are selected and of the ways in which they make decisions. Attention to the structure of the courts. Study of the communication and impact of judicial decisions. Prerequisite: either 330, 332, 433, or consent of instructor. Elective Pass/Fail.

436-3 Administrative Law. The procedural law of public agencies, particularly the regulatory commissions but also executive branch agencies exercising regulatory functions. The exercise of discretion and its control through internal mechanisms and judicial review. Prerequisite: an ability to read court cases; 340 also preferred. Elective Pass/Fail.

437-3 Jurisprudence (Theories of Law). Major schools in legal thinking. Positive law and natural law. Idea of justice and concept of natural rights. Elective Pass/Fail.

441-3 Organization Theory. Analysis of various approaches to organizational theory and public administration with emphasis on recent American literature in this field. Prerequisite: 340 or consent of instructor. Elective Pass/Fail.

442-3 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: 340. Elective Pass/Fail.

443-3 Public Financial Administration. An examination of state and local government financial administration. Patterns in revenues and expenditures and administrative processes and problems are emphasized. Some of the topics covered are: (1) interstate variations in expenditures, (2) the property tax, (3) grants-in-aid and revenue sharing, and (4) municipal debt. Students conduct individual research and participate in computer based exercises. Prerequisite: none. 213 recommended. Elective Pass/Fail.

444-3 Policy Analysis. An examination of basic concepts in the policy sciences, approaches to policy analysis, applications to selected areas of policy, and instruments of policy development. Elective Pass/Fail.

447-6 to 9 (3, 1 or 2, 2 to 4) Urban Planning. (See Geography 470a, b, c.) Elective Pass/Fail.

454-3 Comparative Urban Politics. Comparative analysis of urban political systems in the United States and other nations. Attention to the social environment, political structures, political processes, and public policies of selected urban areas. Prerequisite: none. 213 recommended. Elective Pass/Fail.

- 455-3 Comparative Public Administration.** Administrative attitudes, behaviors, and institutions are compared on a topical basis in governments of Britain, Europe, the United States, Japan, and selected socialist, developing, and ancient states. Elective Pass/Fail.
- 457-3 Great Britain and the Commonwealth.** The nature of the Commonwealth Association and the politics of Great Britain and the "Old Commonwealth" countries: Australia, Canada, New Zealand. Prerequisite: none. GSB 250 recommended. Elective Pass/Fail.
- 458-3 Governments and Politics of Europe.** A comparative study of the political systems of the major countries of Western and Central Europe. Prerequisite: none. GSB 250 recommended. Elective Pass/Fail.
- 459-3 Government and Politics of Soviet Russia.** Dynamics of Soviet government and economy. Prerequisite: none. GSB 250 recommended. Elective Pass/Fail.
- 460-3 Governments and Politics of South Asia.** Politics in India, Pakistan, Bangladesh, Sri Lanka, Nepal. Prerequisite: none. GSB 250 recommended. Elective Pass/Fail.
- 461-3 Governments and Politics of Southeast Asia.** Politics and governments of Burma, Thailand, Malaysia, Vietnam, Cambodia, Laos, Singapore, Indonesia, and the Philippines. Prerequisite: none. GSB 250 recommended. Elective Pass/Fail.
- 462-3 Governments and Politics of Vietnam.** Development of political groupings since the period of French domination. Role of the religious sects and the private armies. Constitution and the legal and political system of Vietnam. Prerequisite: none. GSB 250 recommended. Elective Pass/Fail.
- 463-3 Government and Politics of China.** Internal political, economic, and social development of China. Prerequisite: none. GSB 250 recommended. Elective Pass/Fail.
- 464-3 Governments and Politics in the Middle East.** Internal and international politics of the Islamic states of the Middle East and North Africa and Israel. Prerequisite: none. GSB 250 recommended. Elective Pass/Fail.
- 465-3 Governments and Politics of Sub-Saharan Africa.** (Same as Black American Studies 465.) An examination of the impact of western colonial rule on the societies and politics of Africa, the methods by which these colonial areas became sovereign states in the post-World War II era, the role of domestic political institutions, African political thought and behavior, and the development of foreign policies regarding relations with other African states, continental and international organizations, and non-African states. Prerequisite: 352 or GSB 250. Elective Pass/Fail.
- 466-4 Governments and Politics of Latin America.** An in-depth analysis of specific problem areas in Latin American political processes as well as comparative study of selected Latin American nation-states. Prerequisite: none. 366 recommended. Elective Pass/Fail.
- 471-3 Theories of International Relations.** Systematic analysis of a variety of approaches which seek to explain the actions of nations. The realist and utopian traditions, ecological factors, decision-making processes, theories of conflict and integration, equilibrium and systems analysis will be covered among others. Prerequisite: GSB 270 or graduate standing. Elective Pass/Fail.
- 475-6 (3, 3) International Law.** (a) Rules and practices governing the nations in their relations in peace and war. Prerequisite: none. GSB 270 recommended. (b) Investigation of special problems in international law. Prerequisite: 475a. Elective Pass/Fail.
- 477-3 The Making of American Foreign Policy.** An advanced course dealing with the formulation and administration of American foreign policy. Prerequisite: none. GSB 378 recommended. Elective Pass/Fail.
- 480-3 International Politics.** Definition and analysis of the concepts of spheres of hegemony, alliances, regionalism, integration, interdependence, and an evaluation of their application to contemporary international politics. The course will stress the need for the continuing evaluation of the vague role of national power and influence within the framework of a changing world environment. Elective Pass/Fail.
- 485-3 International Relations of the Far East.** The political and strategic problems and the interplay of the foreign policies of the major powers in this area. Prerequisite: none. GSB 270 or History 380 recommended. Elective Pass/Fail.
- 488-3 International Relations of the Western Hemisphere.** Emphasis on the international behavior of Latin American nation-states and/or regions especially related to policy trends and historical and contemporary objectives of the U.S. Prerequisite: none. GSB 270 recommended. Elective Pass/Fail.
- 494-1 to 6 Honors Research.** Directed research for senior government honors students. Not for graduate students. Prerequisite: consent of instructor and chairperson. Student must have at least a *B* average in political science.
- 500-2 Research Methods—Introduction.**
- 501-3 to 9 (3 per topic) Research Methods.**
- 502-3 to 6 Topical Seminar in Research Methods.**
- 503-3 Data Preparation and Management.**
- 505-3 to 6 (3, 3) Topical Seminar in Normative Theory.**
- 508-3 to 6 (3, 3) Topical Seminar in Empirical Theory.**
- 510-3 Proseminar in American Politics.**
- 511-3 to 6 (3, 3) Topical Seminar in American Politics.**
- 514-3 Seminar in American State Politics.**

515-3 Seminar in Urban Politics.
 516-3 to 6 (3, 3) Seminar in Political Behavior.
 518-3 Seminar in Political Parties.
 521-3 Seminar in the Legislative Process.
 538-3 Seminar in the Judicial Process
 540-3 Advanced Public Administration.
 542-3 Planning and Budgeting Systems.
 544-3 Program Evaluation.
 547-6 (3, 3) Topical Seminar in Public Administration.
 568-3 Seminar in Comparative Analysis.
 569-3 to 6 (3, 3) Topical Seminar in Comparative Politics.
 573-3 Seminar in International Organization.
 575-3 Seminar in International Law.
 577-3 to 6 (3, 3) Topical Seminar in Foreign Policy.
 580-3 to 6 (3, 3) Topical Seminar in International Relations.
 590-1 to 6 Readings.
 591-1 to 6 Individual Research.
 593-2 Seminar on Teaching Political Science.
 595-1 to 6 Internship in Public Affairs.
 599-1 to 6 Thesis.
 600-1 to 36 (1 to 16 per semester) Dissertation.

President's Scholars (Courses)

Courses

111-1 Freshman Honors Colloquium. Open to freshmen. Prerequisite: consent of the President's Scholar Program.
 201-1 to 9 Honors Seminar. Undergraduate honors seminar. Topics vary and will be announced by the President's Scholar Program each time the course is offered. Prerequisite: consent of the President's Scholar Program.
 251a-1 to 8 Honors Seminar in the Sciences. Seminars in the area of the natural sciences intended primarily for freshmen. These seminars may be used to satisfy the requirement for General Studies Area A. Prerequisite: consent of the President's Scholar Program.
 251b-1 to 8 Honors Seminar in the Social Sciences. Seminars in the area of the social sciences intended primarily for freshmen. These seminars may be used to satisfy the requirement for General Studies Area B. Prerequisite: consent of the President's Scholar Program.
 251c-1 to 8 Honors Seminar in the Humanities. Seminars in the area of the humanities intended primarily for freshmen. These seminars may be used to satisfy the requirement for General Studies Area C. Prerequisite: consent of the President's Scholar Program.
 251d-1 to 6 Honors Seminar in Language or Mathematics. Seminars in the area of the organization and communication of ideas, intended primarily for freshmen. These seminars may be used to satisfy a part of the requirement for General Studies Area D. Prerequisite: consent of the President's Scholar Program.
 251e-1 to 4 Honors Seminar in Health and Physical Education. Seminars in the area of health and physical education, intended primarily for freshmen. These seminars may be used to satisfy the requirement for General Studies Area E. Prerequisite: consent of the President's Scholar Program.
 299-1 to 15 Honors Project. Preparation of honors paper or comparable project under joint supervision of President's Scholar Program and a faculty member of subject-matter department. Intended primarily for freshmen and sophomores. Prerequisite: consent of the President's Scholar Program.
 301-1 to 9 Honors Seminar. Undergraduate honors seminar. Topics vary and will be announced by the President's Scholar Program each time the course is offered. Prerequisite: consent of the President's Scholar Program.
 351a-1 to 9 Honors Seminar in the Sciences. Seminars in the area of the natural sciences. These seminars may be used to satisfy the requirement for General Studies Area A. Prerequisite: consent of the President's Scholar Program.
 351b-1 to 9 Honors Seminar in the Social Sciences. Seminars in the area of the social sciences. These seminars may be used to satisfy the requirement for General Studies Area B. Prerequisite: consent of the President's Scholar Program.
 351c-1 to 9 Honors Seminar in the Humanities. Seminars in the area of the humanities. These seminars may be used to satisfy the requirement for General Studies Area C. Prerequisite: consent of the President's Scholar Program.
 351d-1 to 6 Honors Seminar in Language or Mathematics. Seminars in the area of the organization and communication of ideas. These seminars may be used to satisfy a part of the requirement for General Studies Area D. Prerequisite: consent of the President's Scholar Program.

351e-1 to 4 Honors Seminar in Health and Physical Education. Seminars in the area of health and physical education. These seminars may be used to satisfy the requirement for General Studies Area E. Prerequisite: consent of the President's Scholar Program.

399-1 to 15 Honors Project. Preparation of honors paper or comparable project under joint supervision of President's Scholar Program and a faculty member of a subject-matter department. Prerequisite: consent of President's Scholar Program.

499-3 to 9 Undergraduate Honors Thesis. Preparation of honors thesis under supervision of a committee consisting of one or more faculty members in appropriate disciplines and a representative of the President's Scholar Program. Prerequisite: consent of department and of President's Scholar Program.

Professional Education Experiences (Office)

Student Teaching

Student teaching, together with the seminar in professional education, constitutes a full professional commitment on the part of the student and is a full professional semester of experience in the field carrying 15 hours of credit. Additional course work may be taken only on an overload basis with special permission from the coordinator of professional education experiences.

The student teacher must follow the same daily schedule as the cooperating teacher with whom the student is placed. This means that the student teacher remains in the school for the entire day, as well as participating in whatever extra-curricular activities might be the responsibility of the cooperating teacher.

Students majoring in elementary education will be assigned to work with a cooperating teacher in one of the elementary grades, one through six, in an affiliated school. Students majoring in early childhood education will be assigned to work with a cooperating teacher in a kindergarten or primary grade, one through three, in an affiliated school.

The student who majors in a secondary school subject field which has an approved program in the teacher education program will be assigned to work with a cooperating teacher in a secondary school, grades seven through twelve, whose teaching assignment is consistent with the student's teaching major.

Special education majors will be assigned to work with a cooperating teacher in the appropriate special area: mental retardation, behavioral disorders, or learning disabilities. Special education majors will be assigned at both the elementary and secondary levels in order to meet certification requirements. Students majoring in speech pathology and audiology will be assigned to a cooperating teacher who is a speech clinician in an affiliated school.

Students wishing to enroll in the professional semester during the fall or spring semester of the academic year must file an application with the office of professional education experiences, Wham Building, Room 135, at least one semester in advance of the semester during which they wish an assignment. The professional semester program during the summer session is restricted to those individuals who hold either a provisional teaching certificate or a teaching certificate in a field other than the one for which they are seeking certification. Participation in this program is also dependent upon the availability of suitable placements in the summer school programs of participating public schools.

Applications for both regular academic year and special summer participation are available in the office of professional education experiences, Wham Building, Room 135.

The student must register for the professional semester following normal registration procedures. Registration will include the following courses: Education 400, 4 hours, Education 401, 8 hours, and Education 350, 3 hours. Students will register for the sections of these courses designated for their majors. Registration during the summer session is by restricted class card for Education 300A, 5-8 hours.

PLACEMENT OF STUDENT TEACHERS

Student teaching under the supervision of Southern Illinois University at Carbondale faculty is conducted in professional education centers in affiliated schools in the southern Illinois area as well as in specific locations throughout the state. A current listing of specific schools to which student teachers may be assigned is available in the office of professional education experiences.

In so far as numerical limits will permit, students will be assigned to the location of their choice. However, if the limits have been met, students are advised that they may be assigned to any of the centers which can suitably accommodate them.

Students are advised to make no binding housing commitments during the professional semester until they have received verification of their student teaching assignments. Such housing commitments will not be considered when students are assigned.

PROFESSIONAL SEMESTER — (STUDENT TEACHING) PREREQUISITES

1. Students must have achieved formal acceptance into the teacher education program and must present their records of acceptance when applying for the professional semester.
2. The student is responsible for having all transcripts of credit earned at colleges or universities other than Southern Illinois University at Carbondale on file in the office of the coordinator of Professional Education Experiences. These must be on file by the tenth day of the semester for which the student is applying.
3. Prior to the professional semester, the intern must have completed a minimum of 20 semester hours in the subject proposed to teach. The course work involved must meet the approval of the department chairperson of that major department. (Course work and/or performance required may be obtained from the department concerned.) An up-to-date list of approved majors in the teacher education program may be found in the booklet, *The Teacher Education Program*, or requested from the office of Professional Education Experiences.
4. The student must have completed 75 semester hours of credit with a minimum cumulative average of 2.25 before beginning work in student teaching.
5. Each of those courses which are a part of the professional education sequence prior to the professional semester must have been completed with a grade of C or better. (Education 301, 302, 303, and 304.)
6. The student must have completed GSD 101 and GSD 117, 118, or 119, and one additional English course (GSC, GSD, or English department) with a grade of C or better in each of the last two courses completed. The student eligible by ACT (90th percentile or higher) or CLEP scores (480 or above) to take the proficiency examination in English composition may satisfy this requirement with proficiency credit in GSD 101 and GSD 117 and at least a C in English 290.
7. Every student teacher must have a health clearance from the University Health Service. The health clearance consists of a tuberculin test. If it is not convenient to come to the health service in Carbondale, students may have a tuberculin test by their own medical doctors. A record of the health clearance must be on file in the office of Professional Education Experiences by the tenth day of the semester immediately preceding the student's professional semester.
8. The student must have established at least one semester of residence at Southern Illinois University at Carbondale, earning a minimum of 12 semester hours of credit, prior to any professional semester assignment.

Field Experiences Other Than the Professional Semester

Other field experiences for students in the teacher education program are provided in Education 302 and Education 312. Applications for these courses are available in the office of professional education experiences.

Psychology (Department, Major, Courses)

The undergraduate major in psychology is primarily aimed at providing broad general education rather than specialized professional training in psychology. To become a professional psychologist usually requires the completion of two to four or more years of postgraduate study.

Students planning to complete a major in psychology must formally declare their intention with the supervisor of the undergraduate curriculum in the Department of Psychology, Room 229, Life Science II. The declaration should be made as early as possible.

Bachelor of Arts Degree, College of Liberal Arts

<i>General Studies Requirements</i>	45
<i>Supplementary College Requirements</i> (See page 78.)	(4) + 8-14
<i>Requirements for Major in Psychology</i>	28-30
GSB 202	(3)
Mathematics 139	(3)
Psychology 211	4
Psychology electives: (8 courses) The electives must be distributed so at least three courses are chosen from Group A and three from Group B. At least one course must be chosen from 311, 312, 314, 315, 316. At least two of the selections must be at the 400 level.	
Group A: 301, 303, 304, 305, 307, 316, 320, 322, 323, 330, 333, 421, 431, 432, 440, 451, 459, 461	
Group B: 309, 310, 311, 312, 314, 315, 404, 407, 409, 411, 415, GSA 302	
Psychology 391, 392, 394, 399, 489, and any of those in the above two groups may be used to satisfy the remaining two nondistributed electives. Refer to course descriptions for limitations.	
Psychology 101, 106a, b, and 289 may not be used to satisfy major requirements	24-26
<i>Electives</i>	31-39
<i>Total</i>	120

Minor

A minor in psychology consists of 15 hours (a minimum of five courses) of psychology courses from those acceptable for the major.¹

¹Students completing a minor in psychology for purposes of obtaining teacher certification in the State of Illinois must complete a minimum of 18 semester hours in the minor area.

Senior Honors Program

A small number of students are selected each year for the honors program. Selection criteria are promising academic performance (3.0 overall grade point average and 3.25 psychology grade point average minimum), expressed interest, recommendation by departmental adviser, and capacity of program to take new students. Emphasis is on small seminar and individual research work by the student.

Courses

101-3 Developing Effective Relationships. The process of group encounter is used to help students achieve a better understanding of themselves and others. Selected readings in interpersonal encounter supplement the experiential laboratory.

106-8 (4, 4) Drug Abuse and the Helping Relationship. A two-course sequence on drug-related problems and developing potential as a helping agent. (a) Examination of drug information, experience with small groups, communication, and helping skills. (b) Further development of skills; small group and student-designed action projects. Must be taken in a,b sequence. Prerequisite: consent of instructor. Mandatory Pass/Fail.

211-4 Research Methods in Psychology. An introduction to the application of scientific methods to the study of behavior. Experimental design and methodology and correlational procedures are considered. Considerations of data analysis and interpretations are integrated with the treatment of design and methodology. Lecture and laboratory. Prerequisite: GSB 202.

289-1 to 12 Undergraduate Seminar: Selected Topics. Varied content. Offered as need exists and as faculty interests and time permit. Prerequisite: consent of instructor.

301-3 Child Psychology. The biological and psychological development of the child from birth through puberty, and relevant research methods and results. Prerequisite: GSB 202. Elective Pass/Fail.

303-3 Adolescent Psychology. Examines the physical and psychological development of the adolescent, and the relevance of childhood development to adolescent problems. Prerequisite: GSB 202. Elective Pass/Fail.

304-3 Psychology of Maturity and Old Age. A consideration of psychological factors in later maturity and old age, and their concomitant problems, both individual and social. Prerequisite: GSB 202. Elective Pass/Fail.

305-3 Psychology of Personality. The inferred patterns underlying an individual's unique reactions to the environment. Investigates the motivation, development, and methods of changing these patterns, and how personality processes are studied. Prerequisite: GSB 202. Elective Pass/Fail.

307-3 Social Psychology. Introduction to the area of social psychology. Considers methodology, person perception, interpersonal attraction, attitude formation and change, social influence, group processes, intergroup conflict, and other contemporary issues in social psychology. Prerequisite: GSB 202. Elective Pass/Fail.

309-3 Psychology of Learning. Principles and laws of learning as derived from the classical and instrumental learning literature—acquisition, extinction, punishment, persistence, generalization, discrimination, motivation, drives, and incentives. Prerequisite: 211.

310-3 Cognitive Psychology. A survey of theory and research on attention, memory, language behavior, and problem solving. The principal orientation will be the information processing approach to the study of behavior. Prerequisite: GSB 202.

311-3 Experimental Psychology: Learning. Investigates the processes governing behavioral change covered in 309. Experimental studies of conditioning, memory, and forgetting will be emphasized. Laboratory work will include the design and conduct of experiments with humans and/or animals. Prerequisite: 309.

312-4 Experimental Psychology: Perception. Investigates the variables influencing an organism's stimulation by the environment. The structure and operation of the sense organs as well as complex perceptual phenomena are examined in lectures and laboratory. Prerequisite: 211.

314-3 Experimental Physiological Psychology. A survey through readings and laboratory exercises, of selected topics in physiological psychology. The biological bases of sexual behavior, motivation, and memory are emphasized. Prerequisite: GSA 302, Psychology 211.

315-3 Experimental Psychology: Cognitive Processes. The student conducts three or four experiments in cognitive psychology. The first experiments are described in detail by the instructor; the final experiment is one of the student's own design. Prerequisite: 211, 310.

316-3 Experimental Psychology: Social. A laboratory and lecture course designed to familiarize the student with basic research methodology in experimental social psychology. Prerequisite: 211, 307.

320-3 Industrial Psychology. A study of the use of psychological methods in the analysis of human factors problems in business and industry. Prerequisite: GSB 202. Elective Pass/Fail.

322-3 Personnel Psychology. Covers the use of psychological methods in the analysis of jobs and in the selection, placement, and evaluation of personnel in business and industry. Prerequisite: GSB 202. Elective Pass/Fail.

323-3 Psychology of Employee Relations. Job satisfaction and morale, psychological aspects of labor relations, interviewing methods, and human relations training. Prerequisite: GSB 202. Elective Pass/Fail.

330-4 Psychology Applied to Personal Adjustment. Review of psychological methods potentially useful in self-improvement. Training and practice in learning to use various learning procedures with typical problems in everyday living. Effectiveness assessed and

discussed in small groups or confidentially with instructor. Prerequisite: six hours of psychology or consent of instructor.

333-3 Psychology of Women. An examination of empirical evidence on the biological, psychological, and social functioning of women, describing women's roles, the genetic versus social determinants of women's behavior, and the implications for women's potential. Prerequisite: GSB 202 or consent of instructor. Elective Pass/Fail.

391-1 to 12 Individual Study. Independent study under the supervision of a member of the psychology faculty. (A maximum of three hours of 391 or 392 may count toward the major.) Prerequisite: consent of instructor. Mandatory Pass/Fail.

392-1 to 12 Individual Study. Independent study under the supervision of a member of the psychology faculty. For use in those cases where the faculty member deems a graded course to be appropriate. (A maximum of three hours of 391 or 392 may count toward the major.) Prerequisite: consent of instructor.

394-1 to 9 Undergraduate Practicum in the College Teaching of Psychology. Supervised practicum in the college teaching of psychology for selected senior psychology majors. (A maximum of three hours may count toward the major.) Prerequisite: senior psychology major and permission of instructor.

399-1 to 9 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.

404-3 Theories of Perception. An examination of the different theories concerned with an organism's sensory contact with the environment. Physiological, social, and organizational theories of perception will be considered. Prerequisite: 211 or consent of instructor.

407-3 Theoretical Issues in Learning. An introduction to the major theoretical issues in learning and their importance. A brief review of the history of such problems will be followed by a summary of the current research concerning these issues. Traditional figures in learning theory will be considered within the context of their positions on specific questions. Prerequisite: 309 or equivalent.

409-3 History and Systems of Psychology. A review of the conceptual and empirical antecedents of modern psychology. Prerequisite: senior status.

411-3 Principles of Training. An in-depth coverage of practical problems concerned with training to which the principles of learning derived from pure laboratory investigations can be applied. Prerequisite: 309.

415-4 Psychopharmacology. A survey of the effects of drugs on the normal and abnormal behavior of humans and animals. A primary focus is upon understanding drug influences on behavior in relation to actions on the nervous and endocrine systems. Prerequisite: GSA 302, GSB 202. Elective Pass/Fail.

421-3 Psychological Tests and Measurements. Introduction to test theory and test development. Detailed coverage of selected tests from such areas as intelligence, aptitude, and personality. Prerequisite: six hours of psychology.

431-3 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. Elective Pass/Fail.

432-3 Psychopathology of Childhood. An extensive review and systematic evaluation of theories and research pertaining to the behavior disorders of childhood. Emphasis will be upon empirical data and the implications of these data for the classification and treatment of these disorders. Prerequisite: 301, and 211 or Guidance and Educational Psychology 422.

440-3 Theories of Personality. A review and evaluation of major personality theories and their supporting evidence. Prerequisite: 305 or consent of instructor. Elective Pass/Fail.

451-3 Advanced Child Psychology. An assessment of concepts, methods, and research techniques within selected topic areas of developmental psychology. Prerequisite: 211 and 301, or consent of instructor.

459-3 Theory and Practice in the Preschool. Designed for those interested in the education of the preschool-aged child. Examines a variety of topics and provides lectures, demonstration, and practicum experience in the Child Study Cooperative Nursery. Prerequisite: consent of instructor.

461-3 Advanced Social Psychology. Examines in depth current research in experimental social psychology. Emphasis is placed on topics such as person perception, interpersonal attraction, attitude formation and change, social influence, group processes, intergroup conflicts. Not for psychology graduate students. Prerequisite: 211, 307.

489-1 to 12 Seminar: Selected Topics. Varied content. Offered as need exists and as faculty interests and time permit. Prerequisite: consent of instructor.

509-3 Motivation and Reinforcement in Learning.

510-3 Stimulus Control of Behavior.

511-3 Human Learning and Memory.

512-4 Sensory Processes.

513-3 Human Psychophysiology.

514-4 Physiological Psychology.

515-3 Theory and Research in Cognitive Psychology.

522-11 (4, 4, 3) Experimental Design and Analysis.
 523-3 Research Methods in Clinical Psychology.
 524-3 Multivariate Methods in Psychology.
 525-3 Mental Test Theory.
 526-3 Research in Counseling Psychology.
 527-3 Theory and Methods of Scaling.
 530-4 (2, 2) Systems of Personality and Psychotherapy.
 531-3 to 6 Community and Institutional Field Placement.
 532-2 Experimental Approaches to Personality.
 533-2 Experimental Approaches to Psychopathology.
 534-3 Principles of Behavior Therapy.
 535-3 Psychopathology.
 536-3 Fundamentals of Counseling.
 538-3 Theory and Practice of Group Facilitation.
 539-3 Experimental Approaches to Psychotherapy.
 540-3 Psychological Assessment.
 542-3 Principles and Problems in Personality Assessment.
 547-6 (3, 3) Topical Seminar in Public Administration.
 548-3 Vocational Psychology and Career Development.
 549-3 Behavioral Assessment.
 551-3 Advanced Developmental Psychology I.
 552-3 Advanced Developmental Psychology II.
 554-3 Developmental Theories.
 555-3 Language and Cognition.
 556-2 Psychological Treatment of the Child.
 557-2 Family Psychotherapy.
 558-3 Personality and Social Development of Adults.
 560-3 Social Psychology Proseminar.
 564-3 Evaluations of Social Interventions: Experimental and Quasi-Experimental Approaches.
 576-3 Human Engineering.
 585-1 to 18 Advanced Seminar.
 590-1 to 12 Readings in Psychology.
 593-1 to 24 Research in Psychology.
 594-1 to 16 Practicum in Psychology.
 595-1 to 12 Internship.
 597-1 to 15 Preprofessional Training.
 598-3 Ethical and Professional Problems in Psychology.
 599-1 to 6 Thesis.
 600-1 to 24 Dissertation.

Public Visual Communications (Major [Graduate only], Courses)

The graduate faculty in public visual communications, consisting of members of the Departments of Cinema and Photography and Radio-Television of the College of Communications and Fine Arts, offers graduate work leading to the Master of Arts degree. The public visual communications program has as its objective the development of visual media personnel to serve the communicative needs of society and to prepare interested graduates for doctoral study. The program has been structured with flexibility so as to serve holders of baccalaureate degrees in cinema and photography and radio-television as well as those who hold degrees in other disciplines. For a more complete description of the program, refer to the Graduate Catalog.

Courses

500-3 Introduction to Public Visual Communications.
 510-3 Researching and Developing Public Telecommunications Programming.
 530-3 International Telecommunications.
 532-3 Audience Communications Research.
 541-6 (3, 3) Seminar: History of Photography.
 542-6 (3, 3) Seminar in Film History.
 570-3 Public Telecommunications Program Analysis and Criticism.
 571-3 Regulation and Control of Public Communications.
 572-4 (2, 2) Management of the Photographic Unit.



- 573-3 Public Telecommunications Management.
- 574-3 Contemporary Film Theory.
- 580-2 Seminar: Current Trends in Public Telecommunications.
- 589-3 Seminar: Public Communications in a Dynamic Society.
- 591-1 to 6 (1 to 3, 1 to 3) Individual Study in Public Visual Communications.
- 595-1 to 6 (1 to 3 per topic) Advanced Topical Seminar.
- 597-2 to 6 Production Seminar: Cinema, Photography, and Television.
- 599-3 to 6 Thesis.

Radio-Television (Department, Major, Courses)

The Department of Radio-Television prepares students for responsibility as professional broadcasters and as conscientious citizens by combining practical and theoretical courses in broadcasting with the broad background needed to function appropriately in our society. Within an interdisciplinary approach, the Department of Radio-Television studies the public interest while affording work in all aspects of the broadcast media, except the purely technical. The curriculum does not cover broadcast engineering. In addition to classroom instruction, the department is very closely interrelated with the SIU Broadcasting Service, which operates a radio and television station. As an established part of the department's curriculum, students are required to involve themselves in actual on-air experience on these stations. In addition, an internship potential is included in the formal curriculum, so that students with a *B* average or better may gain academic credit for actual professional work experience at broadcasting associated organizations outside the campus.

The core courses, Radio-Television 300M and 300P, must each be completed with a grade of *C* before students may continue in the major. This includes non-majors who wish to take any subsequent radio-television courses. Students are required also to complete Radio-Television 308, 340 and 393, each with a passing grade. The 308 and 340 courses may be taken concurrently. Students must complete 26 semester hours of college credit before registering for either 300M or 300P; transfer students with 45 semester hours may take both courses

the entering semester. Southern Illinois University at Carbondale students should attempt to take these courses in the sophomore year; transfers with junior standing should take both courses the entering semester.

Radio-television majors may not take a pass/fail course in either the major or the minor unless such courses are designated as Mandatory Pass/Fail. Each radio-television major must, by the end of the sophomore year:

1.

Either achieve a grade of *B* in both GSD 101 and GSD 117, or 119, or a grade of *C* in English 290.
2.

Either proficiency or attain a grade of *B* in Secretarial and Office Specialties 101A.

A maximum of 38 hours in radio-television courses may be counted toward the first 120 hours for graduation. Each student must have at least 32 hours in radio-television. Transfer students must complete at least 17 hours in the radio-television curriculum at Southern Illinois University at Carbondale.

Bachelor of Science Degree, College of Communications and Fine Arts

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Radio-Television</i>	32
<i>Minor in a cognate department</i>	15
(Exceptions must be approved by the Department of Radio-Television)	
<i>Electives</i>	28
<hr/>	
<i>Total</i>	120

The department suggests specialized curricula in various areas of broadcasting for those students who may wish to pursue a specific area of interest. These suggested specializations must meet the department's basic requirements for graduation.

Courses

300M-4 Radio-Television Writing Performance Production. Introduction to the functions, theories, materials and techniques of writing, performing and production for radio and television. Students write, perform, and produce in radio and television studio laboratories. Extra fee for books and supplies \$10.00. Note: Radio-Television 300M and 300P are both prerequisites for all other courses. Students must attain a grade of *C* in these courses before taking other courses in the department. Prerequisite: sophomore standing.



300P-4 Radio-Television Foundations and Programming. Examination of the history, economics and governmental control of the American system of broadcasting plus a comprehensive examination of broadcast programming and audience analysis. Note: Radio-Television 300M and 300P are both prerequisites for radio-television majors for all other courses. Students must attain a grade of C in these courses before taking other courses in the department. Prerequisite: sophomore standing.

305-2 Basic Communication Research. Principles and techniques of research in communication. Types of research. Examination of empirical studies. Writing of research. Prerequisite: C in 300M and P.

308-3 Broadcast Laws and Policies. Legal aspects of broadcasting, via study of historical and current developments in rules, laws, philosophy of broadcast regulation. Relationship of federal and state law, and the various government regulatory agencies concerned with broadcasting. Case studies and written problems in broadcast law. Prerequisite: C in 300M and P.

310-3 Radio-Television News Writing. The basic techniques of writing, re-writing and editing news from local and wire service sources, for presentation on radio and television. Actual experience with the WSIU and WSIU-TV facilities is stressed. Laboratory hours required. Prerequisite: C in 300M and P.

311-3 Radio-Television News Reporting. Classroom lectures on the techniques of news reporting and the writing of on-the-scene stories. Includes actual covering of a news "beat" and the reporting of the stories for air on radio and television. Laboratory hours required. Prerequisite: C in 300M and P; 310 and consent of instructor.

325-3 Survey of Cable Communications. History and projections of CATV industry growth, patterns of regulation and use. Relation of cable communications to other media, and to society. Extensive readings and discussion of the literature. Prerequisite: C in 300M and P.

335-3 CATV Programming-Production. Presents theoretical approaches to programming for cable systems originating programs, as well as practical workshop experience in creating and producing such programming. Laboratory hours required. Prerequisite: C in 300M and P; 325.

340-3 Production Analysis and Media Criticism. An examination of existing broadcast techniques to develop the student's sensitivity to and perception of broadcast production as a tool for communication. A section on communications theory ties analysis and criticism together. The course requires several written critical analyses of productions and current criticisms of the media. Prerequisite: C in 300M and P.

351-3 Programs and Audiences. The interrelationships of programs and audiences. Methods of audience and program research, and an investigation of the factors that influence programming decisions. Prerequisite: C in 300M and P.

360-4 Radio-Television Performance. Announcing techniques and extensive practice in various media situations. The development of disciplines controlling vocal and visual mechanics and interpretive performances. Radio and television studios and audio and video tape utilized for practice and performance. Laboratory hours required. Prerequisite: B in 300M, C in 300P; Speech 104.

363-3 Intermediate Radio Production. Techniques of producing, directing, writing and performing radio production announcements and programs, with emphasis on creative use of sound effects and music. Laboratory hours required. Prerequisite: C in 300M and P.

365-2 to 4 (2, 2) Television Studio Operations. The operational and production aspects of television studio operation. Participation in actual program production for WSIU-TV. Laboratory sessions will be arranged. Prerequisite: C in 300M and P.

369-2 Basic Television Directing. Laboratory instruction in television directing. Practical experience in WSIU-TV's broadcast color studio. Introduction to basic techniques of directing news, music, drama, interviews, and station breaks. Prerequisite: C grade in 300M and P; 340; 365.

370-3 Television News Film Production. Technique of filming short news stories and features. Each student will produce short television films using 16mm equipment. Laboratory hours required. Students purchase 300 feet black and white film stock and processing. Prerequisite: C in 300M and P.

371-2 Graphics for Television. Various techniques in the special demands of the graphic arts in television production. Laboratory hours required. \$10. cost for additional laboratory materials. Prerequisite: C or better in 300M and 300P.

377-3 Radio-Television Advertising and Sales. Study and practical experience in designing and developing promotional and advertising campaigns for the radio and television media. Selling techniques, methods and skills. Prerequisite: C in 300M and P, and in 351.

383-3 Basic Radio-Television Writing. Experience in writing radio and television formats, and announcements—commercial, public service, and promotional. Develops critical awareness and analytical attitude toward broadcast writing, and stresses imagination and creative writing skills. Frequent written assignments in and out of class. Prerequisite: C in 300M and P; 340.

384-1 to 2 Radio-Television Practicum. Practical experience in broadcast operations.

Available to all majors at the end of the student's chosen sequence. Prerequisite: *C* in 300M and P, and consent of instructor. Mandatory Pass/Fail.

390-4 Operations and Management. Objectives, procedures, equipment, policies and costs in radio and television station development and operation. Program formats for radio and television. Necessary components of program format construction. Prerequisite: *C* in 300M and P; 308, 351, and 377.

391-1 to 3 (2, 1 or 1, 1, 1) Independent Study. Area of study to be determined by student in consultation with radio-television instructors. Prerequisite: *C* in 300M and P; consent of instructor.

393-3 Radio, Television, and Society. The interrelation of radio and television with social habit patterns and with economic and political systems. Prerequisite: *C* in 300M and P; completion of 86 hours.

395-2 to 4 Internship Program. News production, performance or management/sales work experience within a non-university professional organization. The student will be provided an educational experience beyond that available at the University. Prerequisite: junior status, 3.0 or better average in major, and selection committee consent.

430-2 Public Affairs and the Radio-Television Establishment. An examination of the history and scope of public affairs programming on radio and television. The effects of public affairs on programming and audiences. Prerequisite: *C* grade in 300M and 300P.

453-2 Public Broadcasting. The history and regulatory structure of public broadcasting in the United States today, with special emphasis on organizations regulated under the Public Broadcasting Act of 1967. Methods of funding public stations, programming, and careers in public broadcasting are also considered. Prerequisite: *C* grade in 300M and 300P; 308.

467-3 Radio-Television Production Survey. Production techniques and equipment for all phases of radio and television presentations for those who are not planning professional careers in broadcasting. Standards for equipment and facilities selection. Radio and television laboratory production projects. Prerequisite: non-major.

470-3 Documentary Film Production. For the student with a serious interest in the documentary film. Students work in teams researching, writing, filming, and editing films on subjects relating to historical, cultural, or social issues. Prerequisite: *C* grade in 300M, 300P, and 370 or *C* grade in Cinema and Photography 355 and 356 and consent of instructor. Mandatory Pass/Fail. Graduate students must take on letter grade basis.

481-2 ITV Administration, Production and Utilization. Development of ITV production with emphasis on the use of instructional objectives, the relationship of users' manual to the instructional series, and the functions of various personnel in the administration of instructional television. Prerequisite: *C* grade in 300M and 300P.

483-3 Advanced Radio-Television Writing. Exercises in writing broadcast manuscripts including documentary, drama, and children's programming. Prerequisite: *C* grade in 300M, 300P, and 383; 340.

489-2 to 6 Radio Television Workshop. Advanced work in various areas of radio-television and interrelated disciplines. Prerequisite: *C* grade in 300M, 300P, and consent of instructor.

491-3 to 6 (3, 3) Independent Study. Area of study to be determined by student in consultation with radio-television graduate faculty. Prerequisite: *C* grade in 300M and 300P and consent of instructor.

Recreation (Department, Major, Courses)

The Department of Recreation prepares the student for positions in the management of leisure time pursuits. The department builds its curriculum on a broad General Studies foundation, offers professional and skills courses within the Department of Recreation, and draws from many related departments of the University for competencies and skills in the preparation of leaders for the recreation profession.

The curriculum emphasizes the practical as well as the theoretical aspects of recreation by offering practicums, supervised field experience, and internships in various recreational settings throughout Illinois and the nation.

Students admitted to the Department of Recreation must meet the College of Education requirements and follow their procedures for acceptance. In order to be admitted to practicum courses, students must have a grade point average of 2.25 and the consent of the instructor. Students who do not meet the College of Education requirements must be screened and approved by the department undergraduate faculty.

Students majoring in recreation are required to complete 45 hours of General

Studies, 29 hours of professional courses, a total of 12 hours of leadership experience in at least two areas of interest, and work closely with the department advisers in selecting electives for their chosen area of specialization.

The Department of Recreation offers courses leading to specialization in (1) park and community recreation, (2) recreation for special populations, (3) outdoor recreation, (4) commercial recreation management, and (5) program specialist.

Students majoring in recreation should start early in their college careers developing skills and competencies in music, dance, arts and crafts, literature, sports and games, nature, drama, and other leisure and cultural areas. The American Red Cross life saving certificate, American Camping Association campcraft certificate, workshop certificates in recreation sponsored by the state and national recreation and park associations, and other certificates in instructional areas are desirable in preparation for positions in recreation management.

As soon as possible recreation majors will decide on one of the five specializations and elect courses for their areas of specialization. The undergraduate advisers in the Department of Recreation are available to students to explain job opportunities and to outline required and elective courses in their chosen specialization. Electives must be on the 300 and 400 levels.

Bachelor of Science Degree, College of Education

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Recreation</i>	75
English 290 or Journalism 340	2-3
Health Education 334	3
Psychology 305, 307	6
Recreation 300, 302, 303, 365, 380-4, 470, 490-12	30
One of the five specializations below	33-34
Park and Community	
Selected from: Recreation 310, 350, 395	18
Electives	15-16
Recreation for Special Populations	
Selected from: Recreation 310, 340, 350, 460	18
Electives	15-16
Outdoor Recreation	
Selected from: Recreation 310e, 320, 350, 390, 395	18
Electives	15-16
Commercial Recreation	
Recreation 375, 390, 395	7
Accounting 210	3
Administrative Sciences 170, 301, 304	9
Marketing 305	3
Electives	11-12
Program Specialist Electives	33-34
<i>Total</i>	120

Minor

Students may earn a minor in recreation by completing at least 18 hours of course work. Recreation 300, 302, 303, and 365 are required. The remaining hours may be taken in any recreation courses the student desires. Students wishing to earn a minor in recreation must receive written approval from the Department of Recreation.

Courses

300-3 Leisure and Recreation. An introduction to the professional field of recreation. A

study of the historical, philosophical, sociological, psychological, and economic development of leisure and recreation. Insight into the fundamental concepts, values, and functions of leisure and recreation as an individual emotional experience as well as a necessary part of community life.

302-3 Recreation Program Leadership. A study of essential elements and basic principles involved with the organization and administration of various types of recreation programs and services. Emphasis on leadership processes and methodology. Prerequisite: 300 or consent of department.

303-3 Recreation For Special Groups. Problems and characteristics of special groups in society such as teenagers, aged, emotionally disturbed, mentally retarded, physically handicapped, prisoners, and delinquents. Emphasis on leadership processes, methodology, and program materials. Prerequisite: 300 or consent of department.

310-12 (2, 2, 2, 2, 2, 2) Recreation Skills. (a) Social recreation, (b) dramatics, (c) Leisurecrafts, (d) music and dance, (e) campcraft, (f) playground activities. Prerequisite: 300, 302, 303 or consent of department.

320-3 Nature in Recreation. Acquaints the student with opportunities for the interpretation of the nature phenomenon. The avocational as well as the vocational aspect of nature will be stressed. Required field trip cost not to exceed \$20.00. Prerequisite: 300, 302, 303 or consent of department.

330-3 Outdoor Education. Philosophy and principles underlying the programs and methods in modern outdoor education and school camp programs with emphasis on curriculum enrichment through our natural resources. Expenses for required field trip not to exceed \$20.00. Prerequisite: 300, 302, 303 or consent of department.

335-3 Expedition Leadership. The skills and techniques needed to plan, organize and conduct expeditions such as overnight hikes, canoe trips, backpacking, field trips, and other types of expeditions. Expenses for required field trips not to exceed \$50.00. Prerequisite: consent of instructor.

340-6 (2, 2, 2) Recreation Activities for Special Populations. (a) Mentally retarded and mentally ill, (b) physically handicapped and aged, and (c) emotionally disturbed and prisoners. Prerequisite: 300, 302, 303, or consent of department.

350-6 (1, 1, 1, 1, 1, 1) Recreation Workshops. Current innovations and critical evaluation of methods, materials, and supervision of programs in one of the following areas: (a) Day Camps, (b) Puppetry, (c) Storytelling, (d) Leisurecrafts, (e) Family, and (f) Teen Centers. Prerequisite: 300, 302, 303 or consent of department.

365-3 Park and Recreation Administration. Administrative procedures in park and recreation departments—organization, finance, personnel, facilities, program, public relations, and other areas of administration. Prerequisite: 300, 302, 303 or consent of department.

366-3 Workshop in Administrative Issues in Recreation. Designed to examine in a workshop current administrative issues in recreation such as practices and trends in budget and finance, legal aspects, grant writing, personnel practices and policies, and others. Prerequisite: 365.

370-3 Camp Management. Principles and procedures of selection and supervision of personnel, program planning, food preparation, health and safety, camp maintenance, evaluation, camp counseling, and other responsibilities of camp administration. Prerequisite: 300, 302, 303 or consent of department.

375-2 Commercial Recreation Management. Problems of commercial recreation related to the profit motive and the challenges and possibilities for public service. Opportunities and examined in such areas as civic centers, student unions, spas and resorts, marinas, ice and roller rinks, sports complexes, and other commercial enterprises. Prerequisite: 300, 302, 303 or consent of department.

380-1 to 6 (1 to 2 per semester) Field Work in Recreation. Supervised leadership experiences in a public or private recreation setting. A student may sign up for a maximum of two hours per semester. Graduates must complete field experience in at least two areas of specialization. A maximum of six hours of credit may be earned. Prerequisite: 300, 302, 303 or consent of department.

385-1 to 2 Readings in Recreation. Selected readings in professional publications for the purpose of becoming acquainted with the types of research current in community, park, special populations, outdoor recreation, outdoor education, and related fields. For recreation majors only. Prerequisite: 15 hours in recreation.

386-1 to 2 Problems in Recreation. Designed to enable students to effectively request funds, request personnel, initiate new programs, or support recreation leisure services from boards of agencies and departments or recreation employers. Prerequisite: 15 hours in recreation.

390-2 Outdoor Recreation Management. Philosophy and principles underlying the growth and development of modern outdoor recreation management. Outdoor recreation is examined in terms of supply and need, economic aspects, environmental problems, and future developments. A laboratory cost of up to \$12.00 may be required. Prerequisite: 300, 302, 303 or consent of department.

395-3 Maintenance of Recreation Areas and Facilities. All phases and principles of development, maintenance, and construction of areas and facilities used in a recreation setting.

Stress is put on selection and supervision of maintenance personnel. There is a maximum cost of \$5.00 for course materials in lieu of textbook. Prerequisite: 300, 302, 303 or consent of department.

401-3 Fundamentals of Environmental Education. (Same as Agriculture 401.)

423-3 Environmental Interpretation. (Same as Agriculture and Forestry 423.)

460-3 Therapeutic Recreation. Organization and administration of therapeutic recreation programs in hospitals, nursing homes, schools for the retarded, detention centers, prisons, and other institutions. Emphasis on programs for special populations in the community setting. Prerequisite: 300, 302, 303 or consent of department.

470-2 School and Community Recreation. The role of the public schools in community recreation. Emphasis on current practices and trends in curriculum content, adult education, extracurricular activities, after-school and vacation programs, and cooperative programs with other agencies. Prerequisite: 300, 302, 303 or consent of department.

475-1 to 24 (1 to 2 per topic) Recreation Workshop. Critical examination and analysis of innovative programs and practices in one of the following areas: (a) commercial, (b) student centers, (c) outdoor education, (d) outdoor recreation, (e) mentally retarded, (f) emotionally disturbed, (g) teen centers, (h) family, (i) aging, (j) prisons and detention centers, (k) physically handicapped, (l) budget and finance, and (m) playground leadership. (n) Maintenance of Areas and Facilities. Critical examination and analysis of innovative programs and practices in the maintenance of grounds and facilities. Maximum of six hours to count toward master's degree.

485-2 to 12 Practicum in Outdoor Education. A supervised experience in a professional setting. Emphasis on administrative, supervisory, teaching, and program leadership in outdoor, conservation, or environmental education setting. Costs for travel are the responsibility of the student. Prerequisite: consent of instructor.

490-2 to 12 Internship in Recreation. Supervised practicum experience in a professional recreation setting. Emphasis on administrative, supervisory, teaching, and program leadership in the student's area of specialization. For undergraduate credit only. Must be taken during student's senior year. Prerequisite: 16 hours in recreation and consent of instructor.

500-3 Principles of Recreation.

520-3 Park and Recreation Management.

525-3 Recreation for Special Populations

530-3 Programs in Recreation.

540-3 Planning Outdoor Areas for Education and Recreation.

550-3 Research in Recreation.

560-6 (2, 2, 2) Seminar in Recreation.

565-3 Seminar in Environmental and Outdoor Education.

570-3 Seminar in Recreation Management.

575-1 to 6 Individual Research.

580-1 to 6 Readings in Leisure and Recreation.

596-1 to 6 Field Work in Recreation.

599-1 to 3 Thesis.

Rehabilitation (Institute, Major [Graduate Only], Courses)

Courses in this department may require the purchase of supplemental materials not to exceed \$10 per course. Field trips are required for certain courses.

Courses

400-2 to 3 Introduction to Rehabilitation. An introduction to the broad field of rehabilitation, to include the processes (services), facilities and personnel involved. Note: Students can enroll in the didactic portion for two credits, or three credits if they elect the field trips. No student can take the field trips alone without taking the didactic portion as well.

402-1 to 3 Human Development and Behavior. Examines theories and systems of human development, personal behavior patterns and learning principles related conceptually to rehabilitation processes and practices. Prerequisite: consent of instructor.

406-3 Introduction to Behavior Modification. A survey of the principles and procedures in behavior modification and the scope of its application to human needs and problems.

409-3 Scientific Methods in Behavior Analysis. A general review of philosophical issues and methodological approaches to the study of human behavior; includes sampling procedures, group statistical designs and single-subject multi-manipulation and multireplication tactics. Prerequisite: consent of department.

419-1 to 3 Cross-Cultural Rehabilitation. (Same as Black American Studies 490.) Major focus on the relationship/comparison of basic cultural, economic, and psychosocial processes relative to the rehabilitation of people in contemporary societies. Prerequisite: consent of instructor.

421-3 Vocational Development and Placement. Relates the psychosocial meaning of work,

process of vocational development, theories of occupational choice and labor market trends to current and innovative methods of job development, selective placement, and follow-up with the handicapped. Prerequisite: 400 or 501.

425-1 to 6 Developing Employment Opportunities. Designed to train rehabilitation personnel in the attitudes, methods, and skills pertinent to placement of handicapped persons in competitive and other occupations. Prerequisite: special standing and consent of instructor.

431-3 Assessment Procedures in Rehabilitation. Review of fundamental bases of measurement, criteria for evaluating tests, practice with representative instruments in major categories, and the use of tests and work samples in assessing the handicapped's functioning abilities and work potential. Prerequisite: consent of instructor.

436-3 to 4 Vocational Evaluation and Adjustment Services. Introduction to the philosophies of evaluation and adjustment services in rehabilitation settings with emphasis on the rationale for use of psychometric testing, functional behavioral analysis, work sampling, situational assessment, and on the job evaluation in relation to the development of individualized adjustment service programs.

445-2 to 12 Rehabilitation Services with Special Populations. Procedures and programs pertinent to the care and treatment of special populations. Two semester credits will ordinarily be granted for each unit.

(a)-6 (2, 2, 2) Aging.

(b)-6 (2, 2, 2) Alcohol and Drug Abuse.

(c)-6 (2, 2, 2) Economically Deprived.

(d)-6 (2, 2, 2) Emotionally Disturbed.

(e)-6 (2, 2, 2) Genetically Disabled.

(f)-6 (2, 2, 2) Juvenile Offender.

(g)-6 (2, 2, 2) Mentally Retarded.

(h)-6 (2, 2, 2) Physically Handicapped.

(i)-6 (2, 2, 2) Public Offender.

(j)-6 (2, 2, 2) Sensory Disabled.

(k)-6 (2, 2, 2) Developmentally Impaired. Prerequisite: consent of instructor.

451-3 to 4 General Rehabilitation Counseling. A didactic and experiential analysis of the underlying premises and procedures of individual and group counseling in rehabilitation settings. Prerequisite: consent of instructor.

453-1 to 4 Personal and Family Life Styling. The academic and personal competencies that are characteristic of fully-functioning, integrated persons within the context of our twentieth century environment will be systematically reviewed for adoption in every day living as well as in professional functions. Participants will focus on and experience life styling theories, models, and skills for their own growth and development and learn to assess basic risk-factors in their rehabilitation clients and families prior to helping them program a more balanced, synergistic, and holistic approach to living. Prerequisite: consent of instructor.

479-0 to 2 Technical Writing in Rehabilitation. Fundamentals of writing skills applicable to special areas of concern to rehabilitation specialists, namely: writing journal articles, drafting program/grant proposals, and preparing news releases, and program/evaluation reports.

490-1 to 6 (1 to 3 per semester) Readings in Rehabilitation. Supervised readings in selected areas. Prerequisite: consent of instructor.

494-1 to 12 Work Experiences in Rehabilitation. Rehabilitation 494 and 594 both cannot be counted for a graduate degree, only one or the other can satisfy requirements toward a master's degree. Elective Pass/Fail.

501-2 Rehabilitation Foundations.

503-3 Basic Behavior Analysis.

508-3 Complex Behavior Analysis.

513-1 to 4 Medical and Psycho-Social Aspects of Disability.

523-3 Job Restructuring for the Handicapped.

531-3 Individual Assessment Procedures in Rehabilitation.

533-2 Vocational Appraisal.

543-3 Child Behavior.

545-3 Behavior Modification in Mental Retardation.

553-3 Learning Therapies for Special Populations.

554-3 Behavior Therapy.

555-2 Contingencies of Reinforcement.

557-2 to 6 Self Regulation of Behavior.

562-3 Rehabilitation Facilities and Developmental Centers.

564-3 School Related Behavior.

568-3 Sexual Behavior and Rehabilitation.

570-3 Rehabilitation Administration.

572-1 to 3 Volunteer Administration and Programming.

573-2 to 3 Programming, Budgeting, and Community Resources.

575-2 Case Management and Reporting.

- 576-2 to 3 Development and Supervision of Rehabilitation Employees.
- 577-1 to 2 Behavioral Apparatus.
- 579-3 Advanced Fiscal Management in Rehabilitation.
- 582-1 to 4 Seminar in Rehabilitation Services.
- 583-1 to 4 Seminar in Work Evaluation.
- 584-1 to 6 (1 to 2 per semester) Seminar in Behavior Modification.
- 585-1 to 4 Seminar in Counseling/Coordination Services.
- 591-1 to 6 Independent Projects in Rehabilitation.
- 593-1 to 6 Research in Rehabilitation.
- 594-1 to 12 Practicum in Rehabilitation.
- 595-1 to 1w Internship in Rehabilitation.
- 599-1 to 6 Thesis.

Religious Studies (Department, Major, Courses)

Religious studies examines religious attitudes and behaviors from their earliest beginnings through their dominant forms, east and west, to their modern developments and alternatives, pointing continually to the question, How is religion possible today? Study of this kind makes an interdisciplinary contribution to a liberal education in the humanities and social sciences and also provides a useful base for graduate study in religion, in the arts, or in any of the helping professions such as the ministry, medicine, psychiatry, law, social work, and public service.

Bachelor of Arts Degree, College of Liberal Arts

General Studies Requirements	45
Supplementary College Requirements (See page 78.).....	(4) + 8-14
Requirements for Major in Religious Studies.....	33
Minimum hours from each of four areas as follows:	
Area A: GSC 216, 217, Religious Studies 201	4
Area B: Religious Studies 332, 333, 334, 335, 336, 410f, 430	10 ¹
Area C: Religious Studies 320a, b, 360, 361, 441	8 ¹
Area D: Religious Studies 301, 302, 340, 341, 352, 353, Sociology 351	11 ¹
Electives	28-34
Total	120

¹Religious Studies 496 may be designed so as to apply toward fulfilling requirements of any one of the three areas B, C, or D. By special permission of the department, students may earn up to four hours major credit in each of three areas (B, C, and D) with courses taken in other departments.

Minor

Students may take a minor in religious studies by completing at least 17 hours distributed among the four areas listed above as follows: 3 hours in A, 7 hours each in any two of areas B, C, or D. Substitutions from other departments may be arranged.

Courses

- 201-4 Introduction to Religious Studies. Comparative methods (historical, theological, psychological, social, scientific, philosophical) applied to various dimensions of religion; examples drawn from primitive, eastern, western traditions.
- 301-3 Philosophy of Religion. (See Philosophy 301.)
- 302-3 Contemporary Western Religious Thought. Issues and writers in the contemporary religious scene in Europe and America, with an option for individual study projects.
- 320-6 (3, 3) Biblical Studies. A survey of Jewish and Christian biblical writings: how they came to be written, for what purposes, and with what effects. (a) The Old Testament. (b) The New Testament. Elective Pass/Fail.
- 332-3 Jewish Ideas and Culture. Selected Jewish rites, beliefs, and customs and their cultural roots and consequences. Elective Pass/Fail.

- 333-4 Myth and Ritual in Archaic Religion.** (Same as Black American Studies 385.) The structure of the sacred among selected primitive peoples in Africa, Asia, and the Americas. Primitivism as a mode of being in contemporary culture. Elective Pass/Fail.
- 334-6 (3, 3) The Asian Traditions.** (a) Religions of India—Hinduism, early Buddhism, Sikhism, Jainism, Indian Islam. (b) Religions of the Far East—China (Taoism, Confucianism, Buddhism) and Japan (Shinto, Zen). Elective Pass/Fail.
- 335-4 Religion and Culture in America.** Tradition and change in the religious movements of the American people from the 17th to the 20th centuries in five periods: Puritans; Great Awakening; Revivalism and Social Reform; Social Gospel; Modern Disaffection. Special emphasis: Black and Women's Movements throughout the history. Elective Pass/Fail.
- 334-6 The Christian Experience.** Inquiries into the history and traditions of Christianity, indicating varieties of leadership, doctrine, ethic, and institutional form. Elective Pass/Fail.
- 340-4 Psychology of Religion.** Four major categories studied in relation to the psychological foundations of religion: fantasy (Feuerbach, Freud, Jung); meaning (Camus, May, Frankl); consciousness (Allport, Maslow, Castaneda); eventfulness (James, Boisen, Erikson); Special issues: behaviorism, altered states of consciousness. Elective Pass/Fail.
- 341-4 Mysticism and Human Transformation.** Comparative studies in selected "classical" mystics, their meaning for contemporary world views, and their relation to consciousness-raising techniques such as meditation and drugs.
- 352-4 Social Ethics and Life Style.** Ethical and critical study of the problem of life style. Issues considered: sexuality, work, family, intimacy, community responsibility, and patriotism. Basic question: How can one create an effective and humane life style?
- 353-4 Social Ethics and Modern Society.** (Same as Sociology 353.) Methods of social ethics applied to the study of problems in complex society such as: revolution, justice, oppression, escape, peace, and impersonalization. Basic question: How is life in complex society possible?
- 360-4 Religious Narrative and Drama.** How religious insights have been created, transmitted, modified, or denied in selected works of Greek tragedy, Shakespeare, Dostoevsky, Melville, and contemporary writers.
- 361-4 Religious Art and Music.** How religion has inspired and used painting, sculpture, voice, and instrument; and how these arts have reacted to some of the crises in the religious dimensions of modern culture.
- 396-1 to 8 (1 to 4 per topic). Comparative Studies in Religion.** Interdisciplinary and cross-cultural approaches to special topics in religion. Topics vary and are announced in advance; both students and faculty may suggest ideas. May be repeated as the topic varies up to a maximum of 8 hours. Prerequisite: departmental approval. Elective Pass/Fail.
- 410F-3 Comparative Religion.** (See Anthropology 410F.)
- 430-4 Religious Traditions of Southern Illinois.** Intensive study based upon field experiences in the religious (popular and traditional) of Southern Illinois. Not for graduate credit.
- 441-3 Themes in Greek Tragedies and the New Testament.** (See Classics 441.)
- 496-1 to 6 Honors Readings in Religion.** Topics selected by student and instructor which ordinarily are not covered in depth in regular course offerings. Not available for graduate credit. Prerequisite: consent of department.

Science (College, Courses)

Courses

- 257-2 to 8 Concurrent Work Experience Credit.** Practical experience in a laboratory or other work directly related to course work in a College of Science program and to the student's educational objectives may be used as a basis for granting credit in the College of Science. Credit is given when specific program credit cannot be granted and is usable for elective credit only. Credit for ongoing work experience is sought by petition and must be approved by the dean and the executive officer of the student's major program before registration. Mandatory Pass/Fail.
- 258-2 to 8 Work Experience Credit.** Practical experience in a laboratory or other work directly related to course work in a College of Science program and to the student's educational objectives may be used as a basis for granting credit in the College of Science. Credit is given when specific program credit cannot be granted and is usable for elective credit only. Credit for past work experience is sought by petition and must be approved by the dean and the executive officer of the student's major program. Mandatory Pass/Fail for work experience approved before registration. No grade for past work experience.
- 259-2 to 24 Vocational Education Credit.** Formal, post-secondary, educational credit earned in a military service or other vocational, technical, or occupational program and directly related to the student's educational objectives may be used as a basis for granting credit in the College of Science. Credit is given when specific program credit cannot be granted and is usable for elective credit only. Credit is sought by petition and must be approved by the dean and the executive officer of the student's major program.
- 500-2 Science Information Sources.**

Secondary Education

(SEE CURRICULUM, INSTRUCTION, AND MEDIA)

Secretarial and Office Specialties (Program, Specialized Major, Minor, Courses)

The business world offers many opportunities for secretarial and office personnel with special interests and extensive skills in specific areas. Both men and women find this a rewarding career field.

A student may earn credit by class attendance; transferring credits from an accredited post-secondary school, such as a community college; passing a proficiency examination; credit granted for work experience; or credit granted for work completed in other educational situations.

The student may prepare for a position in a field of special interest by working with an adviser to choose from a variety of allied health, administrative, technical, graphic, and business courses to build upon the basic secretarial requirements in creating an individualized program of study. The student interested in legal secretarial work would take additional courses in legal shorthand, legal word processing, legal transcription, legal office procedures, and business law. The administrative assistant student would take courses in office management and supervision, executive typewriting, and statistics. One who wishes to become a medical secretary would develop a program including courses in physiology, medical shorthand, and medical office procedures. The student working toward a specialization for insurance secretaries would take courses in technical writing, insurance, machine transcription, and office management and supervision. A program leading to a specialization for the international service secretary or bilingual might include courses in international relations, current events, a foreign language, office procedures, and business law. Other possible specializations include engineering secretary, technical secretary, educational secretary, word processing secretary, or graphics and design secretary. It is possible to design a program with no shorthand competencies. Students in all areas of specialization will receive on-the-job experience in an office related to their area of specialization.

The student may develop one of the special majors in the following manner:

1. The student should consult the program supervisor about a possible program.
2. Students should draft a program which is coherent and unified, showing courses they plan to take, and explaining the purpose of the program.
3. The completed program must have the support of at least one faculty sponsor.

Court and conference reporting may be pursued as a specialization within the associate degree program, and also is offered as a third-year specialization for those who have completed an associate degree legal secretarial program at a community college or other post-secondary institution. Students combine classroom instruction with actual courtroom experience in the company of an official reporter in preparation for the National Shorthand Reporters examination.

The purchase of one or two new C-60 cassette tapes, costing approximately \$1.50 each, is mandatory for students enrolled in secretarial learning center courses. A list of the cassette requirements for all secretarial learning center courses will be sent upon request. Over a two year period this would amount to \$20 to \$40 per student. Students taking court reporting courses are required to

purchase a shorthand machine at the end of their first year at a cost of approximately \$300.

An advisory committee composed of professional secretaries and business executives serves the program. Current members are: Margie M. King, personnel officer, St. Louis County National Bank, Clayton, Mo.; Henrietta Lindsey, administrator, corporate employment services, Ralston Purina Company, St. Louis, Mo.; Rosemary Hendricks, secretary development and manuals coordinator, Eli Lilly & Co., Indianapolis, Ind.; Cheryl Welsh, assistant administrator, Memorial Hospital of Carbondale, Carbondale; Phillip M. Ray, official court reporter, Union County Courthouse, Jonesboro; Mary Burchett, legal assistant — officer manager, Charles A. William Law Offices, Paducah, Ky.; Wanda Mangels, legal secretary, Thomas, Mamer, Haughey, and Miller, Attorneys, Champaign; Earl Long, Marion; and Avis Cardwell, official court reporter, Jackson County Courthouse, Murphysboro.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Art Degree, School of Technical Careers

<i>Requirements for Specialized Major in Secretarial and Office Specialties</i>	
GSD 101	3
Accounting 110	3
School of Technical Careers 101, 153b	4
Secretarial and Office Specialties 101a, b, c, d, 104, 106, 107, 109, and 102a, b, c, d, or 103a, b, c, d	29.5
Electives dependent upon specialty program including cooperative experience	26
<i>Total</i>	69.5

Minor in Secretarial and Office Specialties (for students with a major in Spanish)

The minor in secretarial and office specialties is intended for students who wish to train as bilingual secretaries with a major in Spanish. For those skilled in the secretarial areas of shorthand, typing, and transcription the minor requirements are Secretarial and Office Specialties 106, 107, 109, 201, 205, 208, 231, 232, 233, 234, and School of Technical Careers 101 and 3-7 hours of approved electives in secretarial and office specialties courses. For those unskilled in the secretarial areas of shorthand, typing, and transcription the minor requirements include the courses above and Secretarial and Office Specialties 101a, b, c, d, 102a, b, c, d, and 104.

Courses

- 101-10 (3, 2, 2.5, 2.5) **Typewriting.** Upon successful completion of this course, the student will (a) develop proper touch typing techniques, manipulate machine parts, determine layout of material, machine adjustments, and type basic communications, and use proper correcting and carbon copy techniques; (b) set up and type various business communications; (c) set up and type advanced business communications; (d) set up and type advanced and special business communications, and develop a workable skill on the Executive typewriter. Typing speed and accuracy will be emphasized at all levels. Lecture one hour. Learning Center three hours. Must be taken in sequence.
- 102-10 (3, 2, 2.5, 2.5) **Gregg Shorthand.** Upon successful completion of this course, the student will (a) demonstrate proficiency in gregg shorthand theory by reading and writing outlines accurately and rapidly and by taking practice dictation on familiar and related material; (b) demonstrate further shorthand skill by taking dictation at faster speeds, and by transcribing the dictated material accurately and rapidly; (c) attain higher speed and accuracy in shorthand with emphasis on mailability; (d) continue to attain higher speed and accuracy with emphasis on mailability and office-style material. Lecture two hours. Learning Center two hours. Must be taken in sequence.
- 103-10 (2.5, 2.5, 2.5, 2.5) **Machine Shorthand.** Upon completion of this course, the student

will (a) be able to write on the machine by touch words by sound according to the touch shorthand theory patterns; write touch shorthand abbreviations, derivatives, brief forms, and punctuation symbols; read personal shorthand notes as well as printed text notes; (b) take new-matter dictation for five minutes and transcribe the material, transcribe letters in mailable form using the proper spelling, punctuation, English, and erasing techniques, and transcribe notes from 20 to 25 wpm; (c) write an extensive vocabulary of words, abbreviations, and derivatives; take new matter dictation for five minutes and transcribe that material accurately; (d) transcribe letters in mailable form using the proper spelling, punctuation, English, and erasing techniques; transcribe notes in a 30-minute period at the rate of 25 to 30 wpm; write machine shorthand from office style dictation, read own shorthand notes as well as printed text notes with accuracy. Lecture one hour. Laboratory three hours.

104-3.5 Machine Transcription (Introduction). Upon successful completion of this course, the student will properly operate and care for a transcribing unit and develop transcription speed by typing basic business communications from recordings; develop transcription techniques such as typing, grammar, punctuation, sentence structure, form and arrangement, as well as develop a higher transcription speed. The student will be required to make decisions in a variety of assignments. Lecture one hour. Laboratory three hours.

106-1 Reprographics. Upon successful completion of this course, students, given a particular reproduction job, will determine the most appropriate reproduction process by considering pertinent factors. They will then perform the necessary operations to reproduce the copies by using the duplicator, mimeograph, offset, and a variety of copiers. Lecture/laboratory two hours.

107-2 Filing. Upon successful completion of this course, the student will apply filing rules to alphabetic, subject, numeric, and geographic methods; determine the proper supplies for any given filing situation; and perform proper filing techniques in an organized, workable manner. Lecture/laboratory three hours.

109-3 Calculating Machines. Upon successful completion of this course, the student will demonstrate operational skill on the electronic calculator, ten-key adding machine, full-key adding machine, rotary calculator, and accounting machines. Production standards are used to measure skill proficiency. Lecture one hour. Laboratory three hours.

201-2 to 8 Cooperative Secretarial Experience. Upon successful completion of this course, the student will apply knowledges and skills learned in classroom situations to on-the-job situations in an office closely related to the student's specialty; apply knowledges and skills learned in classroom situations to courtroom situations. Minimum of one hour conference and twenty hours work experience per week.

205-2 Office Management and Supervision. Upon successful completion of this course students will demonstrate competency in the planning, organizing, and controlling of a business office. They will identify proper managerial skills, managerial roles, office services, physical facilities, and records management. Lecture two hours.

207-2 Personality Development. Upon successful completion of this course, the student will be able to demonstrate knowledges learned concerning personal hygiene, personality, poise and charm, clothing, and personal ethics. Lecture 2 hours.

208-3 Applied Law for Technical Careers. An individualized program of instruction designed to acquaint students enrolled in the various technical programs of the School of Technical Careers with the fundamental legal practices and procedures common to their area of specialization. The student will identify, define, and describe contracts, agency and employment, commercial paper, security devices, and insurance procedures related to the student's technical field. Lecture 3 hours.

209-3 Applied Law for Technical Careers II. An individualized program of instruction designed to acquaint students enrolled in the various technical programs of the School of Technical Careers with the fundamental legal practices and procedures common to their area of specialization. Students will identify, define, and describe security devices and insurance, partnership, corporations, real property and environment, personal property and bailments, and commercial paper. Prerequisite: 208 recommended.

211-3 Medical Typewriting. Upon successful completion of this course, students will produce a variety of medical office communications at the typewriter at speeds commensurate to their straight-copy speed. Lecture one hour. Laboratory three hours.

212-6 (3, 3) Medical Terminology/Shorthand. (a) The successful student will demonstrate the use of medical terminology, including prefixes and suffixes; spell and define medical terms and special terms and definitions used in consultation reports and medical case histories and actual medical courtroom testimony. (b) Increase speed and proficiency in the writing of a medical case history and consultation report as well as medical vocabulary, phrases, special terms, short cuts and medical abbreviations. Lecture two hours. Laboratory two hours.

213-3 Medical Office Procedures. Upon successful completion of this course, the student will be able to perform necessary duties required of a medical secretary in a hospital, doctor's office, or any related medical secretarial position. Lecture two hours. Laboratory two hours.

214-1 Machine Transcription (Medical). Upon successful completion of this course, the student will be able to use the transcriber with proficiency in typing letters, consultation

reports, and case histories. Further stress is put on accuracy and speed. Lecture/laboratory two hours.

221-3 Legal Typewriting. Upon successful completion of this course, students will produce a variety of legal documents, papers, and office communications at the typewriter at speeds commensurate to their straight copy. Lecture one hour. Laboratory three hours.

222-6 (3, 3) Legal Terminology/Shorthand. Upon completion of this course the student should be acquainted with the responsibilities and duties of a law office secretary and a court reporter; know background information concerning law theory and practice for courtroom testimony; know the spelling, punctuation, meaning, and shorthand outlines for commonly used legal terms; be able to take dictation of letters, legal papers, and documents at speeds ranging from 100 to 120 words a minute; be able to transcribe dictated material accurately and in final, proper form; be able to transcribe from cold notes with a minimum of 95 percent accuracy; and have a self-made notebook of legal papers and documents, legal terms, and office shortcuts for use on the job. Lecture three hours. Laboratory two hours. Must be taken in sequence.

223-3 Legal Office Procedures. Upon successful completion of this course, the student will perform office duties peculiar to a legal office, as well as many procedures used in all types of offices. Lecture two hours. Laboratory two hours.

224-1 Machine Transcription (Legal). Upon successful completion of this course the student should be able to transcribe from a transcribing machine most types of legal documents, letters, and other legal office communications at a rate of speed commensurate to the student's straight copy speed. Students will be required to make decisions in a variety of instances. Lecture/laboratory two hours. Prerequisite: 104 or equivalent.

225-3 Jury Charge. Upon completion of this course, the student should take three-minute dictation takes of jury charge, legal opinions, and other legal material at speeds ranging from 100 to 150 words a minute and transcribe that copy with a minimum of 95 percent accuracy; integrate into own writing the abbreviations and phrase shortcuts presented; transcribe from cold notes on jury charge material with a minimum of 95 percent accuracy; type legal correspondence, documents, and papers in mailable form; and compile a legal notebook consisting of legal terminology, abbreviations, court information, legal forms, shortcuts, letter samples, and depositions.

226-3 Two-Voice Testimony. Upon completion of this course, students should: take dictation of two-voice and multiple-voice testimony at speeds ranging from 80 to 150 words a minute and transcribe that material with a minimum of 95 percent accuracy; transcribe cold notes material in a 30 minute period in final form; integrate the legal shortcuts and theory presented in class into their writing of shorthand notes. Lecture two hours. Laboratory two hours.

231-3 Executive Typewriting. Upon successful completion of this course, the student will produce various office communications at the typewriter at speeds commensurate to the straight-copy speed. Lecture one hour. Laboratory three hours.

232-3 Advanced Shorthand. Upon successful completion of this course, the student will take dictation at speeds ranging from 100 to 120 words a minute, transcribe office communications with emphasis on mailability, and build transcription speeds ranging from 20-30 words a minute. Lecture one hour. Laboratory three hours.

233-3 Secretarial Office Procedures. Upon successful completion of this course, the student will be able to perform efficiently office duties, including relating to people, handling incoming and outgoing mail, handling telephone situations, composing office communications, setting up travel arrangements and conferences, performing basic record-keeping operations, and carrying out supervisory responsibilities. Lecture three hours.

234-1 Machine Transcription (Advanced). Upon successful completion of this course, the student will be able to transcribe from transcribing unit office communications which require the transcriber to make decisions before completing the mailable product. Students' speed should be commensurate to their straight copy speed. Lecture/laboratory two hours.

241-3 Insurance Typewriting. Upon successful completion of this course, students will produce a variety of insurance office communications at the typewriter at speeds commensurate to their straight-copy speed. Lecture one hour. Laboratory three hours.

242-3 Insurance Shorthand. Upon successful completion of this course, the student will demonstrate competency by taking dictation with insurance vocabulary words at speeds ranging from 100-120 words a minute, transcribe insurance office communications with an emphasis on mailability, and build transcription speeds ranging from 20-30 words a minute. Lecture one hour. Laboratory three hours.

243-3 Insurance Office Procedures. Upon successful completion of this course, the student will perform office duties peculiar to an insurance office as well as many procedures used in all types of offices. Lecture three hours.

244-1 Machine Transcription (Insurance). Upon successful completion of this course, the student will be able to transcribe from a transcribing unit most all types of insurance office communications at a rate of speed commensurate to the student's straight copy speed. Students will be required to make decisions in a variety of instances. Lecture/laboratory two hours.

260-3 Introduction to Text Processing. (Same as Electronic Data Processing 260.) Each student will learn the basic operation and function of representative word processing machines and terminals. The lab time will be spent in the development of speed and accuracy in the typing of textual materials. Lecture two hours. Laboratory two hours. Prerequisite: typing skill.

312-3 Advanced Legal Dictation. Upon completion of this course, students should have increased the speed of their writing on legal matter to 225 words a minute; supplemented their vocabularies and short forms with more legal terms and Latin terms; become proficient enough in taking two-voice material at 225 words a minute for five minutes with 95 per cent accuracy; one-voice legal opinion at 200 words a minute for five minutes with 95 percent accuracy; and literary material at 180 words a minute with 95 percent accuracy. (These are the requirements for the CSR Examination.) Lecture/laboratory five hours.

313-5 Advanced Machine Shorthand. Upon completion of this course, the student should have developed a take speed of 160 words a minute with an accuracy tolerance of five percent on literary material; reviewed computer compatible abbreviations and reporting phrases; increased transcription speed from 40 to 50 words a minute; reviewed rules of punctuation; reviewed legal and medical vocabulary; developed a technical vocabulary; and been introduced to the ethics and responsibilities of the reporting profession. Lecture three hours. Laboratory three hours. Prerequisites: 222A and 212A.

315-3 Testimony and Depositions. Upon completion of this course, the student should have built speed to 225 words a minute in taking depositions; transcribed classroom takes as well as those taken in the Circuit Court at speeds ranging from 150 to 225 words a minute with 95 percent accuracy; become adept at taking medical two-voice testimony and depositions at speeds ranging from 150 to 225 words a minute with 95 percent accuracy. Lecture/laboratory five hours.

316-1 Legal Ethics. Upon completion of this course, the student should understand the canons of professional ethics as listed in *Cochran's Law Lexicon* and the NSRA Code of Ethics; have observed the etiquette and duties of court reporters by attending court sessions; have taken testimony in court and transcribed that copy in proper, final form; have taken jury charges and legal dictation in class at speeds of 100 to 180 words a minute and transcribed that copy with a minimum of 95 percent accuracy; have taken depositions and transcribed them in state-approved form. Lecture/laboratory two hours.

317-2 to 5 Cooperative Court Reporting Experience. Upon completion of this course, students will have gained actual courtroom experience (40 hour minimum); developed the necessary adaptability to take courtroom testimony; developed self-confidence in their ability to report; acquired training in taking four-part dictation and become acquainted with actual trial procedures; gained the opportunity of transcribing actual court proceedings and comparing transcripts with reporters; gained practice in reading notes aloud. Lecture one hour. Laboratory six hours.

Social Studies (Major)

Bachelor of Science Degree, College of Education

<i>General Studies Requirements</i>	45
<i>Requirements for Major in Social Studies</i>	49 ¹
GSB 300, 301, U.S. history elective (6) + 3	
World history, 205a, 205b plus three hours at 300 or 400 level	9
Economics 214, 215, economics elective	9
GSB 212, Political Science 213, political science elective	10
GSA 330, Geography 300, geography elective (3) + 5	
GSB 104, 202, Sociology 301 (6) + 4	
Electives to be chosen from any one of three fields of anthro- pology, psychology, or sociology but concentration in one is recommended	7
Curriculum, Instruction, and Media 469	2
<i>Professional Education Requirements</i>	24
See Teacher Education Program, page 71.	
<i>Electives</i>	2
Total	120

¹Although the hours shown in parentheses are required for the major, they also will count toward the 45 hour requirement in General Studies.

Social Welfare (Major, Courses)

The social welfare program, which is a part of the Division of Social and Community Services, offers a professional curriculum which is designed to meet the educational needs of students with career interests in the human services field and leads to a Bachelor of Science degree with a major in social welfare. The curriculum provides an interdisciplinary approach to understanding people in contemporary society, basic social problems, and some of the issues associated with the prevention and treatment of these problems.

The basic objectives of the program are; 1) to prepare students for immediate employment in social work positions which do not require graduate education; 2) to prepare students for graduate social work education; and 3) to contribute to the enrichment of general education by challenging students to understand social welfare needs, services, and issues.

Two of the basic courses in the curriculum are field experiences. In these courses the students attend weekly seminars and work a minimum of 20 hours each week under supervision in an approved social service agency where they provide direct services to clients. Placements may be made over two semesters half time or for one semester full time. Field placements may not begin during summer session. Arrangements can be made for field practicum in approved social service agencies away from the University under special circumstances.

The social welfare program is accredited by the Council on Social Work Education, the national accrediting agency, and is recognized for advanced standing credit by most graduate schools of social work.

Academic Requirements. Students must be in good academic standing with at least a C grade point average in order to be considered for acceptance into the program.

Advisement. A student planning to major in social welfare should consult with the social welfare academic adviser of the College of Human Resources as early as possible in order to plan an orderly and coherent program. All faculty members are available for advice and career guidance information.

Bachelor of Science Degree, College of Human Resources

<i>General Studies Requirements</i>	45
Area A: GSA 125, 209, 220, 221, 302 recommended	
Area B: GSB 202, 203 required. GSB 104, 109, 112, 207, 211, 212, 299, 321, 325, 330 recommended	
Area C: GSC 104, 205, 214, 325, 363, 390 recommended	
Area D: University requirements	
Area E: University requirements	
<i>Requirements for Major in Social Welfare</i>	54-55
Social Welfare 375, 380, 383, 401, 402, 411, 416, 421, 441, 442	41
Political Science 426	3
Health Education 311	3
Sociology: One of the following: 302, 332, 335, 340, 372, 406, 424, 426	4
Psychology: One of the following: 301, 303, 304, 305, 307, 330, 415, 431, 440	3-4
<i>Electives</i>	20-21
Recommended: Electives in Social Welfare, Black American Studies 230, 330, Economics 303, 304, History 365, Philosophy 342, Political Science 324, Community Development 401, 405	
<i>Total</i>	120

Courses

375-3 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.

380-3 Methods of Social Work I. This course serves as an introduction to social work practice. It provides a conceptual framework for problem solving and change with individuals, families, groups, and communities.

383-4 Methods of Social Work II. This is an introductory course in interpersonal skills in the social services. Interviewing and history taking skills are emphasized. Prerequisite: 375 and 380.

391-2 Social Services and Minority Groups. (Same as Black American Studies 391.) Exploration of the needs, experiences, and attitudes of minority groups pertaining to social welfare services. Implications for policy and programs in such areas of service as physical and mental health, child welfare, family planning, income maintenance, recreation, education, training and employment. Prerequisite: 375.

396-1 to 3 Readings in Social Welfare. Varying topics not ordinarily covered in depth in regular courses and of specific interest to advanced students. Prerequisite: consent of instructor.

401-4 Methods of Social Work III. An examination of problem solving interventions and environmental modification skills for use with individuals, families, and small groups. Not for graduate credit. Prerequisite: 375, 383, and Health Education 311.

402-3 Methods of Social Work IV. This course examines social work processes with non-clinical groups and communities. Leadership, roles, structure, assessment, planning, and problem solving strategies are key content areas. Prerequisite: 383 and Health Education 311.

411-3 Methods of Social Research. Examines the principles, concepts and methods of scientific investigation in terms of its application to social work research and practice. Not for graduate credit. Prerequisite: 375, 380, 383, and Health Education 311.

416-3 Human Behavior and the Social Environment. A social systems approach to the study of human development and behavior. Examination of environmental forces impinging on the individual and implications for social work practice. Not for graduate credit for social welfare majors. Prerequisites: 375, 380, and Health Education 311.

421-3 Social Welfare Policy. This course provides an in depth examination of social welfare structure, functions, policy, and programs, as well as strategies for shaping and changing policy. Prerequisite: 401, 411, 416, and Health Education 311.

426-2 Comparative Social Welfare Systems. An examination of social welfare policies and practices in other countries and by international organizations. Prerequisite: 375.

441-7.5 Social Work in Selected Agencies. At least 20 hours per week of supervised experience in an approved social work agency with concurrent weekly seminar. Not for graduate credit. Field work practicums begin only in fall and spring semester. Prerequisite: senior standing, 375, 380, 383, 401, 402, 416, and a 2.5 grade point average in departmental prerequisites. Mandatory Pass/Fail.

442-7.5 Advanced Field Practicum. Supervised field work experience in an approved social service agency with concurrent weekly seminar. At least 20 hours per week. Not for graduate credit. Field work practicums begin only in fall and spring semester. Prerequisite: senior standing, 375, 380, 383, 401, 402, 416, and a 2.5 grade point average in departmental prerequisites. Mandatory Pass/Fail.

451-2 Seminar in Social Casework. A problem-solving approach based on case studies aims to explore alternate methods in counseling of individuals and families. Prerequisite: consent of instructor.

452-2 Seminar in Group Treatment. Study of theory and practice in social group work covering various methods of group treatment interventions. Prerequisite: consent of instructor.

453-2 Seminar in Community Work. Study of variety of strategies of intervention in agency and grass roots decision-making processes leading to social change through citizen participation. Prerequisite: consent of instructor.

461-3 Child and Family Services. Problems of child-parent relationships and difficulties in social functioning of children and adolescents. Adoptions, foster home and institutional placements, protective services. Not for graduate credit. Prerequisite: consent of instructor. Elective Pass/Fail.

462-2 School Social Work. Organization, development, and administration of school social work. Referrals for school social work services. Functions and responsibilities related to pupil personnel services. Evaluation, school placement, remedial procedures, cooperation with home and community agencies. Prerequisite: consent of instructor.

463-2 Social Work with the Aged. Basic concepts of social work methods applied to the older adult group. Characteristics of the aged group, its needs and potentials. Social trends and institutions involved in services to the aged. Prerequisite: consent of instructor.

464-2 Public Welfare. Social work knowledge, values, and techniques in public assistance.

Care and rehabilitation of the public welfare client affected by social problems and social change. Prerequisite: consent of instructor.

465-2 Strategies in Health and Mental Health. A survey of current legislative and service trends in health programs under governmental and voluntary auspices. Preventive and restorative concepts will be explored in relation to chronic disease, aged adults, maternal and child health, and community health services. Role of social workers as an integral part of the medical and psychiatric case system. Prerequisite: consent of instructor.

496-1 to 6 Independent Research in Social Welfare. Not for graduate students. Prerequisite: consent of instructor.

Sociology (Department, Major Courses)

Bachelor of Arts Degree, College of Liberal Arts

<i>General Studies Requirements</i>	45
<i>Supplementary College Requirements</i> (See page 78.)	(4) + 8-14
<i>Requirements for Major in Sociology</i>	32
Sociology 301	4
Sociology 497 senior seminar	4
Sociology (Two 400-level courses)	8
Sociology electives	16
<i>Electives</i>	29-35
<hr/>	
<i>Total</i>	120

Minor

A minor in sociology consists of a minimum of 15 hours including Sociology 301. Students completing a minor in sociology to meet part of the requirements for a teaching certificate in the State of Illinois must complete a minimum of 18 hours including Sociology 301.

Honors Program

The department offers a honors program for academically outstanding sociology majors. Qualifications for acceptance into this program consist of: (1) an overall grade point average of at least 3.00; (2) completion of 8 hours in sociology courses with a grade point average of at least 3.25. Three honors courses are offered at the junior and senior class levels. For details, qualified students interested in this program should consult the director of undergraduate studies in the Department of Sociology.

Courses

- 301-4 Principles of Sociology.** This course is intended to acquaint sociology majors and prospective majors with basic principles in a broad sampling of substantive areas of contemporary sociology as background for more advanced courses. Elective Pass/Fail.
- 302-4 Contemporary Social Problems.** Review of the basic sociological perspectives used in the study of social problems; discussion and analyses of selected contemporary social problems; assessment of alternative courses of action for the solution of problems. Elective Pass/Fail.
- 308-4 Statistics for Social Science.** Methods and application of statistics in the social sciences. Measures to describe distribution, measures of relationship, statistical inference. Prerequisite: 301 or six hours of GSB courses. Elective Pass/Fail.
- 312-4 Elements of Sociological Research.** Types of research. Principles and steps in research procedure. Selected techniques. Prerequisite: 301 or six hours of GSB courses. Elective Pass/Fail.
- 316-3 Political Socialization.** (See Political Science 316.)
- 332-4 Comparative Social Organization.** Examination of social organization and institutions in pre-industrial and industrial societies. Prerequisite: 301 or six hours of GSB courses. Elective Pass/Fail.
- 335-4 Urban Sociology.** The structure, culture, and problems of modern cities, with emphasis on American cities; the impact of culture and structure on modern urban life; problems of community, social identity, mass culture, and social control; implications for urban planning. Prerequisite: 301 or six hours of GSB courses. Elective Pass/Fail.

340-4 Family. The family in historic and contemporary society; evolution of the modern family; changes in family functions, structure, roles; and an examination of variation and change in family systems. Prerequisite: 301 or six hours of GSB courses. Elective Pass/Fail.

351-4 Sociology of Religion. The origin and function of religious ideas and institutions in society, their relationship to social change and stability. Prerequisite: 301 or six hours of GSB courses. Elective Pass/Fail.

353-4 Social Ethics and Modern Society. (See Religious Studies 353.)

371-4 Population. Characteristics of population, problems of growth, composition, distribution, differential fertility, international and internal migration. Prerequisite: 301 or six hours of GSB courses. Elective Pass/Fail.

372-4 Criminology. The nature of crime; criminal statistics; causal factors; theories and procedures in prevention and treatment. Prerequisite: 301 or six hours of GSB courses. Elective Pass/Fail.

374-4 Sociology of Education. Methods, principles, and data of sociology applied to the educational situation; relation of education to other institutions and groups. Prerequisite: consent of instructor or 301 or six hours of GSB courses. Elective Pass/Fail.

396-1 to 3 Readings in Sociology. Prerequisite: 301 and consent of department and instructor. Elective Pass/Fail.

396H-1 to 3 Honors Readings in Sociology. Topics selected jointly by student and instructor which ordinarily are not covered in depth in regular course offerings. Prerequisite: 301 and consent of department and instructor. Elective Pass/Fail.

397H-3 Honors Seminar in Sociology. Varying sociological topics studied in depth and breadth. Maximum opportunity for student participation in the exploration of the subject. Prerequisite: 301 and consent of department and instructor. Elective Pass/Fail.

406-4 Social Change. Theories and problems of social change; their application, with emphasis on the modern industrial period. Prerequisite: 301 or consent of instructor. Elective Pass/Fail.

415-3 Logic of the Social Sciences. (See Philosophy 415.)

424-4 Social Movements and Collective Behavior. A sociological analysis of the behavior of collectivities in uninstitutionalized settings; crowds, masses, publics, and social movements will be examined with relation to their social and cultural backgrounds, forms of expression and organization, and their functions in society. Prerequisite: 301 or consent of instructor. Elective Pass/Fail.

426-4 Social Factors in Personality and Adjustment. Review of selected theoretical orientations and research traditions in social psychology. Comparison of different theoretical and methodological approaches—symbolic interaction, role theory, developmental and social psychology, theories of attitude organization and change, studies of belief and value systems, theories of socialization. Prerequisite: 301 or consent of instructor. Elective Pass/Fail.

435-4 Social Stratification. A comparative study of social class systems, with emphasis on the American system. Relationships of class position to behavior in family, religion, politics, etc. Prerequisite: 301 or consent of instructor. Elective Pass/Fail.

437-4 Sociology of Rural Development. Rural development and rural social problems in the United States and other countries. Concepts of rural and urban, developed and underdeveloped, characteristics of rural populations and institutions; rural development analyzed functionally and historically. Prerequisite: 301 or consent of instructor. Elective Pass/Fail.

450-4 Social Thought. Traces the historical development of sociology from its beginnings in the Enlightenment to the classical expositions of the early 20th Century. Prerequisite: 301 or consent of instructor.

454-4 Sociology of Science. Emphasis on the origins and growth of science in historical perspective, reciprocal relations between science and society in the 20th Century, science as a social system, differentiation within and relations between disciplines, and implications of the social organization of scientific research and funding. Prerequisite: 301 or consent of instructor. Elective Pass/Fail.

460-4 Sociology of Medicine. Examination of the sociological factors involved in health and illness, the role of medicine in society, the organization of medical care and health institutions in the United States, and the prospects for sociological research in this area. Prerequisite: 301 or consent of instructor. Elective Pass/Fail.

465-3 Sociology of Aging. The adult life cycle from a sociological perspective, with emphasis on the later stages of adulthood. Special topics on aging include demographic aspects, family interaction, ethnicity, and cross-cultural trends.

471-4 Demography and Human Ecology. The demographic portion surveys general theory and techniques of population analysis, with emphasis on contemporary research in mortality, migration, fertility, and problems of world population growth and distribution. The ecological portion summarizes human ecology from the classical Chicago school to current research on sustenance organization and the division of labor. Prerequisite: 301 or consent of instructor. Elective Pass/Fail.

472-3 The American Correctional System. (See Administration of Justice 472.)

473- 4 Juvenile Delinquency. (Same as Administration of Justice 473.) Nature of sociological theories of delinquency; analytical skills in studying the delinquent offenders; systematic assessment of efforts at prevention, control, and rehabilitation in light of theoretical perspectives. Prerequisite: 301 or consent of instructor. Elective Pass/Fail.

475- 4 Political Sociology. (Same as Political Science 419.) An examination of the nature and function of power in social systems at both the macro- and micro-sociological levels of analysis, the social bases of power and politics; and various formal and informal power structures; the chief focus will be on American society. Prerequisite: 301 or consent of instructor. Elective Pass/Fail

497- 4 Senior Seminar. Contemporary issues in sociology and the analysis of these issues. Prerequisite: senior standing with 20 hours in sociology (including 301), or consent of instructor. Elective Pass/Fail.

498-1 to 4 Independent Research. With a faculty member the student arranges a research topic resulting in a paper or report. Prerequisite: senior standing with 20 hours of sociology (including 301), and consent of instructor. Elective Pass/Fail.

498H-1 to 4 Honors Independent Research. Advanced research study of a problem. Not for graduate credit. Prerequisite: senior standing with 20 hours in sociology (including 301), and consent of department and honors standing. Elective Pass/Fail.

501-4 Survey of Sociological Theory.

502-4 Seminar on Theoretical Systems in Sociology.

506-4 Seminar on Contemporary Sociological Theory.

512-5 Sociological Research.

519-4 Methodological Foundations of the Social Sciences.

521-4 Seminar in Social Psychology.

522-4 The Sociology of Small groups.

526-8 (4, 4) Quantitative Methods of Sociology.

529-4 Sampling and Inference in social Research.

530-2 to 12 (2 to 4 per topic) Topical Seminar in Sociology.

532-4 Urban Social Structure.

537-4 Sociology of Law.

539-4 Seminar in Complex Organization.

542-4 Seminar on the Family.

543-4 Seminar in Family Variability and Change.

551-4 Sociology of Religion.

562-4 Deviance and Disorganization.

564-4 Social Factors in Health and Illness.

566-4 Sociology of the Community.

572-4 Seminar in Criminology.

574-3 to 4 Seminar in the Sociology of Education and Science.

591-1 to 4 Individual Research—Supervised Research Projects.

596-1 to 8 Readings in Sociology.

599-1 to 6 Thesis.

600-1 to 32 (1 to 16 per semester) Dissertation.

Special Major (Major)

In addition to the regular major, the University encourages students with special needs and interests to design their own majors. They may develop a special major in the following manner:

1. The student should consult a faculty member about a possible program.
2. The student should draft a program which is coherent and unified, showing the courses planned, and explaining the purpose of the program.
3. The completed program should have the support of at least one faculty sponsor and the dean or deans of the academic units involved.
4. Final approval including the title designation of the major must come from the dean of General Academic Programs.

Approval of a special major does not exempt a student from any University requirements or from any of the requirements of the academic unit from which the student's degree will be awarded.

Special Education (Department, Major, Courses)

In the Department of Special Education, teachers are prepared to work with

behaviorally disordered, mentally retarded, and learning disabled children. Students seeking the Standard Special Certificate will complete a 120 semester hour program leading to approval in one of the three handicap areas listed above. Students who wish to obtain joint certification in special education and elementary education must complete a 144 to 149 hour program.

All programs are fully approved by the Illinois State Teacher Certification Board.

Bachelor of Science Degree, College of Education

SPECIAL EDUCATION MAJOR—STANDARD SPECIAL CERTIFICATE WITH APPROVAL IN BEHAVIORAL DISORDERS, OR MENTAL RETARDATION, OR LEARNING DISABILITIES¹

<i>General Studies Requirements</i>	45
GSA: 9 hours	
GSB: 9 hours including 202 and 212, 300 or 301	
GSC: 12 hours including Music 101 (GSC substitution) and one literature course	
GSD: GSD 101; 117 or 119; GSD 152 or 153; Mathematics 114 or equivalent to substitute for GSD 107	
GSE: 4 hours including 201 and two hours of physical education activity.	
<i>Additional General Education Requirements for Certification</i>	16-17
Art 348 or Vocational Education Studies 370; Music 302 or 300; Physical Education 202; Mathematics 314	
Psychology 301	
Guidance 412 or Psychology 431	
<i>Requirements for Major in Special Education</i>	49-50
<i>Professional Education Requirements</i>	26
Education 201, 301, 302, 303, 304c, 312, 350, 400 ¹ , 401 ¹	
<i>Special Education Requirements</i>	23-24
Special Education 400, 411 or 412, 423, 425.	10
Curriculum, Instruction, and Media 312, 315	6
Certification Area	7-8
Behavioral Disorders: 401, 417, 430	
Mentally Retarded: 402, 406 plus either 418 and 430 for educable mentally retarded or 421 and 431 for trainable-severely/profoundly handicapped	
Learning Disabilities: 404, 419, 430	
<i>Electives</i>	8-10
Psychology 305, 307 (both required in behavioral disorders)	
Sociology 473 or Rehabilitation 406 (one required in behavioral disorders)	
<i>Total</i>	120

¹To be certified in two areas of special education, a student must take problem and characteristics courses in both areas, methods courses in both areas and eight hours of student teaching in both areas.

SPECIAL EDUCATION MAJOR—JOINT CERTIFICATION IN SPECIAL EDUCATION AND ELEMENTARY EDUCATION SPECIALIZATION

<i>General Studies Requirements</i>	45
GSA: 9 hours	
GSB: 9 hours including 202 and 212, 300 or 301	
GSC: 12 hours including Music 101 (GSC substitution) and one literature course	
GSD: GSD 101; 117 or 119; GSD 152 or 153; Mathematics 114 or equivalent to substitute for GSD 107	

GSE: 4 hours including 201 and two hours of physical education activity	
<i>Additional General Education Requirements for Certification</i>	16-17
Art 348 or Vocational Education Studies 370	
Music 300 or 301 or 302	
Physical Education 202	
Mathematics 314	
Psychology 301	
Guidance 412 or Psychology 431	
<i>Requirements for Major in Special Education</i>	69-70
Professional Education Requirements	34
Education 201, 301, 302, 303, 304c, 312, 350, 400 ¹ , 401 ¹	
Special Education Requirements	17-18
Special Education 400, 411 or 412, 423, 425	10
Certification Area	7-8
Behavioral Disorders: 401, 417, 430	
Mentally Retarded: 402, 406 plus either 418 and 430 for educable mentally retarded or 421 and 431 for trainable-severely/profoundly handicapped	
Learning Disabilities: 404, 419, 430	
Elementary Education Requirements	18
Curriculum, Instruction, and Media 315, 312, 423, 424, 426, 435	
<i>Electives (must bring total in general education to 78)</i>	17-20
Psychology 305, 307 (required in behavioral disorders)	
Sociology 473 or Rehabilitation 406 (one required in behavioral disorders)	
<i>Total</i>	144-149

¹Includes eight hours of student teaching for special education and eight hours of student teaching for elementary education.

Courses

- 400-3 Introduction to Special Education.** 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. Case studies, observations, and field trips may be required.
- 401-3 Problems and Characteristics of the Behavior Disordered Child.** Diagnosis, screening, classroom management, placement considerations, goals, and the effective use of ancillary services for school children who are emotionally disturbed and/or socially maladjusted. Emphasis on the understanding of maladaptive behavior through principles of learning and behavior. Prerequisite: 400 or concurrent enrollment or consent of department chairperson.
- 402-2 Problems and Characteristics of the Mentally Retarded Child.** Emphasizes a developmental approach to understanding and dealing with children who have mildly and moderately reduced mental abilities. Considers historical, theoretical, and practical factors pertinent to mental retardation. Prerequisite: 400 or concurrent enrollment or consent of department chairperson.
- 403-3 Problems and Characteristics of the Gifted Child.** Designed to help teachers in the identification of and programming for gifted and talented children. Prerequisite: 400 or concurrent enrollment or consent of department chairperson.
- 404-3 Problems and Characteristics of the Learning Disabled Child.** Behavioral, emotional, physical, and learning characteristics of children with learning disabilities. Emphasis on receptive and expressive modalities for learning; theories dealing with causes and management. Prerequisite: 400 or concurrent enrollment or consent of department chairperson.
- 405-3 Education of the Preschool Handicapped Child.** Emphasizes classroom procedures for enhancing development in children with developmental delay. Covers organization of the curriculum, goal setting, task analysis, lesson planning, and classroom organization. Practicum with preschool handicapped children is an integral part of this course. Prerequisite: 400, concurrent enrollment, or consent of chairperson.
- 406-2 Characteristics of the Severely Handicapped Child.** Provides the basic developmen-

tal, psychological, intellectual, and curricular background essential to students wishing to teach in this area of special education. The course requires 30 hours of lecture and 15 hours of lab with severely handicapped children. Students will be video-taped for self-critique and progress evaluation. Prerequisite: 400 or consent of department chairperson

409-1 to 6 Cross-Cultural Studies. Seminar and/or directed independent study concerned with socio-cultural variables affecting the personality characteristics and educational needs of children who are diagnosed as mentally, emotionally, or psychically handicapped. Prerequisite: 400 or consent of instructor and department chairperson

410-2 International Aspects of Services for the handicapped. Focus on innovative ideas and practices in other countries in preschool programs, special education, rehabilitation, vocational training and employment, recreation, community living, organizational structures, and legislation.

411-3 Assessment in Special Education. Designed to develop competency in students in the administration, scoring and interpretation of educational tests including the integration of findings from a number of tests. A laboratory fee of \$5 is required to cover the cost of materials. No textbook is required. Prerequisite: 400; Curriculum, Instruction, and Media 312, 315; Education 304c. Prerequisite or concurrent enrollment in 401, or 402 or 404.

412-3 Assessment and Remedial Planning for the Preschool Handicapped Child. An introduction to the assessment of preschool handicapped children including the specifics of screening, tests used by the classroom teacher and observational procedures. A charge of \$5 for testing materials is required. No textbook is required. Prerequisite: 400 and 405.

417-2 Methods and Materials for Teaching Behaviorally Disordered Children at the Elementary Level. Psychoeducational procedures used in teaching the behaviorally disordered child. Includes field trips, meetings with parents, and visits by resource persons from schools and agencies. Prerequisite: 411, concurrent enrollment in Education 312 and Education 400.

418-2 Methods and Materials for Teaching Educable Mentally Handicapped Children at the Elementary Level. Psychoeducational strategies used in teaching the educable mentally handicapped child. Prerequisite: 411, concurrent enrollment in Education 312 and Education 400.

419-2 Methods and Materials for Teaching Learning Disabled Children at the Elementary Level. Psychoeducational strategies used in teaching children with learning disabilities. Prerequisite: 411, concurrent enrollment in Education 312 and Education 400.

421-3 Methods and Materials for Teaching Pre-School or Elementary Severely Handicapped Learners. Emphasis on methods of teaching those with severe handicaps. Minimum of one video-taping session, and individualized tutoring, are required of all participants. Prerequisite: 411 or 412; concurrent enrollment in Education 312 and Education 400.

423-2 General Procedures in Special Education. Deals with methods, materials and instructional management practices common to the instruction of the handicapped. Prerequisite: 411 or 412; concurrent enrollment in Education 312.

425-2 Home-School Coordination in Special Education. Consideration of the techniques used in parent interviews, conferences, and referrals by school personnel with parents of handicapped children. Prerequisite: 400 or consent of department chairperson.

430-2 Work-Study Programs for Handicapped Adolescents to Age 21. Deals with modifications of and additions to school programs to insure that they are appropriate to the needs of the mildly handicapped adolescent. Includes detailed coverage of joint work-study programs as preparation for vocational adequacy. Prerequisite: 400 and one of 401, 402, 403, or 404.

431-2 Work-Study Programs for Severely Handicapped Adolescents to Age 21. Deals with program offerings in public school special education programs designed to prepare the severely handicapped adolescent for his maximum vocational adequacy. Prerequisite: 400 and one of 401, 402, 404, or 406; concurrent enrollment in Education 312.

456-4 (2, 2) Music for Exceptional Children. (See Music 456.)

490-1 to 5 Readings in Special Education. Study of a highly specific problem area in the education of exceptional children. Open only to selected seniors. Prerequisite: 400 and consent of department chairperson. Elective Pass/ Fail.

500-3 Special Education Research Problems.

502-2 Special Education Research Paper.

505-3 The Pre-School Handicapped Child.

511A-3 Advanced Assessment and Remedial Planning in Special Education.

511B-3 Advanced Remediation in Special Education.

512-3 Advanced Assessment and Remedial Planning for the Preschool Handicapped Child.

513-3 Organization, Administration, and Supervision in Special Education.

514-3 Simulation of Administrative Tasks in Special Education.

515-2 Itinerant and Resource Teaching in Special Education.

517-2 The Atypical Child and Social Agencies.

518-1 to 6 Workshop in Special Education.

580-3 Master's Seminar: Issues and Trends in Special Education.

- 582-2 Post-Master's Seminar: Remedial Models in Special Education.
- 583-2 Post-Master's Seminar: Program Coordination in Special Education.
- 584-2 Doctoral Seminar: Research in Special Education.
- 585-2 Doctoral Seminar: Evaluation in Special Education.
- 590-1 to 5 Readings in Special Education.
- 591-2 to 5 Independent Investigation.
- 594-1 to 6 Practicum in Special Education.
- 600-1 to 32 (1 to 16 per semester) Dissertation.

Speech Communication (Department, Major, Courses)

The Department of Speech Communication provides the undergraduate with a substantial background in the history, theory, and application of verbal and nonverbal communication. The program specializations are designed to develop the language and personal skills for professional, artistic, and instructional careers in human communication; to explore the social and cultural implications of human interaction; to compare the aesthetic and instrumental nature of oral communication; and to provide catholic and diverse opportunities for the study of and training for communication as personal perception and expression.

A graduate of Southern Illinois University at Carbondale with a major in speech communication will be expected to demonstrate the following competencies: proficient communication skills within large and small groups, a considerable ability to read and interpret the printed page, demonstrably well-practiced interpersonal skills, and an understanding of the theories and principles which are basic to the speech discipline.

These competencies may be demonstrated by completing any of the major programs described below and by receiving no grade lower than C in the following courses which are required in all specializations except public relations: GSC 200, GSD 152 or 153, Speech Communication 221 or 380, 230, 261, 262, 325, and 370. Under certain circumstances, a student may elect to demonstrate a competency by passing a proficiency examination administered by the Department of Speech Communication.

Bachelor of Science Degree, College of Communications and Fine Arts

SPEECH COMMUNICATION MAJOR—COMMUNICATION ARTS AND STUDIES
SPECIALIZATION

General Studies Requirements	45
Must include GSC 200, GSD 152 or 153	
Requirements for Major in Speech Communication	36
Speech Communication 221, 230, 261, 262, 325, 370	18
Electives in Speech Communication which must include at least three 400-level courses	18
Electives	39
Total	120

SPEECH COMMUNICATION MAJOR—ORAL INTERPRETATION SPECIALIZATION

General Studies Requirements	45
Must include GSC 200, GSD 152 or 153, GSE 103d (2 hours), GSB 202 strongly recommended	
Requirements for Major in Speech Communication	56
Speech Communication 221, 230, 261, 262, 325, 370, 390-3, 433, 471, 472, 474, 491-3	36
English literature courses	12
Courses to be determined in consultation with adviser	
Theater 203, 207, 213, 217	8

<i>Electives</i>	19
Recommended that electives be in speech communication, music, film, sociology, psychology, English, theater	

<i>Total</i>	120
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SPEECH COMMUNICATION MAJOR—PUBLIC RELATIONS SPECIALIZATION

The public relations specialization is an interdisciplinary program designed with the assistance of the Public Relations Society of America.

Building upon the liberal arts and sciences required of all students in the general studies program, the curriculum provides fundamental knowledge in social science, business management, marketing, political science, and research methods, and in communication through all types of media. The broad coverage of these disciplines provides a sound preparation for careers and graduate studies in public relations and the several areas included. Through flexibility in the choice of restricted electives, the students are able to select courses in the field of their special interests in preparing for graduate work and specific career goals.

Membership in the Raymond D. Wiley Chapter of the Public Relations Student Society of America provides opportunities for internships, field trips, job placement, involvement in on- and off-campus public relations projects, and association with professional practitioners.

The active internship program enables selected students to obtain work-study experiences under the supervision of qualified practitioners in industrial, educational, and non-profit organizations. In most cases, academic credit is earned, and the student receives a stipend to defray living expenses.

<i>General Studies Requirements</i>	45
Must include GSB 202, 212, GSD 152 or 153 (Economics 214 substitutes for GSB 211)	

<i>Requirements for Major in Speech Communication</i>	71
Speech Communication 326, 380, 381, 382, 480, 481	19
Journalism 300, 310, 311 and 312	12
Radio-Television 300m.	4
Psychology 307	3
Administrative Sciences 304	3
Marketing 304, 363	6
Political Science 340	3
Accounting 210	3
Graphics	3
Design 322 or Journalism 315	

<i>Restricted electives</i>	15
Selected from speech communication, journalism, radio- television, administrative sciences, marketing, finance, eco- nomics, political science, psychology, sociology, English. Some recommended courses are: Speech Communication 390 (may be repeated to a total of 3 hours), 358, 362, 451; Journal- ism 361, 370, 372, 374, 376, 391; English 290, 390 or other approved English writing courses.	

Internship: Speech Communication 490-A-1 to 6. The internship practicum in public relations is open to selected students with consent of the instructor. Hours taken here apply against 15 hours of restricted electives or other substitutions approved by the instructor.

Typing: Proficiency of 30 words per minute required.

<i>Electives</i>	4
<i>Total</i>	120

Bachelor of Science Degree, College of Communications and Fine Arts or College of Education

SPEECH COMMUNICATION MAJOR—COMMUNICATION EDUCATION SPECIALIZATION	
<i>General Studies Requirement</i>	45
Must include GSB 202, 212, GSC 200, 203, GSD 152 or 153, GSE 201	
<i>Requirements for Major in Speech Communication</i>	48
Speech Communication 221, 230, 261, 262, 325, 370, 432.	21
Mass media courses selected from the following: Radio-Television 300m, 300p, 467; Journalism 300, Speech Communication 452 . . .	6
Theater 217 and 354 or 402a.	6
15 hours of special electives in Speech Communication approved by the departmental adviser or an approved minor	15
Or	
Speech Communication 221, 261, 262, 370, 432 plus nine hours from courses offered by the Department of Speech Communication including at least 3 hours at the 400-level	24
Eighteen hours in one department in the College of Communications and Fine Arts other than the Department of Speech Communication	18
Electives	6
<i>Professional Education Requirements (including Speech Communication 431)</i>	27
See Teacher Education Program, page 71.	
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<i>Total</i>	120

Bachelor of Arts Degree, College of Liberal Arts

<i>General Studies Requirements</i>	45
Must include GSC 200 and GSD 152 or 153	
<i>Supplementary College Requirements (See page 78.)</i>	(4) + 8-14
<i>Requirements for Major in Speech Communication</i>	36
Speech Communication 221, 230, 261, 262, 325, 370	18
Speech Communication electives which must include at least three 400-level speech communication courses	18
<i>Electives</i>	15-21
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<i>Total</i>	120

Minor:

A 15-hour minor in speech communication should be planned in consultation with the chairman of the department or the undergraduate adviser. Students electing speech communication as a minor in a teacher education program must include Speech Communication 431.

Courses

Courses in speech communication are listed according to numerical order. However, the second digit in the course number indicates its locus in the speech communication curriculum, as follows:

- 00-09 Research Methods
- 10-19 Rhetoric and Criticism
- 20-29 Public Speech Communication
- 30-39 Speech Education
- 40-49 Language Behavior
- 50-59 Political Speech Communication

- 60-69 Interpersonal Speech Communication
- 70-79 Oral Interpretation
- 80-89 Organizational Speech Communication
- 90-99 Applied and Special Studies

221-3 Advanced Public Speaking. The components of effective speech, with actual preparation and presentation of several types of speeches. Prerequisite: GSD 153 or consent of instructor.

230-3 Introduction to Speech Education. Areas of speech education, their relevance and importance to the high school curriculum, and potential for prospective teachers. Practical information on content-focus in these areas. Restricted to students having nine or fewer hours in speech.

258-1 to 30 Work Experience. Credit given for work experience by students enrolled in the Department of Speech Communication. Such credit is granted upon approval of the undergraduate adviser.

261-3 Small Group Communication. Introduction to small group communication and the small group process. Special emphasis given to problem-solving discussion groups.

262-3 Interpersonal Communication II. Focuses on face-to-face interaction and inter-group relations by combining information about human communication and practice in communication. Utilizes the laboratory method for learning to establish and develop communicative relationship with others. Prerequisite: GSD 152 or consent of instructor.

310-2 Speech Composition. Rhetorical techniques of public address. Two major speeches prepared, with every possible refinement. Prerequisite: 221.

320-3 Intercultural Communication. (Same as Linguistics 320.) Examination of the elements and structure of intercultural and transracial communication in the United States. Designed to analyze and describe the interaction between social perception and expression as manifest in verbal and nonverbal behavior. Emphasis on the functional communication of minority groups. Prerequisite: GSD 152 or Speech 262 or consent of instructor.

325-3 Argumentation and Debate. Through the study of argument, evidence, reasoning and oral advocacy this course seeks to insure competence in the ascertainment of truth by investigation and research and the establishment of truth through proof. The ultimate rationale for the course is the discovery and support of intelligent decisions.

326-3 Persuasion. The means of influencing individuals and groups through communication. Emphasizes the shaping of other's values, beliefs, attitudes and behavior primarily by the spoken word. Provides theoretical information about and practice in persuasive speaking, for sources and targets of persuasion.

340-2 Language and Speech: Introduction. Introduction to the language of speech, an interdisciplinary approach to the learning and use of language. The structure of speech interaction in relation to participants, situation and functions of communication. Emphasis on linguistic, psychological, sociological and developmental perspectives on language in speech communication.

358-3 Political Campaigns and Elections. (See Political Science 318.) Elective Pass/Fail.

361-3 Nonverbal Communication. Nonverbal factors that influence the communicative interaction among persons. Review research findings and conduct projects germane to nonverbal communication. Readings, discussions, and research projects. Prerequisite: 262 or consent of instructor.

362-3 Communication and Social Process. Introduction to the phenomenology of human communication and social process. Analysis and description of interpersonal communication in the development and operation of human communities. Special emphasis is given to the nature of persons, consciousness, and communication exchange in society.

370-3 Oral Interpretation II. Theory and practice in advanced interpretation techniques, with emphasis on the student as performer. Prerequisite: GSC 200 or consent of the instructor.

380-3 Business and Professional Speaking. A survey of organizational communication. Classical rhetorical theory, modern communication theory, general semantics fundamentals, and human relations. Composition and delivery of major speech. Briefing, interview, and conference techniques. Audiovisual aids. Class attends civic group luncheon. Prerequisite: GSD 153.

381-3 Public Relations Policy and Practice. Philosophy, principles, policies, and practice of public relations. Historical review of industrial, institutional, governmental, and agency PR; managerial and communicative functions; internal and external publics. Lecture, audiovisual media, and guest public relations practitioners. Prerequisite: junior standing.

382-4 Research Methods in Public Communication. An introductory survey of methods and techniques of audience analysis and public opinion research. Designed especially for public relations specialization. Instruction in the design of research tools, sample selection, interviewing, and the use of the computer for data analysis.

390-1 to 6 Applied Communication. Supervised individual and group performance in various communication arts. Emphasis on the practical application of verbal skills. May be repeated for credit. A maximum of six hours may be counted toward a speech major; a

maximum of six hours toward degree requirements. Prerequisite: consent of instructor and department adviser.

401-3 Communication Theories and Models. An introduction to theory construction and model utilization in communication research. Critical analysis of existing communication theories in the social sciences as a basis for generating new models. Emphasis on the heuristic nature and function of the language/speech act paradigm in communication studies.

402-3 Empirical Research in Speech Communication. Principles of research design accompanied by a critical examination of research on oral communication. Prerequisite: 401 or consent of instructor.

411-3 Rhetorical Criticism. Designed to develop the student's ability to criticize public discourse, including speeches, written works, and the mass media.

421-3 to 9 (3,3,3) Studies in Public Address. Critical studies of speakers and issues relevant to social and political movements dominant in national and international affairs. A lecture, reading, and discussion course. Students may repeat enrollment to a total of nine hours. Prerequisite: for undergraduates, 411 or consent of instructor.

430-3 Speech in Elementary Schools. Survey of normal speech development with emphasis on the elementary school years. Concept of speech as skill to basic reading, writing, and spelling. Psychological and sociological variables affecting language as it relates to school learning. Speech experiences supportive of the child's linguistic, intellectual, and social development.

431-3 Speech in Secondary School. Philosophy of speech education, and effective teaching of speech through curricular and extra-curricular work. Prerequisite: twelve hours of speech.

432-3 Secondary School Forensic Program. Designed to evaluate and plan the proper role of forensics in the secondary school and to prepare the students for their tasks as teachers and administrators in that program. Not for graduate credit. Prerequisite: 325, GSC 200.

433-3 Creative Dramatics for Children. Materials, techniques, and procedures for conducting sessions in informal drama with emphasis upon its contribution to the total growth and development of the child. Includes lectures, observations, student participation. Prerequisite: concurrent enrollment in 490F-1 or consent of instructor.

435-3 to 6 (3,3) Topics in Creative Dramatics. An exploration of advanced theories and techniques for conducting sessions in informal drama. Topics vary and are announced in advance. Students may repeat enrollment in the course, since the topics change. Lecture, discussion, class projects, school visitations.

440-4 Language Behavior I. Psycholinguistic approach to the study of language learning and the early use of language. Theories and research in normal acquisition and development of grammatical structures, basic semantic categories, and rules of use in speech. Application of theories and research in first language learning to acquiring second languages.

441-4 Language Behavior II. Applicability of psychological and linguistic theories to social psychological aspects of speech communication. Relation of speech to other developing behaviors with particular attention to theories of cognition. Study of psychological and sociological variables affecting the functions of language for individuals and societies.

442-3 Psychology of Human Communication. Nature, development, and functions of verbal and nonverbal behavior; application of psychological theories and research to the communication process in individuals and groups. Emphasis on the systemic nature of communicative behavior.

443-3 General Semantics. Formulations from the works of Alfred Korzybski and from neo-Korzybskian interpreters are presented. General semantics is discussed as an interdisciplinary approach to knowledge. Relationships are made to contemporary problems in human affairs.

444-3 Language of Young Children. For teachers of young children and students of language. Theory of the development of language with attention to maturational and environmental correlates. Study of children's spoken language encoding and decoding behavior in relation to development of secondary skills of reading and writing and to general cognitive development.

445-3 Semiology and Semiotic Communication. Advanced study of sign, signal, and symbol systems in the phenomenology of communication. Systematic analysis of the metatheory relationship between expression and perception as manifest in verbal and nonverbal communication systems. Emphasis on semiology as a communication theory in the human sciences. Some consideration of related theories such as structuralism, interspecies communication, human/machine communication, and general systems theory. Prerequisite: 340 or 361 for undergraduates, 401 or 440 for graduate students, or consent of instructor.

451-3 Political Communication. (Same as Political Science 418.) A critical review of theory and research which relate to the influence of communication variables on political values, attitudes, and behavior. Prerequisite: 358 or consent of instructor.

452-3 Interpersonal Communication and the Mass Media. A review, synthesis, and analy-

sis of communication theory and research which deals with the process, interactive nature of interpersonal and mass channels of communication. Prerequisite: 401 or consent of instructor.

460-3 Small Group Communication: Theory and Research. A critical examination of small group theory and research in speech communication. Emphasis is given to the development of principles of effective communication and decision-making in the small, task-oriented groups. Prerequisite: 261 or consent of instructor.

461-3 Laboratory in Interpersonal Communication I. Intepersonal communication is studied as human encounter. The philosophy and theoretical bases of existential phenomenological approaches to human communication are discussed. Projects are evolved by small groups that contribute to the understanding of human communication.

462-3 Laboratory in Interpersonal Communication II. Various theories of social and cultural change are explored. The role of interpersonal communication in the development of human consciousness is explicated. Projects are evolved by small groups that examine values and priorities of human nature and cultural nature.

465-3 Philosophy of Language. (See Philosophy 425.)

471-3 Oral Interpretation: Prose. The study of the prose form through analysis and performance. Prerequisite: 370, GSC 200 or consent of instructor.

472-3 Oral Interpretation: Poetry. The study of poetic form through analysis and performance. Prerequisite: 370, GSC 200 or consent of instructor.

474-3 Group Performance: Readers Theater. Theory and practice in constructing and staging the compilation script form. Prerequisite: 370, or consent of instructor.

475-3 Group Performance: Chamber Theater. Theory and practice in adapting and staging prose fiction. Prerequisite: 370 and 471, or consent of instructor.

480-3 Studies in Organizational Communication. Study of communication systems and behavior within organizations. Demonstrates the relevance of communication to management operations, networks, superior-subordinate relations, production, employee morale, and organizational climates through the study of theory and research.

481-3 Public Relations in Cases and Campaigns. Advanced course in selected case studies provided by the Public Relations Society of America and other sources. Student groups design actual or simulated public relations campaigns through the four steps of research, planning, communications, and evaluation. Prerequisite: 381.

490-1 to 6 Communication Practicum. A supervised experience utilizing communication skills in a professional or career setting. Emphasis on the development of applied performance skills in the following areas: (a) Public Relations, (b) Communication Studies, (c) Interpersonal Communication, (d) Oral Interpretation of Literature, (e) Forensic Activities, (f) Creative Dramatics, (g) Political Communication, (h) Organizational Communication, (i) Language Behavior, (j) Instructional Communication. May be repeated for credit. Undergraduates are limited to a total of six hours and graduate students to a total of three hours to be counted toward degree requirements. Prerequisite: consent of instructor and departmental adviser.

491-1 to 3 Independent Study in Communication. Readings, creative projects, or writing projects focusing on a theoretical study of communication. The independent study should normally be completed in one semester under the tutorial supervision of a faculty sponsor. Not for graduate credit. Prerequisite: twelve hours of speech, consent of instructor and departmental adviser.

492-2 to 8 Workshop in Oral Interpretation. Summer offering concentrating in specialized areas of oral interpretation.

493-3 to 9 (3, 3, 3) Special Topics in Communication. An exploration of selected current topics in communication arts and studies. Topics vary and are announced in advance; both students and faculty suggest ideas. Students may repeat enrollment in the course, as the topic varies.

502-3 Seminar: Empirical Communications Research.

503-3 Seminar: Non-Quantitative Research Methods.

510-3 to 6 (3, 3) Seminar: Rhetoric and Communication.

526-3 Seminar: Studies in Persuasion.

531-3 Seminar: Speech Education.

539-3 Speech Communication at University Level.

540-3 Seminar: Language Behavior.

561-3 to 6 (3, 3) Studies in Small Group Communication.

562-3 Philosophy of Human Communication.

571-3 Theoretical Perspectives in Interpretation.

572-3 Critical Perspectives in Interpretation.

574-3 to 6 (3, 3) Studies in Interpretation.

593-1 to 3 Research Problems in Communications.

598-0 Proseminar in Human Communication.

599-1 to 6 Thesis.

600-1 to 36 (1 to 16 per semester) Dissertation.

Speech Pathology and Audiology (Department, Major, Courses)

The program in speech pathology and audiology has as its objective the training of qualified personnel to work with people impaired in either speech or hearing. The undergraduate curriculum is broad in scope and gives the student the necessary background for the professional program offered at the master's level. Both State and national certification require the M.S. degree. Positions in this field are available in the public schools, colleges and universities, and in highly specialized public or private clinics, hospitals, and agencies.

The program in speech pathology and audiology features two specialization tracks, one for students wishing to pursue careers in public or private clinics, and the other for those who wish to seek employment in the public schools. Students may also plan a special major program by following procedures outlined in the Undergraduate Catalog.

Clinical experience is obtained through work at the University's Clinical Center, the public schools in student teaching, special summer programs, the Marion Veterans Administration Hospital, A. L. Bowen Children's Center, the Anna State Hospital, and area hospitals and other community agencies.

Students are encouraged to plan programs of study to meet academic and practicum requirements for the Certificate of Clinical Competence of the American Speech and Hearing Association and the Standard Special Certificate—Certificate in Speech and Language Impaired. Planning at the bachelor's level will facilitate completion of ASHA and State of Illinois certification requirements in conjunction with the master's degree program.

Bachelor of Science Degree, College of Communications and Fine Arts

SPEECH PATHOLOGY AND AUDIOLOGY MAJOR—CLINICAL SPECIALIZATION	
<i>General Studies Requirements.</i>	45
GSA, GSB, GSC.	30
GSA: 9 hour minimum from 3 different departments including 115 and 209	
GSB: 10 hour minimum from 3 different departments including 202, 203, 206	
GSC: 9 hour minimum from 3 different departments	
GSD 101, 117, 107, and 152 or 153	11
GSE: Health and physical education	4
<i>Requirements for a Major in Speech Pathology and Audiology.</i>	61
Psychology 211, 301, 305.	10
Psychology: 12 hours selected from 307, 309, 311, 314, 411, 451	12
Rehabilitation 406	3
Speech Pathology and Audiology 200, 203, 205, 214, 302, 303, 316, 318, 319, 401, 419, 494, 495, and 496	36
<i>Electives</i>	14
<i>Total</i>	120

SPEECH PATHOLOGY AND AUDIOLOGY MAJOR—PUBLIC SCHOOL SPECIALIZATION

A student in the College of Communications and Fine Arts who plans to be a public school speech and language clinician in Illinois, thereby needing to prepare to meet the requirements for the Standard Special Certificate—Certificate in Speech and Language Impaired, should follow the program of course requirements listed below.

This Bachelor of Science degree program of study does not culminate in certification by either the State of Illinois or the American Speech and Hearing Association. The undergraduate public school program qualifies the student for graduate study providing all conditions for admission to the Graduate School have been met. Students must maintain the stipulated grade point averages for entrance to both student teaching and the Graduate School. Students pursuing the clinical specialization program are not required to take the education courses.

<i>General Studies Requirements</i>	45
Same required courses as listed under the clinical specialization.	
<i>Requirements for a Major in Speech Pathology and Audiology</i>	49
Psychology 211, 301, 305.	10
Rehabilitation 406	3
Speech Pathology and Audiology 200, 203, 205, 214, 302, 303, 316, 318, 319, 401, 419, 494, 495, and 496	36
<i>Professional Education Requirements</i>	24
Education 304a,c, or e. See Teacher Education Program, page 71.	
<i>Electives</i>	2
<i>Total</i>	120

Bachelor of Science Degree, College of Education

A student in the College of Education who wishes to become a speech clinician in the public schools should follow the plan listed above, in addition to any special requirements for a major in the College of Education.

Courses

100-0 to 1 Speech Clinic: Therapy. For students with speech and hearing deviations who need individual help. Prerequisite: consent of instructor.

104-3 Training the Speaking Voice. For those students who desire to improve their voice and articulation.

200-3 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.

203-3 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.

205-3 Introduction to Speech Pathology. A general survey course devoted to a discussion of the various problems considered to be speech and hearing disorders with special emphasis on basic etiological classification schemes and their incidence in the current population. Opportunities for directed observation.

214-3 Anatomy and Physiology of the Speech and Hearing Mechanism. Structure and function of the speech and hearing mechanism.

302-3 Phonological Development and Disorders. A general introduction to the phonological development in children on a normative basis. In addition to introducing the student to the classical studies in articulatory development, this course provides a general exposure to the implications of classical phonetic theory, coarticulatory theory and distinctive features theory as a framework for therapy and research. Prerequisite: 200 or concurrent enrollment.

303-3 Language Development and Disorders. Presentation of the progressive stages of language development in the areas of syntax and semantics. The student is acquainted with normal developmental processes and introduced to identification and remediation of therapeutics with children from ages three to twelve. Theoretical considerations and terminology related to traditional structural and transformation grammars are introduced as tools for interpreting the acquisition processes. Prerequisite: 200 or concurrent enrollment.

316-3 Introduction to Audiology and Audiometry. Basic orientation to the professional field of audiology, its history and its goals; basic acoustics, the phylogeny, anatomy and physiology of the human ear, and significant pathologies of the ear. Prerequisite: junior standing.

318-3 Parameters of Voice. Physio-acoustic parameters of voice quality variables evidenced in verbal communication. Lectures and demonstrations emphasize basic information necessary to study for the treatment of voice disorders. Prerequisite: 205.

319-3 Stuttering. Deals with diagnostic and therapeutic techniques for the understanding and treatment of stuttering.

- 401-3 Diagnostic Procedures in Speech Pathology.** A general introductory course devoted to discussion of the role of the speech and hearing clinician as a differential diagnostician. Special emphasis is placed on correlating information obtained from the oral-peripheral examination, articulation and language evaluation, audiometric and case history information in constructing the initial evaluation report. Prerequisite: 200, 314.
- 407-2 Communicative Disorders: Cerebral Palsy.** An introduction to cerebral palsy as a disorder, with an emphasis on etiology, problems, and approaches to therapy. Prerequisite: 205, 314, or consent of instructor.
- 408-2 Communicative Disorders: Cleft Palate.** An introduction to the ontology and teratology of cleft palate, problems, of personal and social adjustments, and principles of therapy. Prerequisite: 205, 314, 318, or consent of instructor.
- 419-3 Communication Problems of the Deaf and Hard of Hearing.** Objectives and techniques for the teaching of lip reading, speech conservation, and auditory training. Prerequisite: 316 or consent of instructor.
- 420-3 Basic Audiometric Evaluation.** Principles and procedures of audiometric evaluation: pure-tone threshold testing; techniques and standards for clinical calibration of the audiometer; clinical masking procedures; materials and procedures for speech audiometry; hearing assessment of infants and children. Prerequisite: 316.
- 428-3 Speech and Language Disorders and the Classroom Teacher.** Etiology and therapy of common speech defects. May be taken by all inservice teachers, seniors, and graduate students in education.
- 431-1 to 6 (1 to 3, 1 to 3) Biofeedback Communication.** An investigation into the experimental approaches for the study of the phenomena of speech. Evoked potential and signal averaging techniques, psychophysiological methodology. Laboratory experience with various biofeedback instrumentation, EMG, EEG, temperature ECG, etc. Open to non-majors.
- 438-2 Problems of Communication and the Process of Aging.** Reviews problems of communication related to the aging process and examines relevant diagnostic and therapeutic techniques. For non-majors only. Prerequisite: senior or graduate standing.
- 491-1 to 4 (1 to 2, 1 to 2) Individual Study.** Activities involved shall be investigative, creative, or clinical in character. Must be arranged in advance with the instructor, with consent of the chairperson. Prerequisite: consent of chairperson.
- 494-1 to 2 Clinical Practice: Phonological Disorders.** Supervised clinical practicum in articulation. Emphasis will be upon therapy procedures, diagnostic techniques, and preparation of reports. Prerequisite: 302.
- 495-1 to 2 Clinical Practice: Language Disorders.** Supervised clinical practicum in language. Emphasis will be upon therapy procedures, diagnostic techniques, and preparation of reports. Prerequisite: 303.
- 496-1 to 2 Clinical Practice: Hearing Disorders.** Supervised clinical practicum in hearing disorders. Emphasis will be upon rudimentary clinical procedures in audiology. Prerequisite: 316, 419, or consent of instructor.
- 497-1 to 2 Clinical Practice: Hearing Diagnostics.** Supervised clinical practicum in hearing diagnostics. Emphasis will be upon diagnostic techniques and preparation of reports. Prerequisite: 316 and 420.
- 500-3 Research Design in Speech Pathology and Audiology.**
- 503-3 Laboratory Instrumentation in Speech Pathology and Audiology.**
- 505-3 Phonological Acquisition in Children.**
- 507-3 Modern Techniques for the Syntactically Impaired.**
- 510-3 Stuttering: Behavior Assessment and Therapy.**
- 512-3 Voice Disorders.**
- 517-3 Psycholinguistic Correlates of Verbal Impairment.**
- 521-3 Advanced Audiology II.**
- 525-3 Amplification for the Hearing Impaired.**
- 526-3 Industrial and Community Hearing Conservation.**
- 528-3 Seminar: Physio-and Psycho-Acoustics of the Ear.**
- 529-3 Seminar: Experimental Audiology.**
- 533-3 to 6 (3, 3) Seminar: Speech Science and Experimental Phonetics.**
- 536-3 Seminar: Administration of Speech and Hearing Programs.**
- 540-3 Neuro-Anatomical and Neuromuscular Disorders of Communication.**
- 541-3 Neuropsychological Disorders of Communication.**
- 544-3 Seminar: Phonology.**
- 548-3 Stuttering: Behavior Theory and Research.**
- 550-3 Seminar: Speech Pathology and Audiology.**
- 590-1 to 4 (1 to 2 per semester) Readings in Speech Pathology and Audiology.**
- 593-1 to 3 Research Problems in Speech Pathology and Audiology.**
- 594-1 to 2 Clinical Practice: Voice Disorders.**
- 595-1 to 2 Clinical Practice: Fluency Disorders.**
- 596-1 to 2 Clinical Practice: Cerebral Palsy.**
- 598-1 to 3 Internship in Speech Pathology and Audiology.**
- 599-1 to 6 Thesis.**
- 600-1 to 32 (1 to 16 per semester) Dissertation.**

Technical Careers (School, Program, Courses)

The Bachelor of Science degree in the School of Technical Careers is specifically designed for the student who has entered an educational or career path for which there is no existing baccalaureate program. It accommodates those who have begun or completed associate degree occupational programs in any post-secondary institution, by allowing full transfer of credit; those who wish to turn military training into viable civilian credentials; and those with extensive occupational experience who wish to upgrade their educational status. Provision is made to recognize many forms of previous educational and occupational experience for credit toward the degree. The program is designed to build upon a person's education and experience by making possible additional career preparation and general education at the baccalaureate level.

Because each student's baccalaureate program is completely individualized, there is no list of course requirements applicable to all students. Each student designs a program of study, drawing on the many resources of the University, in consultation with a School of Technical Careers baccalaureate adviser. The program of study is formalized in a learning contract.

Persons who wish to enter the program must meet the following requirements:

1. Have completed at least two semesters of post-secondary education.
2. Have fewer than 90 semester hours passed.
3. Have a learning contract approved by the chairperson.

A student is considered admitted to the program only after the learning contract has been approved. Once admitted, students are expected to maintain close contact with their adviser in the program.

To complete program requirements students must:

1. Complete the requirements listed in the learning contract.
2. Be enrolled full-time in the program for at least two semesters.
3. Have at least six hours of credit for work experience.

Students must also fulfill all university requirements including General Studies, hour requirements, residence requirements and average requirements. The capstone program is available to qualified majors in the baccalaureate program of the School of Technical Careers. The capstone program is explained in chapter 3.

Persons interested in the program should contact the chairperson, Division of Baccalaureate Studies, School of Technical Careers, for details concerning advisement, program requirements, the learning contracts, and the many educational possibilities available through this unique program.

The following general education and technical courses are taught within the School of Technical Careers. They are open to students in associate and baccalaureate degree programs in the School of Technical Careers as well as to students in other academic units.

Courses

101-2 Business Correspondence. To equip students for effective letter writing so that they can compose letters quickly, easily, and efficiently as a basic goal of this course. It will help the student form good habits that will facilitate adaptability in the business world. The student will strive to develop naturalness, courtesy, tact, honesty, and a positive attitude in the construction and use of business correspondence. Lecture and individualized instruction two hours.

102-2 Technical Writing. To successfully complete this course, students should be proficient in particular writing techniques (technical description, definition, classification, abstracting, etc.) and follow through a library research project in their individual technical fields. Lecture two hours and individualized instruction.

103-2 Fundamentals of Mathematics. This course is pre-technical level intended for those

who have had no high school algebra or whose scores on the School of Technical Careers Mathematics Placement Test indicate a need for it. The course will enable the student to perform the fundamental operations with integers, common fractions, and decimals; to solve problems involving ratio, proportion, and percent; to use measurement concepts and geometric formulas to compute areas, volumes, and perimeters; and to perform basic algebraic operations. Semi-programmed instruction. Four hours per week.

104-2 Business Mathematics. Upon successful completion of this course, the student should be able to perform a wide range of business procedures for which mathematics is required and have the mathematical skills needed by a student preparing to enter business employment. The topics include percent, taxes, insurance, depreciation and overhead, interest, and retail mathematics. Lecture-discussion two hours.

105-4 (2,2) Technical Mathematics. Will enable the student to solve problems within the context of engineering technologies. (a) Emphasizes the use of algebraic equations and geometric relationships and formulas. Lecture-discussion, four hours per week for eight weeks. (b) Emphasizes the application of trigonometric relationships to problems in applied technologies. The use of electronic calculators is encouraged when appropriate. Lecture-discussion, four hours per week for eight weeks. Prerequisite: one year of high school algebra or STC 103.

107-4 (2, 2) Applied Physics. Places emphasis on basic and applied physics at a level consistent with technical education objectives. The student will learn laws and principles and solve problems pertaining to (a) mechanics and the structure of matter, (b) heat and electricity. Lecture three hours. Laboratory problem solving, testing, demonstrations two hours. Prerequisite: high school algebra or equivalent.

108-2 Chemistry of Fuels and Lubricants. The student will demonstrate the ability to analyze fuels and lubricants and detect impurities and contaminants. (Lecture two hours, Laboratory three hours. Eight weeks.)

115-5 (2, 3) Introduction to Chemistry. (a) Inorganic. The student will study the structure of matter, including a survey of common elements and compounds and the changes during chemical reactions, and will also study inorganic bases, salts, solutions, the periodic tables, equation balancing, and metric tables. (Lecture three hours. Laboratory two hours. Eight weeks.) (b) Biological. The student will study the chemistry of organic compounds, carbohydrates, proteins, and lipids relating them specifically to body functions. The student will also study the chemistry of digestion, metabolism, respiration, blood enzymes, hormones, and vitamins. (Lecture four hours. Laboratory three hours. Eight weeks.) Must be taken in a, b sequence.

118-2 Applied Calculus. Upon successful completion of this course, the student will be able to find derivatives and integrals of algebraic expressions, and will use this working knowledge of calculus as a tool to solve technical problems in the mechanical, civil, and electrical-electronic fields; to converse intelligently with engineers and scientists who speak the language of calculus; and to read technical articles written in that language. Lecture-discussion two hours. Prerequisite: 105 or Mathematics 111.

141-3 Introduction to Physiology and Human Anatomy. The student will survey the functions and structures of the nine basic body systems: digestive, respiratory, skeletal, muscular, excretory, reproductive, endocrine, circulatory, and nervous. Lecture three hours.

153A-2 Oral Reporting. Successful completion of this course equips the student to construct and execute effective informative oral communications, recognize and use basic methods of logical organization, make a logical and coherent oral progress report, and take a more positive role in the world of business and industry. Lecture and individualized instruction, four hours per week. Eight weeks.

153B-2 Conference Methods. Upon successful completion of this course, the student will be able to identify and use basic problem solving methods, take a positive role in a typical business conference, and effectively manage the mechanics of dyadic and public oral communications within the typical business framework. Lecture, individualized instruction, and special projects, four hours per week. Eight weeks.

199-1 to 10 Individual Study. Provides first-year students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor, program supervisor, and division chairperson.

200-2 Primary Flight Theory. Prepares the beginning aviation student for the FAA Private Pilot Written Examination. Consists of 48 classroom hours of instruction in aerodynamics, FAA regulations, primary navigation, use of computer, weather, and radio navigation.

201-2 Flight—Primary. Prepares the beginning student in flight to pass the practical examination (flight test) for the Private Pilot Certificate. Consists of 45 hours of flight training, which includes 30 hours of dual flight instruction, five of which is in a simulator; and 15 hours of solo flight. Each training flight is also preceded by a briefing by the instructor and a post-flight critique. This course carries substantial charges which may change from time to time. For exact charges contact the Air Institute and Service, Southern Illinois Airport.

202-2 Flight—Basic and Intermediate Theory. Continuation of ground school above the primary level. Course consists of 32 hours of classroom instruction in Federal Aviation Regulations pertaining to operations relating to commercial flight, aerodynamics, safety, weather, and the safe operation of aircraft.

203-1 Flight—Basic. Beginning course in preparation for the Commercial Certificate. Course consists of 50 hours of flight training. Includes pre-flight briefing and post-flight critique by the flight instructor. Of the 50 hours, ten hours are dual flights and 40 hours are solo flights. Includes dual night flights and 17 hours of solo cross-country. This course carries substantial charges which may change from time to time. For exact charge contact the Air Institute and Service, Southern Illinois Airport.

204-1 Flight—Intermediate. Continuing preparation for the Commercial Certificate. Consists of 50 hours of flight training. Includes preflight and post-flight briefing by instructor. Includes ten hours of dual flight instruction, five hours of night flights, 15 hours of solo cross-country, and 20 hours of solo practice on advanced maneuvers.

205-2 Flight—Instrument Theory. Course is directed to the theory of flight by instrument. Consists of thirty-two hours of classroom instruction in Federal Aviation Regulations pertaining to instrument flight, navigation by radio aids, aviation weather, and function, use, and limitations of instruments required for instrument flight.

206-2 Flight—Instrument and Advanced. This flight course will complete requirements for the Commercial Certificate, and will consist of 45 hours. Included in the 45 hours are 20 hours of instrument flight instruction in an airplane, 10 hours in an instrument simulator, 10 hours dual on flight maneuvers, and five hours of solo practice on maneuvers required to pass an FAA commercial flight test. This course carries substantial charges which may change from time to time. For exact charges contact the Air Institute and Service, Southern Illinois Airport.

207-1 Flight—Multi-Engine Operations. Prepares the student for the FAA Multi-Engine Rating (airplane). Includes ten hours of flight training in multi-engine aircraft; and ten hours of individual ground instruction. This course carries substantial charges which may change from time to time. For exact charges contact the Air Institute and Service, Southern Illinois Airport.

210-4 (2,2) Job Orientation and Analysis. (a) Special instructional sessions offered on personality, clothing, job application, and professional ethics. Preparation of a portfolio consisting of a personal data sheet, an analysis of prospective employing firms, sample letters of application, and an acceptance or refusal. Practice in being interviewed by representatives of business and industry. (b) Students will be required to discover their interests in career opportunities, to explore these fields, and to discover job opportunities in their interest areas. Lecture four hours. Need not be taken in sequence.

215-6 (3,3) Drafting Graphics. Use of drafting instruments, development of lettering and linework; geometric construction, orthographic projections, sections, reflected plans, pictorial drawings, perspective, shades and shadows, and their adaption to print reading and production. (a) Instruments, lettering, linework, geometric construction, orthographic projections, sections, reflected plans, shades and shadows, non-perspective pictorial drawings. One hour lecture, five hours lab. Taken concurrently with Interior Design 231. (b) Perspective drawing methods, both interior and exterior with emphasis on interior perspectives including Klok Board, direct measurement, Lockard freehand perspective, geometric relationships, and shades and shadows and reflections in perspective drawings. One hour lecture, five hours laboratory. Must be taken in a, b sequence.

232-3 Labor-Management Problems. Students will gain a general understanding of the economic situation of which labor-management problems represent a sub-set. They will develop a perspective on the evolution of labor relations in the United States economy and on how the interaction of labor and management differs throughout the world. The collective bargaining section introduces the student to the techniques of bargaining used by labor and management in their ongoing interactions. Lecture three hours.

258-1 to 30 Work Experience Credit. Credit granted for job skills, management-worker relations and supervisory experience for past work experience while employed in industry, business, the professions, or service occupations. Credit will be established by departmental evaluation.

259-1 to 60 Occupational Education Credit. A designation for credit granted for past occupational educational experiences related to the student's educational objectives. Credit will be established by departmental evaluation.

299-1 to 16 Individual Study. Provides students with opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor, program supervisor, and division chairperson is required.

300-2 Flight-Instructor (Airplane). Prepares the commercial pilot for an FAA Flight Instructor Certificate. Includes 20 hours of dual flight training and 40 hours of specialized ground instruction. This course carries substantial charges which may change from time to time. For exact changes contact the Air Institute and Service, Southern Illinois Airport.

301-1 Flight-Instructor (Airplane-Multi-Engine). This course consists of five hours of dual

flight instruction and 10 hours of classroom instruction. Prepares the holder of a flight instructor certificate for the addition of the multi-engine flight instructor rating. This course carries substantial charges which may change from time to time. For exact charges contact the Air Institute and Service, Southern Illinois Airport.

302-1 Flight-Instructor (Airplane Instrument). Designed to prepare the flight instructor to teach instrument flying, and to acquire the Instrument Flight Rating. Course consists of ten hours of dual flight instruction and 15 hours of classroom instruction. This course carries substantial charges which may change from time to time. For exact charges contact the Air Institute and Service, Southern Illinois Airport.

319-1 to 15 Occupational Internship. Each student will be assigned to a University approved organization engaged in activities related to the student's academic program and career objectives. The student will perform duties and services as assigned by the perceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail.

320-1 to 10 Work Study Internship. Provides work-study students with an opportunity to participate in an on-campus work experience related to their academic program and career objectives. Hours and credits are to be individually arranged. Mandatory Pass/Fail.

321-3 Seminar in Technical Careers. The purpose of this course is to allow those School of Technical Careers baccalaureate students who have had little or no experience within their chosen careers to become acquainted with the current state of the professions to which they aspire. The object is to help students prepare themselves for maximum competitiveness within the job market through awareness of existing job opportunities, knowledge of job requirements, and selection of course work appropriate to meet specifications of available positions.

350-1 to 32 Technical Career Subjects. In-depth competency and skill development and exploration of innovative techniques and procedures used in business, industry, professions, and health service occupations offered through various workshops, special short courses, and seminars. Hours and credit to be individually arranged. Prerequisite: consent of baccalaureate department chairperson and instructor.

370-3 Airport Planning. To acquaint the student with the basic concepts of airport planning and construction, as well as an investigation of various community characteristics and resources.

371-3 Regulation of Air Transportation. A study of the various regulatory agencies of the industry and their functions.

372-3 Airport Management. A study of the operation of an airport devoted to the phases of lighting, fuel systems, field marking, field buildings, hangars, and surrounding community.

373-3 Airline Management. A study of the administrative aspects of airline operation and management including a detailed study of airline organizational structure.

374-3 Fixed Base Operation. A study of a general aviation airport including such activities as Fixed Base Operations, Air Taxi Operations, Flight and Ground School, and other revenue producing activities.

380-3 Orientation to Allied Health Professions. Study of the various existing and evolving health care professions and how they fit into the overall health care field. An analysis is made of the educational, personal, certification, and licensure requirements of the various professions.

381-3 Health Care Management. A study of the principles of effective management techniques including planning, decision making, organizing, budgeting, communication, and direction.

382-3 Health Economics. An analysis of the economics of health care in the United States and its effect on society and the health care profession.

384-3 Health Facilities and Equipment Management. Prepares health care administrators with the necessary management tools to assure comfort, safety, and well-being of patients, hospital personnel, and visitors, and to focus their attention on sound maintenance management practices, materials procurement, storage and preservation, records keeping, and the utilities systems needed in a health care facility.

385-3 Fiscal Aspects of Health Facilities. An introduction to the fiscal problems encountered in the administration of health care facilities.

386-3 Fiscal Aspects of Aviation Management. An introduction to the fiscal problems encountered in the administration of aviation facilities.

387-3 Fiscal Aspects of Fire Service. An introduction to the fiscal problems encountered in the administration of fire service facilities.

388-3 Legal Aspects of Health Care. To supply the student an awareness of the legal requirements affecting health care facilities. The course will emphasize the basic law of contracts, consents, records, personnel, liabilities, privacy, and other routine functions. Successful students acquire an understanding of the need for legal counsel. Lecture three hours.

400-1 Flight-Airline Transport Pilot. Prepares the commercial pilot for the FAA Airline Transport Pilot Certificate. Includes 40 hours of ground instruction and 20 hours of flight training in single-engine or multi-engine aircraft. This course carries substantial charges

which may change from time to time. For exact charges contact the Air Institute and Service, Southern Illinois Airport. Not for graduate credit.

410-3 Fire Prevention and Inspection. Laws and regulations affecting fire prevention; administering building and fire codes; interpreting building, fire prevention, and state fire marshall codes; and inspection procedures. Not for graduate credit.

411-3 Fire Insurance Rating. Analysis of fire hazards for computing fire insurance rates. Actuarial basis of rating schedules with particular emphasis on the analytic system for measurement of relative fire hazard. Not for graduate credit.

421-3 Preprofessional Seminar in Technical Careers. Introduces students to the various elements involved in obtaining a position in their chosen career field. Topics included are: personal inventories, placement services, employment agencies, interviewing techniques, resumes, letters of application, references, and employment tests. Each student will develop a portfolio including personal and professional information related to individual career goals. Not for graduate credit. Prerequisite: enrollment in School of Technical Careers baccalaureate program or consent of instructor. Elective Pass/Fail.

Technology (Department)

Two degree programs are available in technology. One program leads to the Bachelor of Science degree with a major in engineering technology (see Engineering Technology) with specialization in one of three areas: civil engineering technology, electrical engineering technology, or mechanical engineering technology. The other program leads to the Bachelor of Science degree with a major in industrial technology (see Industrial Technology).

Engineering technology courses contain topics related to the design and development of products. Industrial technology courses contain topics related to the manufacture and distribution of products.

The present technological society has increased the demand for new types of personnel known as technologists. A technologist utilizes established methods to achieve improvements in existing designs and systems. Technologists should be knowledgeable in the state of the art of a particular technology, capable of utilizing handbooks and other forms of codified information with skill and discrimination, and sufficiently versed in mathematics and science to recognize sound procedures.

The technology programs are flexible enough to provide the means whereby a graduate of a two-year occupational program can obtain a bachelor's degree in a minimum length of time. The industrial technology program provides credit to individuals for related work experience outside the institution.

The programs are designed to provide the necessary training for entry into employment upon the completion of the baccalaureate degree. Opportunities for advanced study are available in business-related fields or in education.

Theater (Department, Major, Courses)

The Department of Theater has as its objective the continuing development of a program blending the academic and practical aspects of the discipline. A broad knowledge of theater is afforded through the theater core curriculum and specific specializations are provided in acting-directing, design-technical and play-writing-dramatic literature. In addition, theater majors may elect to take courses in various other disciplines including music, speech communication, television, cinema, art, and the humanities.

Coordinated with the academic programs is a broad schedule of productions including musical productions, children's theater plays, original works, dramas, and numerous experimental and laboratory works. Direct practical involvement is required of all students and the production schedule is extensive enough to allow students the opportunity to design sets, lights, costumes, and to write, act, and direct for these productions. Students have the additional advantages of work with visiting artists and participation in the Summer Theater program.

Bachelor of Arts Degree, College of Communications and Fine Arts

All theater majors must complete a minimum of 75 hours of courses in addition to the General Studies requirements. Of these hours, 39 constitute a specific specialization and 36 make up the theater core curriculum which is required of all majors.

<i>General Studies Requirements.</i>	45
GSC 365.	3
GSD 153	3
<i>Requirements for Major in Theater</i>	75
Theater Core Curriculum	36
Theater 354a, b, c	9
Theater 218 a, b, c, 207, 217, 311 a, 402a	20
Theater 300a, b, 400a, b	4
English (dramatic literature)	3
Theater Specialization (Requirements listed below)	39
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<i>Total</i>	120

THEATER MAJOR — ACTING-DIRECTING SPECIALIZATION

Theater 317a, b, 417a	9
Theater 213a, b, 413a	8
Theater 303a, b	6
Theater 402b	3
Speech Pathology and Audiology 104, 200	6
Electives	7
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<i>Total</i>	39

Qualified students in the acting-directing specialization may take additional courses of speech studies (Theater 403a, b), stage movement (Theater 413b), and acting (Theater 417b) with consent of instructor.

THEATER MAJOR — DESIGN-TECHNICAL SPECIALIZATION

Theater 307, 407, 414a, 418	11
Theater electives.	17
Art (by advisement)	6
Electives	5
<hr/>	
<i>Total</i>	39

THEATER MAJOR — PLAYWRITING-DRAMATIC LITERATURE SPECIALIZATION

English 460, 462, 464, 465 (select one).	3
Theater 311b, 411a, b, 402b	12
English 468.	3
Radio and Television 300M or Cinema and Photography 452	3-4
Theater electives	12-13
Electives	5
<hr/>	
<i>Total</i>	39

Minor

<i>Requirements for Minor in Theater</i>	20
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Theater 207, 218a, 217, 311a	11
Theater 354a, b, c (select two)	6
Theater electives	3

Courses

- 205-2 Stage Make-Up.** Theory and technique of various types of make-ups. Supplies, at least \$10.00 per semester.
- 207-2 Fundamentals of Theatrical Design.** Lecture and classroom exercises acquaint students with the problems encountered by the director, scene designer, costumer, and lighting director in providing a suitable environment, by visual means, for the actor. Elective Pass/Fail.
- 213-6 (3, 3) Stage Movement.** Fundamentals of movement for the performer. (a) Body awareness/assessment; increasing control and exploring basic elements of movement. (b) Applications of basic elements to characterization. Elementary combat techniques and use of props and costume will be introduced. Must be taken in a,b sequence.
- 217-3 Acting.** Preparing the actor's instrument through Stanislavskian technique; concentration/relaxation exercises; improvisations. The course objective is the discovery and development of the actor's inner resources. Contemporary American plays are studied from the actor's point of view. Readings are selected from the work of Stanislavsky, Boleslavsky, and Michael Chekhov. A final scene is chosen from the genre of American realism. Elective Pass/Fail
- 218-9 (3, 3, 3) Stagecraft.** (a) Fundamentals of scenic construction and stage rigging. Three hours class meeting; six hours practicum. (b) Fundamentals of stage lighting including basic tools, equipment, hanging, focusing, and maintenance. Basic color theory and lighting design covered. Three hours class meeting; six hours practicum. (c) Basic techniques of constructing and handling stage costume. Three hours class meeting; six hours practicum.
- 260-1 to 15 Internship.** Up to fifteen hours of credit awarded for off-campus internship which is related to the major program but not part of a regular instructional course. Written reports are required of student and supervisor. Prerequisite: theater major only; written proposals must be approved by undergraduate adviser and curriculum committee prior to internship.
- 300-2 (1, 1) Production.** Crew practicum. Crew assignments made by department technical director early each semester. Roles in department productions may fulfill requirement. Must be taken in a,b sequence. Prerequisite: 218a, b, c.
- 303-6 (3, 3) Voice and Diction.** (a)Voice production. Basic training in control of breathing, vocal tone, resonance, and vocal power for the beginning actor. (b) Diction. Consonant and vowel production; pronunciation for the actor. Prerequisite: 303a.
- 307-2 Drafting for the Theater.** Development of the student's skill in scenographic techniques including ground plans, sections, elevations and detail construction drawings. Lecture two hours, laboratory one hour.
- 311A-3 Play Analysis.** An analysis of the structure and content of such dramatic forms as the stage play, film play, television play, etc., as it pertains to the theater practitioner. Conceptual elements are also considered. Students prepare a creative project drawn from one of the following: an original short play scenario, a costume or scene design, a model, a director's promptbook. Prerequisite: GSC 203 or one course in dramatic literature.
- 311B-3 Playwriting Workshop for Actors.** Practical experience in acting in original plays combined with class discussions and critiques. Actors attend class sessions as well as rehearsals and have their work progressively evaluated. Workshop productions are staged in cooperation with 511. Prerequisite: audition; 217, 317a for majors, no prior courses for non-majors. Elective Pass/Fail.
- 317-6 (3, 3) Intermediate Acting.** (a) Continuation of the actor's development of inner resources with emphasis on characterization. Mask and body center exercises; characterization through costume, props, music. Discussion of the techniques of outstanding actors. Prerequisite: 217. (b) Preliminary scene study. Emphasis on American realism. Extended scenes rehearsed and performed. Written character analyses required. Prerequisite: 317A.
- 318-3 Advanced Stagecraft.** Advanced study of the principles and procedures of scenic construction and stage rigging. Includes fundamentals of scene shop organization, materials, and specialized stage equipment. Three hours lecture and laboratory to be arranged. Prerequisites: 218A, B, and 307.
- 322-1 to 12 SIU Summer Theater.** Practical experience in summer stock play production. A maximum of twelve credit hours may be accumulated for performance or technical work in SIU Summer Theater only. Open to majors or non-majors. Prerequisite: audition or consent of instructor.
- 323-1 to 6 Practicum for Non-Majors.** Practical experience in non-performing production areas for non-majors. Up to six hours may be taken at one time. Prerequisite: consent of instructor.
- 354-9 (3,3,3) History of the Theater.** (a) Theater history from primitive times through the Medieval Period. (b) Theater history from the Renaissance to the Romantic Revolution in France. (c) Theater history from 1831 to the present. Two of these three are required.

390-1 to 6 Independent Study. Independent work on selected problems in academic or blend of academic and creative research. A maximum of three hours may be taken for a single project and a cumulative maximum of six hours may count toward the degree. Prerequisite: majors only; written proposals; consent of undergraduate adviser and instructor.

400-2 (1, 1) Production. Crew practicum for support of major department productions in all areas: costume, makeup, props, set construction, etc. Crew assignments made by department technical director early each semester. Roles in department productions may fulfill requirement. Must be taken in a,b sequence. Prerequisite: 300a,b.

402-6 (3, 3) Play Directing. (a) Introduction to directing. The history of the director; the evolution of the director into a position of predominance in modern theater hierarchy. The function of the director; an examination of theoretical viewpoint. Textual analysis; establishing the groundwork for the director's approach to production. Prerequisite: junior standing; 207 and 217; or consent of instructor. (b) The principles of play direction including play selection, analysis, and patterning of auditory and visual elements of production. Extensive scene work in class; direction of a full one-act play by the end of the semester. Prerequisite: 402a or consent of instructor.

403-4 (2, 2) Advanced Theater Speech Studies. (a) Standard stage speech. Advanced training in vocal variety and flexibility. Expanded work with phonetics and application to play readings, poetry, etc. Prerequisite: 303b for undergraduates, no prerequisite for Master of Fine Arts acting students. (b) Vocal characterization. Applications of standard speech to characterization, verse plays, etc. Includes an approach to common American dialects. Prerequisite: 403a.

404-3 Theater Management. Discussion of legal and financial aspects concerning the professional and community theaters of the United States. Consideration of and practice in managerial activities of an educational theater including administration, purchasing, and accounting practices, direct sales, publicity, promotion, and public relations.

407-3 Stage Design. The design of settings for the stage and other dramatic media. Prerequisite: 207 and 307. Elective Pass/Fail.

410-3 Children's Theater. Study of methods and their practical application of introducing children to theatre and theatrical productions as an art form. Includes the writing of a short play for children. Recommended for majors in education programs.

411A-3 Playwriting — The One-Act Play. Principles of dramatic construction and practice in the writing of two one-act plays. Problems of adaptation are treated. Individual plays have the opportunity to be produced in the theater's Quarter-Night program for new plays. Prerequisite: one course in dramatic literature for non-majors and graduates; 311a for undergraduate theater and speech communication majors; or consent of instructor. Elective Pass/Fail.

411B-3 Playwriting — The Full-Length Play. Principles of dramatic construction and practice in the writing of a full-length play, encompassing such varied types of the children's play, the musical, the outdoor historical drama, etc. In special cases, students may elect to write three short plays. Prerequisite: 411A or consent of instructor for non-majors; 311a for undergraduate theater majors. Elective Pass/Fail.

413-4 (2, 2) Advanced Stage Movement. (a) Special movement problems encountered by the actor: falls, combat, mime, working with costumes, props, music. Continued work in characterization and movement skills mastery. Prerequisite: 213a, b for undergraduates; no prerequisite for Master of Fine Arts students. (b) Period styles of movement: bows, curtsies, postures, and dances. Research and practical applications. Prerequisite: 413a.

414-6 (3, 3) Costume Design. (a) History of western costume from Greek to Renaissance and its adaptation to stage use. Theory and principles of theatrical costuming. Application of principles of design and color. Designs for single scenes. (b) History of costume, Renaissance through 19th century. Style, fantasy, and the comic in costume design. Principles of dramatic theory and criticism as applied to costume design. Evaluation of research tools. Methods and procedures in designing costumes for a complete show. Prerequisite: 414a.

417-6 (3, 3) Advanced Acting. (a) Advanced scene study. Scenes from the Poetic Realists (Ibsen, Chekhov, Strindberg, etc.) Emphasis is on the ability to build and sustain a character. Audition technique is explored. Prerequisite: 317B. (b) Elizabethan style. Scenes and soliloquies from the plays of Shakespeare, Marlowe, Jonson, Fencing and stage combat applied to scene work. Prerequisite: 417a.

418-3 Advanced Stage Lighting. Investigation of stage lighting design, theory, and professional practice. Special attention will be focused on color theory and its application to stage lighting. Three hours lecture and laboratory to be arranged. Prerequisite: 218a, b, c, or consent of instructor.

454-3 American Theater. The development of American theater and its environment from colonial times to the present. Includes a study of the American musical theater from preminstrels through contemporary music-drama.

489-3 to 6 Theater-Television Workshop. Advanced work in the producing, acting, writing of original television drama. Prerequisite: C grade in Radio-Television 300M, 300P and consent of instructor for radio-television majors; consent of instructor for theater and other majors.

500-2 Introduction to Research Methods.
501-2 Contemporary Developments.
502-3 Advanced Directing.
503-4 (2, 2) Graduate Theater Speech Studies.
504-3 The Comic Theater.
505-3 The Tragic Theater.
511-3 Playwriting Workshop.
513-4 (2, 2) Stage Movement for Graduate Actors.
517-6 (3, 3) Graduate Acting Studio.
522-1 to 12 SIU Summer Theater.
526-3-12 (3 per topic) Seminar in Theater Arts.
530-1 to 12 Independent Study.
550-2 to 6 (2 per topic) Topical Seminar.
599-1 to 6 Thesis.
600-1 to 36 (1 to 16 per semester) Dissertation.

Thermal and Environmental Engineering

(Department, Major [Engineering], Courses)

(SEE ENGINEERING)

Tool and Manufacturing Technology (Numerical Control) (Program, Major, Courses)

Graduates of Tool and Manufacturing Technology (Numerical Control) will have the technical background to assist engineers in research, development, and testing. They will also have skills in metal cutting enabling them to follow through on jobs requiring the abilities of a tool maker.

The tool and manufacturing curriculum is designed to accept students without previous experience in metal cutting. Those students entering with industrial experience, or special courses which were taken during military training, will be given course credit. Transfer students from community colleges will be accepted and given credit for course work where it is applicable.

Upon completion of the tool and manufacturing program, students readily obtain positions in the areas of engineering technicians testing components and materials, pilot model makers, tool and die work, mold making, supervisors of numerical control production lines, programmers, and process planners. With additional on-the-job experience, many graduates of tool and manufacturing technology enter into supervisory positions.

The tool and manufacturing curriculum fits between the areas occupied by the mechanical and manufacturing engineer and the skilled toolmaker. It includes theory, procedures, techniques, and skills from each of these areas and falls approximately halfway between.

Students in this program will have the advantage of courses in data processing that will give them the ability to work with computer-assisted programming for numerical controlled machines.

They will learn to design and test industrial, hydraulic, and pneumatic power circuits; to read blueprints, design basic jigs and fixtures, make shop sketches, and alter existing machines for structural changes; and to build basic progressive dies, draw dies, die casting dies, and plastic injection mold dies.

Graduates will have the technical background to work with engineers in research, development and testing, plus skills in metal cutting that will give them the abilities of a tool maker.

Students in tool and manufacturing technology should expect to spend about \$75.00 for instruments, tools, and supplies.

Representatives of industry serve on an advisory committee which helps to keep the program responsive to the needs in the field. Current members are: Paul

Andrews, Southern Illinois University at Carbondale, Carbondale; Herb Baum, Nutzel Mach. Co., St. Louis, Mo.; Ed Marshall, General Electric, Carbondale; Charles Stallings, Mt. Vernon High School, Mt. Vernon; R. W. Stelkenrider, Diagraph Bradley Inc., Marion; Roy Volk, Hartwig Inc., St. Louis, Mo.

The associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Applied Science Degree, School of Technical Careers

Requirements for Major in Tool and Manufacturing Technology (Numerical Control)

GSD 101	3
GSB 202 or 212.	3-4
Electronic Data Processing 208a	4
School of Technical Careers 105a,b, 107a,b, and 102 or 153a.	10
Tool and Manufacturing Technology 101, 102, 125, 126, 128, 185, 186, 210, 211, 220, 221, 225, 275, 276	56
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Total.....	76-77

Courses

101-1 to 7 Basic Tool and Manufacturing Laboratory. The student will perform the basic operations covering the drill press, engine lathe, shaper, and basic bench work operations involving layout and hand tools. The operation of the shaper as a unit production machine is covered. Laboratory five to fifteen hours.

102-1 to 7 Milling Machine and Grinding Laboratory. The student will demonstrate ability to set up and operate the various milling machines and grinding machines common to the tool room and manufacturing operations. Laboratory five to fifteen hours. Prerequisite: 101 or consent of instructor.

125-1 to 3 Introduction to Machine Tools. The student will demonstrate knowledge of the basic machine tool operations; also, bench and hand tool techniques. Lecture one to three hours.

126-1 to 3 Machinability of Metals, Milling, and Abrasive Machining. Students will demonstrate ability to select correct cutting speeds, feeds, and tool geometry for various alloy steels and to understand the relationship of the factors involved. They will be required to understand the various tool room and production milling machines and grinders; their construction, set-up, and operations. Lecture one to three hours. Prerequisite: 125 or consent of instructor.

128-2 Hydraulic and Pneumatic Controls. The student will be required to understand industrial fluid power and its application in industry. The student designs, tests, and implements hydraulic and pneumatic circuits that are applicable to industry. Lecture one hour. Laboratory two hours.

180-3 Welding I. The student will demonstrate ability to apply the basic procedures in oxy-acetylene welding. Lecture one hour. Laboratory four hours.

181-3 Welding II. The student will demonstrate ability to apply basic welding procedures in metallic arc welding. Lecture one hour. Laboratory four hours.

182-3 Welding III. The student will demonstrate ability to apply basic welding procedures in T.I.G., M.I.G., and special welding and cutting applications. Lecture one hour. Laboratory four hours. Prerequisite: 181 or consent of instructor.

185-4 Technical Drawing I. Upon completion of this course, the student should be able to read and sketch pictorial and multiview drawings which include auxiliary views, sectional views, assemblies, weldments, up-to-date types of precision dimensioning, and many types of fasteners and machine elements. Lecture two hours. Laboratory three hours.

186-4 Technical Drawing II. Upon completion of this course the student should be able to read more complex drawings, use drawing instruments and geometric constructions where accuracy of layout is important, and design and draw simple jigs and fixtures. Lecture two hours. Laboratory three hours. Prerequisite: 185 or consent of instructor.

210-1 to 7 Numerical Control, Electrical Discharge Machining, and Tool and Die. The student will demonstrate ability to set-up and operate the numerically controlled milling machine for production jobs; to set-up and operate the electrical discharge machine on die and mold making applications; and to build progressive compound and forming dies. Laboratory five to fifteen hours. Prerequisite: 102 or consent of instructor.

211-1 to 7 Advanced Numerical Control, Tool and Die, and Production Machining. Students will demonstrate ability to set-up and operate advanced production jobs on the turret lathe, tracer lathe, and numerically controlled milling machines. They will build

progressive dies and mold dies. Laboratory five to fifteen hours. Prerequisite: 210 or consent of instructor.

220-1 to 3 Numerical Control, Inspection Practices, and Electrical Discharge. The student will demonstrate ability to program for typical industrial jobs using point to point programming, to understand the E.D.M. process and to select proper machine settings for a given application, and to understand inspection practices and precision measuring procedures. Lecture one to three hours. Prerequisite: 126 or consent of instructor.

221-1 to 3 Tool and Die, Production Machining, and Process Planning. The student will demonstrate ability to process plan and run cost estimates on typical production jobs; to understand basic die design and components in relation to progressive compound and forming dies, and to understand production processes. Lecture one to three hours. Prerequisite: 220 or consent of instructor.

225-2 Manufacturing Processes. A study of the techniques required to coordinate a diverse variety of manufacturing processes into the making of acceptable products. Special emphasis will be made on the role of the technician in the choice and application of selected processes. Lecture two hours. Prerequisite: 221 or consent of department.

275-2 Ferrous Metallurgy. The student will demonstrate understanding in the theory of alloys, characteristics of metals, simple phase diagrams and basic heat treating practices. Lecture two hours.

276-2 Tool Steel Metallurgy. Students will demonstrate ability to apply heat treating procedures with tool steel common to industrial uses. They must also be able to select the proper steel for the design criteria. Lecture one hour. Laboratory two hours. Prerequisite: 275 or consent of instructor.

310-6 to 24 Certified Welder Training. Students may choose a concentrated area of work such as pipe welding, boilermaking welding, or structural steel welding. Upon completion of this course students will pass the ASME code requirements in the welding area chosen. They may choose any one or all of the following processes; oxyacetylene, metallic arc, tungsten inert gas, metallic inert gas, and cored wire welding. Through individualized instruction students will progress at their own rate and may complete instruction at any time depending upon individual progress. Certified papers will be completed by the School of Technical Careers and will be given to the student or forwarded to an employer. Prerequisite: completion of formal welding program or equivalent work experience.

Uncommon Languages (Minor)

(SEE LINGUISTICS)

University Studies (Program)

The University Studies program allows the eligible student to design a broad interdisciplinary program of study leading to a Bachelor of Science or Bachelor of Arts degree. The Bachelor of Arts degree is granted to the graduate who has completed at least one full year of foreign language on the college level; the Bachelor of Science degree is granted to the graduate who has not completed a year of foreign language.

In order to be formally admitted to work toward a degree in University Studies, the student must meet the following criteria:

1. The student must have fewer than 90 semester hours passed.
2. The student must have completed at least one full year of college course work—a minimum of 24 semester hours—with a 2.25 grade point average or higher. (For entering transfer students, the 2.25 must be for all college work previously completed; for continuing Southern Illinois University at Carbondale students, the 2.25 must be for all Southern Illinois University at Carbondale work.)
3. The student must not have exceeded any of the limitations prescribed by the program.
4. The student must have his individual program plan approved by the dean of General Academic Programs or the program representative.

There are few specific requirements for the degree in University Studies other than those requirements which are university-wide baccalaureate requirements. However, there are limitations on the selection of coursework to insure that

students pursue a program commensurate with their ability and compatible to their educational goals and future aspirations.

Bachelor of Arts Degree

<i>General Studies Requirements</i>	45 ¹
<i>Requirements for University Studies</i>	75
Foreign language (4) + 4	
300-400 level coursework	40 ¹
Electives as approved by the dean of General Academic programs or a designated representative.	31 ²
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<i>Total</i>	120

Bachelor of Science Degree

<i>General Studies Requirements</i>	45 ¹
<i>Requirements for University Studies</i>	75
300-400 level coursework	40 ¹
Electives as approved by the dean of General Academic Programs or a designated representative.	35 ²
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<i>Total</i>	120

¹The student must have a minimum grade point average of 2.00 for the 40 semester hours of 300-400 level coursework. General Studies courses at the 300-level count toward both the General Studies requirements and toward the requirement of 40 semester hours at the 300-400 level.

²There are two limitations placed on the electives:

a. The student may take no more than 40 semester hours in any academic unit *excluding* the basic 45 semester hours required in General Studies—with the exception of the College of Liberal Arts where no more than 27 semester hours in the Social Sciences (excluding the nine semester hours required in Area B) and no more than 27 semester hours in the Humanities (excluding the nine semester hours required in Area C and excluding English Composition) may be taken.

b. The student may take no more than 20 semester hours in a department (or in a School within a College). General Studies courses are to be included in the total *except* for the basic 45 semester hours required.

In other words, *any* General Studies courses taken in addition to the minimum requirements are counted both toward the academic unit limits allowed and toward the department limits allowed.

University (Courses)

Courses

- 257-3 to 12 Concurrent Work Experience.** For giving elective credit for concurrent work experience by students enrolled in the University Studies degree program. Prerequisite: consent of department.
- 258-1 to 30 Work Experience.** For giving elective credit for previous work experience by students enrolled in the University Studies degree program when credit has been established by departmental evaluation.
- 259-1 to 60 Occupational Education.** A designation for credit granted for past occupational educational experiences related to students' educational objectives. Used only when specific program credit cannot be granted and is usable for elective credit only.
- 388-1 to 18 (1 to 9 per semester) International Studies.** Course work undertaken as part of an approved University residential study program abroad. May be taken for a maximum of nine semester hours per semester and may be repeated for a maximum of 18 semester hours. Prerequisite: major department or program approval.

Vocational Education Studies (Department, Courses)

Programs are designed to prepare persons for teaching, supervisory, and leadership roles in elementary schools, secondary schools, colleges, military and industry in several areas of vocational and pre-vocational education. Students are made aware of and become knowledgeable about roles, relationships, and expertise in a variety of occupational subject areas including agriculture, business, career education, health, home economics, industrial arts, public service, and trades and industries. Several majors and specializations are offered. Qualified

students may be accepted into the capstone program with majors in agricultural education, business education, home economics education, and occupational education. The capstone program is explained in chapter 3.

AGRICULTURAL EDUCATION (Major)

In this program a student will receive the technical and professional training needed to teach applied biological and agricultural occupations in secondary schools, serve in extension, or be employed in industry. A student majoring in agricultural education may specialize in one of the following areas: agricultural production, agricultural supplies and services, agricultural mechanics, agricultural products, ornamental horticulture, agricultural resources, forestry, and other areas of agriculture in specially designed curricula. The Capstone program is available to qualified majors in agricultural education. The capstone program is explained in chapter 3.

Bachelor of Science Degree, College of Education or School of Agriculture

AGRICULTURAL EDUCATION MAJOR — SECONDARY TEACHING CERTIFICATE

<i>General Studies Requirements</i>	46
GSA 106, 115	6
GSB 212 or 300, and 202	6-7
GSD 101, 107, 118, 153	12
GSE 201 and two hours of physical education activity courses	4
<i>Requirements for Major in Agricultural Education</i>	40
Agricultural Industries (agricultural economics)	3
Agricultural Industries (agricultural mechanization)	4
Agricultural Industries 311 and one of the following: Agricultural Industries 411, 414, Vocational Education Studies 360, 364.	6
Animal Industries	3
Plant and Soil Science	3
Specialty in Agriculture and agriculture electives	21
<i>Professional Education Requirements</i>	24
See Teacher Education Program, page 71.	
<i>Electives</i>	10
<i>Total</i>	120

BUSINESS EDUCATION (Major)

The business education major offers programs to prepare persons for teaching, supervisory, and leadership roles in secondary schools, private business schools, colleges, and industry in the areas of vocational and pre-vocational business education, and in-service training. Students selecting the secondary certification option may select one of the following teaching areas: office education, accounting/data processing, or general business/consumer education/distributive education. Those selecting the non-certification option may select from these areas: office, accounting, data processing, distributive. The Capstone program is available to qualified majors in business education. The capstone program is explained in chapter 3.

Bachelor of Science Degree, College of Education

BUSINESS EDUCATION MAJOR — SECONDARY TEACHING CERTIFICATE

<i>General Studies Requirements</i>	45
Including GSB 202, 211 or Economics 214, 212 or 300, 305, GSC 208, GSD 101, 110, 118, GSE 201, 2 hours of physical education activity courses	

<i>Requirements for Major in Business Education</i>	48
Accounting 221.....	3
Marketing 304.....	3
Vocational Education Studies 210, 302, 306.....	8
Secretarial and Office Specialties 101a	3
Preparation in one of the following business teaching areas:	
Office Education	
Vocational Education Studies 311, 313, 404	
Secretarial and Office Specialties 106, 107, 234	
Plus (a) three supplemental teaching areas or (b) two sup-	
plemental teaching areas and completion of vocational	
teaching requirements	
Accounting/Data Processing Education	
Vocational Education Studies 314, 412	
Accounting 222, 321, 365	
Electronic Data Processing 102, and two of the following:	
201a, 202, 204a, and 206	
Plus (a) two supplemental teaching areas or (b) one supple-	
mental teaching area and completion of vocational teach-	
ing requirements	
General Business/Consumer Education/Distributive Education	
Vocational Education Studies 418, 480	
Administrative Sciences 170 or 304	
Economics 215	
Family Economics and Management 340	
Finance 271 or 370	
Marketing 305, 341, 363, 401	
Plus (a) one supplemental teaching area or (b) completion of	
vocational teaching requirements	—
<i>Professional Education Requirements</i>	24
See Teacher Education Program, page 71.	
<i>Electives</i>	3
<i>Total</i>	120

Supplemental Teaching Areas in Business Education:

1. Typewriting: Vocational Education Studies 311
2. Shorthand and Transcription: Vocational Education Studies 304, 312
3. Accounting and Bookkeeping: Accounting 222, Vocational Education Studies 314
4. General Business/Consumer Education: Vocational Education Studies 480 and one of the following: Family Economics and Management 340, 341, GSB 346, Administrative Sciences 170, 304
5. Business Law: Finance 271, 370
6. Data Processing: Vocational Education Studies 412, Electronic Data Processing 101, one of the following: Electronic Data Processing 201a, 204a, 206, Computer Science 202, Engineering 222, Accounting 319

VOCATIONAL PROGRAM TEACHING REQUIREMENTS

Vocational Education Studies 470, 466, plus the equivalent of one year of work experience from Vocational Education Studies 258, 395, or 491.

Credit from Vocational Education Studies 258 or 259 may be used in lieu of the business education requirements, except Vocational Education Studies 311, 312, 313, 314, 412, 418, and 480.

The city of Chicago has requirements that differ from those presented in this bulletin. Copies of these requirements may be obtained from the business education office, 133 General Classroom Building.

BUSINESS EDUCATION MAJOR — NON-CERTIFICATION BUSINESS OCCUPATIONS
TEACHING

<i>General Studies Requirements</i>	45
Including GSB 305, Economics 214 or GSB 211	
<i>Requirements for Major in Business Education</i>	75
Accounting 110 and 120 or Accounting 221 and 222	6
Administrative Sciences 304	3
Marketing 304	3
Economics 215	3
Finance 271	3
Secretarial and Office Specialties 101a	3
Vocational Education Studies 210, 302, 306, 484	11
Vocational Education Studies 395, 460, 466, 472, 495	18-28
Plus completion of courses in one of the following areas:	
Office	
Vocational Education Studies 304, 404, and two of the fol-	
lowing: 311, 312, 313	
Secretarial and Office Specialties 106, 107, 234	
Accounting	
Accounting 321, 322, 341, 365	
Vocational Education Studies 314	
Data Processing	
Electronic Data Processing 102, 104, 205, and two of the	
following: 201a,b, 202, 204a,b, 206	
Vocational Education Studies 412	
Distributive	
Finance 370	
Marketing 363, 341, 401	
One of the following: Marketing 305, Family Economics	
and Management 340, GSB 346	
Vocational Education Studies 418	

Total..... 120

Credit from Vocational Education Studies 258 or 259 may be used in lieu of the business education requirements.

Minor

A minor in business education consists of a minimum of 20 hours. Minors are planned for each student individually by the student and the adviser.

HOME ECONOMICS EDUCATION (Major, Courses)

Programs are designed to prepare home economics teachers and home economics extension advisers with various specializations. Both general home economics education and vocational home economics teachers are prepared. Three specializations are offered. The Capstone program is available to qualified majors in home economics education. The capstone program is explained in chapter 3.

Bachelor of Science Degree, College of Education

HOME ECONOMICS EDUCATION MAJOR — TEACHING VOCATIONAL HOME ECONOMICS
SPECIALIZATION

This program prepares students to teach consumer education, homemaking as an occupation, and occupational home economics in schools operating under the provisions of the federal vocational act.

<i>General Studies Requirements</i>	45
Including GSB 202, 203, 212; GSC 101, GSD 101, 117, or 118, 152, 107; GSE 201; 2 hours of physical education activity courses	
<i>Requirements for Major in Home Economics Education</i>	44
Chemistry 140a	(4)
Child and Family 227, 237, 345	9
Clothing and Textiles 127, 150, 227, 304, 305	10
Family Economics and Management 320, 330, 340, 350, 351.....	13
Food and Nutrition 100, 156, 335.....	8
Interior Design 131.....	4
<i>Professional Education Requirements</i>	32
See Teacher Education Program, page 71.	24
Vocational Education Studies 320, 322, 470	8
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<i>Total</i>	121

Credit from Vocational Education Studies 258 or 259 may be substituted for six semester hours in each of two areas (Child and Family, Clothing and Textiles, Family Economics and Management, Food and Nutrition) of the home economics requirements. There is no substitution for Child and Family 227, 237, Clothing and Textiles 150, Family Economics and Management 340, Food and Nutrition 100, or Interior Design 131.

HOME ECONOMICS EDUCATION MAJOR — TEACHING VOCATIONAL HOME ECONOMICS SPECIALIZATION, SPECIAL EDUCATION EMPHASIS (SECONDARY TEACHING CERTIFICATE IN HOME ECONOMICS)

This program prepares home economics teachers for special needs learners.

<i>General Studies Requirements</i>	45
Including GSB 202, 203, 212, GSC 101, GSD 101, 107, 118, 152, GSE 201; 2 hours of physical education activity courses	
<i>Requirements for Major in Home Economics Education</i>	43
Chemistry 140a	(4)
Child and Family 227, 237	6
Clothing and Textiles 127, 150, 227	6
Family Economics and Management 320, 350.....	5
Food and Nutrition 100, 156, 355	8
Interior Design 131	4
Vocational Education Studies 320, 322, 341, 464, 470	14
<i>Requirements in Special Education</i>	
Special Education 400, 402, 405, 411	11
<i>Professional Education Requirements</i>	24
See Teacher Education Program, page 71.	
<hr/>	
<i>Total</i>	123

HOME ECONOMICS EDUCATION MAJOR — EXTENSION SPECIALIZATION

This program prepares students for positions as home advisers, 4-H advisers, and with further training, extension specialists.

<i>General Studies Requirements</i>	45
Including GSB 202, 203, 212; GSC 101, GSD 101, 118, 107, 152	

<i>Requirements for Major in Home Economics Education</i>	68
Chemistry 140a,b	(4) + 4
Child and Family 227, 237, 345	9
Clothing and Textiles 127, 150, 227, 304, 305	10
Family Economics and Management 320, 330, 340, 350, 351	13
Food and Nutrition 100, 156, 256, 335	11
Vocational Education Studies 320, 324, 325, 431	12
Interior Design 131	4
Journalism 340 or substitute	2
Speech Communication 221	3
<i>Electives</i>	7
<i>Total</i>	120

OCCUPATIONAL EDUCATION (Major, Courses)

Programs are designed to prepare persons for teaching, supervisory, and leadership roles in schools, colleges, military, and industry. Students are made aware of and become knowledgeable about roles, relationships, and expertise in a variety of educational agencies and occupational subject areas. Three specializations are offered.

Bachelor of Science Degree, College of Education

The Capstone program is available to qualified majors in occupational education. The capstone program is explained in chapter 3.

OCCUPATIONAL EDUCATION MAJOR — PREOCCUPATIONAL TEACHING SPECIALIZATIONS, INCLUDING INDUSTRIAL ARTS EMPHASIS (SECONDARY TEACHING CERTIFICATE)

Preoccupational teaching encompasses a broad area of study of industry and related areas in elementary and secondary schools. It involves study in a broad area of industrial skills and technology. Students may select a minor area of specialization that will prepare them for teaching orientation and exploration of the world of work through the study of occupational clusters and analyses of occupations; for conducting cooperative education programs; for providing career education; for becoming specialized industrial teachers; for working with specialized populations; and for other specialized programs designed by the student and approved by the academic adviser.

<i>General Studies Requirements</i>	45
Including GSA 101, 106; GSB 202, 212, GSD 101, 117, 153, GSD Mathematics; GSE 201; 2 hours of physical education activity courses	
<i>Requirements for Major in Occupational Education</i>	42
Requirement in Laboratory Experiences	24
Vocational Education Studies 366, 370	7
Electives in four industrial arts areas	17
Requirements in Approved Areas of Specialization	18
Vocational Education Studies 362	3
Electives in specialization	15
<i>Professional Education Requirements</i>	33
See Teacher Education Program, page 71	24
Vocational Education Studies 460, 462, 478	9
<i>Total</i>	120

OCCUPATIONAL EDUCATION MAJOR—SECONDARY TEACHING SPECIALIZATION, OCCUPATIONAL EMPHASIS (SECONDARY TEACHING CERTIFICATE)	
Secondary occupational teaching concerns specialized instruction in a wide variety of vocational-technical occupations including industrial-oriented, health-oriented, personal and public service-oriented, and others. In addition to being certificated to teach in secondary high schools or vocational schools, graduates may also teach in industry, private schools and community junior colleges.	
<i>General Studies Requirements</i>	45
Including GSA 101, 106; GSB 202, 212; GSD 101, 117, 152, GSD Mathematics; GSE 201; 2 hours of physical education activity courses	
<i>Requirements for Major in Occupational Education</i>	42
Vocational Education Studies 395	16
Vocational Education Studies 258 and/or 259	26
<i>Professional Education Requirements</i>	33
See Teacher Education Program, page 71	24
(Must include Education 304b)	
Vocational Education Studies 460, 462, 466	9
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<i>Total</i>	120

OCCUPATIONAL EDUCATION MAJOR—OCCUPATIONAL TEACHING SPECIALIZATION	
Occupational teaching involves instructing youth and adults in highly skilled or technical areas such as dental hygiene, electronics, practical nursing, automotives, aviation, commercial art, executive secretary, and others, which require an advanced knowledge of application in a defined line of endeavor.	
<i>General Studies Requirements</i>	45
Including GSA 101, 106; GSB 202, 212; GSD 101, 117, 152, GSD Mathematics; GSE 201; 2 hours of physical education activity courses	
<i>Requirements for Major in Occupational Education</i>	75
Vocational Education Studies 258 ¹ , 259, 395, 460, 462, 466, 472, 495	66
College of Education electives.....	9
To include 3 semester hours in courses outside the Department of Vocational Education Studies	
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<i>Total</i>	120

¹Limit on 258 is 30 semester hours.

Courses

- 119-1 Home Economics Careers.** (Same as Human Resources 111.) An introduction to career opportunities in the broad fields of home economics and related occupations.
- 210-2 Introduction to Business Education.** An introduction to teaching in business education programs in secondary schools, vocational schools, community colleges, and educational programs in businesses. Emphasis is on curriculum structures, philosophical bases, instructional materials and media, student characteristics, employment requirements, and career opportunities.
- 257-1 to 30 Work Experience.** Credit for on-campus work experience through a cooperative program developed between the department and the Office of Student Work and Financial Assistance. Prerequisite: consent of program coordinator. Mandatory Pass/Fail.
- 258-2 to 30 Occupational Experience.** Credit for documented experience in a teachable occupation or family of occupations. Prerequisite: 12 hours of *C* or better at Southern Illinois University.
- 259-2 to 48 Occupational Subjects.** Credit for documented occupational study in accred-

ited and selected other programs. Prerequisite: 12 hours of *C* or better at Southern Illinois University.

302-3 Communications in Business. Principles and practice in written and oral business communications. Included is the development of ability to use words and correct grammatical construction in oral and written business expression; the learning of the principles of planning, organizing, writing, and summarizing effective communications; and the refinement of listening skills.

304-3 Analysis of Alternative Shorthand Systems. Development of high-level dictation and transcription skills and knowledges in one shorthand system; the learning of the theory of one or more additional shorthand systems, either alphabetic or symbolic. Prerequisite: Secretarial and Office Specialties 102D or 103D or equivalent.

306-3 Introduction to Data Processing. Emphasis on operation of keypunch machine, vocabulary development, unit record equipment, concepts of programming, fundamentals of computer mathematics and applications, and flow charting.

311-3 Teaching Typewriting. Review of typewriting technique, skill, and knowledges. Methods of instruction, skill-building principles and techniques, selection and preparation of instructional materials, review of course content, standards of achievement, and evaluation of pupil performance. Prerequisite: Secretarial and Office Specialties 101D or equivalent.

312-2 Teaching Shorthand and Transcription. Methods of instruction, skill-building principles and techniques, selection and preparation of instructional materials, review of course content, standards of achievement, and evaluation of pupil performance. Prerequisite: 304 or equivalent.

313-3 Teaching Office Procedures and Machines. Review of skills and knowledges pertaining to office procedures and machines; instructional methods and materials for and the evaluation of pupil performance in office practice, clerical practice, and office machines. Prerequisite: 404 or equivalent.

314-2 Teaching Bookkeeping and Accounting. Teaching procedures, instructional materials, and evaluation of pupil progress in bookkeeping and accounting; instruction and practice in operations taught in high school and college bookkeeping-accounting classes. Prerequisite: 210 or equivalent.

320-1 Home Economics as a Profession. A social, psychological, and philosophical interpretation of home economics in today's world. Overview of career areas and the practice of the dual role of homemaker-professional worker.

321-2 Methods of Teaching for Non-Teaching Majors. Educational principles for use in situations mostly outside of the formal classroom. Selection and organization of materials. Practice in using a variety of techniques and teaching aids.

322-4 Methods and Curriculum in Home Economics. The total home economics program. Curriculum planning for the course and the unit. Teaching methods especially suitable for home economics classes. Teaching aids and materials. Evaluation of instruction. Managing the business of the department. Possible expense for materials for teaching experiences: \$5.00. Prerequisite: Basic professional block in education, eight semester hours.

324-4 History, Development and Principles of Extension Work. The history and philosophy of cooperative extension. Principles and practice of organizing and administering extension work in home economics. Offered alternate years. Transportation expense for field trips: approximately \$5.00

325-4 Field Experience. Six weeks of observing and assisting a county home economics extension adviser. Supervised experiences in various phases of extension work. Student must provide for own living and travel expenses. Prerequisite: 324.

326-2 Practicum-Home and Family Life Education. Provides pre-service home economics teachers and home economics extension advisers experiences in observing and working with families with respect to problems, needs, and values as a basis for more effective teaching.

327-3 Home Economics for Men (and Women). A survey of the areas of home economics; child care and personal, family, and community relations; economics and management of personal and family resources; food, nutrition, clothing selection and buying; financial management, consumer education; and protection. Emphasis on life skills as reflected in needs of students. Field trip and practicum experiences. Cost: two dollars for supplies.

360-15 (3, 3, 3, 3, 3) Vocational, Occupational, and Career Simulation Clusters Studies. Vocational, occupational, and careers simulation and gaming activities. Occupational orientation and exploration. Community laboratory films and other methods. Team teaching also used.

362-3 Vocational, Occupational, and Career Orientation and Exploration. Introduction to orientation and exploration activities for vocational, occupational, and career education programs at the junior high and early senior high school levels. Career development processes are examined.

364-3 Leadership of Youth and Peer Groups. Identification and discussion of the role of organizations, both structured and unstructured. Identification and development of qualities of leadership.

366-4 Multi-Activity Laboratory. Participation in designing instructional programs for

multiple activity industrial arts laboratory or shops and performing the shop tasks. It includes such methods or approaches as project, exercises, mass production, enterprise, American industries, career orientation, world of construction, and others. Prerequisite: 15 hours shop or laboratory credits.

368-3 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.

370-3 Diversified Crafts for Teachers and Recreation 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.

384-3 Adult Education in Vocational, Occupational, and Career Education. Planning and preparing for adult education programs. Includes review of characteristics of clientele, financial support, program development.

395-2 to 24 Occupational Internship. Includes job skills and knowledges, management-worker relations, supervised instruction, conferences, and evaluations. Prerequisite: consent of coordinator.

398-1 to 3 Special Problems in Vocational, Occupational, and Career Education. Independent study for qualified students. (a) Agricultural education. (b) Business education. (c) Home economics education. (d) Occupational education. Prerequisite: consent of instructor.

404-3 Analysis of Office Systems. An investigation of procedures and systems used in various types of offices, including a study of work flow, the processing of words, office personnel and their responsibilities, and the role of office functions in the total business society.

405-3 Office Management. Principles of management applied to office problems. Emphasis on the role of the office in business management; office organization; physical facilities and layout of office; office services, procedures, standards, and controls; records management.

407-2 Records Administration. Methods and systems of controlling, storing, retrieving, and disposing of records. Application of principles to such records as medical, legal, educational, industrial, and governmental.

410-2 Principles and Problems of Business Education. A study of the fundamentals of business education; its relation to business, to general education, and to vocational and career education; its history, current status, and trends; special emphasis on objectives and curriculum problems.

411-2 Teaching Classes Related to Experiential Business Education. For those who plan to become teacher-coordinators of vocational cooperative education programs. Emphasis is placed upon the construction and presentation of subject matter and materials used to teach basic marketable skills to secondary and post-secondary students. Prerequisite: 210.

412-2 Teaching Data Processing. Instructional methods and materials for and the evaluation of pupil progress in data processing. Prerequisite: 306 or Electronic Data Processing 101 or equivalent.

416-3 Teaching Marketing Skills. The development of instructional materials and methods used to teach consumer and industrial product pricing; merchandise selection and control; sales expertise, advertising, and promotional sales skills. Prerequisite: Marketing 363.

417-3 Teaching Distribution Skills. The development of instructional methods and materials to develop high-level skills in product development, market segmentation, transportation modes utilization, product handling, and merchandise storage. Prerequisite: Marketing 341 or 452.

418-3 Teaching Distributive Education. For those who plan to become teacher-coordinators of vocational cooperative or in-school distributive education programs. Emphasis on the planning of facilities; selection and review of course content; preparation of instructional materials; organization and arrangement of units; related instruction; simulated, block, and project plans; and student evaluation. Prerequisite: Marketing 304 and 363.

428-3 Home Economics for Elementary Teachers. Identification and development of meaningful home economics related experiences appropriate for various levels of elementary curriculum. Interpretation of current vocational education legislation and trends affecting elementary programs.

430-3 Teaching Concepts and Generalizations in Home Economics. Use of cooperative teacher-pupil planning to develop curriculum based on subject matter concepts and generalizations. Techniques for helping students to take part in planning, implementation of learning experiences, and evaluation. Provides practice in use of group process to plan for sequential learnings. Prerequisite: consent of instructor.

431-3 Demonstration and Laboratory Techniques in Home Economics Education. Practice in planning and carrying out instructional demonstrations in home economics for youth and adults. Use of audiovisual aids and hand-outs. Procedures for laboratory and guided practice to develop psychomotor skills. Attention given to TV presentations. Possible expense for materials to use in classroom demonstrations \$5.00 to \$8.00.

433-3 Women and the Politics of Education. Ways of organizing to implement legislation for social needs. How to have input into decisions which affect the educational community — reimbursement, grants, funding. The need, impact, and opportunity for careers in public service as these relate to individual, family, and societal needs. Field trips.

460-3 Vocational, Occupational, and Career Education Analysis and Curriculum Development. The first of a two-course sequence presenting a systems approach to curriculum development and instructional methods utilized in vocational, occupational, and career education. This course includes conducting job analysis, specifying objectives, and developing curriculum.

462-3 Vocational, Occupational, and Career Education Methods and Materials. The second of a two-course sequence presenting a systems approach to curriculum development and instructional methods utilized in vocational, occupational, and career education. This course is concerned with the unique instructional methods and material utilized in vocational, occupational, and career education.

464-3 Special Needs Learners in Vocational, Occupational, and Career Education Programs. Theoretical and applied concepts in teaching special needs learners. Affective aspects of learning are emphasized. Curricula and teaching materials are examined and prepared. Field trips.

466-3 Principles and Philosophies of Vocational, Occupational, and Career Education. Nature and purpose of vocational, occupational, and career education, their relationships and differences, and the place of each in preparing people for the world of work.

470-3 Introduction to Cooperative Vocational, Occupational, and Career Education. Investigation of competencies required of cooperative education instructors and coordinators.

472-3 Post-Secondary Cooperative Vocational, Occupational, and Career Education. Operational procedures and development of instructional processes for coop programs. Work experience required. Transportation expense for work and field trips.

474-3 Individualized Instruction in Vocational, Occupational, and Career Education. Study of the theory, characteristics, appropriateness, and evaluation techniques of individualized programs. Will include a review of the current state of individualized instruction in vocational, occupational, and career education.

478-3 Contemporary Principles and Management of IA Programs. Study of contemporary approaches to the teaching of industrial arts including objective philosophies, advantages, and disadvantages; shop or laboratory design and organization; and the management of programs in shops or laboratories. Not for graduate credit. Prerequisite: junior standing.

480-3 Teaching Consumer Education. Principles of teaching consumer education in all settings. Emphasis on meeting state requirements for teachers of consumer education in Illinois. Selection and study of course content; preparation of instructional materials; organization and arrangement of units of study; and planning and evaluation program.

484-3 Adult Vocational and Technical Education. A study of adult vocational and technical education as offered in a variety of educational settings. Major topics include organization, funding, teaching, student characteristics, and evaluation. Prerequisite: consent of adviser.

486-3 Post-Secondary Vocational-Technical Teaching. A study of contemporary approaches to the teaching of vocational education in post-secondary educational institutions. The course includes a review of practices in area vocational centers, vocational-technical institutes, community and junior colleges, colleges and universities.

488-3 Vocational Student Placement and Follow-Up. The organization and operation of a comprehensive school-based placement system for secondary and post secondary vocational, technical and adult education students. Utilization of resources with emphasis on planning, implementing, and evaluating the placement effort.

490-2 to 4 Vocational, Occupational, and Career Education Readings. Supervised reading for qualified students. (a) Agriculture education. (b) Business education. (c) Home economics education. (d) Occupational education. Prerequisite: consent of instructor and coordinator of program.

491-1 to 5 Advanced Occupational Skills. Modern occupational practice in selected fields. For experienced professionals seeking advanced techniques in specialized areas of occupational education. (a) Agricultural education (b) Business education. (c) Home economics education. (d) Occupational education. Prerequisite: intermediate level study in the specialty.

494-1 to 4 Workshop in Vocational, Occupational, and Career Education. Study of current issues of interest to vocational, occupational, and career education teachers, supervisors, and administrators in the field. Emphasis of each workshop will be identified in each workshop announcement. (a) Agricultural education. (b) Business education. (c) Home economics education. (d) Occupational education.

495-2 to 12 Vocational, Occupational, and Career Education Teaching Internship. Experience in working with special intern and post-high school vocational, occupational, and career education training programs in approved centers. The teacher will follow the program of the supervisor of the primary specialization in both regular and extra class

activities. (a) Agricultural education. (b) Business education. (c) Home economics education. (d) Occupational education. Prerequisite: 395-10 hours, 490-3 hours.

497-2 to 6 Vocational, Occupational, and Career Education Practicum. Applications of vocational, occupational, and career education skills and knowledge. Cooperative arrangements with corporations and professional agencies provide opportunity to study under specialists. (a) Agricultural education. (b) Business education. (c) Home economics education. (d) Occupational education. Prerequisite: 20 hours in specialty.

498-2 to 5 Special Problems in Vocational, Occupational and Career Education. Assistance and guidance in the investigation and solution of vocational, occupational, and career education problems (a) Agricultural education. (b) Business education. (c) Home economics education. (d) Occupational education. Prerequisite: consent of instructor and coordinator.

511-2 Improvement of Instruction in Consumer and Basic Business Subjects.

512-2 Improvement of Instruction in Secretarial Subjects.

518-3 Home Economics Programs in the Schools.

520-3 Trends and Issues in Home Economics Education.

521-3 Advanced Methods of Teaching Home Economics.

522-3 Supervision of Home Economics.

561-3 Research in Vocational, Occupational, and Career Education.

562-3 Legislation and Organization in Vocational, Occupational, and Career Education.

564-3 Evaluation of Vocational, Occupational, and Career Education Programs.

566-3 Administration and Supervision of Vocational, Occupational, and Career Education Programs.

568-3 Planning Vocational, Occupational, and Career Education Facilities.

570-3 Cooperative Vocational, Occupational, and Career Education Programs.

572-3 Post-Secondary Cooperative Vocational, Occupational, and Career Education Programs.

574-3 Vocational, Occupational, and Career Education Information.

576-6 (3, 3) Policy Implementation and Supervision of Vocational, Occupational, and Career Education Programs.

578-3 Vocational, Occupational, and Career Education in Diverse Settings.

580-3 Characteristics of Vocational, Occupational, and Career Education Clientele.

582-3 Vocational, Occupational, and Career Education Planning and Policy Development.

584-3 Articulated Vocational, Occupational, and Career Education Programs.

586-3 Methods and Materials for Adult Vocational, Occupational, and Career Education Programs.

590-1 to 4 Readings in Vocational, Occupational, and Career Education.

591-1 to 9 New Developments in Vocational, Occupational, and Career Education Programs.

592-2 to 6 Recent Research in Vocational, Occupational, and Career Education.

593-2 to 4 Individualized Research in Vocational, Occupational, and Career Education.

594-1 to 4 Research Seminar in Vocational, Occupational, and Career Education.

595-1 to 16 Vocational, Occupational, and Career Education Professional Internship.

597-1 to 4 Vocational, Occupational, and Career Education Practicum in Supervision.

598-2 to 6 Special Investigations in Vocational, Occupational, and Career Education.

599-2 to 6 Thesis.

600-1 to 36 Dissertation.

Women's Studies

A number of departments of the University offer courses dealing with women's studies. While a major or minor program is not offered, the list below provides information about courses for those interested in pursuing studies relating to women.

Art 457, Women in the Visual Arts

Family Economics and Management 480, Women in the Home and Labor Market

GSC 231, Greek Civilization

GSC 330, Classical Mythology

History 368, Women in American History

History 369, History of the American Family

Philosophy 446, Philosophical Perspectives on Women

Psychology 333, The Psychology of Women

Vocational Education Studies 433, Women and the Politics of Education

In addition, some special topic courses are concerned with women's studies. For

the courses listed below, the topical listing is in parentheses following the general course title. Students interested in enrolling in these courses should refer to the Schedule of Classes or contact the department regarding the scheduling of these sections.

- Administration of Justice 492, Contemporary Issues in Administration of Justice (the female offender.)
- Child and Family 408, Workshop (changing roles of women and men.)
- Communications and Fine Arts 397b, Special Interdisciplinary Studies (women in the arts-the politics of sex.)
- GSC 393, Studies in Literature (women in literature.)
- Liberal Arts 303, Interdisciplinary Studies (introduction to women's studies.)
- Linguistics 440, Topics in Linguistics (sexism and language.)

Zoology (Department, Major, Courses)

A major in zoology is an appropriate beginning for those planning a career that includes teaching and research in zoology, conservation, fisheries management and wildlife management, environmental monitoring, or the practice of medicine, dentistry, and veterinary science.

Students majoring in zoology are required to develop an individualized curriculum by consulting with the director of undergraduate studies in zoology and an appropriate faculty member of the department. The curriculum must include: a year of chemistry or physics, one course in mathematics beyond the College of Science requirement or a course in computer science, Biology 305 and 307, Zoology 220a,b, 300 (or equivalent, i.e., Biology 309), Zoology 482, and at least 18 additional semester hours of electives in zoology.

Courses offered in the General Studies program will not be accepted as electives. A minimum of 37 semester hours of biology and zoology must be completed for the major.

Bachelor of Arts or Bachelor of Science Degree, College of Science

<i>General Studies Requirements</i>	45 ¹
<i>Supplementary College of Science Requirements</i>	11
Foreign Languages	(4)+4
Mathematics 110a,b or 111.	(4)+1
Physical Science (Not General Studies)	6 ²
<i>Requirements for Major in Zoology</i>	40-44 ³
Biology 305, 307.	6
Zoology 220a,b, 300 (or its equivalent), 482	13
Elective zoology courses	18
Chemistry or Physics (Not General Studies)	(6)+0-2 ⁴
A course in Mathematics (beyond Mathematics 110a,b or 111), or in Computer Science.	3-5
<i>Electives</i>	20-24
<i>Total.</i>	120

¹The 45 hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Studies courses.
²May apply toward General Studies if approved substitutes are taken.
³Zoology requirements will satisfy biological science requirement for the College of Science.
⁴Satisfies physical science requirements for the College of Science.

Bachelor of Science Degree, College of Education

Degrees taken in the College of Education must satisfy all requirements of that college for the Bachelor of Science degree. The requirements for the major in zoology are the same in both colleges. College of Education professional educa-

tion and other certification requirements may be found in the section of this catalog titled Secondary Education. See Teacher Education Program, page 71.

Minor

A minor in zoology consists of 20 hours, including 220a,b, and 482. Electives from zoology and the following areas may be used to complete the 20-hour minimum requirement: Biology 305, 306, 307, and 309; but no General Studies courses can be included.

Courses

118-4 Introductory Zoology. An introduction to the basic concepts of animal life and its diversity, including the elements of cellular and organismic structure and function, reproduction, development, genetics, evolution, and ecology. Three lectures and one 2-hour laboratory per week. Offered Fall, Spring, and Summer terms. A cost of \$5 may be incurred by student.

212-2 Birding. Bird watching for pleasure. Consideration of identification, songs and ecology of birds, information on bird organizations, equipment, and techniques. Credit may not be used toward a major in zoology. Two lectures per week. Offered Fall term. Cost of \$5 to \$10 may be incurred by student.

220-8 (4,4) Diversity of Animal Life. Diversity and its taxonomic treatment in animals, emphasizing structure, function, life cycles, behavior, and phylogeny. (a) Invertebrates, (b) Vertebrates. Two lectures and two 2-hour laboratories per week. Need not be taken in a, b sequence. Fall, Spring, Summer. Prerequisite: principal interest in biology.

258-2 to 4 Work Experience. Credit for prior practical experience directly related to a student's specialty in the field of zoology. The student must petition the department and provide documentation as may be necessary to assess and approve such credit. Available for elective credit only.

300-4 Vertebrate Embryology. Main features of embryonic and fetal development from fish to humans. Two lectures and two 2-hour laboratories per week. Offered Fall and Spring terms. Prerequisite: 120b or 220b.

305-2 Genetics Laboratory. Experimental methods in applying basic principles of genetics. Monogenic and digenic inheritance, sex-linkage, gene interaction, linkage and chromosome mapping, mutation, artificial and natural selection, gene frequencies, and genetic drift. Two 2-hour laboratories per week. Cost of \$5 may be incurred by student. Offered Spring term. Prerequisite: Biology 305, or concurrent enrollment.

309-3 Elementary Cell Biology. Introduction to structure, function, and natural history of major cell types. Two lectures and one 2-hour laboratory per week. Offered Spring term. Prerequisite: consent of instructor.

314-3 Biology of Human Populations. Examines in detail three aspects of the increasing human population: its biological causes, its effects on the environment, and biological approaches for solving it. Three lectures per week. Offered Fall and Spring terms.

316-3 Insect Pests and Their Control. Classical and economic entomology including morphology, physiology, and taxonomy. Life history, damage, and control of principal injurious insects will be discussed. Two 1-hour lectures and one 2-hour laboratory per week. Credit may not be used toward a major in zoology. Offered Fall term. Prerequisite: 118 or equivalent.

318-5 Comparative Vertebrate Anatomy. The structure of vertebrate organ systems. Two lectures and three 2-hour laboratories per week. Cost of \$5 to \$10 may be incurred by student. Offered Spring term. Prerequisite: 120b or 220b.

351-4 Ecological Methods. Basic ecological field techniques for analysis of community structure and functional relationships. Two 4-hour laboratories per week. Cost of field trips may be \$5.00 to \$25.00 per student. Offered Spring term. Prerequisite: 120a, b or 220a, b and Biology 307.

375-2 Ecology of Surface Mining. Environmental characteristics, techniques of evaluating, plans for utilization and reclamation of surface mined areas. One lecture and one 2-hour laboratory or field trip per week. Credit may not be used toward a major in zoology. Cost of \$5 to \$10 may be incurred by student. Offered Summer term.

393-1 to 3 Individual Research. Research on zoological problems. Credit may not be used toward a minor in zoology. Some cost may be borne by the student. Offered Fall, Spring, and Summer terms. Prerequisite: minimum of 3.00 GPA (A is 4.00), senior standing, and approval by the proposed faculty supervisor.

400-3 Cell Biology of Development. Cellular molecular mechanisms of embryogenesis and differentiation. Examination of the cell as a component of interacting tissues constituting the developing organism. Prerequisite: consent of instructor, 300 or advanced standing in Biology.

402-3 Natural History of Invertebrates. Introduction to ecology, intraspecies communication and interspecies relationships of invertebrate animals. Recommended for teacher prep-

aration programs. One lecture and two 2-hour laboratories per week. Cost of \$10 to \$20 may be incurred by student. Offered Fall term. Prerequisite: 120a or 220a.

403-3 Natural History of Vertebrates. Observation, identification, and life histories. Designed for teachers. Not for students specializing in vertebrate zoology. Cost of \$10 to \$20 may be incurred by student. One lecture and one 4-hour laboratory. Offered Spring term. Prerequisite: 120b or 220b.

406-3 Protozoology. Taxonomy, cytology, reproduction, and physiology of unicellular animals. Laboratory methods for culture and study. One lecture and two 2-hour laboratories per week. Cost of \$5.00 may be incurred by student. Offered Fall term. Prerequisite: 120a or 220a.

407-4 Parasitology. Principles, collection, identification, morphology, life histories, and control measures. Two lectures and two 2-hour laboratories per week. Cost of \$5 may be incurred by student. Offered Spring term. Prerequisite: 120a or 220a.

408-3 Herpetology. Taxonomic groups, identification, morphology, and natural history of amphibians and reptiles. One lecture and two 2-hour laboratories per week. Cost of \$5.00 may be incurred by student. Offered Fall term. Prerequisite: 120b or 220b.

409-4 Vertebrate Histology. Microscopic structure of organs and tissues with emphasis on mammalian material. Two lectures and two 2-hour laboratories per week. Cost of \$5.00 may be incurred by student. Offered Spring term. Prerequisite: 10 semester hours of biological science including vertebrate biology.

410-6 (3, 3) Vertebrate Paleontology. History of vertebrate animals in terms of their morphological change, geological succession, and ecological relationships. (a) Fossil fishes, amphibians, reptiles and birds. (b) Fossil mammals. Two lectures and one 2-hour laboratory per week. Cost of \$5.00 may be incurred by student. Offered (a) Fall; (b) Spring terms. Prerequisite: 120b or 220b.

413-6 (3, 3) The Invertebrates. (a) Structure, phylogeny, and habitats of the lower invertebrates through lophophorates and deuterostomes except echinoderms. (b) Structure, phylogeny, and habitats of the higher invertebrates including echinoderms, molluscs, annelids, and arthropods. Three 2-hour laboratories per week. Cost of \$5 may be incurred by the student. Offered Spring term, (a) in alternate even years; (b) alternate odd years. Cost of \$5 may be incurred by student. Prerequisite: 220a.

414-4 Freshwater Invertebrates. Taxonomic groups, identification, distribution, and habitats of the North American freshwater invertebrate fauna. Two lectures, two 2-hour laboratories per week. Offered Fall term. Cost of \$19 to \$20 may be incurred by student for field trips. Prerequisite: 120a or 220a.

415-3 Limnology. Lakes and inland waters; the organisms living in them, and the factors affecting these organisms. Two lectures per week and one 4-hour laboratory alternate weeks. Cost of \$15 to \$20 may be incurred by student. Offered Fall term. Prerequisite: 120a or 220a.

421-4 Histological Techniques. Methods of preparing animal tissue for microscopic study and learn theories of staining and histochemistry. One lecture and two 3-hour laboratories per week. Cost of \$15 may be incurred by student. Offered Fall term. Prerequisite: 10 semester hours of biological science.

426-3 Comparative Endocrinology. Comparison of mechanisms influencing hormone release, hormone biosynthesis, and the effects of hormones on target tissues. Includes ablation and histology of glands and chemical and bio-assays with vertebrates and invertebrates. Two lectures and one 2-hour laboratory per week. Cost of \$5 to \$10 may be incurred by student. Offered Spring term. Prerequisite: consent of instructor.

460-2 Upland Game Birds. Identification, life history, ecology, and management. One lecture and one 2-hour laboratory per week; there will be three or four Saturday field trips. Cost of field trips up to \$25 per student. Prerequisite: 220b or consent of instructor.

461-3 Mammalogy. Taxonomic groups, identification, and natural history of mammals. One hour lecture and two 2-hour laboratories per week. Cost of \$10 may be incurred by student. Offered Fall term. Prerequisite: 120b or 220b.

462-2 Waterfowl. Identification, life history, ecology, and management. One lecture and one 2-hour laboratory per week; there will be three or four Saturday field trips. Cost of field trips up to \$25 per student. Prerequisite: 220b or consent of instructor.

465-3 Ichthyology. Taxonomic groups, identification, and natural history of fishes. Two lectures and one 2-hour laboratory per week. Cost of \$10 may be incurred by student. Offered Spring term. Prerequisite: 120b or 220b.

466-3 Fish Management. Sampling, age and growth, dynamics, habitat improvement, manipulation of fish populations, and management of freshwater and marine fish stock. Two lectures per week and one 4-hour laboratory alternate weeks. Cost of field trips up to \$25 per student. Offered Fall term. Prerequisite: 10 hours of biological science.

467-3 Ornithology. Classification and recognition of birds and the study of their songs, nests, migratory habits, and other behavior. One lecture and two 2-hour laboratories per week. Cost of field trips may be up to \$20 per student. Offered Spring term. Prerequisite: 120b or 220b.

468-4 (2, 2) Wildlife Biology. Basic concepts and techniques employed in managing wildlife

populations and their associated ecosystems. A basic ecology course is desirable as background for this course. (a) Principles. Two 1-hour lectures per week. (b) Techniques. One 4-hour laboratory session per week, three or four of which will be field trips on Saturdays. Cost of field trips up to \$25 per student may be incurred. Offered Fall term. Prerequisite: 10 semester hours of biological science; plus for zoology majors, concurrent enrollment in 468b.

471-3 Entomology. Structure, classification, and life histories of insects. One lecture and two 2-hour laboratories per week. Offered Fall term. Cost up to \$20 may be incurred by student for field trips. Prerequisite: 120a or 220a.

473-3 Aquatic Entomology. Structure, classification, and biology of aquatic insects. One lecture and two 2-hour laboratories per week. Cost up to \$20 may be incurred by student. Offered Spring term. Prerequisite: 120a or 220a.

478-3 Animal Behavior. Biological basis of the behavior of animals. Two lectures and one 2-hour laboratory per week. Prerequisite: one year of biological science or permission of instructor.

479-2 to 5 Concepts in Animal Behavior. Terms and concepts relevant to the study of animal behavior. Guided self-instructional format, with two 1-hour and one 3-hour period scheduled weekly, primarily as question-answer and evaluation sessions. Offered Spring term. Prerequisite: one year of biological science or permission of instructor.

480-2 to 5 Research Methods in Animal Behavior. Skills relevant to doing research in animal behavior. Guided self-instructional format, with two 3-hour periods scheduled weekly, primarily as question-answer and evaluation sessions. Cost of up to \$25 may be incurred by student. Offered Fall term. Prerequisite: at least two hours of *B* work in 478 or 479, or permission of instructor.

482-1 Zoology Seminar for Seniors. Classical and contemporary topics in zoology. This requirement will normally be met by participating in the regular meeting of the seminar. In lieu of seminar attendance and with consent of departmental chairperson, the student may elect to prepare and give an oral presentation at a special seminar on an agreed upon research topic. One meeting per week. Offered Fall, Spring, Summer terms. Not for graduate credit. Prerequisite: senior standing or 24 hours of life sciences completed. Mandatory Pass/Fail.

496-2 to 4 Zoology Field Studies. A trip of four to eight weeks to acquaint students with animals in various environments and with methods of field study, collection, and preservation. Cost of \$25 may be incurred by the student. Offered Fall, Spring, Summer terms. Prerequisite: consent of department.

508-2 Helminthology.

512-2 Animal Geography.

514-3 Advanced Entomology.

520-3 Advanced Invertebrates.

521-3 Advanced Limnology.

525-3 Cytology. (Same as Botany 525.)

540-3 Factors in Animal Reproduction.

542-3 Osteology.

561-3 Game Mammals.

566-3 Fish Culture.

567-1 to 4 Techniques in Fish Culture and Fish Management.

573-3 Physiological Ecology.

577-2 Population Ecology.

578-2 Population Genetics.

580-3 Advanced Taxonomy.

581-2 Zoological Literature.

582-1 to 4 (1, 1, 1, 1) Graduate Zoology Seminars.

583-1 Teaching Zoology in College

585-36 (3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3) Seminar.

593-1 to 8 Individual Research.

599-1 to 8 Research and Thesis.

600-1 to 32 Research and Dissertation.



5

Faculty

Accountancy (College of Business and Administration)

BARRON, MARY NOEL, Associate Professor, C.P.A., M.B.A., University of Michigan, 1946.
BASI, BARTHOLOMEW A., Professor, C.P.A., J.D., D.B.A., Indiana University, 1971.
BURGER, CLIFFORD R., Professor, C.P.A., M.S., Indiana State University, 1947.
ERIKSEN, DOUGLAS C., Associate Professor, C.P.A., C.M.A., Ph.D., University of Missouri/Columbia, 1968.
GALLEGLY, ROBERT L., Associate Professor, *Emeritus*, A.M. University of Illinois, 1947.
GLICK, JOHN R., Assistant Professor, D.B.A., University of Colorado, 1975.
KARVEL, GEORGE R., Associate Professor, M.S., University of Colorado, 1972.
NEAL, PHILLIP G., Assistant Professor, J.D., Southern Illinois University, 1977.
OGDEN, SUSIE, Associate Professor, *Emerita*, A.M. University of Illinois, 1931.
SCHMIDLEIN, EDWARD J., JR., Professor, *Emeritus*, C.P.A., Ph.D., New York University, 1953.
SWICK, RALPH D., Professor, *Emeritus*, C.P.A., D.B.A., Indiana University, 1954.
TUCKER, MARVIN W., Professor, Ph.D., University of Alabama, 1966.
WHITE, JACKSON A., Professor and *Chairperson*, C.P.A., Ph.D., Louisiana State University, 1964.
WOELFEL, CHARLES J., Professor, C.P.A., Ph.D., University of Texas, 1957.
WRIGHT, ROLAND M., Professor, C.P.A., Ph.D., University of Iowa, 1962.

Administrative Sciences (College of Business and Administration)

BATEMAN, DAVID N., Associate Professor, Ph.D., Southern Illinois University, 1970.
BEDWELL, R. RALPH, Associate Professor, *Emeritus*, Ph.D., Southern Illinois University, 1969.
BUSSOM, ROBERT S., Associate Professor and *Chairperson*, Ph.D., Ohio State University, 1973.
FOHR, JOHN M., Professor, Ed.D., Michigan State University, 1959.
HUNT, JAMES G., Professor, Ph.D., University of Illinois, 1966.
JAUCH, LAWRENCE R., Associate Professor, Ph.D., University of Missouri-Columbia, 1973.
LARSON, LARS L., Associate Professor, Ph.D., University of Illinois, 1971.
MARTIN, THOMAS N., JR., Assistant Professor, Ph.D., University of Iowa, 1977.
OSBORN, RICHARD N., Associate Professor, D.B.A., Kent State University, 1971.
REHN, HENRY J., Professor, *Emeritus*, Ph.D., University of Chicago, 1930.
SCOTT, JOHN W., Professor, *Emeritus*, Ph.D., University of Chicago, 1930.
SEKARAN, UMA, Assistant Professor, Ph.D., University of California-Los Angeles, 1977.
VICARS, WILLIAM M., Associate Professor, Ph.D., Southern Illinois University, 1969.
WESTBERG, WILLIAM C., Professor, Ph.D., Pennsylvania State University, 1948.
WHITE, GREGORY, Assistant Professor, Ph.D., University of Cincinnati, 1976.
WILSON, HAROLD K., Assistant Professor, D.B.A., University of Colorado, 1972.

Aerospace Studies

CHRISTIAN, FRANK H., Adjunct Assistant Professor.
CROW, SAMUEL A., II, Adjunct Assistant Professor, M.A., Chapman College, 1975.
DEIGNAN, FRANCIS X., Adjunct Assistant Professor, M.Ed., University of Massachusetts, 1973.
HAYES, MICHAEL J., Adjunct Instructor.
LESSER, STUART J., Adjunct Instructor, A.A., Los Angeles City College, 1976.

MOREY, WILLIAM F., Adjunct Professor, M.A., Oklahoma University, 1972.

Agricultural Industries (School of Agriculture)

BENTON, RALPH A., Professor, *Emeritus*, Ph.D., University of Illinois, 1955.

DOERR, WILLIAM A., Assistant Professor, Ph.D., Southern Illinois University, 1973.

HERR, WILLIAM MCD., Professor, Ph.D., Cornell University, 1954.

KEEPPER, WENDELL E., Professor, *Emeritus*, Ph.D., Cornell University, 1938.

LEGACY, JAMES, Assistant Professor, Ph.D., Cornell University, 1976.

LYBECKER, DONALD W., Associate Professor, Ph.D., Iowa State University, 1970.

PATERSON, JOHN J., Associate Professor, *Emeritus*, M.S., University of Saskatchewan, 1943.

SHUMAKER, GEORGE A., Assistant Professor, Ph.D., University of Georgia, 1977.

SOLVERSON, LYLE, Associate Professor, Ph.D., University of Wisconsin, 1967.

STITT, THOMAS R., Professor, Ph.D., Ohio State University, 1967.

SYMONS, WILLIAM B., Assistant Professor, Ph.D., Ohio State University, 1975.

WILLS, WALTER J., Professor, Ph.D., University of Illinois, 1952.

WOLFF, ROBERT L., Associate Professor, Ph.D., Louisiana State University, 1971.

WOOD, EUGENE S., Professor and *Chairperson*, Ed.D., University of Missouri, 1958.

Allied Health and Public Services (School of Technical Careers)

ARNO, JOHN F., Researcher, Radiologic Technology Development Project, B.S., Chicago Medical School, 1977.

BOBEK, SUSAN C., Adjunct Instructor, Nursing.

BRANSON, BONNIE SUE, Instructor, Dental Hygiene, B.G.S., University of South Carolina, 1976.

BUSHEE, ELEANOR J., Professor, Dental Hygiene, D.D.S., Northwestern University, 1948.

BYKOWSKI, PETER, Instructor, Dental Laboratory Technology.

CARLTON, KERRY L., Adjunct Instructor, Allied Health Careers Specialties.

CATES, NITA E., Adjunct Instructor, Allied Health Careers Specialties, B.S., Eastern Illinois University, 1969.

CATTOOR, KAREN S., Adjunct Instructor, Allied Health Careers Specialties.

CHRONISTER, DEBORAH, Adjunct Instructor, Allied Health Careers Specialties, B.S., Lebanon Valley College, 1976.

CITTADINO, DOMINIC, Adjunct Assistant Professor, Dental Hygiene, D.D.S., Loyola University, 1974.

DENNIS, PATRICIA G., Adjunct Instructor, Allied Health Careers Specialties.

DENTON, SHIRLEY A., Researcher, Rural Allied Health Manpower Project, M.A., University of Connecticut, 1976.

DETOMASI, MARILYN, Researcher, Rural Allied Health Manpower Project, B.S., St. Louis University, 1964.

DUGGER, BETTIE, Adjunct Instructor, Dental Hygiene, A.A., Southern Illinois University, 1974.

DURR, MICHAEL, Visiting Assistant Professor, Dental Hygiene, D.M.D., Washington University, 1976.

EBNER, MELITTA T., Visiting Instructor, Dental Hygiene, B.S., Columbia University, 1974.

EDWARDS, MARY C., Associate Professor, Dental Hygiene, M.A. in Ed., University of San Francisco, 1962.

EIFERT, DAVID C., Researcher, Radiologic Technology Development Project, B.S., Southern Illinois University, 1977.

ELLIOTT, JAMES R., Associate Professor, Dental Hygiene, D.D.S., University of Tennessee, 1953; M.S., Ohio State College of Dentistry, 1962.

ENTERMAN, CYNTHIA JO, Visiting Instructor, Dental Hygiene, B.S., University of South Dakota, 1976.

FRAVELL, EDWARD L., Adjunct Instructor, Allied Health Careers Specialties, B.S., University of Wisconsin, 1957.

GREENE, BARBARA, Instructor, Physical Therapist Assistant, B.S., Stanford University, 1952.

GRISWOLD, PAMELA J., Adjunct Instructor, Allied Health Careers Specialties.

HABERBERGER, RICHARD, Adjunct Instructor, Allied Health Careers Specialties.

HEES, ALICE JANE, Assistant Professor, Nursing, M.S., University of Colorado, 1960.

HERTZ, DONALD G., Associate Professor, Mortuary Science and Funeral Service, Ed.M., University of Oklahoma, 1953.

HUCKELBERRY, LOWELL L., Adjunct Instructor, Allied Health Careers Specialties.

HUTER, CONNIE K., Adjunct Instructor, Allied Health Careers Specialties.

IJAMS, KAYLEONNE, Assistant Professor, Dental Laboratory Technology, B.S., Southern Illinois University, 1973.

- JANCZAK, DAVID E., Adjunct Instructor, Allied Health Careers Specialties.
- JOHNSON, EDNA M., Adjunct Instructor, Allied Health Careers Specialties.
- JOHNSON, RONALD L., Adjunct Instructor, Allied Health Careers Specialties.
- KALBFLEISCH, LEE M., Adjunct Instructor, Allied Health Careers Specialties.
- KING, DANIEL C., Adjunct Instructor, Allied Health Careers Specialties.
- KUBERSKI, ROGER J., Adjunct Instructor, Allied Health Careers Specialties.
- KUNSTADTER, KARL M., Adjunct Professor, Dental Hygiene, D.D.S., University of Missouri at Kansas City, 1977.
- LAAKE, DENNIS, Assistant Professor, Dental Laboratory Technology, M.S. Ed., Southern Illinois University, 1973.
- LEFEVRE, HAZEL L., Adjunct Instructor, Nursing, B.S. in Nursing Education, Columbia University, 1950.
- LEWIS, GARRY L., Adjunct Instructor, Allied Health Careers Specialties.
- LUGENBEEL, ARCH, Assistant Professor, Allied Health Careers Specialties, M.Ed., University of South Carolina, 1964.
- MOOS, ANN H., Visiting Instructor, Dental Hygiene, A.S., William Rainey Harper College, 1974.
- MORGAN, FREDERIC L., Associate Professor, and *Chairperson*, Allied Health and Public Service Division, Ed.D., Ball State University, 1969.
- MUELLER, KENNETH W., Adjunct Instructor, Allied Health Careers Specialties.
- NEEDHAM, BILLY J., Adjunct Instructor, Allied Health Careers Specialties.
- NEEDHAM, JUDITH, Adjunct Instructor, Allied Health Careers Specialties.
- OKITA, TED Y., Associate Professor, Physical Therapist Assistant, M.A., Northwestern University, 1964.
- PAULK, MARILYN, Assistant Professor, Dental Hygiene, B.S., Southern Illinois University, 1975.
- POSTON, GEORGE H., Instructor, Mortuary Sciences and Funeral Service, B.A., McKendree College, 1969.
- RIPLEY, AUDREE J., Adjunct Instructor, Nursing, B.S.N., Evansville University, 1963.
- SCHUBERT, JOHN D., Adjunct Instructor, Allied Health Careers Specialties.
- SLOAN, DAVID L., Adjunct Instructor, Allied Health Careers Specialties.
- SMITH, BARBARA J., Adjunct Instructor, Nursing.
- SMITH, BILLY D., Adjunct Instructor, Allied Health Careers Specialties.
- SMITH, LINDA T., Adjunct Instructor, Allied Health Careers Specialties.
- SOTO, CARLOS, Researcher, Radiologic Technology Development Project, B.S., Southern Illinois University, 1976.
- STIEREN, PATRICIA L., Adjunct Instructor, Nursing.
- STRALEY, KEVIN J., Instructor, Mortuary Science and Funeral Service, B.A., William Jennings Bryan College, 1972.
- TAYLOR, GLENNA S., Adjunct Instructor, Allied Health Careers Specialties.
- TENNYSON, DANIEL, Instructor, Dental Laboratory Technology, B.S., Southern Illinois University, 1977.
- TESTO, ERNEST J., Adjunct Instructor, Dental Hygiene.
- TESTORY, RENEE L., Instructor, Dental Hygiene, B.S., Southern Illinois University, 1975.
- THOMPSON, ALDEN S., Adjunct Instructor, Allied Health Careers Specialties.
- WALTON, LARRY D., Adjunct Instructor, Allied Health Careers Specialties.
- WESTPHAL, DWIGHT, Instructor, Dental Laboratory Technology, B.S., Southern Illinois University, 1977.
- WITTENBRINK, JOHN H., Adjunct Instructor, Allied Health Careers Specialties.
- WOHLWEND, LINDA, Instructor, Dental Hygiene, B.S., Southern Illinois University, 1974.
- WOLAVER, JO ELLEN, Instructor, Dental Hygiene, M.S. in Ed., Southern Illinois University, 1975.

Animal Industries (School of Agriculture)

- ARTHUR, ROBERT, Assistant Professor, Ph.D., University of Missouri, 1970.
- GOODMAN, BILL L., Professor, Ph.D., Ohio State University, 1959.
- HAUSLER, CARL L., Associate Professor, Ph.D., Purdue University, 1970.
- HINNERS, SCOTT W., Professor, *Emeritus*, Ph.D., University of Illinois, 1958.
- HODSON, HAROLD H., JR., Professor and *Chairperson*, Ph.D., Iowa State University, 1965.
- KAMMLADE, W. G., JR., Associate Professor, Ph.D., University of Illinois, 1951.
- KROENING, GILBERT H., Professor, Ph.D., Cornell University, 1965.
- LEE, D. DIXON, JR., Associate Professor, Ph.D., North Carolina State University, 1970.
- MALES, JAMES R., Assistant Professor, Ph.D., Ohio State University, 1973.
- OLSON, HOWARD H., Professor, Ph.D., University of Minnesota, 1952.
- REED, ALEX, Professor, *Emeritus*, Ph.D., University of Illinois, 1953.
- STRACK, LOUIS E., Associate Professor, D.V.M., University of Illinois, 1961.

Anthropology (College of Liberal Arts)

BENDER, M. LIONEL, Associate Professor, Ph.D., University of Texas at Austin, 1968.
BRAUN, DAVID P., Assistant Professor, Ph.D., University of Michigan, 1977.
COOK, EDWIN A., Associate Professor, Ph.D., Yale University, 1967.
DARK, PHILIP J. C., Professor, *Emeritus*, Ph.D., Yale University, 1954.
FALK, DEAN, Assistant Professor, Ph.D., University of Michigan, 1977.
GUMERMAN, GEORGE J., Professor, and *Chairperson*, Ph.D., University of Arizona, 1969.
HANDLER, JEROME S., Professor, Ph.D., Brandeis University, 1965.
KELLEY, J. CHARLES, Professor, *Emeritus*, Ph.D., Harvard University, 1948.
MacLACHLAN, BRUCE B., Associate Professor, Ph.D., University of Chicago, 1962.
MARING, ESTER G., Assistant Professor, Ph.D., Indiana University, 1969.
MARING, JOEL M., Associate Professor, Ph.D., Indiana University, 1967.
MULLER, JON D., Associate Professor, Ph.D., Harvard University, 1967.
RANDS, ROBERT L., Professor, Ph.D., Columbia University, 1952.
RILEY, CARROLL L., Professor, Ph.D., University of New Mexico, 1952.
TAYLOR, WALTER W., Professor, *Emeritus*, Ph.D., Harvard University, 1943.

Applied Technologies (School of Technical Careers)

ALBERT, JOSEPH J., Instructor, Automotive Technology, B.S., Southern Illinois University, 1971.
BASSETT, FRANKLIN A., Assistant Professor, *Emeritus*, Construction Technology, B.S., University of Illinois, 1948.
BEAUCHAMP, CLARENCE, Assistant Professor, *Emeritus*, M.S., University of Wisconsin, Stout, 1949.
BRANSON, CARL E., Instructor, Construction Technology, B.S., Southern Illinois University, 1974.
BROWN, TERENCE, Assistant Professor, Photographic and Audio-Visual Technology, Ph.D., Southern Illinois University, 1975.
CASH, JOE R., Assistant Professor, Automotive Technology, M.S.Ed., Southern Illinois University, 1970.
CRENSHAW, J. HOWARD, Instructor, *Emeritus*, Mathematics and Science, M.S., University of Illinois, 1940.
DALLMAN, MURNICE, Associate Professor, Tool and Manufacturing Technology, M.S.Ed., Southern Illinois University, 1960.
DELMASTRO, EDWIN V., Instructor, Photographic and Audio-Visual Technology and Commercial Graphics Production.
GREER, JACK, Instructor, Automotive Technology, B.S., Southern Illinois University, 1974.
HARBISON, JAMES L., Instructor *Emeritus*, Mathematics and Science, M.S. University of Illinois, 1940.
HOYLE, ORVILLE GLENN, Instructor, *Emeritus*, Tool and Manufacturing Technology, B.Ed., Western Illinois University, 1931.
JONES, PAUL, Instructor, *Emeritus*, Automotive Technology.
KAZDA, JOSEPH G., Assistant Professor, Automotive Technology, M.S.Ed., Southern Illinois University, 1965.
LAMPMAN, DUNCAN, Associate Professor, Tool and Manufacturing Technology and Construction Technology, M.S.Ed., Southern Illinois University, 1956.
MAILLOUX, LAWRENCE, Assistant Professor, Commercial Graphics—Design, B.F.A., Rhode Island School of Design, 1947.
McDONALD, JAMES H., Instructor, *Emeritus*, Automotive Technology, B.S.Ed., Central Missouri State University, 1948.
MUHICH, FRANK W., Associate Professor, Tool and Manufacturing Technology, M.S.Ed., Southern Illinois University, 1957.
O'LOUGHLIN, JOHN, Instructor, Automotive Technology, A.T., Southern Illinois University, 1971.
OSBORN, HAROLD W., Assistant Professor, Construction Technology, M.S.Ed., Southern Illinois University, 1960.
RAY, O. B., Instructor, *Emeritus*, Automotive Technology, B.S., Murray State University, 1934.
ROMACK, CHARLES, Assistant Professor, Automotive Technology, B.S., Southern Illinois University, 1965.
RUNKLE, LEWIS C., Assistant Professor, *Emeritus*, Automotive Technology, M.E., Colorado State University, 1962.
SCHINDLER, RICHARD, Instructor, Commercial Graphics. A.A., Southern Illinois University, 1973.

SCHULTZ, RAYMOND, Assistant Professor, *Emeritus*, Electronics Technology.
SIMON, ERNEST J., Professor, *Emeritus*, M.S., University of Illinois 1936.
SODERSTROM, HARRY R., Professor and *Chairperson*, Tool and Manufacturing Technology, M.S., Bradley University, 1952.
STALEY, GLENN LAMB, Instructor, Construction Technology, M.S., Southern Illinois University, 1976.
SUTTON, JOHN R., Assistant Professor, Tool and Manufacturing Technology, M.S.Ed., Southern Illinois University, 1969.
TRAYLOR, GEORGE LELON, Associate Professor, Tool and Manufacturing Technology, M.S.Ed., Southern Illinois University, 1965.
TREGONING, PHILIP, Assistant Professor, Tool and Manufacturing Technology, M.S.Ed., Southern Illinois University, 1973.
WHITE, JAMES E., Assistant Professor, Photographic and Audio-Visual Technology, M.S.Ed., Southern Illinois University, 1962.
WHITE, ROBERT, Assistant Professor, Photographic and Audio-Visual Technology, M.S. in Ed., Southern Illinois University, 1962.
WILLEY, LUCIAN D., Associate Professor, *Emeritus*, Automotive Technology, B.Ed., Western Illinois University, 1936.
YACK, JOHN L., Assistant Professor, Commercial Graphics, M.F.A., University of Oklahoma, 1959.

Art (College of Communications and Fine Arts)

ABRAHAMSON, ROY E., Associate Professor Ed.D., Columbia University, 1965.
ADDINGTON, ALDON M., Assistant Professor M.F.A., Cranbrook Academy of Art, 1966.
BARONE, VIOLET TROVILLION, Assistant Professor, *Emerita*, M.A., George Peabody College for Teachers, 1955.
BEENE, PATRICIA C., Instructor, M.S.Ed., Southern Illinois University, 1974.
BERNSTEIN, LAWRENCE A., Associate Professor, M.F.A., Cranbrook Academy of Art, 1953.
BOYSEN, BILL H., Associate Professor, M.F.A., University of Wisconsin, 1966.
DELLER, HARRIS, Assistant Professor, M.F.A., Cranbrook Academy of Art, 1973.
FEHM, SHERWOOD A., Associate Professor, Ph.D., Yale University, 1971.
FELDMAN, JOEL B., Assistant Professor, M.F.A., Indiana University, 1967.
FINK, HERBERT L., Professor, M.F.A., Yale University, 1958.
GREENFIELD, SYLVIA R., Assistant Professor, M.F.A., University of Colorado, 1967.
JOHNSON, EVERT A., Lecturer, M.A., University of Iowa, 1954.
KINGTON, L. BRENT, Professor, M.F.A., Cranbrook Academy of Art, 1961.
LAWSON, ELNORA, Instructor, *Emerita*, B.Ed., Southern Illinois University, 1936.
LINTAULT, M. JOAN, Associate Professor, M.F.A., Southern Illinois University, 1962.
LITTLEFIELD, F. LEE, Assistant Professor, M.A., University of New Mexico, 1968.
MAVIGLIANO, GEORGE J., Assistant Professor, M.A., Northern Illinois University, 1967.
ONKEN, MICHAEL O., Assistant Professor, M.A., Northern Illinois University, 1966.
PAULSON, ROBERT L., Associate Professor, M.F.A., University of Wisconsin, 1967.
ROACH, LULA D., Associate Professor, *Emerita*, M.A., Washington University, 1953.
SULLIVAN, JAMES E., Associate Professor, M.A., University of California at Los Angeles, 1965.
SULLIVAN, MILTON F., Professor and *Director*, M.A., Columbia University, 1951.
WALSH, THOMAS J., Professor, M.F.A., University of Michigan, 1962.
WOOD, DAN D., Assistant Professor, M.A., University of Iowa, 1968.

Aviation Technologies (School of Technical Careers)

BIRKHEAD, LARRY M., Assistant Professor, Avionics Technology, 1973.
BURKEY, PAUL D., Instructor, Aviation Technology, 1968.
CANNON, RICHARD H., Assistant Professor, Aviation Technology, 1966.
DAROSA, EDMUND A., Professor and *Chairperson*, Aviation Technology, B.A., College of Saint Joseph, Portugal, 1936.
KOLKMEYER, ROBERT O., Assistant Professor, Aviation Technology, M.S.Ed., Southern Illinois University, 1971.
OHMAN, LENNERT R., Assistant Professor, Aviation Technology, B.S., University of Illinois, 1964.
RICH, DAVID L., Assistant Professor, Aviation Technology, 1968.
RODRIGUEZ, CHARLES L., Visiting Instructor, Aviation Technology, A.A., Southern Illinois University, 1977.
SCHAFFER, JOSEPH A., Assistant Professor, Aviation Technology, B.S., Lewis College, 1960.
STAPLES, LAURENCE C., Instructor, Aviation Technology, B.S., Southern Illinois University, 1975.

- TEAGUE, JAMES T., Instructor, Aviation Technology, B.S., Southern Illinois University, 1970.
- VERNER, GERRY D., Instructor, Aviation Technology, B.S., Southern Illinois University, 1973.
- WHITACRE, GERRY LEE, Assistant Professor, Aviation Technology, B.S., Southern Illinois University, 1975, 1976.

Botany (College of Science)

- ASHBY, WILLIAM C., Professor, Ph.D., University of Chicago, 1950.
- BISSING, DONALD R., Assistant Professor, Ph.D., Claremont Graduate School, 1976.
- MARBERRY, WILLIAM M., Assistant Professor, *Emeritus*, University of Illinois, 1936.
- MATTEN, LAWRENCE C., Professor, Ph.D., Cornell University, 1965.
- MOHLENBROCK, ROBERT H., Professor and *Chairperson*, Ph.D., Washington University, 1957.
- OLAH, LADISLAO V., Professor, *Emeritus*, Ph.D., Stephen Tisza University, Hungary, 1934.
- PAPPELIS, ARISTOTEL J., Professor, Ph.D., Iowa State University, 1957.
- ROBERTSON, PHILIP A., Assistant Professor, Ph.D., Colorado State University, 1968.
- SCHMID, WALTER E., Professor, Ph.D., University of Wisconsin, 1961.
- STOTLER, BARBARA C., Associate Professor, Ph.D., University of Cincinnati, 1968.
- STOTLER, RAYMOND E., Associate Professor, Ph.D., University of Cincinnati, 1968.
- SUNDBERG, WALTER J., Associate Professor, Ph.D., University of California, 1971.
- TINDALL, DONALD R., Associate Professor, Ph.D., University of Louisville, 1966.
- UGENT, DONALD, Associate Professor, Ph.D., University of Wisconsin, 1966.
- VERDUIN, JACOB, Professor, Ph.D., Iowa State University, 1947.
- VOIGT, JOHN W., Professor, Ph.D., University of Nebraska, 1950.
- WELCH, WALTER B., Professor, *Emeritus*, Ph.D., University of Chicago, 1937.
- YOPP, JOHN H., Associate Professor, Ph.D., University of Louisville, 1969.

Center for the Study of Crime, Delinquency, and Corrections (College of Human Resources)

- ANDERSON, DENNIS, Assistant Professor, Ed.D., University of Nebraska, 1970.
- BASCOM, PATRICIA, J., Academic Adviser, M.S., Southern Illinois University, 1976.
- BENNETT, LAWRENCE A., Associate Professor and *Director*, Ph.D., Claremont Graduate School, 1968.
- COUGHLIN, JOSEPH S., Professor, M.S.W., University of Wisconsin, 1954.
- DREHER, ROBERT H., Associate Professor, J.D., University of Illinois, 1940.
- JOHNSON, ELMER H., Professor, Ph.D., University of Wisconsin, 1950.
- KIEFER, GEORGE W., Instructor, M.A., Southern Illinois University, 1976.
- KLYMAN, FRED I., Associate Professor, Ed.D., Oklahoma State University, 1973.
- MATTHEWS, CHARLES V., Associate Professor, M.A., University of Kansas City, 1951.
- RICH, VERNON, Associate Professor, Ph.D., Michigan State University, 1971.
- RIEDEL, MARC P., Associate Professor, Ph.D., University of Pennsylvania, 1972.
- WILSON, KENNETH G., Assistant Professor, Ph.D., Kansas State University, 1973.
- WILSON, Nanci K., Assistant Professor, Ph.D., University of Tennessee, 1972.

Chemistry and Biochemistry (College of Science)

- ARNOLD, RICHARD T., Professor, Ph.D., University of Illinois, 1937.
- BAILEY, JAMES M., Assistant Professor, Ph.D., University of North Carolina, 1973.
- BEMILLER, JAMES N., Professor, Ph.D., Purdue University, 1959.
- BEYLER, ROGER E., Professor, Ph.D., University of Illinois, 1949.
- BOLEN, D. WAYNE, Associate Professor, Ph.D., Florida State University, 1969.
- BROWN, GEORGE E., Professor, *Emeritus*, Ph.D., Iowa State University, 1941.
- CASKEY, ALBERT L., Associate Professor, Ph.D., Iowa State University, 1961.
- COX, JAMES A., Associate Professor, Ph.D., University of Illinois, 1967.
- EMPTAGE, MICHAEL R., Assistant Professor, Ph.D., Harvard University, 1965.
- GUYON, JOHN C., Professor, Ph.D., Purdue University, 1961.
- HADLER, HERBERT I., Professor, Ph.D., University of Wisconsin, 1952.
- HADLEY, ELBERT H., Professor, Ph.D., Duke University, 1940.
- HALL, J. HERBERT, Professor, Ph.D., University of Michigan, 1959.
- HARGRAVE, PAUL A., Associate Professor, Ph.D., University of Minnesota, 1970.
- HINCKLEY, CONRAD C., Associate Professor, Ph.D., University of Texas, 1964.
- KOSTER, DAVID F., Associate Professor, Ph.D., Texas A & M University, 1965.
- MEYERS, CAL Y., Professor, Ph.D., University of Illinois, 1951.
- NECKERS, J. W., Professor, *Emeritus*, Ph.D., University of Illinois, 1927.
- PHILLIPS, JOHN B., Assistant Professor, Ph.D., University of Arizona, 1977.
- SCHMIT, JOSEPH, Assistant Professor, Ph.D., Purdue University, 1971.
- SCHMULBACH, C. DAVID, Professor and *Chairperson*, Ph.D., University of Illinois, 1958.

SLOCUM, DONALD W., Professor, Ph.D., New York University, 1963.
 SMITH, GERARD V., Professor, Ph.D., University of Arkansas, 1959.
 SUNG, MICHAEL T., Associate Professor, Ph.D., University of Wisconsin, 1968.
 TRIMBLE, RUSSELL F., Professor, Ph.D., Massachusetts Institute of Technology, 1951.
 TYRRELL, JAMES, Associate Professor, Ph.D., University of Glasgow, 1963.
 VAN LENTE, KENNETH A., Professor, *Emeritus*, Ph.D., University of Michigan, 1931.
 WOTIZ, JOHN H., Professor, Ph.D., Ohio State University, 1948.

Cinema and Photography (College of Communications and Fine Arts)

BLUMENBERG, RICHARD M., Associate Professor, Ph.D., Ohio University, 1969.
 BUKALSKI, PETER J., Associate Professor and *Chairperson*, Ph.D., Ohio State University, 1975.
 COCKING, LOREN D., Assistant Professor, M.A., Ohio State University, 1969.
 COVELL, MICHAEL D., Assistant Professor, M.F.A., Ohio University, 1975.
 GILMORE, DAVID A., Associate Professor, M.F.A., Ohio University, 1969.
 HARPOLE, CHARLES H., Assistant Professor, Ph.D., New York University, 1976.
 HORRELL, C. WILLIAM, Professor, Ed.D., Indiana University, 1955.
 LAWSON, RICHARD A., Visiting Assistant Professor, M.F.A., University of Illinois, 1977.
 MERCER, JOHN, Professor, Ph.D., University of Nebraska, 1952.
 PAINE, FRANK, Associate Professor, B.S., Iowa State University, 1950.
 POWELL, W. DUANE, Assistant Professor, M.F.A., University of Illinois, 1977.
 SWEDLUND, CHARLES A., Professor, M.S., Illinois Institute of Technology, 1961.
 ZIRPOLA, DONALD J., Assistant Professor, M.F.A., University of Southern California, 1973.

Comprehensive Planning and Design (College of Human Resources)

ALLEN, ALBERT L., Adjunct Instructor, M.S., Southern Illinois University, 1977.
 ARCHER, RICHARD, Instructor, B.A., Southern Illinois University, 1970.
 BERRY, THELMA HUFF, Professor, *Emerita*, Ed.D., Columbia University, 1963.
 BUSCH, W. LARRY, Assistant Professor, M.S., Southern Illinois University, 1970.
 CARAWAY, JEANINE, Instructor, M.S., Kansas State University, 1974.
 DAVIS, NANCY K., Instructor, M.F.A., University of Georgia, 1976.
 ELLNER, JACK R., Professor, Ph.D., New York University, 1969.
 FERGUSON, K. JAMES, Adjunct Professor, B.I.D., University of Manitoba, 1950.
 FRIEND, SHIRLEY E., Associate Professor, Ed.D., University of Arkansas, 1969.
 GROSOWSKY, HAROLD, Lecturer, Certificate, IIT, Institute of Design, Chicago.
 KACHEL, THOMAS J., Instructor, M.S., Southern Illinois University, 1972.
 KULA, ELSA, Lecturer, *Emerita*, B.F.A., Pratt Institute, Brooklyn, New York, 1977.
 LOUGEAY, PAUL J., Associate Professor, Registered Architect, M.S., Southern Illinois University, 1973.
 MACDONALD, ANTONETTE T., Instructor, M.S., Southern Illinois University, 1973.
 MCGINNIS, ROBERT GUY, Assistant Professor, B.Arch., B.F.A., Pratt Institute, 1973, 1972.
 NEWMAN, GERALDINE, Instructor, M.S., Southern Illinois University, 1972.
 PADGETT, ROSE, Professor, *Emerita*, Ph.D., Purdue University, 1955.
 PERK, HARRY F.W., Lecturer, A.B., University of California at Los Angeles, 1951.
 PRATT, DAVIS J., Lecturer, Certificate, University of Chicago, IIT, Institute of Design, Chicago.
 PULLEY, CHARLES M., Assistant Professor, *Emeritus*, Registered Architect, B.S., University of Illinois, 1939.
 RIDLEY, SAMANTHA SUE, Assistant Professor, M.S., Southern Illinois University, 1959.
 ROAN, HERBERT, Lecturer, Certificate, Cooper Union, 1938.
 SCHOEN, ALAN HUGH, Professor, Ph.D., University of Illinois, 1958.
 STEWART, LUCY P., Assistant Professor, *Emerita*, M.S., Southern Illinois University, 1964.
 ST. JOHN, WAYNE L., Associate Professor and *Chairperson*, Ph.D., University of Oregon, 1954.
 WHITESEL, RITTA, Associate Professor, *Emerita*, M.A., Columbia University, 1941.
 WRIGHT, WELYNDA, Assistant Professor, M.S., University of Kentucky, 1973.

Computer Science (College of Liberal Arts)

BATEMAN, BARRY L., Adjunct Professor, Ph.D., Texas A&M University, 1970.
 BLONDE, BARRY J., Adjunct Instructor, M.S., Southern Illinois University, 1971.
 DANHOF, KENNETH J., Associate Professor and *Chairperson*, Ph.D., Purdue University, 1969.
 GUHA, RATAN K., Associate Professor, Ph.D., University of Texas at Austin, 1970.

MARK, ABRAHAM M., Professor, Ph.D., Cornell University, 1947.
 NEWMAN, J. RICHARD, Adjunct Assistant Professor, Ph.D., University of Southwestern Louisiana, 1976.
 SMITH, CAROL L., Assistant Professor, Ph.D., Iowa State University, 1975.
 WRIGHT, WILLIAM E., Assistant Professor, D.Sc., Washington University, 1972.

Curriculum, Instruction, and Media (College of Education)

AIKMAN, ARTHUR L., Professor, Ph.D., Southern Illinois University, 1965.
 ALSTON, MELVIN O., Professor, *Emeritus*, Ed.D., Columbia University, 1945.
 ANDERSON, KAYE, Instructor, M.S. in Ed., Southern Illinois University, 1970.
 BAUNER, RUTH E., Associate Professor, M.S., University of Illinois, 1956.
 BEDIANT, DOUGLAS, Assistant Professor, Ph.D., Southern Illinois University, 1971.
 BENCINI, E. L., Assistant Professor, *Emeritus*, M.Ed., University of Missouri, 1942.
 BOYKIN, ARSENE O., Associate Professor, Ed.D., University of Illinois, 1964.
 BRADFIELD, JOYCE M., Instructor, M.A., George Peabody College for Teachers, 1946.
 BRADFIELD, LUTHER E., Professor, *Emeritus*, Ed.D., Indiana University, 1953.
 BROD, ERNEST E., Professor, *Emeritus*, Ed.D., University of Northern Colorado, 1953.
 BROWN, BILL, Instructor, *Emeritus*, M.Ed., University of Missouri, 1946.
 BUELL, MICHAEL, Assistant Professor, Ed.D., Oklahoma State University, 1974.
 BUSER, MARGARET, Instructor, M.S. Ed., Indiana University, 1966.
 BUTTS, GORDON K., Professor, Ed.D., Indiana University, 1956.
 CARTER, CLEO D., Associate Professor, *Emerita*, Ed.D., Indiana University, 1958.
 CASEY, JOHN P., Professor, Ed.D., Indiana University, 1963.
 CHERRY, AVENIEL, Lecturer, M.S. in Ed., Southern Illinois University, 1962.
 COX, DOROTHY, Assistant Professor, Ph.D., Southern Illinois University, 1976.
 DALE, DORIS C., Professor, D.L.S., Columbia University, 1968.
 DEWEESE, JEWEL V., Instructor, M.S. Ed., Southern Illinois University, 1971.
 DIXON, BILLY G., Associate Professor, Ph.D., Southern Illinois University, 1967.
 EDWARDS, TROY W., Professor, *Emeritus*, Ed.D., Indiana University, 1954.
 FLETCHER, KATHLEEN G., Associate Professor, *Emerita*, M.S., University of Illinois, 1947.
 FLIGOR, ROSS J., Professor, *Emeritus*, Ph.D., Michigan State University, 1953.
 GILES, M. FRANCES, Coordinator, Teacher Education Services, M.A., Southern Illinois University, 1969.
 GRANT, FRANCIS, Assistant Professor, Ph.D., Michigan State University, 1972.
 HENNIGER, MICHAEL, Assistant Professor, Ph.D., University of Texas, 1977.
 HILL, MARGARET K., Professor, Ed.D., Boston University, 1948.
 HUNGERFORD, HAROLD R., Professor, Ph.D., Southern Illinois University, 1970.
 JACKO, CAROL, Assistant Professor, Ph.D., University of Pittsburgh, 1974.
 JACKSON, JAMES, Assistant Professor, Ph.D., University of Wisconsin, 1976.
 JACKSON, MICHAEL, Associate Professor, Ed.D., University of Florida, 1971.
 JENKINS, JEANNETTE, Lecturer, M.Ed., Pennsylvania State University, 1948.
 KARMOS, ANN, Assistant Professor, Ph.D., Southern Illinois University, 1975.
 KLASEK, CHARLES B., Associate Professor, Ph.D., University of Nebraska, 1971.
 LAMB, MORRIS L., Associate Professor, Ed.D., University of Oklahoma, 1970.
 LEE, J. MURRAY, Professor, *Emeritus*, Ph.D., Columbia University, 1934.
 LEMING, JAMES, Assistant Professor, Ph.D., University of Wisconsin, 1973.
 LINDBERG, DORMALEE H., Associate Professor, Ed.D., University of Missouri, Columbia, 1969.
 LIPSEY, WILLIAM, Lecturer, *Emeritus*, Ed.D., Northwestern University, 1952.
 LONG, RUTH A., Associate Professor, Ed.D., Indiana University, 1972.
 MALONE, WILLIS E., Professor, *Emeritus*, Ph.D., Ohio State University, 1950.
 MATTHIAS, MARGARET, Assistant Professor, Ph.D., Southern Illinois University, 1972.
 MCINTYRE, JOHN, Assistant Professor, Ed.D., Syracuse University, 1977.
 MEEHAN, ELIZABETH C., Assistant Professor, *Emerita*, A.M., University of Illinois, 1940.
 MEYER, EDRA T., Instructor, *Emerita*, M.S., Southern Illinois University, 1956.
 MOORE, ERYN E., Assistant Professor, Ph.D., Southern Illinois University, 1976.
 MORPURGO, JANE S., Assistant Professor, Ph.D., University of Illinois, 1974.
 MUELLER, RUTH E., Academic Adviser, B.S., Milwaukee State Teachers College, 1944.
 NORRIS, WILLIAM, Assistant Professor, Ed.D., Indiana University, 1973.
 PAIGE, DONALD D., Professor and *Chairperson*, Ed.D., Indiana University, 1966.
 POPE, CEDRIC A., Assistant Professor, Ed.D., University of Northern Colorado, 1959.
 QUISENBERRY, JAMES D., Assistant Professor, Ph.D., Indiana University, 1972.
 QUISENBERRY, NANCY L., Associate Professor, Ed.D., Indiana University, 1971.
 RANDOLPH, VICTOR, Professor, *Emeritus*, Ph.D., George Peabody College for Teachers, 1942.
 ROSENBERG, MARC, Assistant Professor, Ph.D., Kent State University, 1977.
 ROY, THOMAS, Lecturer, M.S. Ed., Southern Illinois University, 1975.

RUBBA, PETER A., Assistant Professor, Ed.D., Indiana University, 1977.
 SAMFORD, CLARENCE, Professor, *Emeritus*, Ph.D., New York University, 1940.
 SCHEER, JANET, Assistant Professor, Ph.D., Arizona State University, 1977.
 SEIFERTH, BERNIECE B., Associate Professor, Ed.D., University of Missouri, 1955.
 SHELTON, VIVIAN, H. Instructor, M.S. Ed., Southern Illinois University, 1965.
 SHEPHERD, TERRY R., Associate Professor, Ph.D., University of Illinois, 1971.
 SLOAN, FRED A., Professor, Ed.D., George Peabody College for Teachers, 1959.
 SOLLIDAY, MICHAEL, Assistant Professor, Ph.D., Southern Illinois University, 1975.
 SPIGLE, IRVING S., Associate Professor, *Emeritus*, Ed.D., Indiana University, 1955.
 STEHR, JEAN, Associate Professor, M.A., Texas Woman's University, 1945.
 STEINRUCK, YVONNE, Assistant Professor, Ph.D., University of Toledo, 1973.
 STEPHENS, CLARENCE, Professor, *Emeritus*, Ed.D., Indiana University, 1955.
 TOMERA, AUDREY, Associate Professor, Ph.D., Southern Illinois University, 1973.
 TREECE, MADELYN, Assistant Professor, *Emerita*, A.M., University of Chicago, 1936.
 TURNER, DORIS S., Lecturer, M.S. in Ed., Southern Illinois University, 1949.
 WENDT, PAUL R., Professor, *Emeritus*, Ph.D., University of Minnesota, 1948.
 WINSOR, DONALD, Associate Professor, Ed.D., University of Florida, 1961.
 WOOD, RUTH B., Instructor, *Emerita*, M.S., University of Illinois, 1948.

Economics (College of Liberal Arts)

ADAMS, DONALD R., JR., Professor, Ph.D., University of Pennsylvania, 1967.
 BOHI, DOUGLAS R., Professor, Ph.D., Washington State University, 1967.
 EDELMAN, MILTON T., Professor, Ph.D., University of Illinois, 1951.
 ELLIS, ROBERT J., JR., Associate Professor, Ph.D., University of Virginia, 1966.
 FORAN, TERRY G., Associate Professor and *Chairperson*, Ph.D., Pennsylvania State University, 1971.
 FRYMAN, RICHARD F., Associate Professor, Ph.D., University of Illinois, 1967.
 GROSSKOPF, SHAWNA, Assistant Professor, Ph.D., Syracuse University, 1977.
 HAND, GEORGE H., Professor, *Emeritus*, Ph.D., Princeton University, 1939.
 HICKMAN, C. ADDISON, Professor, Vandevier Chair of Economics, Ph.D., University of Iowa, 1942.
 LAYER, ROBERT G., Professor, Ph.D., Harvard University, 1952.
 LYON, VERN, Assistant Professor, Ph.D., University of Kansas, 1975.
 MORRISON, VERNON G., Professor, *Emeritus*, Ph.D., University of Nebraska, 1961.
 MYERS, JOHN G., Associate Professor, Ph.D., Columbia University, 1961.
 SHIELDS, MICHAEL P., Assistant Professor, Ph.D., University of Utah, 1975.
 TRACY, RONALD L., Assistant Professor, Ph.D., Michigan State University, 1975.
 VOGEL, ROBERT C., Associate Professor, Ph.D., Stanford University, 1967.
 WIEGAND, G. C., Professor, *Emeritus*, Ph.D., Northwestern University, 1950.

Educational Leadership (College of Education)

ARMISTEAD, FRED J., Professor, *Emeritus*, Ph.D., University of California, 1960.
 BACH, JACOB O., Professor, Ph.D., University of Wisconsin, 1951.
 BRACEWELL, GEORGE, Professor, *Emeritus*, Ed.D., Washington University, 1952.
 BRAMMELL, PARIS R., Professor, *Emeritus*, Ph.D., University of Washington, 1930.
 BROWNING, BARNEY K., Assistant Professor, Ph.D., Southern Illinois University, 1972.
 BRYANT, ROYE R., Professor, *Emeritus*, D.Ed., Washington University, 1952.
 BUSER, ROBERT L., Professor, Ed.D., Indiana University, 1966.
 CHILDS, JOHN L., Professor, *Emeritus*, Ph.D., Teachers College, Columbia University, 1931.
 CLARK, ELMER J., Professor, Ph.D., University of Michigan, 1949.
 DENNIS, LAWRENCE J., Associate Professor, Ph.D., Southern Illinois University, 1968.
 DUFF, GRACE H., Assistant Professor, Ph.D., Southern Illinois University, 1970.
 EATON, WILLIAM E., Associate Professor, Ph.D., Washington University, 1971.
 EWING, PARMER L., Professor, *Emeritus*, Ed.D., New York University, 1950.
 FISHBACK, WOODSON W., Associate Professor, *Emeritus*, Ph.D., University of Chicago, 1947.
 HALL, JAMES H., Associate Professor, *Emeritus*, Ed.D., George Washington University, 1950.
 JACOBS, ROBERT, Professor, *Emeritus*, Ed.D., Wayne State University, 1949.
 KAISER, DALE E., Professor, Ph.D., University of Illinois, 1963.
 LAWLER, EUGENE S., Professor, *Emeritus*, Ph.D., Columbia University, 1932.
 LEAN, ARTHUR E., Professor, *Emeritus*, Ph.D., University of Michigan, 1948.
 MATTHIAS, WILLIAM, Associate Professor, Ed.D., University of Illinois, 1964.
 MCKENZIE, WILLIAM R., Professor, Ed.D., University of Denver, 1953.
 MERWIN, BRUCE W., Professor, *Emeritus*, Ph.D., University of Kansas, 1929.
 MILLER, HARRY G., Professor and *Chairperson*, Ed.D., University of Nebraska, 1970.
 MOORE, MALVIN E., Professor, Ed.D., George Peabody College for Teachers, 1959.

NEAL, CHARLES D., Professor, *Emeritus*, Ed.D., Indiana University, 1948.
PARKER, JAMES C., Associate Professor, Ed.D., University of Tennessee, 1971.
RIPPLE, KENNETH E., Associate Professor, Ed.D., Michigan State University, 1968.
SASSE, EDWARD B., Professor, Ph.D., University of Wisconsin, 1966.
SHELTON, WILLIAM E., Associate Professor, Ph.D., University of Chicago, 1950.
STUCK, DEAN, Professor, Ph.D., Iowa State University, 1968.
VERDUIN, JOHN R., JR., Professor, Ph.D., Michigan State University, 1962.
WARREN, F. G., Professor, *Emeritus*, A.M., University of Chicago, 1928.
WOHLWEND, HERBERT W., Associate Professor, Ph.D., Southern Illinois University, 1964.

Electrical Sciences and Systems Engineering (School of Engineering and Technology)

DODD, CURTIS W., Associate Professor, Ph.D., Arizona State University, 1967.
DUNNING, E. LEON, Professor, Ph.D., University of Houston, 1967.
FIESTE, VERNOLD K., Associate Professor, Ph.D., University of Missouri at Columbia, 1966.
GRISMORE, F. LEE, JR., Associate Professor, Ph.D., Georgia Institute of Technology, 1970.
LIT, ALFRED, Professor, Ph.D., Columbia University, 1948.
McCALLA, THOMAS, JR., Associate Professor, Ph.D., Case Western Reserve University, 1969.
RAWLINGS, CHARLES A., Associate Professor, Ph.D., Southern Illinois University, 1974.
SMITH, JAMES G., Professor and *Chairperson*, Ph.D., University of Missouri at Rolla, 1967.

Engineering Mechanics and Materials (School of Engineering and Technology)

BROWER, WILLIAM E., JR., Assistant Professor, Ph.D., Massachusetts Institute of Technology, 1969.
CHUGH, YOGINDER P., Associate Professor, Ph.D., Pennsylvania State University, 1971.
DAVIS, PHILIP, Professor and *Chairperson*, Ph.D., University of Michigan, 1963.
EDDINGFIELD, DAVID, Assistant Professor, Ph.D., University of New Mexico, 1975.
EVERS, JAMES, Associate Professor, Ph.D., University of Alabama, 1969.
HALL, MONTE R., Assistant Professor, Ph.D., Virginia Polytechnic Institute and State University, 1974.
NOWACKI, C. RAYMOND, Associate Professor, Ph.D., University of Illinois, 1965.
ORTHWEIN, WILLIAM, Professor, Ph.D., University of Michigan, 1959.
RAZZAQ, ZIA, Assistant Professor, D.Sc., Washington University, 1974.
RUBAYI, NAJIM, Professor, Ph.D., University of Wisconsin, 1966.
SAMI, SEDAT, Professor, Ph.D., University of Iowa, 1966.

English (College of Liberal Arts)

APPLEBY, BRUCE C., Associate Professor, Ph.D., University of Iowa, 1967.
BARBER, JULIA MINETTE, Assistant Professor, *Emerita*, A.M., University of Illinois, 1915.
BARBOUR, FRANCES, Associate Professor, *Emerita*, M.A., Washington University, 1920.
BENZIGER, JAMES G., Professor, Ph.D., Princeton University, 1941.
BLACK, ROSE, Instructor, *Emerita*, M.A., Ohio State University, 1926.
BOYLE, TED EUGENE, Professor, Ph.D., University of Nebraska, 1962.
BROWN, WILLIAM J., Associate Professor, Ph.D., Duke University, 1966.
BURNS, WINIFRED, Assistant Professor, *Emerita*, M.A., University of Illinois, 1933.
CAMP, GEORGE, Assistant Professor, *Emeritus*, Ph.D., University of Illinois, 1951.
CASSIDY, THOMAS E., Associate Professor, *Emeritus*, A.M., University of Notre Dame, 1938.
CLARK, MARTHA, Instructor, *Emerita*, A.M. Southern Illinois University, 1953.
COHN, ALAN MARTIN, Professor, M.S., University of Illinois, 1955.
COLEMAN, E. C., Professor, *Emeritus*, Ph.D., University of Illinois, 1936.
COLLINS, K., Assistant Professor, Ph.D., Vanderbilt University, 1977.
DODD, DIANA L., Assistant Professor, *Emerita*, M.A., Southern Illinois University, 1954.
DONOW, HERBERT, Associate Professor, Ph.D., University of Iowa, 1966.
FRIEND, JEWELL, Associate Professor, Ph.D., Southern Illinois University, 1970.
GOODIN, GEORGE, Associate Professor, Ph.D., University of Illinois, 1962.
GRIFFIN, ROBERT P., Associate Professor, Ph.D., University of Connecticut, 1965.
HARPER, CLIFFORD D., Associate Professor, Ph.D., St. Louis University, 1972.

HATTON, THOMAS J., Associate Professor, Ph.D., University of Nebraska, 1966.
 HILLEGAS, MARK, Professor, Ph.D., Columbia University, 1957.
 HILLIARD, LEWIS J., Instructor, M.S. in Ed., Southern Illinois University, 1952.
 HOWELL, JOHN M., Associate Professor, Ph.D., Tulane University, 1963.
 HURLEY, PAUL, Professor, Ph.D., Duke University, 1962.
 KRAPPE, EDITH, Associate Professor, *Emerita*, Ph.D., University of Pennsylvania, 1953.
 KVERNES, DAVID M., Assistant Professor, Ph.D., University of Minnesota, 1967.
 LAMB, MARY, Assistant Professor, Ph.D., Columbia University, 1976.
 LAWSON, RICHARD A., Associate Professor, Ph.D., Tulane University, 1966.
 LINGLE, FRED, Assistant Professor, *Emeritus*, A.M., University of Illinois, 1935.
 LITTLE, JUDY RUTH, Associate Professor, Ph.D., University of Nebraska, 1969.
 MARTIN, JOAN FOLEY, Assistant Professor, M.A., Southern Illinois University, 1959.
 McNICHOLS, EDWARD L., Instructor, M.A., University of Detroit, 1958.
 MITCHELL, BETTY LOU, Assistant Professor M.A., Southern Illinois University, 1951.
 MOORE, HARRY T., Professor and Research Professor, *Emeritus*, Ph.D., Boston University, 1951.
 MOSS, SIDNEY P., Professor, Ph.D., University of Illinois, 1954.
 PARTLOW, ROBERT B., JR., Professor, and *Chairperson*, Ph.D., Harvard University 1955.
 PAUL, JAMES, Assistant Professor, Ph.D., University of Michigan, 1977.
 PETERSON, RICHARD F., Associate Professor, Ph.D., Kent State University, 1969.
 PIPER, HENRY DAN, Professor, Ph.D., University of Pennsylvania, 1950.
 RAINBOW, RAYMOND, Associate Professor, Ph.D., University of Chicago, 1950.
 RAIZIS, M. BYRON, Professor, Ph.D., New York University, 1966.
 RICHMAN, LOIS ANNE, Assistant Professor, A.M., University of Illinois, 1962.
 RUDNICK, HANS, Associate Professor, Ph.D., University of Freiburg, Germany, 1966.
 SCHONHORN, MANUEL, Professor, Ph.D., University of Pennsylvania, 1963.
 SCHULTZ, JOHN HOWARD, Professor, *Emeritus*, Ph.D., Harvard University, 1940.
 SIMEONE, WILLIAM E., Professor, Ph.D., University of Pennsylvania, 1950.
 SIMON, MARY C., Instructor, *Emerita*, A.M., University of Illinois, 1940.
 STIBITZ, E. EARLE, Professor, *Emeritus*, Ph.D., University of Michigan, 1951.
 TAYLOR, LARRY E., Associate Professor, Ph.D., University of Oklahoma, 1969.
 TENNEY, CHARLES D., University Professor, *Emeritus*, Ph.D., University of Oregon, 1931.
 TRAVIS, EDNA, Instructor, *Emerita*, M.S. in Ed., Southern Illinois University, 1948.
 VIETH, DAVID MUENCH, Professor, Ph.D., Yale University, 1953.
 WEBB, HOWARD W., JR., Professor, Ph.D., University of Iowa, 1953.
 WESHINSKEY, ROY K., Assistant Professor, M.S., Southern Illinois University, 1950.

Finance (College of Business and Administration)

ELSAID, HUSSEIN H., Associate Professor, Ph.D., University of Illinois, 1968.
 MATHUR, IQBAL, Associate Professor, Ph.D., University of Cincinnati, 1974.
 PERTL, MARS A., Assistant Professor, Ph.D., University of Iowa, 1974.
 TYLER, R. STANLEY, Associate Professor, J.D., University of Illinois, 1952.
 VAUGHN, DONALD E., Professor and *Chairperson*, Ph.D., University of Texas, 1961.
 WATERS, GOLA E., Associate Professor, J.D., University of Iowa, 1957, Ph.D., Southern Illinois University, 1970.

Foreign Languages and Literatures (College of Liberal Arts)

AYDT, JUDITH, Instructor, M.A., Southern Illinois University, 1966.
 BECKMAN, BARBARA, Assistant Professor, D.A., University of Washington, 1975.
 BORK, ALBERT W., Professor, *Emeritus*, Doctor en Letras, National University of Mexico, 1944.
 CANFIELD, D. LINCOLN, Visiting Professor, *Emeritus*, Ph.D., Columbia University, 1934.
 DAVIS, J. CARY, Professor, *Emeritus*, Ph.D., University of Chicago, 1936.
 FRENCH, HOWARD, Associate Professor, *Emeritus*, Ph.D., Indiana University, 1952.
 GOBERT, DAVID L., Professor, Ph.D., University of Iowa, 1960.
 HARTMAN, STEVEN LEE, Assistant Professor, Ph.D., University of Wisconsin, 1971.
 HARTWIG, HELLMUT A., Professor, *Emeritus* Ph.D., University of Illinois, 1943.
 KELLER, THOMAS, Assistant Professor, Ph.D., University of Colorado, 1975.
 KILKER, JAMES, Associate Professor, Ph.D., University of Missouri at Columbia, 1961.
 KUPCEK, JOSEPH, Professor, Ph.D., Comenius University, Bratislava, Czechoslovakia, 1943.
 LIEDLOFF, HELMUT, Professor, Ph.D., Phillips University, Germany, 1956.
 McBRIDE, CHARLES, Associate Professor, Ph.D., University of Texas, 1968.
 MEINHARDT, WARREN, Associate Professor, Ph.D., University of California at Berkeley, 1965.

NEUFELD, ANNA K., Assistant Professor, *Emerita*, M.A., University of Kansas, 1937.
O'BRIEN, JOAN, Associate Professor, Ph.D., Fordham University, 1961.
O'MEARA, MAURICE, Associate Professor, Ph.D., University of Iowa, 1967.
ORECHWA, OLGA, Associate Professor, Ph.D., Ukrainian Free University, Germany, 1970.
PEACOCK, VERA L., Professor, *Emerita*, Ph.D., Cornell University, 1930.
SMITH, MADELEINE M., Associate Professor, *Emerita*, Ph.D., Yale University, 1952.
SPECK, CHARLES, Assistant Professor, Laurea in Diritto Canonico, Pontifical Lateran University, Italy, 1963.
TAI, JAMES, Associate Professor, Ph.D., Indiana University, 1970.
TIMPE, EUGENE F., Professor and *Chairperson*, Ph.D., University of Southern California, 1960.
ULNER, ARNOLD, Assistant Professor, Ph.D., University of Missouri at Columbia, 1972.
VOGELY, MAXINE, Assistant Professor, *Emerita*, Ph.D., University of Illinois, 1969.
WILKINSON, MILDRED, Instructor, M.A., Southern Illinois University, 1965.
WILLIAMS, FREDERICK L., Assistant Professor, Ph.D., Cornell University, 1976.
WOODBIDGE, HENSLEY, Professor, Ph.D., University of Illinois, 1950.

Forestry (School of Agriculture)

AUBERTIN, GERALD M., Associate Professor, Ph.D., Pennsylvania State University, 1964.
BUDELSKY, CARL A., Assistant Professor, Ph.D., University of Arizona 1969.
BURDE, JOHN H., III, Assistant Professor, Ph.D., University of Arizona, 1975.
CHILMAN, KENNETH C., Associate Professor, Ph.D., University of Michigan, 1972.
FRALISH, JAMES S., Associate Professor, Ph.D., University of Wisconsin, 1970.
GAFFNEY, GERALD R., Assistant Professor, Ph.D., Southern Illinois University, 1970.
KUNG, FAN H., Associate Professor, Ph.D., Michigan State University, 1968.
McCURDY, DWIGHT R., Professor, Ph.D., Ohio State University, 1964.
MYERS, CHARLES C., Associate Professor, Ph.D., Purdue University, 1966.
ROTH, PAUL L., Professor, Ph.D., Kansas State University, 1968.
SPALT, HOWARD A., Associate Professor and *Chairperson*, D. For., Yale University, 1959.
WEAVER, GEORGE T., Associate Professor, Ph.D., University of Tennessee, 1972.
YAMBERT, PAUL A., Professor, Ph.D., University of Michigan, 1961.

Geography (College of Liberal Arts)

AREY, DAVID G., Associate Professor, Ph.D., Clark University, 1969.
BAUMANN, DUANE D., Associate Professor, Ph.D., Clark University, 1968.
BEAZLEY, RONALD I., Professor, Ph.D., Purdue University, 1954.
CHRISTENSEN, DAVID E., Professor, Ph.D., University of Chicago, 1956.
CUNNINGHAM, FLOYD, Professor, *Emeritus*, Ph.D., Clark University, 1930.
DWORKIN, DANIEL M., Assistant Professor, Ph.D., Clark University, 1974.
HORSLEY, A. DOYNE, Assistant Professor, Ph.D., Southern Illinois University, 1974.
HORTON, FRANK E., Professor, Ph.D., Northwestern University, 1966.
IRWIN, DANIEL R., Associate Professor, Ph.D., Syracuse University, 1972.
JONES, DAVID L., Professor, Ph.D., Pennsylvania State University, 1960.
KRAUSE, ANNEMARIE, Associate Professor, *Emerita*, Ph.D., University of Chicago, 1952.
LIEBER, STANLEY R., Assistant Professor, Ph.D., University of Iowa, 1974.
SHARPE, DAVID M., Associate Professor and *Chairperson*, Ph.D., Southern Illinois University, 1968.

Geology (College of Science)

BELL, FRANK JAMES, Assistant Professor, *Emeritus*, M.S., University of Nebraska, 1941.
COLE, REX D., Assistant Professor, Ph.D., University of Utah, 1975.
CRELLING, JOHN C., Assistant Professor, Ph.D., The Pennsylvania State University, 1973.
DUTCHER, RUSSELL R., Professor and *Chairperson*, Ph.D., The Pennsylvania State University, 1960.
FANG, JEN-HO, Professor, Ph.D., Pennsylvania State University, 1961.
FRANK, CHARLES OTIS, Assistant Professor, Ph.D., Syracuse University, 1973.
FRAUNFELTER, GEORGE H., Professor, Ph.D., University of Missouri, Columbia, 1964.
HARRIS, STANLEY, E., JR., Professor, Ph.D., University of Iowa, 1947.
HOOD, WILLIAM C., Professor, Ph.D., University of Montana, 1964.
MANSFIELD, CHARLES F., Assistant Professor, Ph.D., Stanford University, 1972.
RITTER, DALE F., Professor, Ph.D., Princeton University, 1964.
ROBINSON, PAUL D., Assistant Professor, M.S., Southern Illinois University, 1963.

SENDLEIN, LYLE V. A., Professor, Ph.D., Iowa State University, 1964.
SEXTON, JOHN L., Assistant Professor, Ph.D., Indiana University, 1974.
UTGAARD, JOHN E., Professor, Ph.D., Indiana University, 1963.
ZIMMERMAN, JAY, JR., Associate Professor, Ph.D., Princeton University, 1968.

Graphic Communications (School of Technical Careers)

ASHWORTH, EDWIN ROBERT, Assistant Professor, Electronic Data Processing, Ph.D., Southern Illinois University, 1972.
BECKENBACH, JOSEPH R., Assistant Professor, Architectural Technology, M.Arch., University of Nebraska, 1973.
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BONZELET, JOSEPH T., Assistant Professor, Correctional Services and Law Enforcement, M.A., University of Southern California, 1972.
CALDWELL, PAUL N., Associate Professor, Electronics Technology, M.S.Ed., Southern Illinois University, 1965.
CROSS, B. D., Adjunct Assistant Professor, Electronic Data Processing, M.S., Southern Illinois University, 1965.
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DAVIE, JOSEPH L., Adjunct Assistant Professor, Electronic Data Processing, B.A., Southern Illinois University, 1954.
DAVIS, DIANE R., Instructor, Secretarial and Office Specialties, B.S., Southern Illinois University, 1976.
FAHLSING, THEODORE E., Instructor, Electronics Technology, B.S., Purdue University, 1971.
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GIMENEZ, ATILIO M., Assistant Professor, Architectural Technology, M.Arch., University of Buenos Aires, 1964.
GRACE, W. CHARLES, Lecturer, Correctional Services and Law Enforcement, J.D., University of Tennessee College of Law, 1972.
GREATHOUSE, LILLIAN, Assistant Professor, Secretarial and Office Specialties, M.A., Southern Illinois University, 1970.
GRIFFITH, JOHN R., Visiting Instructor, Electronic Data Processing, B.S., Southern Illinois University, 1977.
HARRE, PAUL A., Assistant Professor, Electronics Technology, M.S.Ed., Southern Illinois University, 1974.
HENDRICKS, JAMES E., Assistant Professor, Correctional Services and Law Enforcement, M.A., Southern Illinois University, 1973.
HENGEHOLD, LARRY, Adjunct Assistant Professor, Electronic Data Processing, M.S., Southern Illinois University, 1968.
HILL, MARVIN P., Professor, *Emeritus*, M.S., University of Colorado, 1939.
HUCK, JOHN H., Adjunct Assistant Professor, Electronic Data Processing, M.A., Southern Illinois University, 1970.
JOHNSON, BYRON V., Assistant Professor, Electronic Data Processing, S.T.M., McCormick Theological Seminary, 1969.
JOHNSON, JOHN R., Instructor, Electronics Technology, M.A., Southern Illinois University, 1977.
KLEMM, ROBERT W., Assistant Professor, Electronics Technology, M.A. in Ed., Arizona State University, 1977.
KREUTZER, ANDREW N., Assistant Professor, Electronic Data Processing, M.A., City College of City University of New York, 1971.
KUSEK, ROBERT, Associate Professor, Secretarial and Office Specialties, Ed.D., Boston University, 1974.
LACH, NORMAN, Instructor, Architectural Technology, M.Arch., University of Illinois, 1974.
LADNER, JOEL BROOKS, Assistant Professor, Architectural Technology, B.Arch., University of Houston, 1966.
LITTLE, HAROLD E., Associate Professor, Architectural Technology, B.S., Pennsylvania State University, 1951.
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MIRIANI, THERESA B., Associate Professor, Secretarial and Office Specialties, M.S., University of Denver, 1946.
MORGAN, BARBARA, Instructor, Secretarial and Office Specialties, M.S.Ed., Southern Illinois University, 1972.

- MORSE, H. PAULETTA, Instructor, Secretarial and Office Specialties, M.S., Southern Illinois University, 1975.
- MUTHUKRISHNAN, SHANKAR, Visiting Assistant Professor, M.S. (E.E.), University of Bombay, 1972.
- POGGAS, CHRISTY J., Instructor, Architectural Technology, B.A. Arch., University of Arizona, 1975.
- RICHEY, HELEN E., Assistant Professor, Secretarial and Office Specialties, M.S.Ed., Southern Illinois University, 1953.
- RUTLEDGE, CLIFTON D., Associate Professor, Architectural Technology, M.Arch., Kansas State University, 1968.
- SCHOEN, JANICE S., Instructor, Secretarial and Office Specialties, M.Ed., University of Illinois, 1970.
- SHEETS, LESLIE P., Instructor, Electronics Technology, M.S.Ed., Southern Illinois University, 1976.
- SHIN, WANGSHIK, Assistant Professor, Secretarial and Office Specialties, M.A., Southern Illinois University, 1963.
- SHUPE, WILLIAM G., Instructor, Electronics Technology, B.S., University of Illinois, 1975.
- TROTTER, GENE E., Associate Professor, Architectural Technology, B.S., North Dakota State University, 1939.
- VAUGHN, F. Eugene, Associate Professor, Secretarial and Office Specialties, M.S.Ed., Southern Illinois University, 1961.
- WHITE, MINDY P., Instructor, Secretarial and Office Specialties, M.S., Southern Illinois University, 1976.

Guidance and Educational Psychology (College of Education)

- ALTEKRUSE, MICHAEL D., Professor, Ed.D., Indiana University, 1967.
- AMBLE, BRUCE ROY, Professor, Ph.D., University of Iowa, 1963.
- BARDO, HAROLD R., Associate Professor, Ph.D., Southern Illinois University, 1972.
- BEGGS, DONALD L., Professor, Ph.D., University of Iowa, 1966.
- BRADLEY, RICHARD W., Professor, Ph.D., University of Wisconsin, 1968.
- CODY, JOHN J., Professor, Ph.D., University of Wisconsin, 1961.
- DEICHMANN, JOHN W., Associate Professor, Ph.D., St. Louis University, 1969.
- DeWEESE, HAROLD L., Professor, *Emeritus*, Ed.D., University of Illinois, 1959.
- ELMORE, PATRICIA B., Associate Professor, Ph.D., Southern Illinois University, 1970.
- ENDSLEY, WILLIAM R., Assistant Professor, Ph.D., Brigham Young University, 1976.
- EVANS, JOHN REAVES, Associate Professor, Ph.D., Southern Illinois University, 1968.
- GRAHAM, JACK W., Professor, Ph.D., Purdue University, 1951.
- GRENFELL, JOHN E., Professor, Ed.D., Oregon State University, 1966.
- IDEUS, HARVEY S., Associate Professor, Ed.D., University of Wyoming, 1965.
- KELLY, FRANCIS J., Professor, Ph.D., University of Texas, 1963.
- LEITNER, DENNIS, Assistant Professor, Ph.D., University of Maryland, 1975.
- LEWIS, ERNEST, Professor and *Chairperson*, Ph.D., Southern Illinois University, 1971.
- LINDSEY, JEFFERSON F., Professor, Ed.D., University of Texas, 1962.
- MEEK, CLINTON ROSCOE, Professor, Ph.D., George Peabody College for Teachers, 1954.
- MOUW, JOHN T., Associate Professor, Ed.D., University of South Dakota, 1968.
- PHELPS, WILLIAM, Professor, *Emeritus*, Ed.D., University of Northern Colorado, 1943.
- POHLMANN, JOHN T., Professor, Ph.D., Southern Illinois University, 1972.
- RENZAGLIA, GUY A., Professor, Ph.D., University of Minnesota, 1952.
- SNOWMAN, JACK, Assistant Professor, Ph.D., Indiana University, 1975.
- WHITE, GORDON, Assistant Professor, Ph.D., University of Iowa, 1969.
- WICKERSHAM, BEVERLY, Assistant Professor, Ph.D., University of Iowa, 1974.
- WOEHLKE, PAULA L., Assistant Professor, Ph.D., Arizona State University, 1973.
- YATES, J. W., Professor, Ed.D., University of Missouri, Columbia, 1951.

Health Education (College of Education)

- AARON, JAMES E., Professor, Ed.D., New York University, 1960.
- AMADIO, JOHN B., Assistant Professor, Ph.D., University of Oklahoma, 1970.
- BATES, IRA J., Visiting Assistant Professor, Ph.D., The Ohio State University, 1970.
- BOYDSTON, DONALD N., Professor and *Chairperson*, Ed.D., Columbia University, 1949.
- BRIDGES, A. FRANK, Professor, *Emeritus*, D.H.S., Indiana University, 1952.
- CASEY, RALPH, Associate Professor, Ed.D., Columbia University, 1956.
- COUNSELL, LEE A., Visiting Associate Professor, D.D.S., Northwestern University, 1948.
- DENNY, FLORENCE E., Associate Professor, *Emerita*, M.A., Columbia University, 1935.
- DEPUE, LEANNA, Visiting Instructor, M.S., Southern Illinois University at Carbondale, 1973.
- GRISSOM, DEWARD K., Professor, *Emeritus*, Ed.D., Columbia University, 1952.

- HAILEY, ROBERT, Instructor, M.Ed., University of Missouri, Columbia, 1959.
 HARRIS, EILEEN M., Assistant Professor, Ph.D., Southern Illinois University, 1970.
 HENDERSON, ALAN C., Assistant Professor, Dr.P.H., University of California (Los Angeles), 1976.
 IUBELT, GEORGE, Instructor, M.S., Indiana University, 1954.
 JONES, RICHARD, Instructor, M.S.Ed., Southern Illinois University, 1966.
 LEFEVRE, JOHN R., Professor, Ed.D., Teachers College, Columbia University, 1950.
 LINDAUER, LARRY, Assistant Professor, Ph.D., Southern Illinois University, 1972.
 MILLER, ALICE, Visiting Instructor, M.A., Ball State University, 1975.
 MOGLIA, RONALD J., Assistant Professor, Ed.D., Temple University, 1975.
 PHILLIPS, FRANCES K., Associate Professor, *Emerita*, M.A., Columbia University, 1940.
 RICHARDSON, CHARLES E., Professor, Ed.D., University of California, Los Angeles, 1959.
 RITZEL, DALE, Associate Professor, Ph.D., Southern Illinois University, 1970.
 RUSSELL, ROBERT D., Professor, Ed.D., Stanford University, 1954.
 SCHUETZ, CYNTHIA, Visiting Assistant Professor, Ph.D., Southern Illinois University at Carbondale, 1977.
 SLIEPCEVICH, ELENA M., Professor, D.P.E., Springfield College, 1955.
 STEELE, ROBERT, Instructor, M.S.Ed., Southern Illinois University, 1963.
 VAUGHN, ANDREW T., Professor, D.Ed., Columbia University, 1958.
 VITELLO, ELAINE, Visiting Assistant Professor, Ph.D., Southern Illinois University at Carbondale, 1977.
 VOGEL, HERBERT, Instructor, M.S., Indiana University, 1954.

Higher Education (College of Education)

- ADAMS, FRANK C., Professor, *Emeritus*, Ph.D., Southern Illinois University, 1962.
 CALDWELL, OLIVER J., Professor, *Emeritus*, M.S. Oberlin College, 1927.
 CASEBEER, ARTHUR L., Professor, Ed.D., Oregon State University, 1963.
 DAVIS, I. CLARK, Professor, *Emeritus*, Ed.D., Indiana University, 1956.
 DINGERSON, MICHAEL R., Assistant Professor, Ph.D., Southern Illinois University, 1974.
 GRAHAM, JACK W., Professor, Ph.D., Purdue University, 1951.
 GRINNELL, JOHN E., Professor, *Emeritus*, Ph.D., Stanford University, 1934.
 HAWLEY, JOHN B., Professor, Ph.D., University of Michigan, 1957.
 JUNG, LOREN B., Professor, Ph.D., Southern Illinois University, 1969.
 KEENE, ROLAND, Professor, Ed.D., Washington University, 1962.
 KING, JOHN E., Professor and *Chairperson*, Ph.D., Cornell University, 1941.
 MORRILL, PAUL H., Professor, Ph.D., Northwestern University, 1956.
 NOVICK, JEHIEL, Assistant Professor, Ph.D., Southern Illinois University, 1970.
 PRATT, ARDEN L., Professor, Ph.D., State University of New York at Buffalo, 1968.
 SPEES, EMIL R., Assistant Professor, Ph.D., Claremont Graduate School, 1969.
 SWINBURNE, BRUCE R., Associate Professor, Ed.D., Indiana University, 1970.
 TOLLE, DONALD J., Professor, Ed.D., Florida State University, 1957.
 ZIMMERMAN, ELWYN, Assistant Professor, Ph.D., Michigan State University, 1963.

History (College of Liberal Arts)

- ADAMS, GEORGE W., Professor, *Emeritus*, Ph.D., Harvard University, 1946.
 ALLEN, HOWARD W., Professor, Ph.D., University of Washington, 1959.
 AMMON, HARRY, Professor and *Chairperson*, Ph.D., University of Virginia, 1948.
 BARTON, H. ARNOLD, Professor, Ph.D., Princeton University, 1962.
 BATINSKI, MICHAEL C., Assistant Professor, Ph.D., Northwestern University, 1969.
 BREHM, DONALD L., Assistant Professor, Ph.D., St. Louis University, 1968.
 CARROTT, M. BROWNING, Associate Professor, Ph.D., Northwestern University, 1966.
 CLIFFORD, JOHN R., Associate Professor, Ph.D., University of Iowa, 1954.
 CONRAD, DAVID E., Associate Professor, Ph.D., University of Oklahoma, 1962.
 DETWILER, DONALD S., Professor; Dr. Phil., Göttingen University, Germany, 1961.
 DOTSON, JOHN E., Assistant Professor, Ph.D., Johns Hopkins University, 1969.
 FLADELAND, BETTY L., Professor, Ph.D., University of Michigan, 1952.
 GARDINER, C. HARVEY, Professor, *Emeritus*, Ph.D., University of Michigan, 1945.
 GOLD, ROBERT L., Professor, Ph.D., University of Iowa, 1964.
 KUO, PING-CHIA, Professor, *Emeritus*, Ph.D., Harvard University, 1933.
 McFARLIN, HAROLD A., Assistant Professor, Ph.D., Indiana University, 1971.
 MURPHY, JAMES B., Associate Professor, Ph.D., Louisiana State University, 1968.
 O'DAY, EDWARD J., Instructor, A.M., Indiana University, 1956.
 PITKIN, WILLIAM A., Associate Professor, *Emeritus*, Ph.D., University of Texas, 1940.
 SHELBY, LON R., Professor, Ph.D., University of North Carolina, 1962.
 SIMON, JOHN Y., Professor, Ph.D., Harvard University, 1961.
 VYVERBERG, HENRY S., Associate Professor, Ph.D., Harvard University, 1950.

WERLICH, DAVID P., Associate Professor, Ph.D., University of Minnesota, 1968.
 WRIGHT, JOHN I., Associate Professor, *Emeritus*, A.M., University of Chicago, 1933.
 WU, TIEN-WEI, Associate Professor, Ph.D., University of Maryland, 1965.
 ZUCKER, STANLEY, Associate Professor, Ph.D., University of Wisconsin, 1968.

Human Development (College of Human Resources)

BARNES, MARY LOUISE, Assistant Professor, *Emerita*, M.S. Iowa State College, 1931.
 BECKER, HENRIETTA, Lecturer, *Emerita*, M.S., Southern Illinois University, 1964.
 BERNARD, BARBARA H., Assistant Professor, Ph.D., Southern Illinois University, 1972.
 BROOKS, THOMAS M., Professor, Ph.D., Pennsylvania State University, 1961.
 DRAYTON, PATRICIA K., Instructor, M.S., Southern Illinois University, 1974.
 EDDLEMAN, E. JACQUELINE, Assistant Professor, Ph.D., Southern Illinois University, 1970.
 ENDRES, JEANNETTE M., Assistant Professor, Ph.D., St. Louis University, 1972.
 GULLEY, S. BEVERLY, Assistant Professor, Ph.D., Southern Illinois University, 1974.
 HARPER, JENNIE M., Professor, *Emerita*, Ph.D., Cornell University, 1941.
 JONES, JENNIE Y., Assistant Professor, A.M., University of Illinois, 1949.
 KONISHI, FRANK, Professor, Ph.D., Cornell University, 1958.
 KRAFT, T. KATHLEEN, Assistant Professor, M.S., Southern Illinois University, 1968.
 LACEY, JEROME, Assistant Professor, Ph.D., Southern Illinois University, 1975.
 PAYNE, IRENE R., Professor, Ph.D., Cornell University, 1960.
 PONTON, MELVA F., Assistant Professor, M.S., University of Illinois, 1956.
 QUIGLEY, EILEEN, Professor, *Emerita*, Ed.D., University of Missouri, 1947.
 ROGERS, SHIRLEY M., Assistant Professor, M.S.Ed., Southern Illinois University, 1961.
 ZUNICH, MICHAEL, Professor and *Director*, Ph.D., Florida State University, 1959.

Journalism (College of Communications and Fine Arts)

ATWOOD, L. ERWIN, Professor, Ph.D., University of Iowa, 1965.
 BIGLER, WILLIAM, Assistant Professor, Ph.D., University of California at Berkeley, 1971.
 BROWN, GEORGE C., Professor, Ph.D., Southern Illinois University, 1963.
 CLAYTON, CHARLES C., Professor, *Emeritus*, B.J., University of Missouri, 1925.
 COMBS, ADRIAN, Lecturer, M.A., Southern Illinois University, 1975.
 FORD, JAMES L. C., Professor, *Emeritus*, Ph.D., University of Minnesota, 1948.
 FRAZER, MARY K., Assistant Professor, *Emerita*, M.S., Southern Illinois University, 1965.
 GRUNY, C. RICHARD, Assistant Professor, J.D., University of Illinois, 1959.
 HARMON, WILLIAM M., Instructor, M.S., Oklahoma State University, 1965.
 HART, JIM ALLEE, Professor, *Emeritus*, Ph.D., University of Missouri, 1959.
 JEFFERS, DENNIS, Assistant Professor, Ph.D., Ohio University, 1976.
 LONG, HOWARD R., Professor, *Emeritus*, Ph.D., University of Missouri, 1948.
 LYONS, WILLIAM H., Assistant Professor, *Emeritus*, M.A., University of Colorado, 1935.
 MCCOY RALPH E., Professor, *Emeritus*, Ph.D., University of Illinois, 1956.
 MENDENHALL, HARLAN H., Lecturer, B.A., University of Oklahoma, 1937.
 MORGAN, HUGH J., Instructor, M.A., University of Oklahoma, 1967.
 OSTMAN, RONALD, Assistant Professor, Ph.D., University of Minnesota, 1974.
 RICE, W. MANION, Associate Professor, Ph.D., Southern Illinois University, 1967.
 SMITH, EVAN, Instructor, M.S., University of Oregon, 1971.
 STONECIPHER, HARRY W., Associate Professor, Ph.D., Southern Illinois University, 1971.
 TRAGER, ROBERT E., Associate Professor, Ph.D., University of Minnesota, 1972.
 WEBB, JOSEPH, Associate Professor, Ph.D., University of Illinois, 1973.
 WILLIAMS, THOMAS, Assistant Professor, M.A., University of Notre Dame, 1969.

Latin American Studies Committee

ADAMS, KENDALL A., Professor, Ph.D., Michigan State University, 1962 (Department of Marketing).
 DOERR, WILLIAM A., Assistant Professor, Ph.D., Southern Illinois University, 1973 (Department of Agricultural Industries).
 FRONDIZI, RISIERI, Professor, Ph.D., National University of Mexico, 1950 (Department of Philosophy).
 GARNER, WILLIAM R., Associate Professor, Ph.D., Tulane University, 1963 (Department of Political Science).
 GOLD, ROBERT L., Professor, Ph.D., University of Iowa, 1964 (Department of History).
 GOODSSELL, CHARLES T., Professor, Ph.D., Harvard University, 1961 (Department of Political Science).

- GUMERMAN, CHARLES T., Professor, Ph.D., University of Arizona, 1969 (Department of Anthropology).
- HARTMAN, STEVEN LEE, Assistant Professor, Ph.D., University of Wisconsin, 1971 (Department of Foreign Languages and Literatures).
- KILKER, JAMES, Associate Professor, Ph.D., University of Missouri at Columbia, 1961 (Department of Foreign Languages and Literatures).
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- MARQUEZ-STERLING, MARIANA, Assistant Professor, M.L.S., Kansas State Teachers College, 1968 (Library).
- MEINHARDT, WARREN, Associate Professor, Ph.D., University of California at Berkeley, 1965 (Department of Foreign Languages and Literatures).
- RANDS, ROBERT L., Professor, Ph.D., Columbia University, 1952 (Department of Anthropology).
- RILEY, CARROLL L., Professor, Ph.D., University of New Mexico, 1952 (Department of Anthropology).
- UGENT, DONALD, Associate Professor, Ph.D., University of Wisconsin, 1966 (Department of Botany).
- ULNER, ARNOLD, Assistant Professor, Ph.D., University of Missouri at Columbia, 1972 (Department of Foreign Languages and Literatures).
- VOGEL, ROBERT D., Associate Professor, Ph.D., Stanford University, 1967 (Department of Economics).
- WERLICH, DAVID P., Associate Professor, Ph.D., University of Minnesota, 1968 (Department of History); *Chairperson*, Latin American Studies Advisory Committee.
- WILKINSON, MILDRED, Instructor, M.A., Southern Illinois University, 1965 (Department of Foreign Languages and Literatures).
- WOODBIDGE, ANNIE S., Researcher, M.A., George Peabody College for Teachers, 1936 (Library).
- WOODBIDGE, HENSLEY, Professor, Ph.D., University of Illinois, 1950 (Department of Foreign Languages and Literatures).

Library

- AKANBI, DAVID K., Assistant Professor, Ed.D., State University of New York at Buffalo, 1977.
- BAUNER, RUTH E., Associate Professor, S.Ed., Southern Illinois University, 1974.
- BAYSINGER, PATRICIA, Researcher, B.A., Southern Illinois University, 1970.
- BEDIENT, DOUGLAS, Assistant Professor, Ph.D., Southern Illinois University, 1971.
- BLACK, GEORGE W., JR., Associate Professor, M.S.L.S., Columbia University, 1966.
- BORK, ELIZABETH V., Instructor, B.A., University of Southern California, 1955.
- BOYDSTON, JO ANN, Professor, Ph.D., Columbia University, 1950.
- BROWN, F. DALE, Instructor, M.S., Eastern Illinois University, 1965.
- CASHORE, THOMAS J., Assistant Professor, M.S., University of Wisconsin, 1975.
- CHERVINKO, JAMES S., Assistant Professor, M.S.L.S., University of Illinois, 1973.
- CLARK, CHARLOTTE R., Instructor, A.B.L.S., University of Michigan, 1940.
- CLIFFORD, JOHN, Associate Professor, Ph.D., University of Iowa, 1954.
- COHN, ALAN M., Professor, M.S., University of Illinois, 1955.
- COOK, MARGARET K., Assistant Professor, Ph.D., Southern Illinois University, 1977.
- COSCARELLI, WILLIAM C., Assistant Professor, Ph.D., Indiana University, 1977.
- COX, SHELLEY M., Instructor, M.A.L.S., University of Chicago, 1973.
- CRANE, LILLY E., Assistant Professor, M.A.L.S., University of Michigan, 1967.
- DANIELS, MINA HAYES, Assistant Professor, M.S.L.S., University of North Carolina, 1965.
- DENZEL, HARRY, Assistant Professor, Ph.D., Southern Illinois University, 1971.
- DUCKETT, KENNETH W., Associate Professor, M.S., University of Wisconsin, 1951.
- EADS, D. KATHLEEN, Assistant Professor, M.S., University of Illinois, 1949.
- FAGERSTROM, DAVID M., Instructor, M.L.S., University of Maryland, 1974.
- FAHEY, KATHLEEN G., Assistant Professor, M.L.S., University of Minnesota, 1968.
- FOX, JAMES W., Assistant Professor, M.A., University of North Carolina, 1974.
- FOX, MARY ANNE, Assistant Professor, M.S.L.S., University of North Carolina, 1975.
- HARWOOD, JUDITH ANN, Assistant Professor, M.S., University of Illinois, 1965.
- HILDRETH, MARGARET H., Assistant Professor, M.L.S., State University of New York at Geneseo, 1970.
- HOFFMAN, JOHN M., Research Associate, Ph.D., Harvard University, 1972.
- HOLLIDAY, CHARLES L., Assistant Professor, M.S., University of Illinois, 1964.
- HOSTETLER, JERRY, Assistant Professor, Ph.D., Southern Illinois University, 1977.
- HUTTON, BETTY JEAN, Instructor, M.S. in Ed., Southern Illinois University, 1968.
- ISELL, MARY K., Instructor, M.S., Southern Illinois University, 1971.
- JENKINS, DARRELL L., Assistant Professor, M.A., New Mexico State University, 1976.

JUHLIN, ALTON P., Assistant Professor, A.M.L.S., University of Michigan, 1946.
 KEEL, ROBERT L., Assistant Professor, M.A.L.S., George Peabody College for Teachers, 1961.
 KELLY, ELIZABETH S., Instructor, B.A., College of St. Catherine, 1958.
 KILPATRICK, THOMAS L., Instructor, M.S., University of Illinois, 1963.
 KOCH, DAVID V., Instructor, M.A., Southern Illinois University, 1963.
 LAMPMAN, WILMA L., Instructor, M.S., Southern Illinois University, 1962.
 LOCKREM, EMILY JANE, Assistant Professor, M.A., University of Wisconsin, 1976.
 MARQUEZ-STERLING, CARLOS, Assistant Professor, M.L.S., Kansas State Teachers College, 1968.
 MARQUEZ-STERLING, MARIANA, Assistant Professor, M.L.S., Kansas State Teachers College, 1968.
 MARRERO, BETTY RUTH, Assistant Professor, M.A., George Peabody College for Teachers, 1957.
 MARRERO, CARLOS E., Instructor, M.A., University of Denver, 1961.
 MARTINSEK, CATHERINE W., Researcher, M.A., University of California at Los Angeles, 1950.
 MATTHEWS, ELIZABETH W., Assistant Professor, Ph.D., Southern Illinois University, 1972.
 MATTHEWS, SIDNEY, E., Associate Professor, M.S., University of Illinois 1952.
 OTTO, THEOPHIL M., Assistant Professor, M.L.S., Indiana University, 1972.
 PERSON, ROLAND C., Assistant Professor, M.A., University of Wisconsin, 1970.
 PETERSON, KENNETH G., Professor; Ph.D., University of California at Berkeley, 1968.
 PIXLEY, LORENE, Instructor, M.S., University of Illinois, 1960.
 POTEET, SUSAN S., Instructor, M.L.S., George Peabody College, 1970.
 POULOS, KATHLEEN E., Researcher, M.S. in Ed., Southern Illinois University, 1969.
 RAY, DAVID T., Assistant Professor, M.A., Southern Illinois University, 1967.
 RAY, JEAN MEYER, Assistant Professor, M.A., Southern Illinois University, 1976.
 ROTH, MARJORIE S., Instructor, M.S., Syracuse University, 1975.
 RUBIN, ANGELA B., Visiting Instructor, M.S.L.S., University of Illinois, 1956.
 RUSSELL, THYRA K., Instructor, M.A., Northern Illinois University, 1972.
 SCOTT, W. WILEY, Instructor, M.S.L.S., Western Reserve University, 1959.
 SEIBERT, SUSAN, M., Researcher, M.S., Southern Illinois University, 1973.
 SIMON, JOHN Y., Professor, Ph.D., Harvard University, 1961.
 STARNES, MATILDA T., Instructor, M.S., University of Illinois, 1963.
 STONEWATER, JERRY K., Visiting Assistant Professor, Ph.D., Michigan State University, 1977.
 STUBBS, WALTER R., Instructor, M.A., Northern Illinois University, 1968.
 TAX, ANDREW T., Instructor, M.L.S., Charles University, Prague, 1962.
 THARP, CHARLES C., Instructor, M.S.L.S., University of Illinois, 1951.
 WENDT, LAUREL A., Assistant Professor, J.D., Indianapolis School of Law, 1977.
 WINSOR, DONALD L., Associate Professor, Ed.D., University of Florida, 1961.
 WOOD, DON E., Assistant Professor, M.S., University of Illinois, 1965.
 WOODBRIDGE, ANNIE S., Researcher, M.A., George Peabody College for Teachers, 1936.
 YOUNG, JAMES B., Instructor, M.Lib., Emory University, 1976.

Linguistics (College of Liberal Arts)

CARRELL, PATRICIA L., Associate Professor and *Chairperson*, Ph.D., University of Texas at Austin, 1966.
 GILBERT, GLENN G., Professor, Ph.D., Harvard University, 1963.
 KONNEKER, BEVERLY HILL, Assistant Professor, Ph.D., University of Texas at Austin, 1972.
 NGUYEN, DINH-HOA, Professor, Ph.D., New York University, 1956.
 PARISH, CHARLES, Professor, Ph.D., University of New Mexico, 1959.
 PERKINS, ALLAN KYLE, Assistant Professor, Ph.D., University of Michigan at Ann Arbor, 1976.
 REDDEN, JAMES E., Professor, Ph.D., Indiana University, 1965.
 SILVERSTEIN, RAYMOND O., Assistant Professor, Ph.D., University of California at Los Angeles, 1973.

Manpower Skill Center

BERRY, GERALD L., Assistant Instructor
 BOND, BURTON, JR., Assistant to Director
 DAVISON, HELEN, Assistant Instructor
 GOEPFERT, ROBERT W., Staff Assistant, A. B., William Jewell College, 1954.
 HAYES, JOYCE, Assistant Instructor, M.S. in Ed., Southern Illinois University.
 HAYS, THOMAS C., Director, M.S. in Ed., Southern Illinois University, 1960.
 JOHNSON, LEE L., Assistant Instructor, B.S., Southern Illinois University, 1969.

MCDONALD, YVONNE T., Assistant Instructor, M.A., University of Wisconsin-Milwaukee, 1976.
 MORGAN, WILLIAM A., Assistant Instructor, B.S., Southern Illinois University, 1960.
 NEELY, BETTY A., Assistant Instructor, A.A., Southern Illinois University, 1977.
 ROBINSON, STEPHEN M., Assistant Instructor, B.S., Southern Illinois University, 1972.
 SCOTT, DONALD P., Assistant Instructor.
 SIMMONS, WILLIAM L., Assistant Instructor.
 SMALL, BETTY L., Assistant Instructor, M.Ed., University of Illinois, 1954.
 SMITH, NORMAN, Assistant Instructor, M.Ed., University of Illinois, 1954.
 SPRINGHORN, KENNETH, Assistant Instructor, B.S., Southern Illinois University, 1974.
 STUCKER, WANDA L., Assistant Instructor.

Marketing (College of Business and Administration)

ADAMS, KENDALL A., Professor, Ph.D., Michigan State University, 1962.
 ANDERSEN, R. CLIFTON, Professor, D.B.A., Indiana University, 1960.
 DARLING, JOHN R., JR., Professor, Ph.D., University of Illinois, 1967.
 DOMMERMUTH, WILLIAM P., Professor, Ph.D., Northwestern University, 1964.
 HINDERSMAN, CHARLES H. Professor, D.B.A., Indiana University, 1959.
 HORSLEY, JOE B., Instructor, M.A., University of Alabama, 1968.
 MOORE, JAMES R., Assistant Professor, Ph.D., University of Illinois, 1972.
 PERRY, DONALD L., Associate Professor, Ph.D., University of Illinois, 1966.
 ROSENBARGER, CHARLES E., Assistant Professor, M.B.A., Indiana University, 1954.
 SUMMEY, JOHN H., Assistant Professor, D.B.A., Arizona State University, 1974.
 TAYLOR, RONALD D., Instructor, M.B.A., Southwest Missouri State University, 1975.
 WALTERS, C. GLENN, Professor and *Chairperson*, Ph.D., University of Illinois, 1964.

Mathematics (College of Liberal Arts)

AMAYO, RALPH, Visiting Associate Professor, Ph.D., University of Warwick, 1972.
 BAARTMANS, ALPHONSE H., Associate Professor and *Chairperson*, Ph.D., Michigan State University, 1967.
 BECKEMEYER, IMOGENE C., Assistant Professor, M.A., Southern Illinois University, 1952.
 BIESTERFELDT, HERMAN, Associate Professor, Ph.D., Pennsylvania State University, 1963.
 BLACK, AMOS H., Professor, *Emeritus*, Ph.D., Cornell University, 1932.
 BOUWSMA, WARD, Associate Professor, Ph.D., University of Michigan, 1962.
 BURTON, THEODORE A., Professor, Ph.D., Washington State University, 1964.
 CARMONY, LOWELL, Assistant Professor, Ph.D., Southern Illinois University—Carbondale, 1976.
 CRENSHAW, JAMES A., Associate Professor, Ph.D., University of Illinois, 1967.
 DANHOF, KENNETH, Associate Professor, Ph.D., Purdue University, 1969.
 ELSTON, GEORGE, Instructor, M.S., University of Wisconsin, 1949.
 FEINSILVER, PHILIP, Assistant Professor, Ph.D., New York University, 1975.
 FOLAND, NEAL E., Professor, Ph.D., University of Missouri, 1961.
 GATES, LESLIE D., Associate Professor, Ph.D., Iowa State University, 1952.
 GREGORY, JOHN, Associate Professor, Ph.D., University of California at Los Angeles, 1969.
 GRIMMER, RONALD C., Professor, Ph.D., University of Iowa, 1967.
 HALL, DILLA, Associate Professor, *Emeritus*, Ph.D., St. Louis University, 1955.
 HOOKER, JOHN W., Assistant Professor, Ph.D., University of Oklahoma, 1967.
 HUNSAKER, WORTHEN N., Associate Professor, Ph.D., Washington State University, 1966.
 KAMMLER, DAVID, Professor, Ph.D., University of Michigan, 1971.
 KIRK, RONALD B., Professor, Ph.D., California Institute of Technology, 1968.
 KOCH, CHARLES, Assistant Professor, Ph.D., University of Illinois, 1961.
 KUIPERS, LAUWERENS, Professor, *Emeritus*, Ph.D., Vrije Universiteit (Amsterdam), 1947.
 LANGENHOP, CARL E., Professor, Ph.D., Iowa State University, 1948.
 MARK, ABRAHAM M., Professor, Ph.D., Cornell University, 1947.
 MAXWELL, CHARLES, Professor, Ph.D., University of Illinois, 1955.
 McDANIEL, WILBUR C., Professor, *Emeritus*, Ph.D., University of Wisconsin, 1939.
 MILLMAN, RICHARD, Associate Professor, Ph.D., Cornell University, 1971.
 MOORE, ROBERT A., Associate Professor, Ph.D., Indiana University, 1962.
 NATHANSON, MELVYN B., Associate Professor, Ph.D., University of Rochester, 1971.
 OLMSTED, JOHN M. H., Professor, *Emeritus*, Ph.D., Princeton University, 1940.
 PAINE, THOMAS B., Assistant Professor, Ph.D., University of Oregon, 1966.
 PANCHAPAKESAN, S., Associate Professor, Ph.D., Purdue University, 1969.

- PARKER, GEORGE D., Associate Professor, Ph.D., University of California, at San Diego, 1971.
 PATULA, WILLIAM T., Associate Professor, Ph.D., Carnegie-Mellon University, 1972.
 PEDERSEN, FRANKLIN D., Associate Professor, Ph.D., Tulane University, 1967.
 PEDERSEN, KATHERINE, Assistant Professor, Ph.D., Tulane University, 1969.
 SELDIN, JONATHAN P., Assistant Professor, Ph.D., University of Amsterdam, 1968.
 SKALSKY, MICHAEL, Professor, D.Nat.Sc., University of Göttingen, 1949.
 SLECHTICKY, JAMES L., Instructor, *Emeritus*, M.S., Washington University, 1940.
 SNYDER, HERBERT H., Professor, Ph.D., Lehigh University, 1965, Ph.D., University of South Africa, 1972.
 STARKS, THOMAS H., Associate Professor, Ph.D., Virginia Polytechnic Institute, 1959.
 TOWNSEND, CARL, Associate Professor, Ph.D., Washington State University, 1965.
 WILSON, JOSEPH C., Professor, Ph.D., Louisiana State University, 1954.
 WIMP, LARRY L., Assistant Professor, M.A., University of Missouri, 1940, M.S., Southern Illinois University, 1959.
 WRIGHT, ALICE K., Assistant Professor, *Emerita*, M.A., University of Illinois, 1925.

Microbiology (College of Science)

- BOND, ENRIQUETA, Assistant Professor, Ph.D., Georgetown University, 1969.
 BORGIA, PETER, Assistant Professor, Ph.D., University of Illinois, 1973.
 BOWSER, DEAN, Assistant Professor, Ph.D., University of Georgia at Athens, 1971.
 CASTER, JOHN, Assistant Professor, Ph.D., St. Louis University, 1968.
 COOPER, MORRIS D., Assistant Professor, Ph.D., University of Georgia at Athens, 1971.
 JACKSON, ROBERT, Professor, Ph.D., Purdue University, 1963.
 LINDEGREN, CARL C., Professor, *Emeritus*, Ph.D., California Institute of Technology, 1931.
 McCLARY, DAN O., Professor, Ph.D., Washington University, 1951.
 MOTICKA, EDWARD A., Associate Professor, Ph.D., University of Illinois at the Medical Center, 1970.
 MYERS, WALTER L., Professor, D.V.M., Ph.D., University of Wisconsin, 1961.
 OGUR, MAURICE, Professor and *Chairperson*, Ph.D., Columbia University, 1948.
 PARKER, JACK M., Assistant Professor, Ph.D., Purdue University, 1973.
 ROUHANDEH, HASSAN, Professor, Ph.D., Kansas State University, 1959.
 ROWAN, DIGHTON F., Professor, Ph.D., Stanford University, 1954.
 SHECHMEISTER, ISAAC L., Professor, *Emeritus*, Ph.D., University of California at Berkeley, 1949.
 TEWARI, RAM, Professor, D.V.M., Agra University, India, 1960; PhR., Ohio State University, 1966.

Music (College of Communications and Fine Arts)

- BARWICK, STEVEN, Professor, Ph.D., Harvard University, 1949.
 BATEMAN, MARIANNE WEBB, Professor, M.Mus., University of Michigan, 1959.
 BERGT, ROBERT, Associate Professor, S.T.M., Concordia Seminary, 1958.
 BLIVEN, FRANK, Instructor, M.A., Western Washington State College, 1976.
 BOE, JOHN, Professor, Northwestern University, 1969.
 BOTTJE, WILL GAY, Professor, A.Mus.D., Eastman School of Music, 1955.
 BRANCH, LONDON, Visiting Lecturer, M.M.Ed., Southern Illinois University, 1966.
 CALLAWAY, PAUL, Visiting Lecturer.
 COKER, WILSON W., Professor, D.M.A., University of Illinois, 1965.
 DENKER, FRED, Professor, *Emeritus*, Ph.D., Eastman School of Music, 1951.
 EDDINS, JOHN, Assistant Professor, Ph.D., Florida State University, 1966.
 FLIGEL, CHARLES, Assistant Professor, M.M., University of Kentucky, 1966.
 FLOYD, SAMUEL, Associate Professor, Ph.D., Southern Illinois University, 1969.
 GORDON RODERICK, Professor, Ph.D., University of Wisconsin, 1953.
 GRIZZELL, MARY JANE, Assistant Professor, M.Mus., Eastman School of Music, 1943.
 HANES, MICHAEL, Assistant Professor, M.M.E., Southern Illinois University, 1965.
 HARTLINE, ELISABETH, Assistant Professor, *Emerita*, M.Mus., Northwestern University, 1936.
 HUNT, C. B., JR., Professor, University of California, Los Angeles, 1949.
 HUSSEY, GEORGE, Associate Professor, M.A.Ed., Washington University, 1963.
 KINGSBURY, ROBERT, Associate Professor, M.Mus., Northwestern University, 1952.
 KLAUSMEIER, CONNIE, Instructor, M.M., University of Wisconsin, 1975.
 KOENIGSTEIN, NICHOLAS, Assistant Professor, M.Mus., West Virginia University, 1956.
 LAWRENCE, MARJORIE, Professor, *Emerita*.
 LEMASTERS, DONALD, Instructor, M.Mus., Northwestern University, 1949.
 McHUGH, CATHERINE, Professor, Ed.D., Columbia University, 1959.
 McINTOSH, DAVID, Associate Professor, *Emeritus*, M.A., University of Iowa, 1935.

MUELLER, ROBERT, Professor, Ph.D., Indiana University, 1954.
 OLSSON, PHILLIP, Professor, M.Mus., Chicago Conservatory, 1949.
 POULOS, HELEN, Assistant Professor, D.M., Indiana University, 1971.
 RESNICK, ROBERT, Professor, M.Mus., Wichita State University, 1949.
 SIENER, MELVIN, Associate Professor, M.A., University of Iowa, 1954.
 SIMMONS, MARGARET, Visiting Assistant Professor, M.M., University of Illinois, 1976.
 TAYLOR, CHARLES, Associate Professor, Ed.D., Columbia University, 1950.
 UNDERWOOD, JERVIS, Associate Professor, Ph.D., North Texas State University, 1970.
 VALK, ALEXIS, Instructor, M.M., Ball State University, 1972.
 VOGLER, HELEN M., Instructor, *Emerita*.
 VONGUNDEN, HEIDI, Assistant Professor, Ph.D., University of California, 1976.
 WALLACE, MARY ELAINE, Professor, M.Mus., University of Illinois, 1954.
 WERNER, KENT, Associate Professor, Ph.D., University of Iowa, 1966.
 WHARTON, JOHN, Associate Professor, *Emeritus*, M.Mus., American Conservatory, 1940.
 WILLIAMS, DAVID N., Assistant Professor, M.Mus., University of Wichita, 1964.

Philosophy (College of Liberal Arts)

AUDI, MICHAEL N., Associate Professor, Ph.D., Johns Hopkins University, 1970.
 CLARKE, DAVID S., JR., Associate Professor, Ph.D., Emory University, 1964.
 DIEFENBECK, JAMES A., Professor, Ph.D., Harvard University, 1950.
 EAMES, ELIZABETH R., Professor, Ph.D., Bryn Mawr College, 1951.
 EAMES, S. MORRIS, Professor, Ph.D., University of Chicago, 1958.
 ERICKSON, GLENN, Visiting Assistant Professor, Ph.D., Vanderbilt University, 1976.
 FRONDIZI, RISIERI, Professor, Ph.D., National University of Mexico, 1950.
 GILLAN, GARTH J., Associate Professor, Ph.D., Duquesne University, 1966.
 HAHN, LEWIS E., Professor, *Emeritus*, Ph.D., University of California, 1939.
 HAYWARD, JOHN, Professor, Ph.D., University of Chicago, 1949.
 HOWIE, JOHN, Associate Professor, Ph.D., Boston University, 1965.
 JOHNSON, MARK, Assistant Professor, Ph.D., University of Chicago, 1977.
 KELLY, MATTHEW J., Associate Professor, Ph.D., University of Notre Dame, 1963.
 LIU, SHU-HSIEN, Professor, Ph.D., Southern Illinois University, 1966.
 McCLURE, GEORGE T., Professor and *Chairperson*, Ph.D., Ohio State University, 1958.
 MIJUSKOVIC, BEN L., Associate Professor, Ph.D., University of California at San Diego, 1972.
 MOORE, WILLIS, Professor, *Emeritus*, Ph.D., University of California, 1936.
 PLOCHMANN, GEORGE KIMBALL, Professor, Ph.D., University of Chicago, 1950.
 SCHEDLER, GEORGE, Associate Professor, Ph.D., University of California at San Diego, 1973.
 SCHILPP, PAUL A., Visiting Professor, Ph.D., Stanford University, 1936.
 TENNEY, CHARLES, University Professor, *Emeritus*, Ph.D., University of Oregon, 1931.

Physical Education (College of Education)

ACKERMAN, KENNETH, Assistant Professor, M.A., Michigan State University, 1959.
 BLACKMAN, CLAUDIA J., Instructor, M.S.Ed., Southern Illinois University, 1968.
 BLAHA, SANDRA, Visiting Instructor, M.S., Southern Illinois University, 1977.
 BRECHTELSBAUER, KAY M., Instructor, M.S.Ed., Southern Illinois University, 1966.
 CARROLL, PETER, Assistant Professor, Ph.D., Pennsylvania State University, 1970.
 DAVIES, DOROTHY R., Professor, *Emerita*, Ed.D., University of Cincinnati, 1944.
 DIRKS, W. EDWARD, Instructor, M.S., Southern Illinois University, 1964, Certificate, Physical Therapy, Ohio State University, 1965.
 ELLIS, WALTER, Assistant Professor, Ph.D., Southern Illinois University, 1977.
 FRANKLIN, C. C., Associate Professor, M.S.Ed., Indiana University, 1946.
 FRANKLIN, MARCILE, Instructor, M.S.Ed., Indiana University, 1944.
 GOOD, LARRY, Associate Professor, Ph.D., Temple University, 1968.
 HARTZOG, LEWIS, Instructor, M.E., Colorado State University, 1954.
 HUNTER, DEBORAH, Instructor, M.Ed., Memphis State University, 1975.
 IDOINE, SALLIE, Assistant Professor, M.M., Florida State University, 1972.
 ILLNER, JULEE ANN, Instructor, M.S.Ed., Southern Illinois University, 1968.
 KNOWLTON, RONALD, Professor, Ph.D., University of Illinois, 1961.
 KOSTALIK, LINDA, Instructor, M.F.A., University of California at Irvine, 1973.
 LEFEVERS, VICTORIA A., Assistant Professor, Ph.D., Texas Woman's University, 1971.
 LONG, LINN, Instructor, M.S., University of Colorado, 1967.
 MEADE, WILLIAM, Assistant Professor, M.A.Ed., University of North Carolina, 1950.
 MEYER, SANDRA, Visiting Instructor, M.S., Southern Illinois University, 1977.

OKITA, TED, Associate Professor, M.A., Northwestern University, 1964.
 PERKINS, SALLY ROUSE, Adjunct Instructor, M.S., Indiana University, 1976.
 POTTER, MARJORIE BOND, Professor, *Emerita*, Ph.D., University of Southern California, 1958.
 REICH, KENNETH, Visiting Associate Professor, Ph.D., University of Southern California, 1975.
 RENNER, INGEBORG, Visiting Instructor, M.S., Washington State University, 1977.
 SHEA, EDWARD, Professor, Ph.D., New York University, 1955.
 SPACKMAN, ROBERT, Associate Professor, M.S.Ed., Southern Illinois University, 1960.
 STEHR, JEAN, Associate Professor, M.A., Texas Woman's University, 1945.
 STOTLAR, JOHN, Associate Professor, D.P.Ed., Indiana University, 1954.
 TAYLOR, MERIDETH, Instructor, B.A., Evergreen State College, 1976.
 THIRER, JOEL, Assistant Professor, Ph.D., Florida State University, 1976.
 THORPE, JO ANNE LEE, Professor, Ph.D., Texas Woman's University, 1964.
 WEST, CHARLOTTE, Professor, Ph.D., University of Wisconsin, 1969.
 WILKINSON, JAMES, Associate Professor, D.P.Ed., Indiana University, 1958.
 ZIMMERMAN, HELEN, Professor, *Emerita*, Ph.D., University of Wisconsin, 1951.

Physics and Astronomy (College of Science)

ARVIN, MARTIN J., Professor, *Emeritus*, Ph.D., University of Illinois, 1934.
 BORST, WALTER L., Associate Professor, Ph.D., University of California, Berkeley, 1968.
 BOSE, SUBIR K., Associate Professor, Ph.D., University of Allahabad, India, 1967.
 BRASEFIELD, CHARLES J., Professor, *Emeritus*, Ph.D., Princeton University, 1927.
 CUTNELL, JOHN D., Associate Professor, Ph.D., University of Wisconsin, 1967.
 GRUBER, BRUNO J., Professor, Ph.D., University of Vienna, Austria, 1962.
 HENNEBERGER, WALTER C., Professor, Ph.D., Göttingen University, Germany, 1959.
 JOHNSON, KENNETH W., Associate Professor, Ph.D., Ohio State University, 1967.
 MARSHALL, LAURISTON C., Adjunct Professor, *Emeritus*, Ph.D., University of California, Berkeley, 1929.
 NICKELL, WILLIAM E., Professor, Ph.D., University of Iowa, 1954.
 SANDERS, FRANK C., JR., Associate Professor, Ph.D., University of Texas, 1968.
 SAPOROSCHENKO, MYKOLA, Associate Professor, Ph.D., Washington University, 1958.
 TELSCHOW, KENNETH L., Assistant Professor, Ph.D., University of California, Los Angeles, 1973.
 WATSON, RICHARD E., Professor and *Chairperson*, Ph.D., University of Illinois, 1938.
 YOUNG, OTIS B., Professor, *Emeritus*, Ph.D., University of Illinois, 1928.
 ZIMMERSCHIED, CHARLOTTE, Assistant Professor, *Emerita*, A.M., University of Minnesota, 1923.
 ZITTER, ROBERT N., Professor, Ph.D., University of Chicago, 1962.

Physiology (College of Science)

BANERJEE, CHANDRA M., Professor, M.D., University of Calcutta, India, Ph.D., Medical College of Virginia, 1967.
 BOELKINS, JAMES N., Assistant Professor, Ph.D., University of Missouri, Columbia, 1971.
 BROWNING, RONALD A., Associate Professor, Ph.D., University of Illinois Medical Center, Chicago, 1971.
 CASPARY, DONALD M., Associate Professor, Ph.D., New York University, 1971.
 CLINE, WILLIAM H., JR., Professor, Ph.D., West Virginia University, 1965.
 DOORENBOS, NORMAN, Professor, Ph.D., University of Michigan, 1954.
 DUNAGAN, TOMMY T., Professor, Ph.D., Purdue University, 1960.
 ELLERT, MARTHA S., Associate Professor, Ph.D., University of Miami, 1968.
 ESTAVILLO, JAIME A., Associate Professor, Ph.D., University of California, Davis, 1970.
 FAINGOLD, CARL L., Associate Professor, Ph.D., Northwestern University, 1970.
 FALVO, RICHARD E., Associate Professor, Ph.D., University of Wyoming, 1970.
 FOOTE, FLORENCE M., Professor, *Emerita*, Ph.D., University of Iowa, 1940.
 FREUND, MATTHEW, Professor and *Chairperson*, Ph.D., Rutgers University, 1958.
 GASS, GEORGE H., Professor, Ph.D., Ohio State University, 1955.
 HUNTER, WILLIAM S., Associate Professor, Ph.D., Michigan State University, 1971.
 KAPLAN, HAROLD M., Professor, *Emeritus*, Ph.D., Harvard University, 1933.
 LEHR, ROBERT P., JR., Associate Professor, Ph.D., Baylor University, 1971.
 MILLER, DONALD M., Professor, Ph.D., University of Illinois, 1965.
 MILLER, GINGER, Assistant Professor, Ph.D., Baylor University, 1976.
 MOORE, WILLIAM D., Assistant Professor, Ph.D., University of Rochester Medical School, 1976.

- MYERS, J. HURLEY, Associate Professor, Ph.D., University of Tennessee School of Medicine, 1969.
- NEQUIN, LYNN G., Associate Professor, Ph.D., University of Illinois Medical School, 1970.
- PARKE, WESLEY W., Professor, Ph.D., University of Connecticut, 1957.
- PETERSON, RUDOLPH N., Associate Professor, Ph.D., University of Florida, 1965.
- RICHARDSON, ALFRED W., Professor, Ph.D., University of Iowa, 1949.
- RUSSELL, LONNIE, Associate Professor, Ph.D., University of Nebraska, 1974.
- SOLLBERGER, ARNE R., Professor, M.D., Caroline Institute, Sweden, 1957.
- SOMANI, SATU M., Associate Professor, Ph.D., Liverpool University, England, 1969.
- VOSS, WILLIAM R., Associate Professor, D.V.M., Michigan State University, 1957, M.P.H., University of Michigan, 1966.
- WINET, HOWARD, Associate Professor, Ph.D., University of California, 1969.
- YAU, WILLIAM M., Associate Professor, Ph.D., Medical College of Virginia, 1971.
- ZMUDA, MICHAEL J., JR., Assistant Professor, Ph.D., University of Minnesota, 1975.

Plant and Soil Science (School of Agriculture)

- CASTER, ALFRED B., Professor, *Emeritus*, Ph.D., University of Arizona, 1941.
- COORTS, GERALD D., Professor and *Chairperson*, Ph.D., University of Illinois, 1964.
- ELKINS, DONALD M., Professor, Ph.D., Auburn University, 1967.
- HILLYER, IRVIN G., Professor, Ph.D., Michigan State University, 1956.
- JONES, JOE H., Associate Professor, Ph.D., Ohio State University, 1960.
- KAPUSTA, GEORGE, Associate Professor, Ph.D., Southern Illinois University, 1975.
- LEASURE, J. K., Professor, Ph.D., University of Illinois, 1953.
- MALEIKE, RAYMOND R., Assistant Professor, Ph.D., Virginia Polytechnic Institute, 1974.
- MOWRY, JAMES B., Professor, Ph.D., Rutgers University, 1951.
- MYERS, OVAL, JR., Professor, Ph.D., Cornell University, 1963.
- OLSEN, FARREL J., Professor, Ph.D., Rutgers University, 1961.
- PIERCEALL, GREGORY M., Assistant Professor, M.L.A., University of Illinois, 1975.
- PORTZ, HERBERT L., Professor, Ph.D., University of Illinois, 1954.
- SATCHELL, DONALD P., Associate Professor, Ph.D., North Carolina State University, 1951.
- STUCKY, DONALD J., Associate Professor, Ph.D., Purdue University, 1963.
- TWEEDY, JAMES A., Professor, Ph.D., Michigan State University, 1966.
- VARSA, EDWARD C., Assistant Professor, Ph.D., Michigan State University, 1970.

Political Science (College of Liberal Arts)

- ALEXANDER, ORVILLE, Professor, *Emeritus*, Ph.D., University of Iowa, 1936.
- BAKER, JOHN H., Associate Professor and *Chairperson*, Ph.D., Princeton University, 1961.
- BHATTACHARYYA, JNANABROTA, Associate Professor, Ph.D., University of Delhi, 1969.
- BIANCHI, RINO, Instructor, M.A., Southern Illinois University, 1961.
- CHOU, IKUA, Professor, Ph.D., Fletcher School of Law and Diplomacy, 1949.
- DALE, RICHARD, Associate Professor, Ph.D., Princeton University, 1962.
- DERGE, DAVID RICHARD, Professor, Ph.D., Northwestern University, 1955.
- ERVIN, OSBIN L., Assistant Professor, Ph.D., University of Tennessee, 1974.
- FOSTER, JOHN L., Assistant Professor, Ph.D., University of Minnesota, 1971.
- GARNER, WILLIAM R., Associate Professor, Ph.D., Tulane University, 1963.
- GOODSELL, CHARLES T., Professor, Ph.D., Harvard University, 1961.
- HANSON, EARL THOMAS, Professor, *Emeritus*, Ph.D., University of Illinois, 1948.
- HARDENBERGH, WILLIAM, Professor, Ph.D., University of Illinois, 1954.
- ISAKOFF, JACK F., Professor, *Emeritus*, Ph.D., University of Illinois, 1937.
- JACKSON, JOHN S., III, Professor, Ph.D., Vanderbilt University, 1971.
- JACOBINI, HORACE B., Professor, Ph.D., University of Kansas, 1951.
- JONES, JUDSON H., Assistant Professor, Ph.D., University of Oregon, 1976.
- KAMARASY, EGON K., Assistant Professor, Doctor Politics, Budapest University, Hungary, 1942.
- KENNEY, DAVID T., Professor, Ph.D., University of Illinois, 1952.
- KLINGBERG, FRANK L., Professor, *Emeritus*, Ph.D., University of Chicago, 1938.
- LACHMAN, ALLAN C., Assistant Professor, Ph.D., University of California—Santa Barbara, 1975.
- LANDECKER, MANFRED, Associate Professor, Ph.D., Johns Hopkins University, 1965.
- MACE, GEORGE R., Associate Professor, Ph.D., Claremont Graduate School, 1963.
- MASON, RONALD M., Assistant Professor, Ph.D., University of Iowa, 1976.
- MCGRATH, ROBERT A., Professor, *Emeritus*, Ph.D., University of Iowa, 1947.
- MILLER, ROY E., Assistant Professor, Ph.D., University of Illinois, 1971.
- MORTON, WARD M., Professor, *Emeritus*, Ph.D., University of Texas, 1941.

NELSON, RANDALL H., Professor, Ph.D., University of Michigan, 1956.
 PAINE, JOANN P., Associate Professor, Ph.D., University of Oregon, 1967.
 RIDGEWAY, MARIAN E., Professor, *Emerita*, Ph.D., University of Illinois, 1952.
 STAUBER, LELAND G., Associate Professor, Ph.D., Harvard University, 1964.
 TURLEY, WILLIAM S., Associate Professor, Ph.D., University of Washington, 1972.
 TURNER, MAX W., Professor, *Emeritus*, Ph.D., University of Iowa, 1947.
 VAN DER SLIK, JACK, Associate Professor, Ph.D., Michigan State University, 1967.

Psychology (College of Liberal Arts)

BAEZ, LUIS A., Associate Professor, Ph.D., Princeton University, 1973.
 BEKKER, L. DEMOYNE, Associate Professor, Ph.D., Ohio State University, 1968.
 BLISS, DAVID K., Associate Professor, Ph.D., University of California at Berkeley, 1968.
 BRUTTEN, GENE J., Professor, Ph.D., University of Illinois, 1957.
 BUCK, TERENCE D., Associate Professor, Ph.D., University of Missouri, 1968.
 CARRIER, NEIL A., Professor, Ph.D., University of Michigan, 1956.
 DOLLINGER, STEPHEN J., Assistant Professor, Ph.D., University of Missouri-Columbia, 1977.
 DUNAGAN, SHIRLEY S., Instructor, M.S., University of Tennessee, 1954.
 DURLAK, JOSEPH A., Assistant Professor, Ph.D., Vanderbilt University, 1971.
 EHRENFREUND, DAVID, Professor, Ph.D., State University of Iowa, 1947.
 GANNON, LINDA, Assistant Professor, Ph.D., University of Wisconsin, 1975.
 GRAHAM, JACK W., Professor, Ph.D., Purdue University, 1951.
 HAREN, VINCENT A., Professor, Ph.D., University of Texas, 1964.
 HAYNES, STEPHEN N., Associate Professor, Ph.D., University of Colorado, 1971.
 HELMS, JANET, Assistant Professor, Ph.D., Iowa State University, 1975.
 KELLEY, NOBLE, H., Professor, *Emeritus*, Ph.D., State University of Iowa, 1936.
 LIT, ALFRED, Professor, Ph.D., Columbia University, 1948.
 McHOSE, JAMES H., Professor and *Chairperson*, Ph.D., University of Iowa, 1961.
 McKILLIP, JOHN A., Assistant Professor, Ph.D., Loyola University of Chicago, 1974.
 MELTZER, DONALD, Professor, Ph.D., University of Pittsburgh, 1963.
 MILLER, H. RICHARD, Associate Professor, Ph.D., University of Missouri, 1967.
 MITCHELL, THOMAS O., Associate Professor, Ph.D., University of Colorado, 1969.
 MOLFESE, DENNIS L., Associate Professor, Ph.D., Pennsylvania State University, 1972.
 MOLFESE, VICTORIA, J., Associate Professor, Ph.D., Pennsylvania State University, 1974.
 MORELAND, JOHN R., Associate Professor, Ph.D., University of Massachusetts, 1971.
 O'DONNELL, JAMES P., Associate Professor, Ph.D., University of Pittsburgh, 1965.
 PITZ, GORDON F., Professor, Ph.D., Carnegie-Mellon University, 1963.
 PURCELL, THOMAS D., Associate Professor, Ph.D., Southern Illinois University, 1965.
 RADTKE, ROBERT C., Associate Professor, Ph.D., State University of Iowa, 1963.
 RANDERS-PEHRSON, SUSAN BAHN, Assistant Professor, Ph.D., University of Maryland, 1976.
 RAFFERTY, JANET E., Professor, Ph.D., Ohio State University, 1952.
 RAMANAIAH, NERELLA, Associate Professor, Ph.D., University of Oregon, 1971.
 RINGUETTE, EUGENE L., Associate Professor, Ph.D., Purdue University, 1963.
 SCHILL, THOMAS R., Professor, Ph.D., Oklahoma State University, 1963.
 SCHMECK, RONALD R., Associate Professor, Ph.D., Ohio University, 1969.
 SHOEMAKER, DONALD J., Professor, Ph.D., Ohio State University, 1955.
 SNYDER, JOHN F., Associate Professor, Ph.D., Loyola University, 1965.
 TINSLEY, DIANE J., Assistant Professor, Ph.D., University of Minnesota, 1972.
 TINSLEY, HOWARD E. A., Associate Professor, Ph.D., University of Minnesota, 1971.
 WESTBERG, WILLIAM C., Professor, Ph.D., Pennsylvania State University, 1948.
 WENDT, RACHEL, Assistant Professor, *Emerita*, Ph.D., Southern Illinois University, 1966.

Radio-Television (College of Communications and Fine Arts)

ANDERSON, JUANITA, Adjunct Instructor, M.A., University of Michigan, 1973.
 BROWN, WILLIAM EDWARD, Assistant Professor, M.S., Southern Illinois University, 1974.
 CRISWELL, WILLIAM, Lecturer, B.S.J., West Virginia University, 1950.
 DYBVIG, HOMER E., Associate Professor, Ph.D., Southern Illinois University, 1970.
 GARRY, KENNETH, Lecturer, M.S., Indiana State University, 1966.
 HILDRETH, RICHARD, Instructor, M.S., Syracuse University, 1968.
 HOLMES, JOHN, Academic Adviser, M.A., Southern Illinois University, 1970.
 KIMSEY, JOHN, Adjunct Instructor, M.A., Indiana State University, 1972.
 KURTZ, JOHN L., Assistant Professor, Ph.D., Southern Illinois University, 1973.
 LYNCH, CHARLES T., Associate Professor and *Chairperson*, Ph.D., Southern Illinois University, 1972.

MAMPRE, VIRGINIA, Lecturer, M.S., University of Indiana, 1972.
 OLSON, THOMAS O., Associate Professor, Ph.D., Wayne State University, 1966.
 PIZZATO, ALAN, Adjunct Instructor, M.A., Indiana State University, 1974.
 RICHARDSON, ALAN, Assistant Professor, Ph.D., Ohio University, 1977.
 ROCHELLE, DAVID, Instructor, B.F.A., University of Houston, 1956.
 SHIPLEY, CHARLES W., Professor, Ph.D., Florida State University, 1971.
 WALKER, MYERS, Instructor, M.F.A., Southern Illinois University, 1971.
 WIESMAN, DARYL, Adjunct Instructor, M.A., Eastern Illinois University, 1976.

Recreation (College of Education)

ABERNATHY, WILLIAM, Assistant Professor, M.S.Ed., Southern Illinois University, 1963.
 ALLEN, JOHN R., Assistant Professor, Ph.D., Southern Illinois University, 1977.
 CRUNK, J. DANIEL, Visiting Instructor, M.S. in Ed., Southern Illinois University, 1975.
 FREEBERG, WILLIAM Professor, D.Rec., Indiana University, 1950.
 LOVELAND, N. JEAN, Assistant Professor, D.Rec., Indiana University, 1975.
 McEWEN, DOUGLAS, Assistant Professor, Ph.D., Michigan State University, 1973.
 O'BRIEN, WILLIAM, Professor and *Chairperson*, D.Rec., Indiana University, 1967.
 SMITH, OWEN, Assistant Professor, Ph.D., University of Utah, 1974.
 TAYLOR, LOREN, Professor, *Emeritus*, Ed.D., Columbia University, 1957.
 YANTIS, JOANNE G., Visiting Instructor, M.S. in Ed., Southern Illinois University, 1977.

Rehabilitation Institute (College of Human Resources)

ALLEN, HARRY A., Associate Professor, Ed.D., University of Arkansas, 1971.
 AZRIN, NATHAN H., Professor, Ph.D., Harvard University, 1956.
 BAKER, FRANCES M., Instructor, M.P.S., Western Kentucky University, 1972.
 BAKER, RICHARD J., Associate Professor, Ed.D., Auburn University, 1972.
 BALCERZAK, WALLACE S., Adjunct Assistant Professor, Ph.D., University of Wisconsin, 1975.
 BENDER, ELEANOR, Assistant Professor, *Emerita*, M.S., Southern Illinois University, 1962.
 BITTLE, RONALD, Adjunct Assistant Professor, Ph.D., Southern Illinois University, 1974.
 BLACK, ARTHUR A., Adjunct Assistant Professor, Ph.D., Southern Illinois University, 1974.
 BLOSSER, RONALD E., Adjunct Instructor, M.S., Southern Illinois University, 1974.
 BRADSHAW, HARLEY E., Adjunct Assistant Professor, Ph.D., Southern Illinois University, 1972.
 BROWN, GARY M., Adjunct Assistant Professor, D.D.S., University of Tennessee, 1970.
 BRYSON, SEYMOUR L., Associate Professor, Ph.D., Southern Illinois University, 1972.
 COLVIN, ROBERT H., Assistant Professor, Ph.D., Southern Illinois University, 1971.
 CUVO, ANTHONY J., Associate Professor, Ph.D., University of Connecticut, 1973.
 DICKEY, THOMAS W., Assistant Professor, *Emeritus*, M.A., Southern Illinois University, 1964.
 EARLL, MARJORIE L., Adjunct Instructor, M.S., Southern Illinois University, 1966.
 EDELMAN, JORDAN, Adjunct Professor, Ph.D., Washington University, 1958.
 ERICKSON, RICHARD B., Adjunct Instructor, M.S., Stout State University, 1969.
 ESPOSITO, ANDREW R., Professor, M.D., Loyola University at Chicago, 1933.
 GARDNER, MARGARET S., Associate Professor, Ph.D., Northwestern University, 1960.
 GELLMAN, WILLIAM, Adjunct Professor, Ph.D., University of Chicago, 1955.
 GRENFELL, JOHN E., Professor, Ed.D., Oregon State University, 1966.
 GRODER, MARTIN, G., Adjunct Professor, M.D., Columbia University, 1964.
 GRUENDEL, GEORGE F., Adjunct Instructor, M.A., Northeast Missouri State, 1962.
 HAWLEY, IRENE B., Assistant Professor, Ph.D., Southern Illinois University, 1973.
 HAYS, RICHARD, Adjunct Instructor, M.S., Southern Illinois University at Carbondale, 1976.
 HENSON, DONALD E., Visiting Assistant Professor, Ph.D., Southern Illinois University, 1976.
 HOUSEWRIGHT, VERNON, Adjunct Assistant Professor, M.P.A., University of Arizona, 1962.
 JOHNSON, RICHARD H., Adjunct Assistant Professor, Ph.D., University of Missouri, 1970.
 LEE, ROBERT E., Associate Professor, *Emeritus*, Ph.D., University of Minnesota, 1964.
 LORENZ, JEROME R., Associate Professor, Ph.D., University of Wisconsin, 1973.
 LUTZKER, JOHN R., Associate Professor, Ph.D., University of Kansas, 1973.
 MAGERS, GEORGE A., Adjunct Instructor, M.S., University of Illinois, Urbana, 1946.
 MCDONALD, A. ANDREW, Assistant Professor, M.S., University of Wisconsin, Stout, 1969.

MCVAY, SAMUEL E., Adjunct Instructor, M.S., Southern Illinois University, 1974.
 MILES, DAVID T., Adjunct Associate Professor, Ph.D., Southern Illinois University, 1967.
 MIRANTI, JOSEPH P., Professor, M.D., Loyola University of Chicago, 1950.
 NEWBAUER, JOHN F., Assistant Professor, Ed.D., Ball State University, 1977.
 PERKINS, JAMES D., Adjunct Instructor, M.Div., Union Theological Seminary, 1970.
 POPPEN, ROGER L., Associate Professor, Ph.D., Stanford University, 1968.
 REITMAN, PAUL, Adjunct Instructor, M.A., Southern Illinois University, 1975.
 RENZAGLIA, GUY A., Professor, *Emeritus*, Ph.D., University of Minnesota, 1952.
 ROBINSON, WALTER G., Assistant Professor, Ph.D., Southern Illinois University, 1976.
 RUBIN, HARRIS B., Professor, Ph.D., University of Chicago, 1965.
 RUSHING, PHILIP, Adjunct Assistant Professor, M.S.W., Washington University, St. Louis, 1960.
 SANDERS, RICHARD M., Adjunct Professor, Ph.D., University of North Carolina, 1966.
 SAWYER, HORACE W., Associate Professor, Ed.D., Auburn University, 1973.
 SCHUMACHER, BROCKMAN, Professor, Ph.D., Washington University, 1969.
 SCOTT, MICHAEL A., Adjunct Assistant Professor, M.D., Queen's University, 1961.
 SHAFTER, ALBERT J., Adjunct Professor, Ph.D., Iowa State University, 1953.
 SLICER, ALFRED, Adjunct Professor, M.A., Northwestern University, 1950.
 SLOAN, WILLIAM, Adjunct Professor, Ph.D., Northwestern University, 1950.
 STALLS, ROBERT, Adjunct Instructor, B.A., Southern Illinois University, 1953.
 STECK, ROBERT C. Adjunct Professor, M.D., University of Illinois Medical School, 1942.
 VIECELI, LOUIS, Associate Professor, M.S.Ed., Southern Illinois University, 1959.

Religious Studies (College of Liberal Arts)

BENGTSON, DALE R., Assistant Professor, Ph.D., Hartford Seminary Foundation, 1971.
 HAYWARD, JOHN F., Professor and *Chairperson*, Ph.D., University of Chicago, 1949.
 HUTCH, RICHARD A., Assistant Professor, Ph.D., University of Chicago, 1974.

Social and Community Services (College of Human Resources)

ALLIBAND, TERRY T., Assistant Professor, Ph.D., University of Iowa, 1974.
 ANDERSON, C. WILSON, Visiting Professor, D.S.W., University of Pennsylvania, 1953;
 J.D., William Mitchell College of Law, 1957.
 AUERBACH, ARNOLD J., Professor, Ph.D., University of Pittsburgh, 1961.
 BHATTACHARYYA, KNANABROTA, Associate Professor, Ph.D., University of Delhi, India, 1969.
 BRELJE, MARTHA BROSE, Assistant Professor, A.M., Indiana University, 1963.
 BROWN, FOSTER S., JR., Instructor, M.S.W., New York University, 1966.
 BROWN, TALLON H., Assistant Professor, Ph.D., Southern Illinois University, 1973.
 CHARLES, EUNICE A., Assistant Professor, Ph.D., Boston University, 1973.
 COX, BEVERLY J., Instructor, M.S. in Ed., Southern Illinois University, 1973.
 DENISE, PAUL S., Assistant Professor, Ph.D., University of California, Berkeley, 1974.
 EHRLICH, IRA F., Professor and *Director*, D.S.W., Washington University, 1970.
 EHRLICH, PHYLLIS D., Visiting Assistant Professor, M.S.S.A., Western Reserve University, 1951.
 FLOYD, SAMUEL A., Research Associate, Ph.D., Southern Illinois University, 1969.
 HANDLER, EUGENIA, Instructor, M.S.W., University of Southern California, 1959.
 HANSON, JAMES M., Assistant Professor, Ph.D., Southern Illinois University, 1974.
 HARPER, CLIFFORD D., Associate Professor, Ph.D., St. Louis University, 1972.
 JONES, McKINLEY A., Assistant Professor, Ph.D., University of Illinois, 1976.
 McDERMOTT, CAROL, Instructor, M.S.S.S., Boston University, 1951.
 O'NEILL, TREVA H., Instructor, M.S.W., University of Denver, 1967.
 POSTON, RICHARD, Professor, *Emeritus*, B.A., University of Montana, 1940.
 ROBINSON, WALTER G., Assistant Professor, Ph.D., Southern Illinois University, 1976.
 ROSEN, ANITA L., Visiting Assistant Professor, Ph.D., Southern Illinois University, 1975.
 SCHRADER, SHARON L., Academic Adviser, M.S., Southern Illinois University, 1976.
 SMITH, STANLEY H., Professor, Ph.D., Washington State University, 1953.
 STURGIS, GLADYS M., Lecturer, M.S.L.S., Atlanta University, 1964.
 THOMAS, RICHARD M., Professor, D.Ed., University of California, Los Angeles, 1964.
 WAKELY, RAYMOND E., Professor, *Emeritus*, Ph.D., Cornell University, 1928.
 WALKER, PEGGY J., Instructor, M.S.W., Washington University, 1967.

Sociology (College of Liberal Arts)

ALIX, ERNEST K., Associate Professor, Ph.D., Southern Illinois University, 1966.
 BROOKS, MELVIN, Associate Professor, Ph.D., University of Wisconsin, 1941.

BURGER, THOMAS, Associate Professor, Ph.D., Duke University, 1972.
 EYNON, THOMAS G., Professor, Ph.D., Ohio State University, 1959.
 GASTON, JERRY C., Professor and *Chairperson*, Ph.D., Yale University, 1969.
 GREENSTEIN, THEODORE N., Assistant Professor, Ph.D., Washington State University, 1976.
 HAWKES, ROLAND K., Associate Professor, Ph.D., Johns Hopkins University, 1967.
 HENDRIX, LEWELLYN, Associate Professor, Ph.D., Princeton University, 1974.
 JOHNSON, ELMER H., Professor, Ph.D., University of Wisconsin, 1950.
 LANTZ, HERMAN R., Professor, Ph.D., Ohio State University, 1950.
 LEMERT, CHARLES, Associate Professor, Ph.D., Harvard University, 1972.
 MARCUM, JOHN P., Assistant Professor, Ph.D., University of Texas, 1976.
 MEDDIN, JAY R., Assistant Professor, Ph.D., University of Kentucky, 1973.
 MUNCH, PETER A., Professor, *Emeritus*, Ph.D., University of Oslo, 1946.
 NALL, FRANK C., II, Associate Professor, Ph.D., Michigan State University, 1959.
 PATTERSON, EDGAR I., Instructor, M.A., University of Kansas, 1961.
 SNYDER, CHARLES R., Professor, Ph.D., Yale University, 1954.

Special Education (College of Education)

CORDONI, BARBARA, Assistant Professor, Ed.D., Duke University, 1976.
 CASEY, JOHN P., Professor, Ed.D., Indiana University, 1973.
 CROWNER, JAMES, Professor, Ph.D., Michigan State University, 1960.
 EWING, NORMA J., Assistant Professor, Ph.D., Southern Illinois University, 1974.
 HISAMA, TOSHIAKI, Associate Professor, Ph.D., University of Oregon, 1971.
 JOINER, LEE M., Professor, Ph.D., Michigan State University, 1966.
 JUUL, KRISTEN D., Professor, Ed.D., Wayne State University, 1953.
 McKAY, ELIZABETH B., Associate Professor, *Emerita*, Ph.D., Syracuse University, 1952.
 MORGAN, HOWARD, Professor, Ed.D., Wayne State University, 1962.
 RAINEY, DAN, Assistant Professor, M.S.Ed., Southern Illinois University, 1956.
 STEPHENS, WYATT E., Professor and *Chairperson*, Ph.D., University of Oklahoma, 1963.
 STONEBURNER, ROBERT L., Assistant Professor, Ph.D., University of Illinois, 1974.
 TESKA, JAMES, Associate Professor, Ph.D., University of Illinois, 1969.

Speech Communication (College of Communications and Fine Arts)

ACKERMAN-ROSS, SUSAN, Assistant Professor, Ph.D., Pennsylvania State University, 1976.
 BRENNIMAN, LESTER R., Associate Professor, *Emeritus*, Ph.D., Ohio State University, 1953.
 BYTWERK, RANDALL L., Assistant Professor, Ph.D., Northwestern University, 1975.
 DEETZ, STANLEY A., Assistant Professor, Ph.D., Ohio University, 1973.
 FISH, ROBERT A., Assistant Professor, Ph.D., University of Oklahoma, 1970.
 GOODIEL, EUNICE B., Assistant Professor, *Emerita*, M.A., Northwestern University, 1941.
 HIBBS, R. P., Professor, *Emeritus*, A.M., University of Wisconsin, 1942.
 HOLDRIDGE, WILLIAM E., Assistant Professor, Ph.D., University of Illinois, 1974.
 KLEINAU, MARION L., Professor, Ph.D., University of Wisconsin, 1961.
 KLEINAU, MARVIN D., Assistant Professor, Ph.D., Southern Illinois University, 1977.
 LANIGAN, RICHARD L., Associate Professor, Ph.D., Southern Illinois University, 1969.
 MacDONALD, DONALD, Associate Professor, Ph.D., Michigan State University, 1971.
 McCauliff, MARY LOU, Assistant Professor, Ph.D., University of Kansas, 1974.
 McGLONE, EDWARD L., Professor and *Chairperson*, Ph.D., Ohio University, 1967.
 McHUGHES, JANET LARSEN, Associate Professor, Ph.D., Northwestern University, 1972.
 MICKEN, RALPH A., Professor, *Emeritus*, Ph.D., Northwestern University, 1948.
 PACE, THOMAS J., Professor, Ph.D., University of Denver, 1957.
 POTTER, DAVID J., Professor, *Emeritus*, Ph.D., Columbia University, 1943.
 SANDERS, KEITH R., Professor, Ph.D., University of Pittsburgh, 1968.
 SMITH, WILLIAM D., Associate Professor, Ph.D., Southern Illinois University, 1964.
 TALLEY, C. HORTON, Professor, *Emeritus*, Ph.D., State University of Iowa, 1936.
 WILEY, RAYMOND D., Assistant Professor, *Emeritus*, M.S., Southern Illinois University, 1965.

Speech Pathology and Audiology (College of Communications and Fine Arts)

ANDERSON, JOHN O., Professor, Ph.D., Ohio State University, 1950.
 BLANCHE, STEPHEN E., Assistant Professor, Ph.D., Ohio University, 1970.
 BRACKETT, ISAAC P., Professor, Ph.D., Northwestern University, 1947.
 BRUTTEN, GENE J., Professor, Ph.D., University of Illinois, 1957.

FRANZEN, RICHARD L., Assistant Professor, Ph.D., University of Iowa, 1970.
 GARBUTT, CAMERON W., Associate Professor, *Emeritus*, Ph.D., Louisiana State University, 1951.
 HOSHIKO, MICHAEL S., Professor, Ph.D., Purdue University, 1957.
 KOEPP-BAKER, HERBERT, Professor, *Emeritus*, Ph.D., University of Iowa, 1938.
 MONCUR, JOHN P., Professor and *Chairperson*, Ph.D., Stanford University, 1950.
 PACE, SUE A., Professor, Ph.D., Northwestern University, 1966.
 WEBB, PATRICIA, Instructor, M.Ed., University of Florida, 1975.

Technical Careers (School of Technical Careers)

ALDEN, ELAINE F., Visiting Associate Professor, Ph.D., University of Pittsburg, 1971.
 BLANCHET, MICHAEL C., Visiting Instructor, M.P.H., University of Oklahoma, 1976.
 BROWN, KEVIN, Visiting Instructor, M.B.A., Southern Illinois University at Edwardsville, 1977.
 DAVIS, HARRY E., Visiting Assistant Professor, M.H.A., Washington University Medical School, 1961.
 FALKENBERRY, WILLIAM A., Academic Adviser, B.A., Southern Illinois University, 1976.
 HAMPTON, ROBBYE JOANNA, Visiting Instructor, M.S., Southern Illinois University, 1964.
 HARRISON, FRED E., Assistant Professor, EdD., University of Denver, 1975.
 HERTZ, VIVIENNE, Assistant Professor, Communications, M.A., Southern Illinois University, 1968.
 HOLMES, JOHN S., Instructor, Baccalaureate Program, M.S., Southern Illinois University, 1972.
 ICENOGLE, DALE F., Assistant Professor, B.A., University of Minnesota, 1970.
 JOHNSTON, CHESTER E., Associate Professor, M.A., George Peabody College for Teachers, 1953.
 LAEDTKE, RALPH, Visiting Assistant Professor, M.A., Webster College, 1977.
 LAYER, ROBERT G., Professor, Ph.D., Harvard University, 1952.
 MANNING, MICHAEL, Visiting Assistant Professor, M.B.A., California State University at Hayward, 1975.
 MEADORS, ALLEN, Visiting Assistant Professor, M.P.A., University of Kansas, 1975.
 NEWMYER, DAVID, Visiting Assistant Professor, M.S., Northwestern University, 1974.
 NOVICK, JEHIEL, Assistant Professor, Ph.D., Southern Illinois University, 1970.
 PAYNE, MICHAEL A., Visiting Instructor, M.S.Ed., Southern Illinois University, 1974.
 PRATT, ARDEN L., Professor, Ed.D., State University of New York at Buffalo, 1968.
 QUINTENZ, CONSTANCE, Field Representative, B.S., Southern Illinois University, 1975.
 REYNOLDS, R., JOHN, Associate Professor and *Chairperson*, Baccalaureate Program, Ph.D., Southern Illinois University, 1971.
 ROBB, JAMES A., Associate Professor, Ph.D., Southern Illinois University, 1974.
 SMITH, DONALD RAY, Assistant Professor, Mathematics and Science, M.S.Ed., Southern Illinois University, 1967.
 SODERSTROM, RUTH, Academic Adviser, M.S., New York University, 1939.
 SUTTON, JOHN R., Assistant Professor, Ph.D., Southern Illinois University, 1977.
 TREGONING, RUBY, Academic Adviser, M.S., Southern Illinois University, 1976.
 TROUTT, EILEEN, Visiting Instructor, M.S., University of Illinois at Chicago Circle, 1975.
 WALSH, E. MICHAEL, Assistant Professor, Ph.D., Southern Illinois University, 1974.
 WATSON, PHILIP C., Instructor, Mathematics and Science, B.A., Southern Illinois University, 1965.
 WORKUN, ARTHUR E., Associate Professor, Communications, M.S.Ed., Illinois State University, 1955.

Technology (School of Engineering and Technology)

ANDERSON, MELVIN K., Associate Professor, Ph.D., University of Arkansas, 1967.
 ANDREWS, PAUL E., Assistant Professor, M.S., Memphis State University, 1972.
 BARBAY, JOSEPH E., JR., Associate Professor, Ph.D., University of Missouri, Columbia, 1971.
 BELL, RODNEY A., Visiting Assistant Professor, M.S., Illinois State University, 1976.
 BESTERFIELD, DALE H., Associate Professor, Ph.D., Southern Illinois University, 1971.
 BROWN, JOHN J., Visiting Assistant Professor, M.S. in Ed., Southern Illinois University, 1975.
 CHEN, HAN LIN, Instructor, M.A., Southern Illinois University, 1958.
 COWLEY, WAYNE D., Visiting Assistant Professor, D.Ed., Texas A&M University, 1975.

DENTON, KEITH, Visiting Assistant Professor, M.P.A., Memphis State University, 1974.
 DOTY, LEONARD A., Visiting Assistant Professor, M.B.A., University of Chicago, 1970.
 DUNNING, E. LEON, Professor and *Chairperson*, Ph.D., University of Houston, 1967.
 FERKETICH, ROBERT R., Instructor, M.S., Southern Illinois University, 1962.
 FERRELL, STUART, Associate Professor, Ph.D., University of Missouri, Rolla, 1971.
 FILLMAN, HARRY W., Visiting Associate Professor, M.S., Columbia University, 1964.
 HART, WILLARD C., Instructor, *Emeritus*, B.S., University of Illinois, 1939.
 HORWITZ, NORMAN G., Visiting Assistant Professor, M.S. Polytechnic Institute of Brooklyn, 1972.
 JOHNSON, MARVIN E., Professor, Ed.D., University of Missouri, Columbia, 1959.
 KAZMIERSKI, THOMAS J., Visiting Assistant Professor, M.S., Kansas State College, 1974.
 KING, FRANK H., Visiting Assistant Professor, M.S.I.E., Oklahoma State University, 1975.
 KLOPP, MARK E., Associate Professor, M.S.Ed., Pennsylvania State University, 1954.
 MEYERS, FRED E., Visiting Assistant Professor, M.B.A., Capitol University, 1975.
 MISRA, SATYA DEB, Instructor, B.E., Calcutta University, 1964.
 MOELLER, C. MERRILL, Associate Professor, M.S.C.E., Kansas State University, 1951.
 MUELLER, WILLIAM E., Visiting Assistant Professor, M.B.A., Eastern Michigan University, 1972.
 NOLEN, DON H., Visiting Assistant Professor, M.S., University of Wisconsin, 1974.
 O'HAGAN, ROBERT E., Visiting Assistant Professor, M.S., Wisconsin State University, 1974.
 OTT, CARLYLE G., Assistant Professor, M.S.Ed., Southern Illinois University, 1951.
 ROGERS, C. LEE, Assistant Professor, Ph.D., Southern Illinois University, 1975.
 WILLIAMSON, JERRY L., Assistant Professor, M.S.M.E., Rensselaer Polytechnic Institute, 1964.

Theater (College of Communications and Fine Arts)

CANNON, JOHN, Assistant Professor, M.F.A., Carnegie-Mellon University, 1968.
 IDOINE, SALLIE, Assistant Professor, M.S., Florida State University, 1972.
 KOSTALIK, LINDA, Instructor, M.F.A., University of California, 1973.
 MCLEOD, ARCHIBALD, Professor, *Emeritus*, Ph.D., Cornell University, 1943.
 MOE, CHRISTIAN H., Professor, Ph.D., Cornell University, 1958.
 PAYNE, DARWIN R., Associate Professor and *Acting Chairman*, M.F.A., Southern Illinois University, 1955.
 PROCTOR, JOSEPH M., Assistant Professor, M.F.A., Brandeis University, 1971.
 REYNOLDS, HOWARD LANGDON, Assistant Professor, M.F.A., Smith College, 1969.
 STEWART-HARRISON, EELIN, Associate Professor, Ph.D., Louisiana State University, 1968.
 STRAUMANIS, ALFREDS, Associate Professor, Ph.D., Carnegie-Mellon University, 1966.
 TALAROWSKI, JOSEPH W., Professor, Ph.D., University of Denver, 1966.
 TAYLOR, MERIDETH, Lecturer, B.A., Evergreen State College, 1976.

Thermal and Environmental Engineering (School of Engineering and Technology)

CHEN, JUH W., Professor and *Chairperson*, Ph.D., University of Illinois, 1959.
 COOK, ECHOL E., Associate Professor, Ph.D., Oklahoma State University, 1970.
 HELMER, WAYNE ALLEN, Assistant Professor, Purdue University, 1974.
 HESKETH, HOWARD E., Professor, Ph.D., Pennsylvania State University, 1968.
 JEFFERSON, THOMAS B., Professor, Ph.D., Purdue University, 1955.
 KENT, ALBERT C., Associate Professor, Ph.D., Kansas State University, 1968.
 MUCHMORE, CHARLES B., Associate Professor, Ph.D., Southern Illinois University, 1970.
 O'BRIEN, WILLIAM S., Assistant Professor, Ph.D., West Virginia University, 1972.
 PETRIE, THOMAS W., Associate Professor, Ph.D., University of Minnesota, 1969.
 RAJAN, S., Assistant Professor, Ph.D., University of Illinois, 1970.
 SINHA, ATMESH K., Associate Professor, University of Sheffield, England, 1963.
 STOEVEER, HERMAN J., Professor, *Emeritus*, University of Illinois, 1934.

Vocational Education Studies (College of Education)

ANDERSON, MARCIA, Assistant Professor, Ph.D., Southern Illinois University, 1975.
 BAILEY, LARRY J., Professor, Ed.D., University of Illinois, 1968.
 BITTLE, R. E., Professor, Ed.D., University of Florida, 1956.
 BOBELL, JOHN L., Visiting Assistant Professor, Ed.D., University of Missouri, 1973.
 BORTZ, RICHARD F., Associate Professor, Ph.D., University of Minnesota, 1967.

- BOSS, RICHARD D., Visiting Associate Professor, Ed.D., Oregon State University, 1968.
- BRAMES, THOMAS J., Visiting Assistant Professor, Ed.D., Utah State University, 1975.
- BUBNAS, PHYLLIS, Assistant Professor, M.S., Southern Illinois University, 1960.
- BUILA, THEODORE, Associate Professor, Ph.D., Cornell University, 1968.
- BURGER, OPAL JUNE, Assistant Professor, M.S.Ed., Southern Illinois University, 1961.
- CARTER, ROSE MARY, Assistant Professor, Ph.D., Purdue University, 1970.
- CHRISTENSEN, PETER A., Visiting Assistant Professor, Ph.D., Colorado State University, 1976.
- CILLEY, RICHARD N., Visiting Assistant Professor, Ed.D., Virginia Polytechnic Institute and State University, 1977.
- CUNNINGHAM, WILLIAM J., Visiting Assistant Professor, Ed.D., University of Tennessee, 1976.
- DEWULF, BERNARD G., Visiting Assistant Professor, Ph.D., Washington University (St. Louis), 1962.
- ERICKSON, JOHN H., Professor, Ed.D., Pennsylvania State University, 1953.
- FULTS, ANNA CAROL, Professor, Ph.D., Ohio State University, 1946.
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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.*



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