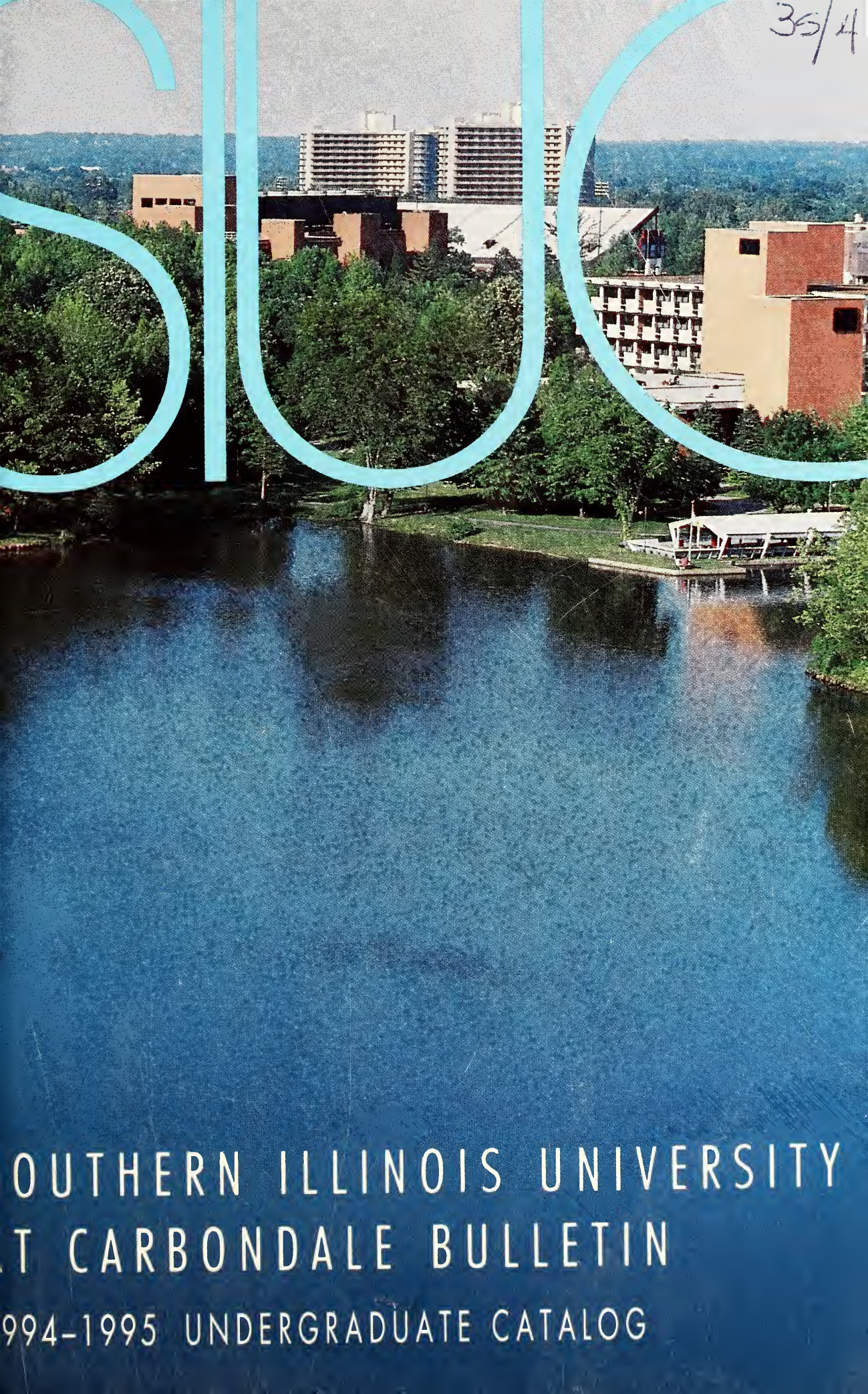
1994

1994-1995 Southern Illinois University Bulletin Carbondale Campus (Undergraduate Bulletin)

Southern Illinois University Carbondale



OUTHERN ILLINOIS UNIVERSITY
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994-1995 UNDERGRADUATE CATALOG

Southern Illinois University at Carbondale Bulletin

1994–1995 Undergraduate Catalog

Southern Illinois University at Carbondale Bulletin (USPS 506-080)

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This Catalog

This publication provides information about the University. Primary attention is given to its academic program, rules and regulations, and procedures. Students starting their collegiate training (first graded course from an accreditied institution) during the period of time covered by this catalog (summer 1994 through spring 1995) are subject to the curricular requirements as specified herein. The requirements herein will extend for a seven calendar year period from the 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 requirements contained herein subsequently be changed by the University, students are assured that necessary adjustments will be made so that no additional time is required of them. 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 requirement changes work to the students' advantage, they may elect to meet the new requirements rather than those contained herein. 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.

The Undergraduate Catalog covers in detail questions concerning the undergraduate program of Southern Illinois University at Carbondale for the period from summer 1994 through spring 1995. It supersedes Volume 34, Number 4.

Affirmative Action Policy

It is the policy of Southern Illinois University at Carbondale to provide equal opportunity and educational opportunities for all qualified persons without discrimination on the basis of race, color, religion, sex, national origin, age, handicap, sexual orientation, or marital status. The University is committed to the principles of equal employment and affirmative action and will continue to conduct all personnel actions in accordance with the letter and spirit of applicable state and federal statutes and regulations, including Executive Order 11246 as amended. Personnel actions include, but are not limited to, recruitment, hiring, position assignments, compensations, training, promotions, tenure consideration and award, retention, lay-off, termination, and benefits.

The University recognizes that the barriers of race, sex, and national origin have resulted in the denial to some individuals of their full participation in all societal functions, and is committed to taking affirmative steps aimed at overcoming such historical patterns of discrimination in our society. The University's Affirmative Action Program identifies special actions intended to bring such groups into full participation in all aspects of university life. Through its Affirmative Action Program, Southern Illinois University at Carbondale is committed to: (1) increasing the number of minority individuals and women in all aspects of the University, with special procedures applicable to those positions determined to be "underutilized" for minorities and women; (2) insuring cultural and educational diversity in the curricula of the University; (3) insuring the removal of barriers to the disabled; and (4) fostering attitudes in the University community that are supportive of the principles of equal opportunity and affirmative action to redress the consequences of past societal discrimination.

The responsibility for coordinating and monitoring compliance with the University's Equal Opportunity/Affirmative Action policy is assigned to the Executive Assistant to the President. Implementation and assuring compliance with this policy is the responsibility of all academic and administrative units.

Board of Trustees and Officers of Administration

Board of Trustees of Southern Illinois University

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University Calendar

Summer Session, 1994

Eight-Week Session Begins	Monday, June 13
Independence Day Holiday	Monday, July 4
Final Examinations	Thursday, August 4, and Friday, August 5
Commencement	Saturday, August 6

Fall Semester, 1994

Semester Classes Begin	Monday, August 22
Labor Day Holiday	Monday, September 5
Saluki Family Weekend	Saturday, October 1
Fall Recess	Monday, October 10
Homecoming	Saturday, October 15
Thanksgiving Vacation	Saturday, November 19, 12:00 NOON — Sunday, November 27
Final Examinations	Monday, December 12 — Friday, December 16

Spring Semester, 1995

Martin Luther King, Jr.'s Birthday Holiday	Monday, January 16
Semester Classes Begin	Tuesday, January 17
Spring Vacation	Saturday, March 11, 12:00 NOON — Sunday, March 19
Honors Day	Sunday, April 9
Final Examinations	Monday, May 8 — Friday, May 12
Commencement	Friday, May 12; Saturday, May 13; and Sunday, May 14

All breaks officially begin at 10:00 p.m. the night before and end at 7:30 a.m. the morning after the respective beginning and ending dates listed above. Exceptions to this policy are shown above.

Accommodating Religious Observances of Students

Southern Illinois University at Carbondale will make reasonable accommodation for individual student religious observances. The *Policy Accommodating Religious Observances of Students* appears in its entirety in Chapter 7.

Chapter Reference Guide

The black tabs on the right of this page correspond to black tabs on Chapters 1 through 8 in this catalog.

For information or concerns pertaining to this catalog, contact Patricia Covington, editor, at the Office of Admissions and Records, Southern Illinois University at Carbondale, Carbondale, Illinois, 62901.

1 General Information

The University

Southern Illinois University

Southern Illinois University is a multicampus university comprising two institutions, Southern Illinois University at Carbondale (SIUC) with a School of Medicine at Springfield and a campus in Niigata, Japan, and Southern Illinois University at Edwardsville (SIUE) with a School of Dental Medicine at Alton and a center in East St. Louis. The University, with an annual operating budget of $450 million, enrolls over 35,000 students in programs from two-year technical curricula to Ph.D. programs in 25 fields along with law, medicine and dental medicine. SIU was chartered in 1869 as Southern Illinois Normal University, a teachers' college. In 1947, the name was changed to Southern Illinois University, reflecting the institution's academic expansion. The University also expanded geographically. As early as 1949, SIU began offering off-campus academic courses in the metropolitan East St. Louis area, which led to the eventual development of a separate institution in Edwardsville.

A modern and comprehensive post-secondary educational institution, Southern Illinois University offers a broad range of academic programs that lead to associate, baccalaureate, master's, specialist's, doctoral, and professional degrees.

The instructional, research, and service missions of the two constituent institutions reflect the needs of the geographic areas in which they are located. The University also is committed to serving statewide, national, and international needs. This commitment is reflected in educational activities located off the main campuses in communities throughout the state. It is realized also through research and training exchanges and through world-wide student exchange programs.

A nine-member Board of Trustees governs Southern Illinois University and sets policy that enables the University to carry out its established missions and goals. The chancellor of Southern Illinois University is its chief executive officer and reports to the Board of Trustees. The University presidents report directly to the chancellor and are responsible for the internal operations of SIUE and SIUC.

Southern Illinois University at Carbondale

Southern Illinois University at Carbondale has taken pride in the quality of its services since its doors were first opened in 1869. Outstanding departments, distinguished faculty, thorough and inspired teaching, and a thoughtful approach to the blending of old wisdom with new knowledge, as well as student services from admission to placement, combine with the University's enviable location to provide a rewarding educational experience.

Every member of the University faculty is a student as well as a teacher bringing the products of research and scholarship into the classroom. The University has many distinguished scholars on its faculty honored by their peers for important contributions to the fields they study. Contact with these hard-working educators offers students the best possible entry into the world of today where ideas and technology mesh. As students progress in their studies they will work along with faculty members and may eventually be able to participate in ongoing research projects or set up projects of their own. Other courses may lead to internships or practicum work on campus or in the area around the University.

Morris Library, a major resource for students and faculty, contains 2,000,000 volumes, 2,600,000 units of microform, and about 13,000 periodical subscriptions. These materials are in open stacks, available to every student. There are also important collections of original research materials, as well as support services such as a map library, records and tapes, and a self-instruction center. Many disciplines require laboratories; some are the traditional variety and some are in orchards, barns, hangars, machine shops, sound chambers, computer labs, archaeological digs, sewing rooms, kindergartens, and clinics.

The University offers a great variety of services to students. The Office of Admissions and Records personnel oversee registration and keep track of students' progress from entrance to graduation. Financial experts, wise in the field of money for education, work tirelessly to find the right combination of loans, grants, and on- and off-campus employment to keep each student in school. Residence halls are available on campus as are furnished and unfurnished apartments for families. Approved housing for freshmen and sophomores is monitored by the University, and those seeking other housing in Carbondale and the surrounding area have access to advice from housing staff. Counseling services are ready to help students deal with scholastic, family, emotional, medical, legal, or financial problems.

The University provides an aggressive placement program on a number of levels. University Placement Center presents career fairs and regular visits by recruiters from large employers. Career counselors are ready to work with students from the time of their enrollment. Seminars and workshops are conducted regularly and a career library is maintained. Some schools and departments have highly successful recruitment programs of their own. Placement services do not stop at graduation — the University keeps a current placement file for every interested graduate, and Alumni Services offers referral assistance.

Carbondale, an economic center of Southern Illinois, has been cited in a recent study as one of the fifty most desirable places to live in the United States. Only a few hours from Chicago, St. Louis, and Memphis, the University sits amid rolling hills, farmlands, and orchards just 60 miles above the confluence of the Mississippi and Ohio rivers. Glaciation deposits of rock have left the area from Carbondale south ruggedly scenic and suitable for a wide range of outdoor activities. Four large recreational lakes are within minutes of the campus; the two great rivers, the spectacular 240,000-acre Shawnee National Forest, and a large number of smaller lakes, state parks, and recreational areas are within easy driving distance. The Mid-South climate is ideal for year-around outdoor activities — even a little cross-country skiing now and then. The campus itself is a marvel of landscaping, planted with native trees and shrubs and blooming flora.

Activities on campus are equally inviting. There are over 300 student organizations — special interest, political, Greek, religious, service — intramurals from baseball to Ultimate Frisbee, a recreational lake on campus, nine intercollegiate sports programs for women and nine for men, and great varieties of diverting entertainment. A large indoor recreational center contains an Olympic-sized pool, weight rooms, game courts of all kinds, diet and exercise programs, instruction, and equipment that can be checked out for outdoor recreation.

At this modern university in a rural setting one can benefit from the best of both worlds — the scenic wonders, the small-town friendliness, the easy access to all the area has to offer, and the resources of a sophisticated faculty and staff with the latest in technological marvels at its command. A Consumer's Report that addresses specific information about the University is available by writing New Student Admissions Services.

Accreditations and Affiliations[1]

North Central Association of Colleges and Schools
Accreditation Board for Engineering and Technology
Accreditation Council of the American Assembly of Collegiate Schools of Business
Accrediting Council on Education in Journalism and Mass Communication
American Association for Accreditation of Laboratory Animal Care
American Association of Airport Executives
American Association of Museums
American Bar Association
American Board of Funeral Service Education
American Chemical Society
American Library Association
American Psychological Association
American Speech-Language-Hearing Association, Educational Standards Board
Association of American Law Schools
Association of American Publishers
Association of American University Presses
Association of 1983 Collegiate Schools of Architecture
Commission on Accreditation in Physical Therapy Education and American Physical Therapy Association
Commission on Accreditation of Rehabilitation Institutes
Commission on Dental Accreditation of the American Dental Association
Committee on Allied Health Education on Accreditation and the Joint Review Committee for Respiratory Therapy Education
Committee on Allied Health Education on Accreditation of the American Medical Association and the Joint Review Committee for Radiologic Technology Education
Community Development Society
Connecticut State Board of Education
Council for Accreditation for Counseling and Related Educational Programs
Council on International Education Exchange
Council on Rehabilitation Education
Council on Social Work Education
Federal Aviation Administration
Federation of Schools of Accountancy
Foundation for Interior Design Education Research
Honors Council of the Illinois Region
House of Delegates of the American Bar Association
Illinois Alcohol and Other Drug Abuse
Illinois State Board of Education
Liaison Committee on Medical Education of the American Medical Association and Association of American Medical Colleges
National Academy of Early Childhood Programs sponsored by the National Association for the Education of Young Children
National Association of Industrial Technology
National Association of Schools of Art and Design
National Association of Schools of Music
National Association of Schools of Public Affairs and Administration
National Athletic Trainers Association
National Automotive Technicians Education Foundation
National Collegiate Honors Council
National Council for Accreditation of Teacher Education
National Fire Protection Association
National Institute for Automotive Service Excellence
National Recreation and Parks Association
National Shorthand Reporters Association Accreditation Council
Photo/Marketing Association International
Servicemembers Opportunity Colleges

Society of American Foresters
University Aviation Association, Airway Science Curriculum Committee
University Council for Vocational Education
Upper Midwest Honors Council

[1]To determine the agency which accredits a specific program, consult the information on that program in this catalog.

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 8 of this catalog the faculty members are listed by departments in which they are appointed.

Undergraduate 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 5 of this bulletin. The degree abbreviations used are: A.A.S., Associate in Applied Science; B.A., Bachelor of Arts; B.F.A., Bachelor of Fine Arts; B.Mus., Bachelor of Music; and B.S., Bachelor of Science.

In addition to the majors and minors listed, preprofessional programs may be completed in dentistry, law, medicine, nursing, optometry, pharmacy, physical therapy, podiatry, public health, 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 Liberal Arts	B.A.
Advanced Technical Studies	X		College of Technical Careers	B.S.
Aerospace Studies		X		
African Studies		X	College of Liberal Arts	
Aging Studies		X	College of Liberal Arts	
Agribusiness Economics	X	X	College of Agriculture	B.S.
Agriculture, General	X	X	College of Agriculture	B.S.
Allied Health Careers Specialties[9]	X		College of Technical Careers	A.A.S.
Animal Science	X	X	College of Agriculture	B.S.
Anthropology	X	X	College of Liberal Arts	B.A.
Aquatics[3]		X	College of Education	
Architectural Technology[9]	X		College of Technical Careers	A.A.S.
Art	X	X	College of Liberal Arts College of Education	B.A., B.F.A. B.S.
Asian Studies		X	College of Liberal Arts	

SUBJECT	MAJOR	MINOR	ACADEMIC UNIT	DEGREE
Athletic Training[3]		X	College of Education	
Automotive Technology[9]	X		College of Technical Careers	A.A.S.
Aviation Flight[9]	X		College of Technical Careers	A.A.S.
Aviation Maintenance Technology[9]	X		College of Technical Careers	A.A.S.
Aviation Management	X		College of Technical Careers	B.S.
Avionics Technology[9]	X		College of Technical Careers	A.A.S.
Biological Sciences	X	X	College of Science	B.A.
Black American Studies		X	College of Liberal Arts	
Business and Administration	X		College of Business and Administration	B.S.
Business Economics	X		College of Business and Administration	B.S.
Chemistry	X	X	College of Science College of Education	B.A., B.S. B.S.
Child and Family Services[4]		X	College of Education	
Chinese[1]		X	College of Liberal Arts	
Cinema and Photography	X		College of Mass Communication and Media Arts	B.A.
Civil Engineering	X		College of Engineering	B.S.
Classical Civilization[1]		X	College of Liberal Arts	
Classics[1]	X		College of Liberal Arts	B.A.
Clothing and Textiles[6]	X	X	College of Education	B.S.
Coaching[3]		X	College of Education	
Commercial Graphics — Design[1]	X		College of Technical Careers	A.A.S.
Communication Disorders and Sciences	X		College of Education	B.S.
Community Development		X	College of Liberal Arts	
Comparative Literature		X	College of Liberal Arts	
Computer Information Processing[9]	X	X	College of Technical Careers	A.A.S.
Computer Science	X	X	College of Science	B.S.
Construction Technology[9]	X		College of Technical Careers	A.A.S.
Consumer Economics and Family Management	X		College of Technical Careers	B.S.
Consumer Studies[2]		X	College of Technical Careers	
Dental Hygiene[9]	X		College of Technical Careers	A.A.S.
Dental Technology[9]	X		College of Technical Careers	A.A.S.
Design	X		College of Liberal Arts	B.A.
Early Childhood[4]	X		College of Education	B.S.
East Asian Civilization[1]		X	College of Liberal Arts	
Economics	X	X	College of Liberal Arts	B.A.

Educational Media[4]		X	College of Education	
Electrical Engineering	X		College of Engineering	B.S.
Electronics Management	X		College of Technical Careers	B.S.
Electronics Technology[9]	X		College of Technical Careers	A.A.S.
Elementary Education[4]	X		College of Education	B.S.
Engineering Technology	X		College of Engineering	B.S.
English	X	X	College of Liberal Arts	B.A.
			College of Education	B.S.
Equine Studies[7]		X	College of Agriculture	
Finance	X		College of Business and Administration	B.S.
Fire Science Management	X		College of Technical Careers	B.S.
Food and Nutrition	X		College of Agriculture	B.S.
Foreign Language and International Trade	X		College of Liberal Arts	B.A.
Forestry	X		College 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	College of Liberal Arts	
Health Care Management	X		College of Technical Careers	B.S.
Health Education	X		College of Education	B.S.
History	X	X	College of Liberal Arts	B.A.
			College of Education	B.S.
Industrial Technology	X		College of Engineering	B.S.
Interior Design	X		College of Technical Careers	B.S.
Japanese[1]		X	College of Liberal Arts	
Journalism	X	X	College of Mass Communication and Media Arts	B.S.
Latin[1]		X	College of Liberal Arts	
Law Enforcement[9]	X		College of Technical Careers	A.A.S.
Linguistics	X	X	College of Liberal Arts	B.A.
Management	X		College of Business and Administration	B.S.
Marketing	X		College of Business and Administration	B.S.
Mathematics	X	X	College of Science	B.S.
			College of Liberal Arts	B.A.
			College of Education	B.S.
Mechanical Engineering	X		College of Engineering	B.S.
Microbiology	X	X	College of Science	B.A.
Mining Engineering	X		College of Engineering	B.S.
Mortuary Science and Funeral Service[9]	X		College of Technical Careers	A.A.S.

SUBJECT	MAJOR	MINOR	ACADEMIC UNIT	DEGREE
Museum Studies		X	College of Liberal Arts	
Music	X	X	College of Liberal Arts	B.Mus., B.A.
			College of Education	B.S.
Office Systems and Specialties[9]	X	X	College of Technical Careers	A.A.S.
Paralegal Studies for Legal Assistants	X	X	College of Liberal Arts	B.S.
Philosophy	X	X	College of Liberal Arts	B.A.
Photographic Production Technology[9]	X		College of Technical Careers	A.A.S.
Physical Education	X	X	College of Education	B.S.
Physical Therapist Assistant[9]	X		College of Technical Careers	A.A.S.
Physics	X	X	College of Science	B.S.
Physiology	X	X	College of Science	B.A.
Plant and Soil Science	X	X	College of Agriculture	B.S.
Plant Biology	X	X	College of Science	B.A.
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 Mass Communication and Media Arts	B.A.
Radiologic Technology[9]	X		College of Technical Careers	A.A.S.
Recreation	X		College of Education	B.S.
Respiratory Therapy Technology[9]	X		College of Technical Careers	A.A.S.
Russian[1]	X	X	College of Liberal Arts	B.A.
Social Studies	X		College of Education	B.S.
Social Work	X		School of Social Work	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 Education	X		College of Education	B.S.
Speech Communication	X	X	College of Liberal Arts	B.S.
			College of Education	B.S.
Theater	X	X	College of Liberal Arts	B.A.
Tool and Manufacturing Technology[1]	X		College of Technical Careers	A.A.S.
University Studies	X		College of Liberal Arts	B.A., B.S.
Women's Studies		X		
Workforce Education and Development	X	X	College of Education	B.S.
Zoology	X	X	College of Science	B.A., B.S.
			College of Education	B.S.

[1]Described under Foreign Languages and Literatures
[2]Described under Consumer Economics and Family Management
[3]Described under Physical Education
[4]Described under Curriculum and Instruction
[5]Described under Linguistics
[6]Described under Vocational Education Studies
[7]Described under Animal Science
[8]A special major may be completed in any academic unit
[9]Qualified A.A.S. graduates may be eligible to earn a B.S. degree through the Capstone Option. See Chapter 4 for additional information.

Visits to Campus

We welcome prospective students, their families, friends, and interested groups to learn about Southern Illinois University at Carbondale through various on-campus and off-campus events. Activities on campus include campus visits, group visit days, and open houses. SIUC preview programs are held in several off-campus locations around Illinois each spring.

Campus Visits. Campus visits are available by appointment Monday through Friday, 8:00 a.m. to 4:30 p.m. To make best use of the visit, plan to arrive early. Please make your reservations at least ten days in advance. Your scheduled visit can include meeting with one of SIUC's admission counselors who will advise you about academic programs, student services, admission policies and procedures, housing options, financial aid, and general information about the University and community. Guided tours of the campus are available. Appointments with representatives of academic programs can also be arranged with advance notice. Campus visitors arriving without providing advance notice will be accomodated to the best of our abilities considering the circumstances.

Group Visits. Group visit days are, quite simply, campus visits by groups of people. The same arrangements are available and advance reservation is required.

Open Houses. Open house programs are held on campus four or five times each year. Activities include admission counseling; academic program exhibits; displays by student organizations; presentations on financial aid, housing, and other student services; tours of residence halls; campus and academic department tours; and opportunities to enjoy other events or activities.

SIUC Previews. SIUC preview programs are events held at off-campus locations from February through May to bring SIUC within easy traveling distance of many Illinois communities. Activities include admission counseling, small-group and individual sessions on financial aid, a dynamic audio-visual presentation entitled "SIUC: Today", consultation about University housing, and information displays.

To schedule a campus visit or group visit to campus, or for information about scheduled on-campus open house and off-campus preview programs, write New Student Admission Services, Southern Illinois University at Carbondale, Carbondale, Illinois 62901-4710 or call 618-536-4405.

Applying for Admission

Request the Undergraduate Admission Application from New Student Admission Services, Southern Illinois University at Carbondale, Carbondale, Illinois 62901-4710, or call 618-536-4405 (direct). For admission requirements see Chapter 2.

Campus Living

On-Campus Housing for Single Students

The University offers single students a variety of living experiences in the on-campus residence halls. These halls provide not only room and board but also opportunities for participation in academic, recreational and social programs. Two distinct advantages of living on campus are the ready access to all facilities and the absence of a need for special transportation since all campus activities are within easy walking distance. Meals are provided in cafeterias of the common buildings in each housing area. A variety of meal plan options are available

to students who do not want the standard nineteen meals a week. Food is presented in a modern all-you-can-eat scatter system. A registered dietitian plans the menus and is available to assist students who have medical or personal dietary concerns or who desire nutritional counseling. Co-ed living is available in all housing areas. All rooms are furnished with single beds, 36 inches by 80 inches, closet space, chests of drawers, desks, study chairs, and draperies. Study lamps, pillows, bed linen, towels, blankets and telephone instruments must be provided by the students. Telephone jacks are provided in each room. Housing contracts are for the school year (fall and spring semesters) with summer contracts being issued separately. The residence halls close during University holidays and break periods, with the exception of Wright I Hall in University Park which is open during all breaks.

SIUC student housing policy stipulates that all single freshman and sophomores under the age of 21 are required to live either in an on-campus residence hall or an approved privately-owned residence hall (known as an accepted living center), or live at home with parent or legal guardian. The accepted living centers for freshmen and sophomores under the age of 21 provide food service and supervision comparable to that in on-campus housing. Sophomores are also allowed to live in some University-approved apartments. Such facilities are not required to provide food service but must have University-approved adult managers, access to kitchen facilities, and be inspected and approved by the University.

Freshmen and sophomores under the age of 21, living with parent or legal guardian, are required to file a *Report of Single Undergraduate Living with Parent/Guardian* form with the off-campus housing office. These students are also allowed to live with an approved brother/sister/grandparent, but certain forms must be filed with off-campus housing. Contact off-campus housing for more information.

There are no restrictions for juniors (56 earned semester hours accepted by SIUC), seniors, students over the age of 21, veterans, married students, or students declared independent by the Financial Aid Office. Separate applications are required for admission and housing. Housing contracts are offered on a space available basis only. Admission to the University does not guarantee housing on campus.

Rates. The 1993-94 room and board rates for the three on-campus residential areas is $3,168 ($1,584 per semester) plus a $14 campus housing activity fee. Single room contracts are an additional $932 ($466 per semester). Students entering for fall semester must purchase a two-semester contract.

Brush Towers. Brush Towers consists of two 17-story, air-conditioned halls, Mae Smith and Schneider Halls. The commons unit is Grinnell Hall which houses the food service, post office, and area office. There is a large study area and computer lab located on the lower level of Trueblood Hall in nearby University Park. This facility is available to Brush Towers residents. The facility offers terminals which provide access to the University's mainframe computer as well as a number of personal computers. All are available free of charge.

Thompson Point. Thompson Point consists of eleven air-conditioned halls. Lentz Hall serves as the commons unit for the food service, post office, snack bar, and recreation areas. Included in the Thompson Point residential area are special facilities for disabled students. There is a study area and computer lab located on the lower level of Lentz Hall. This facility offers terminals which provide access to the University's mainframe computer as well as a number of personal computers. All are available free of charge.

University Park. The University Park residential area is air-conditioned and consists of Neely Hall, a 17-story residence hall; and Allen, Boomer, and Wright Halls, four-story residence halls. A limited number of single rooms are available on the fourth floor of Allen, Boomer and Wright Halls. Wright I Hall opens early and remains open during all University holidays and break periods. Trueblood Hall is the commons unit housing the cafeteria, snack bar, computer room, and post office. There is a large study area and computer lab located on the lower level of Trueblood Hall. The facility offers terminals which provide access to the University's mainframe computer as well as a number of personal computers. All are available free of charge.

More information regarding on-campus housing or application forms may be obtained by writing the supervisor of contracts, University Housing, Building D, Washington Square, Carbondale, Il 62901-6716.

Greek Row. The Greek Row area provides housing for sororities and fraternities. Each building houses about forty students and includes a formal lounge, dining area, and kitchen. Assignment of students to this area is by invitation from the fraternal organization. For more information, contact the Office of Student Development, Southern Illinois University at Carbondale, Carbondale, Il 62901-4425.

Housing for Married Students

There are 571 apartments, both furnished and unfurnished, available for married students. The costs range from $288 to $334 per month with utilities or $275 to $297 per month with tenant paying electricity. For more information or application forms write: Family Housing, Building B, Washington Square, SIUC, Carbondale, Il 62901-6716.

Privately Owned Facilities

Carbondale offers many types of rental units: rooming houses, apartments, residence halls, and mobile homes. Most privately owned facilities are within walking distance of the campus. For more information about privately owned housing and accepted living centers for freshmen and sophomores, please write or call: University Housing Office, Off-Campus Housing Division, Building B, Washington Square, Southern Illinois University at Carbondale, Carbondale, IL 62901-6716, phone 618-453-2301. It is not considered wise to contract for an off-campus living facility without first seeing it.

Parking on Campus

Students wishing to operate and/or park a motor vehicle on campus must apply for a parking decal at the Parking Division located at Washington Square, Building D.

Graduate students and the following categories of undergraduate students may apply for permission to use, operate, park or possess a motor vehicle on campus: 1. Juniors and seniors (with proof of 56 credit hours or more completed); 2. Students 21 years of age; 3. Veterans with two years of military service; 4. Married students; 5. Students residing in the home of a parent or guardian; 6. Students requiring a motor vehicle for reasons of health or physical condition as certified in writing by Disabled Student Services; and 7. Students not covered by 1 through 6 whose reasons for requiring a motor vehicle are judged valid by Student Development and so certified in writing.

To purchase a decal at the Parking Division, an eligible student must present a student identification card, a valid operator's license, vehicle registration card,

and proof of liability insurance which must be maintained for the duration of the parking decal. Students residing on campus must also present a housing contract or a meal ticket. If a parking decal is purchased, a fee is charged. This fee is determined by the type of decal an applicant is eligible for and receives. Currently student parking fees range from $2 to $10.

To accomodate unregistered vehicles, twenty-four hour parking is available for the first five days of any term and during final exam week of any term only in lots 56, 59, 100, and 106.

Exceptions to Motor Vehicle Regulations

Regulations concerning the use of motor vehicles require that a student has achieved junior status, be 21 years of age, married, a veteran, or hold graduate status. Exceptions are made only on a limited basis and only for students whose need for a motor vehicle is justified and can be documented. Contact Student Orientation Programs for details.

Financial Aid Office

The Financial Aid Office assists students in seeking monetary assistance to finance their postsecondary education at Southern Illinois University at Carbondale. Last year Southern Illinois University at Carbondale distributed almost $ 100 million in financial aid to more than 21,300 students.

A package of financial aid is prepared for those students who qualify. The package may include scholarships, grants, student employment and loans. The financial aid package offered is contingent upon both the availability of program funds and each student's demonstrated financial need, as determined from the student's financial aid application.

Grants and scholarships are gift aid which are not repaid to the donor. Loans must be repaid. Interest and repayment provisions differ depending on the loan program. Student employment is offered to all students who desire to earn money while attending the University.

Financial Aid Programs

The University participates in the federal, state, and institutionally-funded financial aid programs including Federal Pell Grant, Illinois Student Assistance Commission Monetary Award Program, Federal Stafford Loan, Federal Perkins Loan, Student-to-Student Grant, Federal Supplemental Educational Opportunity Grant, and the Student Employment Program.

The *Financial Aid Opportunities* brochure summarizes the types of financial aid coordinated through the Financial Aid Office, the application procedures, and the corresponding deadlines. A copy of the brochure is available upon request.

Grants. The major federal grant programs include the Federal Pell Grant and the Federal Supplemental Educational Opportunity Grant. The largest state grant is the Illinois Student Assistance Commission Monetary Award Program. These grants are based on financial need as determined from the student's financial aid application.

Scholarships. Southern Illinois University at Carbondale offers scholarships based on scholastic achievement to high school and Illinois community college transfer students (associate degree graduates only). These scholarships vary in eligibility requirements and dollar values. For more detailed information about the scholarships, students should contact New Student Admission Services.

Recipients of academic scholarships are selected annually by academic units of the University. Also, a limited number of private scholarships are available from each area. More information is available from the appropriate scholarship coordinator in each academic unit.

Students interested in seeking a private grant or scholarship should check as many sources as possible including high schools, local clubs and civic organizations, businesses, church groups, alumni organizations, and commercial lending institutions. In addition, public libraries are an excellent source for information on state and private scholarship money.

Loans. The largest programs include the subsidized Federal Stafford Loan, the unsubsidized Federal Stafford Loan, the Federal Parent Loan for Undergraduate Students - FPLUS, the Federal Supplemental Loan for Students - FSLS, and the Federal Perkins Loan. To apply for any student loan, students should complete and mail a 1994-95 financial aid application. Both the Federal Perkins and subsidized Federal Stafford Loan are based on financial need. The Federal Perkins Loan is borrowed through the school while the Federal Stafford Loan is borrowed through a lending institution. To apply for the FPLUS, parents should contact their lending institution. To apply for the unsubsidized Federal Stafford Loan or the FSLS, students should contact the Financial Aid Office for a separate application.

Employment. To apply for on-campus student employment, students should have a processed financial aid application on file. Students can work a maximum of twenty hours a week at the prevailing minimum wage. Once students arrive on campus, they should review the job listing board in the Financial Aid Office to determine which jobs interest them. A referral will be given to students to interview with prospective on-campus employers. Approximately 6100 students were employed by the University last year.

In addition, a representative is available to give referrals to part-time off-campus jobs. Many SIUC students choose to work off-campus in Carbondale and the surrounding area.

Application for Financial Aid for the 1994-95 Academic Year

To apply for financial aid, students, with their parents, should complete and mail a 1994-95 Free Application for Federal Student Aid (FAFSA). Completion of a FAFSA will allow the student to be considered for the Federal Pell Grant, the Illinois Student Assistance Commission Monetary Award Program (Illinois residents only), the SIUC Campus-Based Aid Programs, the Student Employment Program, and the Student Loan Programs.

Students should complete and mail their FAFSA as early as possible since campus-based aid funding is limited and distributed to eligible students on a first-come, first-served basis. Priority consideration for campus-based aid will be given to those students who complete and mail their FAFSA before April 1, 1994. The FAFSA's are available in December preceding each academic year, and may be obtained from local high schools, community colleges, or from the Financial Aid Office.

Transfer Students

Students who have attended another college or university will be classified as transfer students. Transfer students applying for financial aid must have a Financial Aid Transcript sent to the Financial Aid Office indicating all financial aid received from each college or university previously attended. Even though students may not have received financial assistance prior to attending Southern Illinois University at Carbondale, federal regulations mandate the Financial Aid

Office have that verification. No aid can be awarded until all transcripts are received. Transcript forms may be obtained from the Financial Aid Office.

Students planning to transfer to SIUC for the spring semester should change the school name on their Student Aid Report (SAR) to Southern Illinois University at Carbondale and send it to the address indicated on the SAR. The corrected SAR should then be sent to the Financial Aid Office at SIUC. Upon receipt of the SAR in the SIUC Financial Aid Office, the student will be considered for all forms of financial aid.

Academic Progress Standards for Financial Assistance

The University requires that a student be making satisfactory progress toward a degree if that student wishes to receive financial aid funds. A student is making satisfactory progress toward a degree if successfully meeting two basic academic standards. First, a student must complete a reasonable number of credit hours toward a degree each academic year. Second, a student must maintain a scholastic standing, derived from grades, that allows for continued enrollment at the University under current academic guidelines. A copy of the policy on satisfactory progress is available upon request from the Financial Aid Office.

Students desiring additional information should contact the Financial Aid Office, Woody Hall, B Wing, Third Floor, Carbondale, Illinois 62901-4702, telephone 618-453-4334.

NOTE: At the time of printing this publication, final rules and regulations for the 1994-95 academic school year were pending. Therefore, students should contact the Financial Aid Office for the most recent information.

2 Admission, Academic Regulations and Procedures

Admission Policies, Requirements, Procedures

Now that you have decided you want to attend SIUC you need to know how to apply for admission. Policies and procedures for admission are presented in the admissions section of this chapter. Definitions of each category of admissions are included along with procedures that you will need to follow to complete your admission application.

APPLYING FOR ADMISSION

You need to request the admission application from New Student Admissions Services, Southern Illinois University at Carbondale, Carbondale, Illinois, 62901-4710 or call 618-536-4405. You may also want to schedule a visit of the campus at the same time.

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.

The University does close admission to some programs whenever the availability of faculty or facilities necessitates such closures. The University also stops accepting admission applications from freshman whenever the availability of the University resources dictates this action.

If you are a high school student you may initiate the admission process following completion of your sixth semester in high school. If you are a transfer student who has completed a minimum of one year of work, you can be considered for admission one year in advance of your date of matriculation if you plan to transfer without interruption. Transfer students who intend to transfer to Southern Illinois University at Carbondale after completing one term or one year of study may be admitted prior to completing their transfer work if they qualified for admission as beginning freshmen. 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 be admitted because all of the necessary documents required before the admission decision can 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.

DOCUMENTS REQUIRED FOR ADMISSION

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

1. **The application for admission.**
2. **Transcripts of previous educational experience.** High school students should submit an official copy of their high school transcript or 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 who have earned fewer than 26 semester hours (39 quarter hours) of transfer work must provide the University an official copy of their high school transcript or General Educational Development Test scores. Transfer students who have attended an institution whose credit is not acceptable for admission must also submit an official copy of their high school transcript and ACT scores.

3. University entrance examination scores. All students who are 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.

4. Proof of proper immunization. See Immunization Policy in Chapter 7.

5. High School Course Pattern Requirements.

This policy applies to beginning freshman and transfer students who have completed fewer than twenty-six semester hours of transferable credit.

MINIMUM HIGH SCHOOL COURSE REQUIREMENTS FOR ADMISSION

Course	High School Courses That Complete the Area	Number of Units Required
English	Emphasizing written and oral communication and literature	4
Social Studies	Emphasizing history and government.	3
Mathematics	Algebra through advanced algebra, geometry, trigonometry, or fundamentals of computer programming. Computer programming courses taught in the secondary school business education program or that do not have mathematics courses as a prerequisite are accepted as vocational education courses.	3*
Science	Laboratory sciences.	3
Electives	Foreign language, art, music, or vocational education. If a foreign language is taken, it must include two semesters of the same language.	2
Total		15 –15.5

*3.5 units of mathematics are required for admission to engineering programs.

High school units in excess of the required number of units in mathematics, social studies or science may be redistributed among the other categories by applying no more than one unit to any of the following categories: mathematics, social studies, science, or elective. Elective subjects cannot be substituted for required courses in English, mathematics, science or social sciences.

Students who qualify for admission based on class rank, test scores and transfer grade point average, but have course pattern deficiencies will be provisionally admitted to the University.

Selected applicants are exempt from the high school subject requirements. These include students whose class rank and ACT test scores are at the seventy-fifth percentile (a composite score of 23 on the ACT), participants in the early admission/concurrent enrollment program until the time of their high school graduation, and transfer students who have earned twenty-six semester hours of transferable credit.

Beginning freshmen may satisfy a course pattern deficiency by achieving a subscore on the ACT which is equivalent to the sixtieth percentile on the College Bound Norms. The Enhanced ACT subscores required to satisfy a course defi-

ciency on the 1993-94 ACT tests are: English 21; Mathematics 20; Reading 22; and Science Reasoning 21. Deficiencies may also be fulfilled by CLEP scores or AP scores that qualify the student for credit. The tests must be in the area that is deficient. A student who has a deficiency which is not corrected by test scores must complete a freshman level course in the General Education program that corresponds to the subject area deficiency. This course will be used for graduation credit but it cannot be used to fulfill a general education requirement.

Transfer students who have satisfied a course pattern deficiency at another institution will have such credit applied toward graduation but it cannot be used for general education credit.

Admission of Freshmen

To be eligible for admission, you must be a graduate of a recognized high school. Graduates of nonrecognized high schools may be admitted to the University by an entrance examination. If you have not completed high school you may be considered for admission by completing the GED test.

Beginning freshmen are considered for admission on the basis of a combination of class rank and test scores (ACT). In addition, students entering the University are required to have completed selected high school courses to qualify for unconditional admission. All admissions granted students while in high school are subject to the completion of high school course patterns and graduation from high school.(See High School Course Pattern Requirements above.)

Students entering the University as freshmen are admitted to the colleges within the University that offer the academic programs they indicate they plan to pursue if the student qualifies for admission into that program. Students who are undecided as to the course of study they want to follow are admitted to 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.

EARLY ADMISSION POLICY FOR FRESHMEN

Exceptionally capable high school students who have completed their freshman year in high school, are recommended in writing by their high school principal, and are approved for admission by the University director of admissions will be permitted to enroll in University courses subject to departmental approval. Students approved for admission to this program will be permitted to enroll in University courses during the summer and concurrently with their high school work during the regular school year. Sophomores and juniors may register for one course and seniors may enroll for one and possibly two courses depending on their high school schedules.

The concurrent enrollment program is an acceleration and enrichment experience for academically capable students. To participate in the program, students must have achieved an overall *B* average (3.0 on a 4.0 scale) in high school.

The University courses to be taken in this program should be in subject areas in which a high school does not offer courses or in subject areas in which the student has completed all of the courses the high school can offer. When a high school principal recommends a specific course or courses to be taken, an academic adviser will assist the student in arranging such a schedule.

It is assumed that high school principals who recommend students for this program will consider a student's aptitude for completing college work and a student's ability to adjust socially to the campus community.

High school course subject requirements will be imposed on early admission/concurrently enrolled students at the time of high school graduation.

ADMISSION OF FRESHMEN TO BACCALAUREATE AND ASSOCIATE PROGRAMS

Freshman admission to the University can be granted in one of three ways:

(1) an entrance examination score at the fiftieth percentile or higher, regardless of class rank. This would be a composite score of 20 on the Enhanced ACT, or

(2) an ACT score at the thirty-third percentile or higher (a composite score of 18 on the ACT) and class rank in the upper half of your graduating class, or

(3) the non-high school graduate who has satisfactorily completed the General Education Development Test and achieved an ACT score above the thirty-third percentile.

In addition, students must meet the course pattern requirements described above for unconditional admission. Those students who meet class rank and/or test score requirements, but have course pattern deficiencies will be granted provisional admission.

If you are seeking admission to programs in the Colleges of Business and Administration or Technical Careers, Departments of Anthropology, Engineering, Radio-Television, or Speech Communication, the Schools of Journalism or Social Work, the Foreign Language and International Trade major or the Teacher Education Program you should review the admission requirements for these programs in Chapters 3 or 5.

Potential freshman who do not meet the admission requirements above are urged to submit applications for admission to the University. If you demonstrate potential for academic success, you may be considered for admission through the Selective Admissions Program. Students admitted through the Selective Admissions Program are admitted in good standing and are required to participate in academic assistance activities.

ADMISSION OF FRESHMEN TO ASSOCIATE DEGREE PROGRAMS

Students who request admission to an associate program must follow the same admission standards as students applying for baccalaureate programs. This includes class rank, test scores and high school course pattern requirements. Applicants admissible by means of class rank or test scores, but deficient in course patterns, will be granted provisional admission.

The following majors have selective admission requirements which are above regular requirements: commercial graphics-design, dental hygiene, mortuary science and funeral service, radiologic technology and physical therapist assistant. Qualified applicants are accepted to these programs with a pre-classification, for example, pre-dental hygiene. Students are granted "pre" admission to these programs, but this admission does not mean final acceptance to the given major. The program faculty make the final selection of students to their respective departments.

Many courses are offered on a sequential basis in the College of Technical Careers. Therefore, the following programs allow admission only in the fall: architectural technology, aviation flight, commercial graphics-design, dental hygiene, dental technology, physical therapist assistant, radiologic technology and respiratory therapy. The following programs admit students to any semester, but major courses begin their sequencing in the fall semester: avionics technology, construction technology, computer information processing, electronics technology, and mortuary science and funeral service.

Admission of Transfer Students

If you have attended another college, university, or postsecondary institution you are 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.

Institutions Accepted For Transfer Work:

1. An institution which is accredited or in candidacy status by one of the regional accrediting associations, or
2. An institution which is not accredited by or in candidacy status with one of the regional accrediting associations but the credit from the institution is accepted by the reporting institution in that state, or
3. An institution which is not accredited by or in candidacy status with one of the regional accrediting associations but is one recognized by CCA/ACTTS, AMA, ABET, or similar accrediting bodies recognized by the National Commission on Accrediting or the United States Office of Education. The student must have completed a two-year non-baccalaureate degree or equivalent terminal program with a *C* average before admission to SIUC will be granted. Students admitted from such institutions should not expect to receive credit at Southern Illinois University at Carbondale except in programs which accept occupational credit.

REQUIREMENTS FOR ADMISSION:

1. Graduation from a recognized high school or satisfactory completion of the General Educational Development Test.
2. An overall *C* average (2.0 on a 4.0 scale) from all post-secondary institutions. All grades earned in transferable courses and in courses with a quality point value are used to calculate the grade point average used for admission purposes. This includes all grades earned in repeated courses. Transfer work is calculated according to Southern Illinois University at Carbondale regulations rather than those of institutions students have previously attended.
3. Eligible to continue your enrollment at the last post-secondary institution attended. 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.

If you have been suspended for any reason other than academic failure, you must be cleared by the Office of Transitional Programs before admission will be granted by the director of admissions.

If you are seeking admission with fewer than twenty-six semester hours, you will be required to meet the admission requirements of a beginning freshman as well as a transfer student.

Transfer students who have completed a minimum of one year of work can be considered for admission one year in advance of their matriculation if they plan to transfer without interruption. If you are enrolled in a collegiate program for the first time and wish to transfer upon completion of your first term or first year you may do so if you meet the University's admission requirements for 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 admission and registration withdrawn.

Transfer students will be admitted directly to the college in which their major fields of study are offered if they qualify for that program. Students who are undecided about their major fields of study will be admitted to Pre-Major Advisement or to selected other units with an undecided major.

TRANSFER CREDIT

Transfer credit for students admitted to the University is evaluated for acceptance toward University and General Education requirements by the Office of Admissions and Records after the admission decision has been made. All credit from a regionally accredited institution, and those in candidacy status, or from an institution that has its credit accepted by the reporting institution in the state is evaluated at the time of admission. Courses which are remedial or developmental will not be accepted for transfer. The Office of Admissions and Records will determine the acceptance of credit and its applicability toward General Education requirements. Transfer credit acceptance from baccalaureate and non-baccalaureate programs to be considered toward specific program requirements will be made by the department directing the program.

All grades earned in transferable courses and in courses with a quality point value are used to calculate the grade point average used for admission purposes. This includes all grades earned in repeated courses. Transfer work is calculated according to Southern Illinois University at Carbondale regulations rather than those of institutions students have previously attended.

All credit which is accepted for transfer and which is not applied to General Education requirements or to a specific degree program will be considered elective credit. A student should not expect to receive credit if the transfer work was taken at a school which is neither regionally accredited or whose credit is not accepted by the reporting institution in the state.

Completion of an associate degree in a baccalaureate-oriented program in an accredited Illinois two-year institution provides that the student will: (a) be accepted with junior standing and (b) be considered to have completed the General Education requirements. Associate degrees earned at other than Illinois two-year institutions will be reviewed by the Office of Admissions and Records. If the degree is determined to be baccalaureate-oriented and to have comparable content and credit hour criteria, the same benefits will be extended to those graduates. 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 Education and graduation requirements may be found in Chapter 4.

ADMISSION OF TRANSFER STUDENTS TO BACCALAUREATE PROGRAMS

Students who have graduated with an associate degree in a baccalaureate-oriented program from an accredited Illinois 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.

Applicants seeking admission to programs in the Colleges of Business and Administration, Education, Technical Careers, and the Departments of Anthropology, Engineering, Radio-Television or Speech Communication, the Schools of Journalism or Social Work or the Foreign Language and International Trade major or the Teacher Education Program must review the requirements in

Chapters 3 or 5. Admission policies are more selective for majors in these units and departments.

ADMISSION OF TRANSFER STUDENTS TO ASSOCIATE DEGREE PROGRAMS

New students may be admitted only for the fall semester to selected majors in the College of Technical Careers. Many courses are offered on a sequential basis in the College of Technical Careers. Therefore, the following programs allow admission only in the fall: architectural technology, aviation flight, commercial graphics-design, dental hygiene, dental technology, physical therapist assistant, radiologic technology and respiratory therapy. The following programs admit students to any semester, but courses are sequenced beginning fall semester: avionics technology, construction technology, computer information processing, electronics technology, and mortuary science and funeral service.

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 considered for admission on 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 the 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 of study in a United States high school, (3) have completed fewer than two years (56 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. 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. They may, however, be required to submit university entrance examination scores if they are seeking admission as beginning freshmen or transfer students with fewer than twenty-six semester hours.

International students whose secondary school and college records are acceptable for admission purposes must achieve acceptable TOEFL scores for unconditional admission. Students with a TOEFL score of 520 or higher will be granted unconditional admission. Applicants whose TOEFL score is less than 520 will be admitted contingent upon completion of an English 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.

An administrative service fee of $100 per student per semester including summer session will be charged to sponsoring agencies which enroll international students.

International students interested in making application to Southern Illinois University at Carbondale should address their inquiries to the Office of Admis-

sions and Records, Southern Illinois University at Carbondale, Carbondale, Illinois 62901.

This school is authorized under Federal law to enroll nonimmigrant alien students.

Admission of Former Students

If you have attended another institution since your previous enrollment at Southern Illinois University at Carbondale you must submit an official transcript from that institution before you can be considered for readmission. In addition, a student who has a financial obligation to the University or an immunization hold must clear these holds before being considered for readmission. Students who were suspended for scholastic or disciplinary reasons during their previous enrollment at the University must be approved for readmission by the appropriate academic dean or the Office of Transitional Programs before they can be readmitted to the University. Students with less than a *C* average must be approved for readmission by an academic dean if they are entering an academic unit other than the one in which they were previously enrolled.

Reentering students seeking admission to the Colleges of Business and Administration, Education, Engineering and Technology, and the departments of aviation flight, foreign language and international trade, speech communications and radio-television and the schools of journalism or social work, should review the program/department requirements for reentry students.

It is advisable for former students to initiate the readmission process with the Office of Admissions and Records early. This permits students to complete any special requirements that may be imposed upon them. (See Scholastic Probation, Second Chance and Scholastic Suspension elsewhere in this catalog for further information.)

SECOND CHANCE PROGRAM - A SPECIAL ADMISSION PROGRAM FOR FORMER STUDENTS

The Second Chance Program is designed to allow some former Southern Illinois University at Carbondale students who had a poor scholastic performance in their initial enrollment a second opportunity to demonstrate their academic capabilities. The program permits students in selected majors to establish a new grade point average calculated from their first semester of readmission. Not all University departments are participating in the Second Chance Program. Second Chance students will lose their Second Chance standing if they transfer to a program that does not offer Second Chance.

Program Eligibility Requirements. Former Southern Illinois University at Carbondale students who meet one of the following qualifications may apply for entrance to the Second Chance Program.

1. Adult reentering students who are at least twenty-four years of age and who previously earned fewer than 60 semester hours at Southern Illinois University at Carbondale with less than a 2.0 grade point average. In addition, applicants who have attended any post secondary institution, college, or university including Southern Illinois University at Carbondale within the immediate three years prior to reentering Southern Illinois University at Carbondale in the Second Chance Program must have earned a 2.0 cumulative grade point average for collegiate work taken during that period.

2. Veterans who have completed at least one year of active military service after having previously earned fewer than 60 semester hours at Southern Illinois University at Carbondale with less than a 2.0 grade point average. Southern Illinois University at Carbondale must be the first institution attended since discharge or separation.

3. Community college graduates who have previously earned less than 60 semester hours from Southern Illinois University at Carbondale with a grade

point average below 2.0 prior to completing an associate degree from a regionally accredited institution. Southern Illinois University at Carbondale must be the first institution attended since earning the associate degree.

Program Academic Regulations.

1. A former Southern Illinois University at Carbondale student may be readmitted to the Second Chance Program only once and must meet the readmission requirements of the University which are in effect at the time of readmission to the University under the Second Chance Program.

2. Students readmitted to Southern Illinois University at Carbondale through the Second Chance Program may enter only selected majors. The following programs do **not** participate in the Second Chance Program and transferring to these programs will result in the loss of your Second Chance status.

Accounting
Advanced Technical Studies
Aviation Flight
Aviation Management
Business and Administration
Business Economics
Business—Undecided
Business—Pre
Cinema and Photography
Civil Engineering
Communication Disorders and Sciences
Consumer Economics and Family Management
Electrical Engineering
Electronics Management
Engineering—Pre
Finance
Health Care Management
Interior Design
Management
Marketing
Mechanical Engineering
Mining Engineering
Physical Education (athletic training and teacher education specializations)
Radio-Television
Social Work
Speech Communication
University Studies

In addition to the above programs, Teacher Education Programs in the College of Education as well as those majors in other colleges in which a student intends to pursue a Teacher Education Program are not available to students in the Second Chance Program.

Students interested in business and engineering majors may be readmitted through the Second Chance Program with a pre-business or a pre-engineering classification. However, before students can change their major to a program in which a baccalaureate degree can be earned in the College of Business and Administration or the College of Engineering and Technology, they must meet the admission and retention requirements of those majors at the time they request a change in their major.

3. Students who are readmitted through the Second Chance Program will have "Second Chance" indicated on their transcripts with an appropriate explanation of the program included in the transcript explanation sheet which is attached to all transcripts.

4. Students who are readmitted through the Second Chance Program must meet the curricular requirements stated in the undergraduate catalog in effect for either the term of their reentry or for subsequent terms after their reentry to Southern Illinois University at Carbondale under the Second Chance Program.

5. A new Southern Illinois University at Carbondale grade point average will be calculated from the first term of readmission through the Second Chance Program.

6. The new Southern Illinois University at Carbondale grade point average will apply only to scholastic retention, financial aid, and the grade point average required for graduation from the University. All grades earned at Southern Illinois University at Carbondale including all work taken prior to admittance to the Second Chance Program will be used in the calculation of student classifica-

tion, major program grade point average, collegiate unit requirements, and total semester hours completed.

7. Previously earned work at Southern Illinois University at Carbondale will remain on the student's official record and passing work may be used to satisfy degree requirements.

8. Students who are readmitted through the Second Chance Program may not use the University's forgiveness policy to calculate another grade point average for graduation purposes.

9. To be eligible for graduation, a student readmitted through the Second Chance Program must earn at least 30 additional semester hours at Southern Illinois University at Carbondale.

10. A Second Chance student who changes majors to a program which does not participate in Second Chance will have their previous SIUC grade point average calculated in all future grade point averages.

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 readmission 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.

Military personnel on active duty in any branch of the United States military are expected to meet the same admission requirements as a veteran. Students in military programs are admitted directly into the degree program in which they are enrolling. Military program students whose credentials are not submitted by the end of the second semester will not be allowed to enroll further until all credentials are received.

ADMISSION OF STUDENTS 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.

Non-military personnel whose admission credentials are incomplete are admitted to off-campus courses or degree programs as unclassified students. Unclassified students taking courses in off-campus degree programs have one semester to submit all of their admission records. Future registrations will not be allowed for students who are participating in off-campus degree programs and have incomplete admission records. Students who are taking off-campus courses in which a degree program is not offered may take twenty-six semester hours before they are required to submit all of their academic records. Those students whose records remain incomplete upon completion of twenty-six semester hours will not be allowed to register for any additional courses.

Records submitted by students participating in off-campus courses and degree programs will be reviewed in accordance with current University admission policies. Students who have completed fewer than twelve semester hours at the University and did not meet the current admission requirements will have their academic status changed to scholastic probation.

ADMISSION OF TRANSIENT STUDENTS

Students who are attending other collegiate institutions and want to enroll for one semester must submit an application for admission. They must submit also documentation indicating they have an overall *C* average and are eligible to continue their enrollment at the last institution attended. This can be a student's most recent transcript or grade report. Transient students who request to continue their enrollment for subsequent semesters must submit all documents required for admission and meet the University's current admission policies.

Advisement, Registration, Withdrawal

Through a carefully designed system of orientation, academic advisement and registration, the University attempts to assure you an efficient and effective introduction to the University prior to the time you 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.

Starting in February and extending through July 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.

At the start of the fall semester new students participate in orientation activities during which time they receive introduction to university life.

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 Office of Student Affairs.

Academic Advisement

Academic advisement is administered by the academic units. Each unit employs a selected group of trained advisers. They operate under the supervision of a chief adviser who is responsible to the dean of the academic unit. Students who have not yet declared a major are advised in the Pre-Major Advisement Center.

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 student 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.

The advising of individual students as to their progress is a service provided to you. It does not relieve you, the student, of the responsibility to assure that you are meeting the requirements you need for graduation. You should check with your adviser whenever you have a question as to how you are proceeding.

Changing Majors

If you wish to change your major you must receive approval from the new department and college. A minimum of a *C* average is required to transfer, some colleges and departments require higher grade point averages. To ascertain the grade point average required for the department you wish to enter, check Chapter 3 or 5. Students with less than a *C* (2.0) grade point average who desire to change from one department or college to another will be admitted to the new academic unit only if approved by the dean of that unit. To initiate the change begin with your present academic unit.

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 you are later declared to be ineligible to register due to scholastic reasons. You may also be considered ineligible to register because of financial or disciplinary reasons.

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

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

1. Registration for a semester is conducted under a registration calendar consisting of three distinct periods. Advance registration occurs during the last eight weeks of the preceding term, final registration immediately preceding the start of classes and late registration during the first week of classes.
2. Currently enrolled students are expected to register during the advance registration period. New freshmen, transfer, and re-entry students are provided an opportunity to advance register on specific new student registration days during the advance registration periods.
3. Students who are unable to advance register may register prior to the beginning of classes during the final registration period.
4. Students register at the advisement center of their colleges, schools or departments.
5. 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.
6. Enrollment changes to classes can only be made through the processing of an official program change form. After the third week of the semester, this form must be processed by the Office of Admissions and Records.
8. Tuition and fees are payable in advance or by installments and no student shall be enrolled in any educational unit until at least the first installment of tuition and fees has been paid or officially deferred.
9. Students may not drop a course merely by stopping attendance. (See Withdrawal below.)
10. 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.

Withdrawal

If you officially register for a session you may not withdraw merely by the stopping of attendance. You need to process an official withdrawal form. Outlined below are the procedures to be followed when withdrawing from courses and when

withdrawing from the University (which would be withdrawal from all courses for which registered).

DEADLINE DATES

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 is done with the academic adviser. 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. Students registered for academic work must obtain a withdrawal if they contemplate leaving the University. If the student has not made any tuition and fees payment, the registration will be cancelled. If the student has paid or made partial payment for tuition and fees, a withdrawal must be processed. If a housing contract has been purchased, the student must contact University Housing to cancel the contract.

Withdrawal from the University is a serious decision which, in many cases, affects financial assistance status, housing contracts, and academic records. A student may, with authorization from the Office of Transitional Programs and the academic dean, obtain a withdrawal. There are, however, restrictions on a withdrawal. A withdrawal will not be issued beyond the eighth week of the semester unless the reasons for the withdrawal are beyond the student's control and verified in writing. Warning: if a student obtains a withdrawal after week three and is receiving financial assistance, the student may be in violation of the Satisfactory Progress for Financial Assistance policy since no academic credit will be earned for the semester. The table above provides the deadline dates for withdrawal.

Students receiving a withdrawal within the first three weeks will, under normal circumstances, receive a refund of all tuition and fees paid by the student or family. All financial assistance funds will be returned to their original sources if the student withdraws during the first three weeks.

Students who withdraw between week three and week eight will receive no refund and will receive withdrawal grades.

Students who officially withdraw from school by the specific withdrawal deadline will receive a credit to their University account. Students with credit balances in their account will receive a refund by mail approximately three weeks from the date of withdrawal. No refunding of tuition and fees is made for a withdrawal occurring after the deadlines, except as described in the section titled Tuition and Fee Refund Policy and Procedures below.

Special consideration is extended to individuals who leave school for extended military service (6 months or longer). If students withdraw during the sixth

through tenth weeks of school, 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 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.

Withdrawal from the University does not relieve the student from housing contract obligations. Each student must contact University Housing and resolve the contract issue with that office.

All students seeking a withdrawal must contact the Office of Transitional Programs in person or by mail. The withdrawal, if granted, will be dated at the time of the initial contact with that office, provided the student completes the requirements for the withdrawal. Incomplete applications for withdrawal will be denied. Any student who fails to comply with the withdrawal procedures will receive grades for the semester and must satisfy the financial obligations for the semester.

Refunds of tuition and fees after week three are regulated through a separate policy. The student must complete the withdrawal process and then petition for a refund. The petition is available in the Office of Transitional Programs and the decision on the request will be made by the Office of Transitional Programs.

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 for 1994 - 1995

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 tuition and fees listed on page 30 for Fall 1993 and Spring 1994.

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 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 credit of the fee by contacting the Office of Admissions and Records within ten days of the date of payment of fees.
2. The Student Attorney Fee provides funding for the student attorney program.
3. The Student Center Fee provides funding for operation of the Student Center.

ON-CAMPUS UNDERGRADUATE TUITION AND FEE SCHEDULES

Semester Hours Enrolled	Tuition	Student Fees	Total	Tuition	Student Fees	Total
1	$ 75.00	$206.89	$ 281.89	$ 225.00	$206.89	$ 431.89
2	150.00	224.53	374.53	450.00	224.53	674.53
3	225.00	242.17	467.17	675.00	242.17	917.17
4	300.00	259.81	559.81	900.00	259.81	1,159.81
5	375.00	277.45	652.45	1,125.00	277.45	1,402.45
6	450.00	295.09	745.09	1,350.00	295.09	1,645.09
7	525.00	312.73	837.73	1,575.00	312.73	1,887.73
8	600.00	330.37	930.37	1,800.00	330.37	2,130.37
9	675.00	348.01	1,023.01	2,025.00	348.01	2,373.01
10	750.00	365.65	1,115.65	2,250.00	365.65	2,615.65
11	825.00	383.29	1,208.29	2,475.00	383.29	2,858.29
12	900.00	401.15	1,301.15	2,700.00	401.15	3,101.15
13	975.00	401.15	1,376.15	2,925.00	401.15	3,326.15
14	1,050.00	401.15	1,451.15	3,150.00	401.15	3,551.15
15 +	1,125.00	401.15	1,526.15	3,375.00	401.15	3,776.15

STUDENT FEE DISTRIBUTION

Semester Hours Enrolled	STS Grant (1)	Student Attorney (2)	Student Center (3)	Student Activity (4)	Student Rec (5)	Athletic Fund (6)	Campus Rec (7)	Student Medical (8)	Revenue Bond (9)
1	$2.25	$3.00	$ 3.31	$ 1.31	$ 4.75	$ 3.16	$0.16	$184.00	$ 4.95
2	2.25	3.00	6.62	2.62	9.50	6.32	0.32	184.00	9.90
3	2.25	3.00	9.93	3.93	14.25	9.48	0.48	184.00	14.85
4	2.25	3.00	13.24	5.24	19.00	12.64	0.64	164.00	19.80
5	2.25	3.00	16.55	6.55	23.75	15.80	0.80	184.00	24.75
6	2.25	3.00	19.86	7.86	28.50	18.96	0.96	184.00	29.70
7	2.25	3.00	23.17	9.17	33.25	22.12	1.12	184.00	34.65
8	2.25	3.00	26.48	10.48	38.00	25.28	1.28	184.00	39.60
9	2.25	3.00	29.79	11.79	42.75	28.44	1.44	184.00	44.55
10	2.25	3.00	33.10	13.10	47.50	31.60	1.60	184.00	49.50
11	2.25	3.00	36.41	14.41	52.25	34.76	1.76	184.00	54.45
12 +	2.25	3.00	39.75	15.75	57.00	38.00	2.00	184.00	59.40

4. The Student Activity Fee provides funding for student organizations and activities on campus. $1.15 portion of this fee is used to support a program of campus safety. $4.00 portion of this fee is used to support day care for student dependents through Rainbow's End child development center.

5. The Student Recreation Fund (REC) Fee provides funding for operation of the Student Recreation Center and associated programs.

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

7. The Campus Recreation Fee provides funding for recreational facilities and programs external to the Student Recreation Center.

8. The Student Medical Benefit (SMB) Fee provides funding for a comprehensive health program. The fee is comprised of the Student Health Fee and the Student Medical Insurance Premium. Students who pay these fees are entitled to full medical benefits at the Health Service. Students who have comparable coverage may be eligible for a credit of all or part of the fees. A credit must be applied for within the first three weeks of each semester. Additional information may be found in Chapter 6.

9. The Revenue Bond Fee (RBF) replaces funds which were previously obtained from tuition payments and used to underwrite the funded debt operations of the Student Center and University Housing.

ADDITIONAL FEE INFORMATION

1. Students are urged to refer to the *Schedule of Classes* for more specific fee information.
2. A late registration fee of $15.00 shall be assessed to all students taking on-campus classes who register after the designated registration period. This fee shall be non-refundable and non-waiverable, except when it is clearly shown that the late registration was caused by faculty or administrative action. Off-campus classes and registration in courses numbered 599, 600, or 601 shall be exempt from the fee.
3. 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.
4. Permanent full-time or permanent part-time employees will receive a tuition and fee credit whenever they are employed at any time during a semester for which they are registered. For more specific information refer to the *Schedule of Classes* .
5. Students will be charged a $2.00 transcript fee for all transcripts requested by the student.
6. 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.
7. Students registering for courses on an audit basis pay the same tuition and fees as though they were registering for the courses for credit.
8. Out-of-state students will find the official University regulations governing determination of residency status for assessment of tuition in Chapter 7.
9. 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, Student Recreation, the Revenue Bond Fee, Student Attorney Fee, or Campus Recreation Fee.
10. Students enrolled in public service courses pay only tuition and $3.00 per hour in fees. 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.
11. Students enrolling in off-campus non-contractual courses pay tuition only. Students who combine enrollment in on- and off-campus courses pay tuition only for hours off campus plus tuition and fees for hours enrolled on campus.
12. Tuition and program delivery charges for students enrolled in off-campus programs for the military are established in accordance with Board of Trustees policies relating to such charges for Southern Illinois University at Carbondale cost recovery programs and are not affected by the residency status of the student.
13. An administrative service fee of $100 per student per semester including summer session will be charged to sponsoring agencies which enroll international students.
14. An identification card fee of $10 will be charged to all first-time SIUC students who register for on-campus credit. This is a one-time charge. For additional information contact the Student Center ID Card office.
15. In addition to the above fees, there is a graduation fee. For further information contact the Office of Admissions and Records.

PAYMENT OF TUITION AND FEES

Tuition and fees are payable each semester during the academic year. Students will receive monthly statements of account through the University billing/receivable system. The statement lists all tuition and fees assessed, charges for University housing, charges for various other services, credits applied to the student's account from financial aid sources and cash payments. It shows the balance of these charges and credits as an amount owed by the student or an amount owed to the student. The statement also will show amounts which have been previously billed, amounts which are currently due during the billing period, and amounts which will be due in the future. Payment may be made either by mail or in person at the Bursar Office by the deadline date in accordance with instructions printed on the statement of account.

The top portion of the statement should accompany the payment. The bottom portion of the statement should be retained by students for their records. Prepayments of tuition and fees prior to detailed charges are not encouraged; however, early payments will be generally credited to the student's account and will be applied to charges made to that account.

The statements will be mailed to the student's billing, or if not one, the local address after the fifteenth of each month. December statements of account are mailed to the student's billing address, or if not one, the student's permanent address.

It is the student's responsibility to maintain an accurate local address or billing address to which a statement of account can be mailed. Failure to receive a bill does not relieve students of the responsibility for prompt payment of amounts due. See additional information under the heading Local, Permanent, and Billing Addresses below.

No student shall be enrolled until the student has either paid tuition and fees in full or has paid the initial installment or has a current cancellation waiver. Other amounts due from students at the time the initial installment payment of tuition/fees is due must also be paid or students will not be allowed to enroll. Students who fail to pay the first installment and all other past due charges or who fail to obtain a waiver of cancellation will have their registrations cancelled and will be denied privileges available to a student regularly enrolled in the University. Students with cancelled registrations who want to be enrolled at the University must reregister. They will be subject to payment in full or the installment plan in effect at the time of their reregistration. They may also be subject to a late registration fee.

A service charge of one and one-half percent per month will be assessed on all accounts which are delinquent. To avoid the service charge, students must pay the minimum amount due printed on the statement prior to the next billing date. More detailed information is in the *Schedule of Classes* published each semester.

Following the end of each semester, students not registered for the next semester who have delinquent account balances will receive a series of itemized statements requesting payment. If payments, or arrangements, are not made on a timely basis, the account may be placed with a collection agency with a collection fee added to the account. Should it be necessary for an outside agency to effect a collection, reasonable collection costs shall be $33\frac{1}{3}\%$ of such amount and shall be paid by the debtor. If the University obtains judgment from a court of competent jurisdiction, the debtor shall be liable for the collection agency fee as well as reasonable court costs and attorney's fees.

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 processed the program change within the necessary time frame, they will receive a refund provided their account carries no other charges.

Installment Payment Plans. There are several installment payment plans and eligibility will depend on where students attend class and when they register. The University reserves the right to alter the payment plans offered and in some plans to require prepayment of part or of all a student's charges prior to registration. The basic criterion for eligibility in installment payments is that the student must be attending classes on the Carbondale campus or School of Medicine classes in Springfield. Payment plans for students attending classes on the Carbondale campus or School of Medicine classes allow tuition and fees to be paid in up to four installments for fall or spring semesters and up to two installments for summer term, depending on when students process their registrations. Students who opt for the installment payment need only to pay the minimum amount due indicated on the May, July, or December statement of account by the stated deadline. There is no installment payment plan for students who only attend classes off-campus. A one and one-half percent service charge will be assessed on all minimum amounts not paid prior to the next billing. Students in military contractual programs are not subject to a service charge.

DEFERMENT OF TUITION AND FEES

When a student's financial aid has been delayed, or the funds which a student anticipates using to pay tuition and fees are unavailable by the regular due date for tuition and fee payment, the student may apply for an extension of the payment deadline date through a process called waiver of cancellation. Cancellation waivers are available to students who can demonstrate that they meet minimal eligibility criteria and can provide written verification of an ability to pay. Information on cancellation waivers is publicized each semester in the Office of Admissions and Records, the Bursar Office, the Financial Aid Office, and the *Daily Egyptian.* Eligibility criteria and procedural guidelines may vary from term to term and year to year. Students are advised to seek out the accurate information rather than assume they qualify.

Students applying for a cancellation waiver must first complete registration. Written verification from the source of funds to be used to pay tuition and fees must be presented in person to the Financial Aid Office for those students with approved scholarships, grants, or loans, or any combination of these. Instances of exceptional need will be referred to a financial aid officer when the source of funds is other than those identified above. Additional information on cancellation waivers is available in the Financial Aid Office. Phone or mail requests for deferments will not be accepted.

TUITION AND FEE REFUND POLICY AND PROCEDURES

Tuition and all general student fees shall be refunded to students who officially withdraw from the University by the withdrawal deadlines (see Deadline Dates above). Action on any request for refund of tuition and fees shall be in compliance with Board of Trustees policy and these procedures. For refund of tuition and fees prior to the withdrawal deadlines, the following will apply.

Request for a withdrawal from the University is initiated in the Office of Transitional Programs and approved by the student's academic dean as part of the normal withdrawal procedures.

Refund of tuition and fees based on withdrawal from the University on or prior to the withdrawal deadlines is made without consideration of the student's reason for withdrawing.

No tuition or general student fees shall be refunded in cases where withdrawal occurs after the deadlines stated in Board of Trustees policy, except for students in grave circumstances who demonstrate that, for reasons beyond their control, they are utterly unable to continue their educational programs. Refunds of tuition and general student fees approved in such cases are made at the University's discretion upon a determination by the president or his designee of the existence of one of the following conditions.

Accident or illness occurring prior to the withdrawal deadline which incapacitated the student and made it impossible for him/her to withdraw prior to the deadline.

Accident or illness in the student's immediate family which occurs prior to the withdrawal deadline and is of such nature as to prevent the student from continuing his/her education.

Emotional or psychological trauma resulting from an incident which occurred prior to the deadline and for which the student is undergoing counseling or therapy.

A disciplinary, academic, or financial aid termination appeal which is not accepted if the appeal was initiated prior to the withdrawal deadline.

Induction into military service for a period not less than six months.

The refund of tuition and fees in cases where withdrawal from the University occurs after the deadlines specified in the Board of Trustees refund policy is governed by the following procedures.

The vice president for Student Affairs or his designee will serve as the president's representative for considering requests for refund of tuition and fees after the time period specified in the refund policy.

Request for such refunds are initiated in the Office of Transitional Programs which will furnish the student with the necessary information and appropriate form.

A student requesting a refund after the specified periods must withdraw from the University before the request for refund will be acted upon.

Tuition and fees will not be refunded for courses which have already been completed earlier in the semester and for which a final grade has been earned.

The student must submit written verification of the reasons supporting the request, i.e., (a) written verification from a physician as to the accident or illness to the student or in the student's immediate family and the student's inability to withdraw prior to the deadline; or (b) written verification from a physician or counselor which supports his/her statement concerning emotional or psychological trauma and which substantiates that the trauma resulted from an incident which occurred prior to the deadline; or (c) a copy of the letter denying a disciplinary, academic or financial aid termination appeal and verification that the appeal was filed prior to the withdrawal deadline; or (d) written correspondence from the military which verifies when the student is to report for military service and the length of time for which the student is expected to serve.

The student requesting the refund shall be required to substantiate to the Office of Transitional Program's satisfaction the nature, extent, and seriousness of conditions or circumstances which are the basis for the refund request.

The Office of Transitional Programs will make a decision on the request and inform the student as soon as practical. Refund approvals will then be forwarded to the Office of Admissions and Records for processing.

Local, Permanent, and Billing Addresses

The University maintains both a local and a permanent address for students and a billing address for students who request a specific address for their statements. Accurate addresses are very important for students to ensure receipt of timely mail from the University.

The **billing address** is used only by the Bursar to mail the statement of account. If no billing address exists, the local address is used as the address for the Statement of Account in the months of January through November. In the absence of a billing address, the Statement of Account is mailed to your permanent address in the month of December only.

The **permanent address** maintained by the University is your permanent home address or the address at which you will promptly receive mail when you are absent from Carbondale.

The **local address** is your primary residence while classes are in session. It is used by the University to direct correspondence during the semester. In the months of January through November this address is used to mail your Statement of Account if no billing address exists.

Grading and Scholastic Regulations

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, whichever 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 reregister for courses in which an *INC* has been assigned with the intent of changing the *INC* grade. Reregistration will not prevent the *INC* from being changed to an *F*.

Grading System

GRADE	GRADE POINTS	
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.	
PR,	Work in Progress. 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.	

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. 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 for an *Audit* must designate their intent to enroll on an *Audit* basis at the time of registration or prior to the end of the third week of a

sixteen-week semester and prior to the end of the second week of an eight-week summer session. An equivalent prorated amount of time would be allowed for courses of shorter duration. Students registering for short courses must register for *Audit* prior to the beginning of those classes. Students registering for a course on an *Audit* basis receive no credit. Auditors' Course Request Forms must be marked accordingly, and they pay the same fees as though they were registering for credit. They are expected to attend regularly and to determine from the instructor the amount of work expected of them. If auditing students do not attend regularly, the instructor may determine that the student should not have a satisfactory (AU) audit grade. If the audited class is unsatisfactory, the grade will appear as UAU.

PR is an authorized grade for specifically approved undergraduate courses. It is used for required general education courses which have been designated as ones in which students must receive a grade of *C* or better. The grade is given only to students who regularly attend class and attempt to complete the required work. The grade is to be used only once per student for any given course. The course provides additional instruction for those students not making adequate progress. Students who receive a *PR* grade must reregister for the course within a time period not to exceed a year from the end of the semester in which the course is taken. The grade earned in the course for which the student reregisters will be included in the grade point average. Failure to complete the course within the year will result in the *PR* automatically becoming an *F*. The *F* will be included in grade point computation.

PASS/FAIL GRADING SYSTEM

Certain courses which, in the judgment of the department or program, have been determined to be inappropriate for the traditional grading system are designated as Mandatory Pass/Fail. Courses which carry this designation include the words, Mandatory Pass/Fail, at the end of the course descriptions in Chapter 5. For courses taken on a Mandatory Pass/Fail basis, completed grades will be either a *P* or an *F*. The grade of *P* is not included 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. If a student receives an *INC* in a Mandatory Pass/Fail course, the same regulations apply for completion of the work as apply for all other grades of *INC*, as explained in the Grading System Explanation above.

In addition to the Mandatory Pass/Fail courses, an Elective Pass/Fail grading policy was in effect through the end of Spring Semester, 1987. The regulations concerning the discontinued policy appear in the 1986-1987 Undergraduate Bulletin.

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 Admissions 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 the University. 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 must be

approved and signed not only by the instructor but also by the departmental chairperson and the dean of the academic unit. An incomplete grade which is changed to a final grade need only be signed by the instructor.

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 overall record at Southern Illinois University at Carbondale. It is important that you 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 averages, 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 2.0 (*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 *quality* hours. Each hour of these grades (1 hour of *A* is worth 4 quality points) is given its numerical quality points, and the total number of quality hours is then divided into the total number of quality points to determine the student's grade point average.

All earned grades carrying quality point values are considered when computing students' grade point averages, including each earned grade in a repeated course that is taken.

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 semester average and the cumulative University 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 the University provided the student does not accumulate more than six negative points. See Positive and Negative Grade Points below for an explanation of how positive and negative points are calculated. 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 University 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. Students employed full time may not register for more than eight hours without approval of the head of their academic unit. Other limitations may be established by the academic unit within which the students are enrolled. Students enrolled in programs for the military or students enrolled in programs with a weekend or evening format are not restricted to the eight hour limit while on probation.

TRANSFER STUDENTS ADMITTED ON PROBATION

Transfer students admitted on scholastic probation will remain in that status until they have earned 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 the University 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. Some academic units have scholastic requirements in addition to the overall University requirements listed here. Students must learn and comply with the University requirements as well as those requirements applying to individual schools and colleges.

POSITIVE AND NEGATIVE QUALITY POINTS

Positive and negative quality 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 quality points earned. Since *C* has a value of two quality points on a 4 point scale, quality points equaling a *C* average are exactly twice the number of quality hours. All quality points over that amount are positive quality points. All quality points under the amount are negative quality points.

For example:

Quality Hours	*Quality Points*		*Grade Point Average*
60	120	=	(*C*) 2.0

Twice the quality hours equals 120 quality points. This is a *C* (2.0) average. A student with 60 quality hours and only 115 quality points would have five negative points (1.92 average). A student with 30 quality hours and 55 quality points would have five negative points (1.83) average.

Grades and Hours of Credit Available. Whenever all grades and hours of credit are known and quality 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
F = 2 negative points per hour

For example:

3 hours of *A*	× 2 positive points	= 6 positive points
3 hours of *B*	× 1 positive point	= 3 positive points
3 hours of *C*	× 0 points	= 0
2 hours of *D*	× 1 negative point	= 2 negative points
4 hours of *F*	× 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 at least *C*.

Class Standing

The University 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 Office of Student Work and Financial Assistance.

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[1]	21	11

[1]This 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.

Credit

UNIT OF CREDIT

The University 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.

TRANSFER CREDIT

Transfer credit for students admitted to the university is evaluated for acceptance toward University and General Education requirements by the Office of Admissions and Records after the admission decision has been made. All credit from a regionally accredited institution, and those in candidacy status, or from an institution that has its credit accepted by the reporting institution in the state is evaluated at the time of admission. Courses which are remedial or developmental will not be accepted for transfer. The Office of Admissions and Records will determine the acceptance of credit and its applicability toward General Education requirements. Transfer credit from baccalaureate and non-baccalaureate programs used toward specific program requirements will be determines by the department directing the program.

All credit which is accepted for transfer and which is not applied to General Education requirements or to a specific degree program will be considered elective credit. A student should not expect to receive credit if the transfer work was

taken at a school which is neither regionally accredited or whose credit is not accepted by the reporting institution in the state.

Completion of an associate degree in a baccalaureate-oriented program in an accredited Illinois two-year institution provides that the student will: (a) be accepted with junior standing and (b) be considered to have completed the General Education requirements. Associate degrees earned at other than Illinois two-year institutions will be reviewed by the Office of Admissions and Records. If the degree is determined to be baccalaureate-oriented and to have comparable content and credit hour criteria, the same benefits will be extended to those graduates. 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 Education and graduation requirements may be found in Chapter 4.

Program Flexibility for the Student

The University offers you a wide variety of programs on all higher educational levels. Chapter 5 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 for you to earn credit through means other than the traditional classroom method. While greater flexibility is the goal, the University exercises appropriate supervision to ensure the flexibility is accompanied by educational soundness.

Credit by Means other than Classroom Attendance

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

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.

Correspondence work is accepted when taken from institutions which are regionally accredited if the grade is of *C* quality or better. Southern Illinois University at Carbondale operates an individualized learning program similar to correspondence programs in which students may earn academic credit. More information about individualized learning is in Chapter 3 under *Division of Continuing Education*.

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.

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 or army military science credit. Completion of basic training will be awarded two hours of physical education credit.

Credit will be accepted for DANTES subject standardized courses within the limitations enforced for proficiency credit. 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, Evaluations Department.

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 Board. To receive credit, students must earn at least a grade of 3, 4, or 5.

The maximum credit granted through advanced placement examinations is thirty hours (fifteen for an associate degree). It is nonresident credit, does not carry a grade, and is not used in computing the students' averages. The thirty hour limit also includes any CLEP credit or proficiency that has also been earned.

Advanced classes which qualify for this purpose are offered in many high schools in specific subjects such as English composition, economics, foreign languages, history, biology, computer science, chemistry, government, mathematics, physics, and psychology. A national examination is given in each subject with the examinations administered through the Educational Testing Service. The examinations are prepared by a national committee of high school and college teachers and are intended to measure the achievement of the student and determine at what point the student should begin college work in the subject.

The credit to be granted at Southern Illinois University at Carbondale is determined by the appropriate department. The credit will be validated after 12 hours credit of *C* work or better in residence at SIUC. The following is a list of courses for which a student may currently receive credit:

1. American Government: GEB 114 (three semester hours).
2. American History: GEB 301 and History 300 (six semester hours)
3. Art: credit to be determined in consultation with the director of the School of Art and Design.
4. Biology: GEA 115 (three semester hours)
5. Chemistry: Chemistry 222 a,b (eight semester hours)
6. Comparative Government and Politics: GEB 250 (three semester hours).
7. Computer Science:
   Computer Science A: Computer Science 202 (three semester hours)
   Computer Science AB: Computer Science 220 (three semester hours).
8. Economics:
   Microeconomics: Economics 215 (three semester hours)
   Macroeconomics: Economics 214 (three semester hours)
9. English:
   Language and Composition:
   GED 101 (three semester hours) with a score of 3 or 4

or GED 120 (3 semester hours) with a score of 5. GED 120 will complete the General Education composition requirement.

Literature and Composition: GEC 122 (3 semester hours)

10. European History: History 205a,b (six semester hours)
11. Foreign Languages: credit to be determined in consultation with the chairperson of the Department of Foreign Languages and Literatures.
12. Mathematics:
    Calculus AB: Mathematics 150 (four semester hours)
    Calculus BC: Mathematics 150 and 250 (eight semester hours).
13. Music: credit to be determined in consultation with the director of the School of Music.
14. Physics:
    Physics B: Physics 203a,b (6 semester hours) and Physics 253a,b (2 semester hours) with a score of 4 or 5. A score of 3 qualifies the student to take a proficiency exam in the above courses.
    Physics C, Part I: Physics 205a (3 semester hours) and Physics 255a (one semester hour)with a score of 4 or 5. A score of 3 qualifies the student to take a proficiency exam in the above courses.
    Physics C, Part II: Physics 205b (3 semester hours) and Physics 255b (one semester hour) with a score of 4 or 5. A score of 3 qualifies the student to take a proficiency exam in the above courses.
15. Psychology: GEB 202 (three semester hours)

Further information about the Advanced Placement Program may be obtained from the appropriate regional office of the College Board or by writing The College Board, 888 Seventh Avenue, New York, New York 10019.

COLLEGE LEVEL EXAMINATION PROGRAM (CLEP)

Through the General Examinations of the College Level Examination Program (CLEP), students may apply for credit which will substitute for General Education courses. Prior to the recording of CLEP credit on the student's transcript, the student must earn 12 hours of credit of *C* grade or above in residence at SIUC.

The scores listed below are the minimum required for credit. The scores listed are for tests taken after May, 1989. Students who took exams prior to May, 1989 should consult the *1988 Undergraduate Catalog* for specific scores required. The exams listed below are the only exams which Southern Illinois University will award credit. Also listed are the credit hours that may be awarded for each CLEP exam.

1. Natural Science: A score of 520 or above entitles the student to receive six semester hours credit of core courses in GEA General Education.
2. Social Sciences and History: A score of 520 or above entitles the student to receive six semester hours credit of core courses in GEB General Education.
3. Humanities: A score of 520 or above entitles the student to receive six semester hours credit of core courses in GEC General Education.
4. English Composition with Essay: With a score of 565 or above on the CLEP English Composition with Essay examination, students will receive six semester hours of credit for GED General Education English.

   A score of 540 to 564 entitles the student to receive (a) advanced placement in GED 120 and (b) six semester hours of credit upon successful completion of GED 120 with a grade of *C* or higher (three semester hours of GED 120 and three semester hours of GED 102).
5. Mathematics: A score of 580 or higher is required to pass the mathematics test. With this score students may earn three hours of credit which will fulfill the General Education mathematics requirement.

If prior to taking the CLEP examination students have received a grade or audit in college level work in any discipline included in the CLEP exam, or if they have enrolled in such a course, they shall be ineligible for credit. An exception to this rule is made in the case of students who enroll in the Early Admission program. Such students receive university credit for courses taken during the Early Admission experience and for the CLEP credit earned.

Disciplines included in the science exam include plant biology, microbiology, physiology, zoology, chemistry, physics, earth science, geography, and all General Education Area A courses. The social sciences and history exam includes western civilization, American history, Afro-Asian civilization, world history, political science, economics, anthropology, sociology, social psychology, social studies, and all General Education Area B courses. The humanities exam includes literature — poetry, fiction, drama, non-fiction, creative writing; films and performing arts; art — art appreciation, art history, architecture (past and present); music — classical, modern or jazz; humanities — all general humanities courses; philosophy — aesthetics, ethics, general survey; and all General Education Area C courses. The mathematics test includes all college-level mathematics.

Students may be exempted from all General Education requirements if they (1) pass all five CLEP General Examinations before entering the University with these minimum scores; natural sciences, social sciences, and humanities, 520; English, 565; and mathematics, 580, and (2) complete all requirements of the University Honors Program. No retroactive extension of the CLEP privilege will be allowed.

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.

For further information, students should consult with their academic adviser.

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 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 *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 there will be no official record regarding the proficiency examination. However, the proficiency examination grade report form will be in the students' files 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. Students who are registered for a course may not receive credit by proficiency examination for that course unless they withdraw from the course by the date during the semester which would result in no course entry appearing on the transcript. This date is the end of the third week for a regular semester course, and a correspondingly shorter period for summer session or short courses. Individual departments may require the proficiency examination to be completed in advance of this date.
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 the University.

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 the 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 you 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. If you desire to follow the three-year program you should make that fact known to your academic adviser at the earliest possible date so that your 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.

University Recognition of High Scholastic Achievement

Dean's List. 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, you 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 you have met the criteria established, a notation will appear on your grade slip and your academic record at the end of the semester. The dean's list is recognition for a particular semester. It does not take into consideration your complete record.

University Honors Program. The University Honors program is explained in Chapter 3 and Chapter 5. Those who successfully complete the University Honors Program receive recognition on the academic record and on the diploma at the time the degree is recorded.

Departmental Honors. Honors courses, individual honors work, and honors curricula, all designed to serve the student with high scholastic potential, are offered by departments in the College of Agriculture, the College of Liberal Arts, and the College of Science. A departmental or academic 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 student's major. 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. Successful completion of a departmental or academic unit honors program is indicated on the academic record at the time the degree is recorded and on the diploma, e.g., departmental honors in economics.

Scholastic Honors Day. Each spring a Scholastic Honors Day convocation is held to honor students exhibiting high scholastic achievement. All students who have maintained a cumulative grade point average of 3.50 or higher, and who have been full-time students during the entire academic year, are honored at this time. A 3.50 grade point average is required for all work taken at Southern Illinois University at Carbondale, and in the case of transfer students, the cumulative average must be at least 3.50 also. Each academic unit has its own convocation and each student is recognized individually on this day.

A variety of professional, departmental, and fraternal honorary organizations offer recognition and membership based upon scholastic achievement. Election or selection to most of these organizations is noted at the Scholastic Honors Day ceremonies. The following are examples of some of these organizations: Alpha Epsilon Rho, Alpha Lambda Delta, Beta Alpha Psi, Beta Gamma Sigma, Golden Key Honor Society, Kappa Omicron Phi, Pi Mu Epsilon, Pi Omega Pi, Tau Beta Pi, the Liberal Arts and Sciences Honor Society, and the Honor Society of Phi Kappa Phi. Selection to membership in these organizations is not reflected on the academic record or diploma.

Honors / Departmental Honors Recognition at the Time of Graduation. Graduating students with scholastic averages of 3.90 or higher receive *summa cum laude*; those with 3.75-3.89 receive *magna cum laude*; and those with 3.50-3.74 receive *cum laude*. These averages apply to all work at the University, and in the case of transfer students, the averages also apply to the cumulative record. Whichever of the honors apply, plus graduation with departmental honors, are recorded on the student's academic record at the time the degree is recorded and on the diploma.

Graduation Procedures

The academic requirements for the various baccalaureate degrees are listed in Chapter 5. 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 must apply for graduation by the end of 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 graduation fee is established for all persons receiving degrees. 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.

Graduating students who have outstanding financial obligations or delinquent accounts with the University will not receive either the diploma or transcripts until their accounts are paid.

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.

GRADUATION APPEAL

The University has a Graduation Appeals Committee whose function it is to hear student's 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 the associate or 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.

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 personnel 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. A transcript will be issued directly to a student upon request. The transcript will have the statement, Issued to the Student, on its face. Transcripts will be sent to recipients other than the student as requested, in writing, by the student. A transcript fee of $2.00 will be charged to the student for every transcript the student requests. A transcript will not be sent, issued, or released if a student owes money to the University. For further information see the policy on the release of student information and access to student records in Chapter 7.

3 Academic Programs

Degrees Offered

Southern Illinois University at Carbondale grants the following degrees:

ASSOCIATE

Associate in Applied Science

BACCALAUREATE

Bachelor of Arts
Bachelor of Fine Arts
Bachelor of Music
Bachelor of Science

ADVANCED

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

In addition to the above degrees, the University 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 19230, Springfield, Illinois 62794-9230.

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 complete the residency requirement by completing a minimum of 15 semester hours of technical courses within a major for the Associate in Applied Science degree at Southern Illinois University at Carbondale. Each student must maintain a *C* average for all work taken at Southern Illinois University at Carbondale. In addition to the technical courses, each program requires certain General Education courses to be taken. The degree-granting unit for the associate degree is the College 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 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 two-year college or credit has been awarded based on attendance at a two-year school. 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. MATH 107 cannot be counted in the 120 hours required for graduation.

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. Students enrolled in programs offered for the military will have completed the residence requirement for the University upon completion of all courses required by the program.

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 the University.

The University has adopted a policy for students whose only graduation problem concerns the *C* average for all work taken at the University. 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 *F* grade earned outside the major which was taken prior to the last 60 semester hours of completed work at the University or, (2) by earning a grade point average of 2.10 or higher for the last 60 semester hours of work completed at the University. 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 Education requirements which are explained later in Chapter 4 total 46 semester hours of credit although there are methods available to reduce the number for certain students. The requirements of each college are also listed in this chapter, while the requirements for the specific major and minor programs are explained in Chapter 5.

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 or school and college for the second bachelor's degree. Students pursuing a second baccalaureate degree must meet the General Education requirements of 46 semester hours if the department or school or college so requires. Students may, however, complete a second bachelor's degree under the Capstone Option 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 the University, 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 the University, they need to have completed all requirements other than elective hours for the bachelor's degree which they are seeking.

In some cases the completion of 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, 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 school, a hospital plan approved by the University or an accredited school of osteopathy is required. 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 the College of Business and Administration.

General Education Requirements

The University believes in a strong, well-rounded general education for all students which includes a common core of knowledge. It has, therefore, established General Education course requirements which serve as the general education requirements for all baccalaureate degrees. The University also recognizes that not all students have the same interests or goals so the General Education requirements provide for flexibility in making course selections to fulfill requirements. For the General Education requirements and descriptions of the General Education courses see Chapter 4 of this bulletin.

Capstone Option

The Capstone Option is for the student who has earned an Associate in Applied Science degree or the equivalent certification and 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 Capstone Option's purpose is to provide an opportunity for students to add to the marketable occupational skills and competencies which they have already acquired. For Capstone requirements, admissions policies and participating majors see Chapter 4 of this bulletin.

Academic Units and Programs Offered

College of Agriculture

James M. McGuire, *Dean*

Departments: Agribusiness Economics; Agricultural Education and Mechanization; Animal Science, Food and Nutrition; Forestry; Plant and Soil Science

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

Agribusiness Economics
Agriculture, General
Animal Science
Food and Nutrition
Forestry
Plant and Soil Science

Students majoring in Agribusiness Economics may choose a Business Economics (32-hour) option or an Agricultural (40-hour) option. Students pursuing the General Agriculture major in the Agricultural Education and Mechanization Department may specialize in Agricultural Education, Agricultural Information, Agricultural Mechanization, or Agricultural Production. Production, Science and Pre-Veterinary, and Equine Science specializations are available in the Animal Science major. Food and Nutrition majors may choose Dietetics or Hotel, Restaurant and Travel Administration specializations. In Forestry, one may choose a specialization in Forest Resources Management or in Outdoor Recreation Resources Management. Students in the Plant and Soil Science Department may take a concentration in crops, soils, or horticulture, with a Business, General, or Science specialization within that concentration. In addition, Landscape Horticulture and Environmental Studies specializations are available.

It is recommended that high school students who are planning to pursue one of the above majors include the following in their high school program: four years of English, three years of mathematics (algebra, geometry, advanced mathematics); three years of science (biology, chemistry, physics); three years of social studies; and two years of art, music, vocational education (may include agriculture), or foreign languages. For prospective agriculture majors or food and nutrition majors, high school classes in agriculture or home economics respectively are beneficial but are not specifically required.

For transfer students wishing to pursue a major in one of the agricultural, food and nutrition or forestry areas, courses taken prior to entering the University should include 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 5.

A student planning to take preprofessional courses in veterinary science should register in the College of Agriculture's four-year curriculum in Animal Science (Science and Pre-Veterinary specialization).

Qualified candidates for the Capstone Option are accepted into Agribusiness Economics, Animal Science, the General Agriculture major in Agricultural Education and Mechanization, and Plant and Soil Science. The Capstone Option is described in Chapter 4.

Of the recent graduates of the College of Agriculture, about 40% have been employed in private industry, about 15% 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.

Typical employment opportunities for Agribusiness Economics graduates include positions in credit and financial management, professional farm management, sales, and grain merchandising. A graduate from the Agricultural Education and Mechanization Department can be employed in the farm machinery or implement industry, as a high school agricultural educator, as a news editor, or in agricultural sales or service. Animal Science majors seeking employ-

ment can investigate positions in livestock management or sales, and governmental positions such as meat inspectors, as well as veterinary school. Food and Nutrition majors will find numerous opportunities as registered dietitians or in the hotel and restaurant management industry. The major employer of Forestry graduates is the federal or state government, but they also work as private forestry consultants, in urban forestry, or at sawmills. The Plant and Soil Science graduate with a concentration in agronomy will find opportunities in industry such as agricultural chemical sales, in production agriculture, or with a governmental agency such as the Soil Conservation Service. Horticulture graduates can seek employment in nursery management, in the florist or interior plant maintenance industry, or with landscape design firms.

College of Agriculture students come from both rural and urban homes. Approximately 35% of the undergraduates and 35% of the graduates are women. Students who elect any one of the six majors in the College of Agriculture are counseled, for the most part, by individual faculty advisors prior to registration. Most faculty offer an "open-door" policy and much personal attention to their advisees as well as to students enrolled in their classes.

The Agriculture Building houses the offices, classrooms, and laboratories for the agriculture and forestry programs. The Food and Nutrition program has offices, classrooms, and laboratories in Quigley Hall. Other research and teaching facilities include over one-third acre in greenhouses plus 2,000 acres of farm and timberland. A $1.4 million building and renovation program has resulted in state-of-the-art livestock teaching and research facilities.

College of Business and Administration

Departments: Finance; Management; Marketing
School: Accountancy

The College of Business and Administration aims to prepare students to perform successfully in business and other organizations such as government and other not-for-profit 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 also 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	Finance
Business and Administration	Management
Business Economics	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 5 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 Henry J. Rehn Hall; 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-level 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 departmental-required courses.

Subject	*Semester Hours*
Principles of accounting	6
Economic principles	6
Business economics statistics (where college algebra is a prerequisite)	3
Basic computer course[1]	3
Legal and social environment of business	3

[1]Computer 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 has been approved as an equivalent course by the College of Business and Administration.

Students also have the opportunity of validating additional coursework 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.

Admission Policy

The current admission policy for the College of Business and Administration became effective the summer of 1990 and applies to all students who enroll at Southern Illinois University at Carbondale for the 1990 Summer Session and thereafter.

Freshmen. Beginning freshmen must rank in the top 50% of their high school graduating class and have earned an ACT composite score of 24 or above to be eligible for admission to a major offered by the College of Business and Administration. New freshmen who do not meet these requirements but rank in the top half of their graduating class and achieve an ACT score of at least 18 will be admitted with a pre-business major classification.

Transfer Students. Transfer students who have completed fewer than 26 semester hours must meet the admission requirements of beginning freshmen as well as have earned a collegiate grade point average of 2.5 (4.0 scale). Those students who fulfilled beginning freshmen requirements for direct admission to a department will be granted such admission and those students who qualified for the pre-business classification will be admitted to pre-business.

Students who have completed 26 or more semester hours must have earned an overall grade point average of 2.5 or above. Those students who have com-

pleted the retention courses required by the College of Business and Administration will be admitted directly to the program in which they have requested admission. Applicants who have failed to complete the retention courses will be admitted with a pre-business classification. The retention courses to be completed are: GED 101, GEB 202, Mathematics 139 and 140, Management/Accounting 208 and Economics 214, Accounting 220 and 230, and Computer Science 212 or Computer Information Processing 229.

Transfer students who have earned more than 56 hours of transfer credit and have a grade point average of 2.2 to 2.5 will have their applications reviewed by representatives from the College of Business and Administration to determine if they are admissible to the pre-business classification.

Reentering and Southern Illinois University at Carbondale Students. Students who are currently enrolled or were previously enrolled at the University in a major outside the College of Business and Administration may request admission to a Business program. These students will be considered for admission to the College of Business and Administration if they have earned an overall grade point average of 2.5 or higher. Students who have completed fewer than 26 semester hours of work will need to have earned the above average as well as satisfy the admission policies for beginning freshmen. Students who have completed more than 26 semester hours with a 2.5 or above average and have completed the retention courses can be admitted directly to the program they wish to enter. Students who have a 2.5 average but have not completed the retention courses can be admitted with a pre-business classification. Students with less than a 2.5 average will not be considered for entry into a degree program in the College of Business and Administration. Students who have earned more than 56 hours and have a grade point average of 2.2 to 2.5 will have their applications reviewed by representatives from the College of Business and Administration to determine if they are admissible to the pre-business classification.

International Students. International students must meet admission requirements comparable to those of native students. While admission credentials such as ACT and class rank are generally not submitted by international students, applicants do submit credentials which reflect their achievement in some subject areas similar to those of the United States students. Therefore, beginning international freshmen as well as transfer students will have their applications and documents reviewed in a manner similar to domestic students for admission to the College of Business and Administration. It will be necessary in many instances to grant international students admission with a pre-business classification as their credentials will be difficult to equate to standards required for native applicants.

Grade Point Average Calculation. In calculating a student's grade point average for admission purposes for continuing, new, and reentering students, the admission office will follow the SIUC grading policy and procedures for all collegiate (not remedial) work attempted at SIUC and other collegiate institutions.

Pre-business Classification. Beginning freshmen and transfer students admitted to the University with a pre-business classification may request admission to a College of Business and Administration degree program when all the following conditions are satisfied:

1. They have earned an overall average of 2.5;
2. They have completed at least forty-two semester hours;
3. They have completed six of the College of Business and Administration's nine retention courses with an average of 2.0 in those courses, and be enrolled in the remaining three.

To pursue a specific degree program in the College of Business and Administration students must submit the appropriate application directly to the COBA Student Affairs Office. Students applying for spring must apply by October 1 of the preceding year, for summer by March 1 preceding the summer, and for fall by March 1 preceding the fall. Students who are classified as pre-business majors cannot register for 300- and 400-level courses offered by any of the business departments that are restricted to that department's major.

Because interest in business classes continues to be exceedingly high, it may be necessary to close admission to selected business majors without advance notice.

Class Availability for Non-Business Students

Non-business students may register for business courses, within space limitation, *only* if the course is required by their major as confirmed by the College of Business and Administration. Otherwise, students must have a 2.20 cumulative grade point average at Southern Illinois University at Carbondale and obtain consent of the department which offers the course. Students who have not been admitted to the College of Business and Administration are limited to a total of twenty-four semester hours of business courses.

Retention Policy

Students admitted to the College in the Summer 1990 term or later will be required to fulfill University scholastic standards (e.g. maintain a 2.0 grade point average for all work taken at this University.)

Retention Policy, Collegiate Warning and Dismissal Policy for Students Who Were Admitted to the College Prior to Summer 1990

Students who were admitted to the College prior to Summer 1990 must meet the following requirements:

In order to continue enrollment in the College of Business and Administration, students must maintain a 2.2 Southern Illinois University at Carbondale cumulative grade point average. Students must also complete the following nine courses with an overall *C* average, before attaining junior status (56 semester hours). It is also necessary for students to have completed with a grade of *C* or better seven of these nine courses. The nine retention courses or the equivalencies are GED 101; GEB 202; Mathematics 139 and 140; Management/Accounting 208 and Economics 214; Accounting 220 and 230; and Computer Science 212 or Computer Information Processing 229. Students who have completed 42 semester hours or more without completing at least six of the prescribed nine courses will be subject to termination from the college.

Collegiate Warning. Students who do not achieve an accumulative 2.20 Southern Illinois University at Carbondale grade point average in any semester or who fail to meet the retention course requirements as described above are subject to collegiate warning. Students who are on collegiate warning and do not earn a 2.20 Southern Illinois University at Carbondale grade point average in a subsequent semester will be placed on a status of collegiate dismissal.

A student who has been placed on collegiate dismissal will be transferred to Pre-Major Advisement or may seek transfer to another University program if the student has an overall Southern Illinois University at Carbondale grade point average of 2.0. Students who are placed on collegiate dismissal and have less than an overall 2.0 University grade point average for work completed at the University but have not been suspended from the University will be placed in Pre-Major Advisement.

First Collegiate Dismissal. The student on collegiate dismissal may not be readmitted to the college until the student has interrupted education in the college for a minimum of two semesters and shows evidence that the program of study can be successfully completed. For this purpose, a summer session will be considered a semester.

After the two term interruption, the student may apply to the college scholastic committee for readmission. In this petition, the student should supply written evidence to include: (1) any extraordinary circumstances that contributed to the collegiate dismissal; (2) why the student thinks there is a reasonable chance to succeed in studies; and (3) what the student was doing during the interruption period that will contribute to further success. Insufficient documentation to justify the request will result in denial of the request for that semester.

Business students on collegiate dismissal who are eligible to continue at the University may be readmitted in certain cases upon approval of the scholastic committee without the two semester interruption.

Second and Subsequent Dismissals. A student on collegiate dismissal for a second or subsequent time may apply for readmission after an interval of no less than two calendar years. There are no exceptions. Students requesting readmission who have been on dismissal two or more times must be referred to the scholastic committee as described above.

Admission to Business and Administration Classes. Students on collegiate dismissal who are eligible to continue at Southern Illinois University at Carbondale can take only those business courses that are **not** restricted to business majors. Students are not restricted from taking other required non-business courses.

Grade Point Average Requirement

Graduation from the College of Business and Administration requires achievement of a 2.00 grade point average in all business-prefix (ACCT, BUS, ECON, FIN, MGMT, MKTG) courses offered at Southern Illinois University at Carbondale. Accounting majors are subject to the additional requirement of achieving a grade of *C* or better in accounting-prefix (ACCT) courses completed at the University; Marketing majors must earn a *C* grade in all marketing courses that are taken to satisfy major requirements; and Finance majors must maintain a cumulative 2.00 grade point average in Finance prefix courses taken at SIUC. Business courses may be taken only three times. This is, if a course is failed, a student has two additional attempts to pass the course. Students may not repeat courses in which they have earned a grade of *C* or better.

Pass/Fail Policy of the College

Business majors may not register on a Pass/Fail basis for courses used to satisfy requirements in the College of Business and Administration unless the course is designated Mandatory Pass/Fail.

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 coursework 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.

General Education Courses Prescribed for Business Majors

Students in the College of Business and Administration must complete the General Education requirements of the University. The following courses are required and will count toward partial fulfillment of General Education requirements:

GEB 202
Economics 214 to substitute for GEB 211
GED 101, 102
Mathematics 139 to substitute for GED 107
GED 152 or 153

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 220, 230	6
Business 402	1
Management 202, 208[5], 304, 318, 481	15
Computer Science 212/Computer Information Processing 229[2]	3
Economics 214[1], 215	(3)[1] + 3
Finance 270[3], 330	6
Marketing 304	3
Mathematics 139[1] and 140[4]	(3)[1] + 4
Total	41

[1]See General Education courses prescribed for business majors.
[2]Computer 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 has been approved as an equivalent course by the College of Business and Administration.
[3]The combination of Finance 280 and 380 may be substituted for 270.
[4]Mathematics 150 may be substituted for 140.
[4]Also listed as Accounting 208.

College of Education

Donald L. Beggs, *Dean*

Departments: Curriculum and Instruction; Educational Administration and Higher Education; Educational Psychology and Special Education; Health Education and Recreation; Physical Education; Rehabilitation; Workforce Education and Development

The College of Education offers the following programs[1] leading to the Bachelor of Science degree:

Art
Biological Sciences
Chemistry
Clothing and Textiles
Communication Disorders and Sciences
Early Childhood
Elementary Education
English
French
German
Health Education
History
Mathematics
Music
Physical Education
Political Science
Recreation
Secondary Education[2]
Social Studies
Spanish
Special Education
Speech Communication
Workforce Education and Development
Zoology

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[1]In 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., English, art, music), or with the College of Agriculture and the College of Science (e.g., biological sciences, chemistry).

[2]This is not an academic major. Persons planning to teach in secondary schools should refer to Curriculum and Instruction program for a listing of academic majors and minors.

The College of Education is a multipurpose college preparing students as human service professionals as well as for the teaching profession. These programs include preparation in Apparel Design, Clothing Retailing, Child and Family Services, Athletic Training, Exercise Science and Physical Fitness, Recreation, Community Health, and Education, Training and Development.

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 degree.

Students who wish to become principals or supervisors in the public schools take graduate work in the Department of Educational Administration and Higher Education. The department's major emphasis is on the 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. 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 of 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, area teachers, and administrators 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, special education, secondary education majors and minors, and in majors which lead to the special certificate to teach K-12. The special education major offers specializations in education of the behaviorally disordered, of the mentally retarded, and 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 POLICY

The College of Education admission policy shall be the same as that of the University. All qualified new students are admitted to the College of Education with a specific departmental major classification or as an unclassified student. Students applying to the University for the Elementary Education program are first placed in Pre-Elementary Education. The same policy applies for reentering students and for students enrolled in Teacher Education Program majors in other colleges in the University.

RETENTION POLICY FOR TEACHER EDUCATION PROGRAM

This retention policy became effective August 15, 1993, and applies to all students enrolled at Southern Illinois University at Carbondale after August 15, 1993.

A total of 320 students will be admitted each year to the Teacher Education Program. One hundred and sixty students will be admitted on October 1 for enrollment in the teacher education sequence beginning the spring semester. One hundred and sixty students will be admitted on March 1 for enrollment in the teacher education sequence beginning fall semester.

Advancement to the teacher education certification program may occur when the student has completed a minimum of 30 semester hours. Pre-Elementary Education majors must meet conditions for admissions to the teacher education program as well as admission to the Elementary Education major. A student is eligible to make formal application for admission to the program when the following criteria have been met:

1. A minimum of 30 semester hours of completed work;
2. An overall grade point average of at least 2.50 (4.0 scale);
3. Completion of GED 101 and GED 102 with a grade of *C* or better;
4. Three letters of recommendation from college or university faculty;
5. An ACT score of 18.

Applications must be submitted in person and must be accompanied by verification that all prerequisites have been met. Students are responsible for submitting test scores to the College of Education Student Services at the time of application. Applications received through the mail will not be considered. Application forms, as well as information about the teacher education program, are available from the College of Education Student Services in Wham Education Building, room 135. 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. Transfer students are encouraged to contact the College of Education Student Services at least one semester prior to enrolling at Southern Illinois University at Carbondale.

If a student's application is approved after being reviewed by the chief academic adviser in the College of Education, 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. Criteria for this recommendation are available from the department or the student's adviser. 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, the student must attain a 2.50 grade point average in the major 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.

Collegiate Warning and Dismissal in Teacher Education Program. Students who do not achieve an accumulative 2.25 grade point average in their major in any semester are subject to collegiate warning. Students who are on collegiate warning and do not earn a 2.25 grade point average in courses required by their major in a subsequent semester will be placed in a status of collegiate dismissal. Students registered in other colleges who are in the Teacher Education Program who do not meet this requirement will be dismissed from the Teacher Education Program. A student who has been placed on collegiate dismissal may seek transfer to another program if the student has an overall grade point average at Southern Illinois University at Carbondale of 2.00 and is in good academic standing. Students who are placed on collegiate dismissal and have less than an overall 2.00 for work completed at the University but have not been suspended from the University will be placed in Undergraduate Academic Services.

DEGREE REQUIREMENTS

In addition to general education 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 GEE 201 and two hours of GEE 100-106 or 114. These courses should be selected as a part of the general education requirements.
2. A course in American history and government (GEB 114 and 301 recommended.)
3. The United States and State of Illinois constitution examinations requirement. This requirement for continuing certification in Illinois may be met by taking GEB 114 or 301, or History 300; by taking a course in American history or political science other than GEB 114 or 301 or History 300 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. GEB 202 as a prerequisite for Education 314a,b in the professional education sequence. GEB 202 should be selected as a part of the general education requirements.
5. GED 101 and GED 102, and one additional English course (GEC or English department) with a grade of *C* or better. This requirement is a prerequisite to admission to the Teacher Education Program.

6. GED 152 or 153 is required for state certification.

7. 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 of *C* or better as a prerequisite to admission to the professional semester. Students must receive a grade of *C* or better in Education 401 to receive the institutional recommendation for certification.

Professional Education Sequence	28
Decision Component	
Education 308	3
Education 310	2
Basic Professional Block[1]	
Education 311	2
Education 314a	2
Education 315	3
Education 316	2
Education 317	2
Professional Semester	
Education 401	12

8. Illinois State Teacher Certification Board general education course distributions in: science, mathematics, social science, humanities, health, and physical education. At least one three semester hour course must be taken in non-western or third world cultures in either the humanities or social sciences. Students having questions concerning whether their program meets certification board requirements should discuss their concerns with their academic advisers.

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[1]Includes Education 312 and 400 for Special Education majors.

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 College of Education Student Services, Wham Education Building, Room 135. Upon completion of the application forms by the student, the certification staff will process the forms. When the student's program, including graduation clearance, is completed, the office will mail the completed forms to the student's permanent address for use in applying for certification through the student's future educational service region superintendent.

Applicants for certification must register and pass the Illinois Certification Test for Basic Skills and Illinois Certification Area prior to being granted a certificate. Students are advised to take the Basic Skills Test in their junior year. The Illinois Certification Area Test should be taken prior to graduation.

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 the University.

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 and instruction, and professional education experiences in Chapter 5.

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 and instruction in Chapter 5. 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 and instruction in Chapter 5. Teaching fields for which the standard special certificate is issued include physical education, special education, music, art, and communication disorders and sciences.

Early Childhood Certificate. Students planning to teach at the preschool-primary level in public schools or other settings in Illinois register in the College of Education. The early childhood preschool/primary program is specifically designed to prepare future teachers of pre-kindergarten, kindergarten, and primary age children. For further information concerning the program, see the section of the catalog titled curriculum and instruction in Chapter 5.

College of Engineering

Juh W. Chen, *Dean*

Departments: Civil Engineering and Mechanics; Electrical Engineering; Mechanical Engineering and Energy Processes; Mining Engineering; Technology

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

- Civil Engineering
- Electrical Engineering
- Mechanical Engineering
- Mining Engineering
- Engineering Technology with specializations in electrical engineering technology and mechanical engineering technology.
- Industrial Technology with specializations in manufacturing technology and mining technology (Admission to the mining technology program is temporarily closed.)

All of the engineering programs are fully accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology. The engineering technology program with specializations in civil, electrical and mechanical engineering technology is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology. The industrial technology program is accredited by the National Association of Industrial Technology.

Specific requirements are listed for the various majors in Chapter 5. Six academic programs: civil engineering, electrical engineering, mechanical engineering, mining engineering, engineering technology and industrial technology serve students who have different career goals.

Civil Engineering. The civil engineering program leading to the Bachelor of Science degree is designed to provide the student with the broad educational background essential to modern civil engineering practice. Technical electives in the senior year permit greater breadth and additional depth in such areas as structural and geotechnical engineering, hydraulic engineering, environmental engineering and applied mechanics.

Electrical Engineering. The Department of Electrical Engineering offers courses in the major areas of electrical and computer engineering. Students who choose the electrical engineering major prepare themselves for professional and technical employment or graduate studies leading to advanced degrees. Employment opportunities exist within a wide range of organizations, such as governmental laboratories; consumer goods manufacturers; and telecommunications, electrical power, computer, and microeletronic companies. Flexibility in this major allows students to choose among courses in applications and theory of circuits, systems, communications, digital systems, controls, electronics, instrumentation, electromagnetics, and power systems.

Mechanical Engineering. Mechanical engineering is one of the most broadly based of the traditional engineering disciplines. Mechanical engineers design and develop a wide variety of systems for conversion, transmission, and utilization of energy; for material processing and handling and packaging; for transportation; for environmental control; and for many other purposes for the benefit of humanity. Therefore the curriculum contains a broad foundation in mathematics and the basic and engineering sciences, followed by more concentrated study in energy and machine systems. Mechanical engineers may be found in a variety of assignments including planning and design, research and development, supervision of installation and operation of complex systems, and management.

Mining Engineering. Mining engineers engage in planning, design, development, and management of surface and underground mining operations for exploitation of the earth's mineral deposits. The mining engineering program prepares graduates to meet the challenges of the mining industry. Coursework in the program includes such areas as surface and underground mining systems, mine ventilation, ground control and rock mechanics, mineral coal processing, material handling systems, mineral economics, mine health and safety engineering, operations research, and computer-aided mine design. Facilities include modern, well equipped rock mechanics, mine ventilation and mineral processing laboratories.

After completing the program, the graduate may work in an engineering or management position for mining industries, equipment manufacturing concerns, research organizations, or government agencies. The coursework also provides strong preparation for further study at the graduate level.

Engineering Technology. Engineering technology is that part of the technological field in which engineering knowledge and scientific methods are combined with hands-on technical skills to support engineering activities. It lies in the occupational spectrum between that of the technician and the engineer with specific responsibilities depending upon the nature of the training and requirements of the job but lying more closely to engineering. Graduates are prepared to deal with technical and production problems, and to apply their knowledge to such activities as development, design, construction, maintenance and operational problems.

Industrial Technology. Industrial technology is a management-oriented technical profession that is built upon a sound knowledge and understanding of mate-

rials, processes, technical management, and human relations; and a proficiency level in the physical sciences, mathematics, and technical skills to permit the graduate to capably resolve technical-managerial and production problems. Graduates of this program are prepared for positions in processes, safety, quality control, supervision, robotics, methods analysis, and computer-aided manufacturing.

Admission Policy

The following requirements apply to students seeking admission to civil engineering, electrical engineering, mechanical engineering, and mining engineering. They do not apply to students applying for admission to engineering technology or industrial technology.

FRESHMEN

Beginning freshmen must rank in the top quarter of their high school graduating class and have an ACT standard composite score of 20 to 22 or rank in the top half of their graduating class and have an ACT composite score of 23 or higher. In addition, students must have completed prior to high school graduation the following courses before they will be allowed to enroll in an engineering major: four years of English; three and one-half years of mathematics in which there are two years of algebra, one year of geometry, and one-half year of trigonometry and three years of science of which it is recommended there is one year of chemistry and one year of physics.

Students who do not meet these requirements but do meet the regular University admission requirements will be admitted with a pre-civil engineering, pre-electrical engineering, pre-mechanical engineering and pre-mining engineering classification hereinafter referred to as "pre" classification with the opportunity to transfer to an engineering program once they have satisfied the conditions stated in the section titled "pre" classification. These students may alternatively be admitted directly to one of the technology programs in the college but cannot change their major to engineering until they have satisfied the requirements for transfer students as stated below.

TRANSFER STUDENT

Transfer students including students registered at Southern Illinois University at Carbondale with other majors who have completed fewer than twenty-six semester (thirty-nine quarter) hours must have an overall *C* average and meet the admission requirements of beginning freshmen. Students who have completed twenty-six semester hours or more and have an overall average of 2.40 will also be admitted into an engineering program.

Students who have completed twenty-six to sixty semester hours and have a grade point average between 2.0 and 2.39 will be admitted with a "pre" classification. These students should submit their high school records and ACT scores to the Office of Admissions and Records at the time they apply for admission. Students who have completed twenty-six to sixty semester hours and have a grade point average between 2.0 and 2.39 may be admitted in special cases to an engineering program by one of the engineering departments. Such a student, however, may not transfer to another engineering department without consent of that department.

Students who have earned more than sixty semester hours and have a cumulative grade point average between 2.0 and 2.39 may be referred to the department for approval or they may be admitted to a "pre" classification. If admitted to a "pre" classification the student must complete 26 semester hours of which 12 must be in engineering related courses with at least a 2.40 grade point average. After completion of 26 hours, if the 2.40 average is not reached, the student

may be admitted to an engineering major only with the departmental chairperson's approval.

A transfer student's grade point average is determined by computing all earned grades including repeated courses.

PRE-CLASSIFICATION

Students who have been placed in a "pre" classification because they have not completed the high school courses required for direct admission to an engineering program will be transferred to an engineering program when the high school prerequisite courses have been satisfied by taking courses at the University.

Students admitted with a "pre" classification may be transferred to an engineering program after they have earned at least twenty-six semester hours at the University with a grade point average of 2.40 or greater. In addition, at least twelve of the twenty-six hours must have been earned in engineering or engineering related courses such as chemistry, mathematics, physics or geology courses which are required for graduation from an engineering program at the University.

Students in the "pre" classification who have completed twenty-six to sixty semester hours and have a 2.0 through 2.39 grade point average may, in special cases, be admitted to an engineering program in one of the engineering departments. Such students may not transfer to another engineering department without approval of that department chairperson.

"Pre" classification students who have earned less than a 2.40 average after completing sixty or more semester hours and who cannot be admitted by a department as a special case will be transferred to Pre-Major Advisement or may seek entrance to another collegiate unit provided their overall Southern Illinois University at Carbondale grade point average is 2.0. Students transferred from a "pre" classification may seek readmission to the College of Engineering only after they have attained an overall average of 2.40.

Students who are classified with a "pre" classification cannot register for 300 and 400 level courses offered by any of the engineering departments.

SOUTHERN ILLINOIS UNIVERSITY AT CARBONDALE STUDENT

Students currently enrolled at the University who have not been admitted to an engineering major must meet the requirements described above to transfer into one of the engineering programs.

INTERNATIONAL STUDENT

International students must meet admission requirements comparable to those of native students. While admission credentials such as ACT scores and class rank are not generally submitted by international students, students do submit credentials which reflect their achievements in subject areas such as English, mathematics, and science. Therefore, beginning freshmen and transfer students with less than twenty-six semester hours will be required to submit records which reflect above average achievements in these disciplines in order to be admitted to an engineering program. Transfer students who have earned twenty-six semester hours or more of transfer credit will be required to have a 2.40 or comparable grade point average.

Students who meet minimum University admission requirements but do not meet those requirements for entrance to an engineering program will be granted admission to the college with a "pre" classification and be advised as to an appropriate program during the first year. These students must satisfy the requirements previously described for native students in order to transfer to an engineering major.

Because interest in engineering classes continues to be exceedingly high, it may be necessary to close admission to selected engineering majors without advance notice.

ENGINEERING TECHNOLOGY AND INDUSTRIAL TECHNOLOGY

Admission policies to the engineering technology and industrial technology majors have not changed. However, it is recommended that all students considering entrance to these programs should have completed four years of English, three and one-half years of mathematics in which there are two years of algebra, one year of geometry, and one-half year of trigonometry, and three years of science which includes one year of chemistry and one year of physics.

Readmission to the College

The readmission policy for the College of Engineering is the same as the University policy for a first suspension: "students placed on academic suspension may seek reinstatement after a minimum of two semesters' interruption but must furnish tangible evidence that additional education can be successfully undertaken." Students placed on academic suspension a second or subsequent time may reapply after an interval of no less than two calendar years. For more information on procedures and requirements for readmission, students are advised to consult the Engineering advisement office.

Course Sequence

It is important that required courses in the program be taken in the proper sequence. Sequence guidelines are available from the college advisement office and the departmental offices. Courses on the 300- and 400-levels are reserved for juniors and seniors.

Course Withdrawals

Students who withdraw from a College of Engineering course after the fourth day of the Fall semester will not be permitted to take the course the following Spring semester. Students who withdraw from a College of Engineering course after the fourth day of the Spring semester will not be permitted to take the course the following Fall semester.

Transferred Credits

All transfer credit from an institution whose work is acceptable at the University, both two-year and four-year, will be used in fulfillment of the standards given above. Equivalencies for courses will be determined by the departmental chairperson, advisement office, or office of the dean, College of Engineering.

Students who are attending a public Illinois community college and contemplating application to the College of Engineering should obtain program information which has been prepared for their particular community college.

Qualified candidates for the Capstone Option are accepted with majors in industrial technology. The Capstone Option is described in Chapter 4.

Location

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

Graduate School

John H. Yopp, *Dean*

Southern Illinois University at Carbondale is a comprehensive university with an extensive offering of graduate programs and an equally strong commitment to research.

More than 4,000 graduate students pursue advanced study and research under the leadership and direction of some 1000 graduate faculty members. The Graduate School offers master's degrees through sixty programs, the specialist degree (sixth year) in one area of education, and the doctoral degree through twenty-four programs. The doctoral program in education has concentrations in eight areas.

The highest degrees awarded are the Doctor of Philosophy, the Doctor of Business Administration, and the Doctor of Rehabilitation.

In addition to the Master of Arts and the Master of Science degrees, the master's degrees awarded are Master of Accountancy, Master of Business Administration, Master of Fine Arts, Master of Music, Master of Public Administration, Master of Science in Education, and Master of Social Work.

The Graduate School is fully accredited by the North Central Association of Colleges and Secondary Schools, and specific programs have been accredited by appropriate state and national accrediting associations.

A separate catalog describing admission and graduation requirements for the various programs in the Graduate School may be obtained by writing to the Graduate School, Southern Illinois University at Carbondale, Carbondale, Illinois 62901.

School of Law

Harry J. Haynsworth, IV, *Dean*

The school offers a three-year program leading to the Juris Doctor (J.D.) degree. Candidates must satisfy the entrance requirements, which include a bachelor's degree and a satisfactory score on the LSAT, fulfill the residence requirements, satisfactorily complete a total of 90 semester hours for credit and pass all required courses. Students may, with permission from the School of Law and the relevant graduate program director, obtain joint JD/MBA, JD/MPA and JD/Master of Accountancy degrees. In conjunction with the School of Medicine, the law school also offers a combined JD/MD program. Each year the school admits approximately 120 freshmen.

The School of Law has received accreditation from the American Bar Association and is a member of the Association of American Law Schools. The school occupies a contemporary facility housing classrooms, student lounges, administrative offices and the library, as well as a courtroom and in-house clinic offices. The law library contains more than 270,000 volumes and provides student access to computer assisted research through LEXIS and WESTLAW.

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 are the hallmarks of the legal profession. 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 to the School of Law.

College of Liberal Arts

John S. Jackson, *Dean*

Departments: Administration of Justice; Anthropology; Art and Design; Economics; English; Foreign Languages and Literatures; Geography; History; Linguistics; Music; Philosophy; Political Science; Psychology; Sociology; Speech Communication; Theater.

The College of Liberal Arts offers the following majors leading to the Bachelor of Arts, Bachelor of Fine Arts, Bachelor of Music, and Bachelor of Science degrees. Minors are possible in most of these areas. For exceptions, see Chapter 5.

Administration of Justice
African Studies[1]
Aging Studies[1]
Anthropology
Art
Asian Studies[1]
Black American Studies[1]
Comparative Literature[1]
Community Development[1]
Design
Earth Science[1]
Economics
English
Foreign Language and International Trade
Foreign Languages and Literatures
- Chinese[1]
- Classical Civilization[1]
- Classics
- East Asian Civilizations[1]
- French
- German
- Greek[1]
- Japanese[1]
- Latin[1]
- Russian
- Spanish

Geography
History
Linguistics
Mathematics
Museum Studies[1]
Music
Paralegal Studies for Legal Assistants
Philosophy
Political Science
Psychology
Sociology
Speech Communication
Theater
Uncommon languages[1]
University Studies

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[1]Minor only.

The College of Liberal Arts provides instruction in basic subject matter courses of General Education; majors in twenty-four subject areas; graduate programs for students pursuing master's and Ph.D. degrees; preprofessional curricula for specialized schools such as law and courses offered through the Division of Continuing Education. The Bachelor of Arts, the Bachelor of Fine Arts, the Bachelor of Music, or the 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. Students in the College of Liberal Arts may also prepare directly for teaching at the secondary level by including in their studies certain professional courses offered by the College of Education.

Through the diversified offerings of the College of Liberal Arts, students develop the ability to seek and weigh evidence and to think critically and independently; they gain a fundamental understanding of the ever changing social, political, and physical environment, and a deeper understanding of people, cultures, art, and literature.

ACADEMIC REQUIREMENTS

To receive a degree from the College of Liberal Arts students must fulfill the following:

1. University requirements including those relating to General Education, residency, total hours completed, and grade point average.
2. College of Liberal Arts requirements of one year of a foreign language; one course in English composition in addition to the General Education composition requirement; one approved writing-intensive course designated by the major department as fulfilling the Writing-Across-the-Curriculum requirement. Creative writing courses do not satisfy these requirements. Foreign students whose native language is not English can use Linguistics 290 as a substitute for English 290 to fulfill the College of Liberal Arts requirement for the third composition course in addition to the General Education composition requirement. Foreign students whose native language is not English and who have successfully satisfied the requirement of the Office of Admissions and Records for English language proficiency will have satisfied the College of Liberal Arts foreign language requirement by offering English as their second language. Foreign students who have met the English language proficiency requirement also must offer proof of literacy in their native language by providing a secondary school certificate from their native country.
3. Completion of an approved major in the College of Liberal Arts.
4. At least 40 hours of course work at the 300- or 400- level.

Liberal arts major requirements provide for a large number of elective courses, giving students maximum flexibility in planning their overall program of study at the University. To assist students in planning their programs, the college maintains an academic advisement office in Faner Hall 1229, as well as faculty advisers in each department. Students are urged to consult these academic advisers on how they can best use their electives to fulfill their intellectual interests and to prepare for particular career opportunities. A carefully planned minor or second major field can lead to additional career opportunities for the liberal arts major. 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.

University Studies Degree Program

In the University Studies Program students pursue either a Bachelor of Arts or Bachelor of Science degree through an individually designed, broad-based curriculum rather than a traditional specialization. The program accomodates multidisciplinary and non-traditional approaches to education and to related careers.

To determine eligibility for the University Studies Program as well as to explore specific possibilities, students should consult with the College of Liberal Arts Advisement office in Faner 1229 for further information.

University Honors Program

The University Honors Program is located administratively in the College of Liberal Arts. University Honors is a University-wide undergraduate program designed to offer unique educational experiences to participating students. The program includes special seminars, special sections of certain classes, and independent study. Some special scholarships and internships are available to University Honors Students.

Membership in the University Honors Program is granted to entering freshmen who apply for membership who have an ACT composite score in the 95th percentile or higher. Membership is also granted to other than entering fresh-

men who apply for membership and who have a cumulative grade point average of 3.25.

Members of the University Honors Program are designated as University Honors Students. Retention in the University Honors Program depends upon maintaining a 3.25 cumulative grade point average in all course work and no failing grades in honors courses.

Baccalaureate degrees for University Honors Students are awarded through the regular degree-granting units. Those who successfully complete the University Honors Program graduation option receive recognition on the academic record and on the diploma at the time the degree is recorded.

The Honors graduation option for continuing SIUC students, transfer students without Associate degrees, and entering freshmen is a minimum of 15 semester hours of Honors course work, including a senior Honors thesis or project, approved in advance by the director. The Honors graduation option for transfer students who enter SIUC with an Associate of Arts or an Associate of Science degree (including Capstone students), and two-year degree candidates at SIUC is a minimum of 9 semester hours of Honors course work, including a senior Honors thesis or project, approved in advance by the director. Substitution for this option may be arranged for a student in a major which does not allow curricular flexibility.

University Honors Students may substitute a University Honors seminar in General Education areas A, B, C, and E for their General Education requirements in those specific areas; for example, University Honors 351a for GEA, University Honors 351b for GEB, etc.

University Honors Students may be exempted from all General Education requirements if they (1) pass all five CLEP General Examinations before entering the University with these minimum scores: natural sciences, social sciences, and humanities, 520; English composition with essay, 565; and mathematics, 580; and (2) complete the University Honors Program graduation option. No retroactive extension of the CLEP privilege will be allowed.

Fuller information and application forms are available at the University Honors Program office, Faner Hall 2427.

Pre-Law

The College of Liberal Arts has a pre-law advisory committee to help students plan a useful, interesting curriculum to acquire the skills important for the study of law. This committee is made up of faculty members of various University units who hold law degrees or who have particular expertise in fields important to law and pre-law preparation. The committee sponsors a Pre-Law Night each fall, when opportunities are presented for open discussion of undergraduate curriculum and the law school admission process. These discussions are led by students and faculty of the Southern Illinois University at Carbondale School of Law. A mock Law School Admission Test is given twice a year under regular test conditions.

The pre-law student may choose any major course of study. Among courses especially recommended for pre-law students is Liberal Arts (LAC) 105, Law in American Society, a special interdisciplinary course offered each fall semester. Students who are interested in pre-law may discuss academic programs and plans with pre-law advisers in the Liberal Arts Advisement Office.

College of Mass Communication and Media Arts

Departments: Cinema and Photography; Radio-Television;
Schools: Journalism

The College of Mass Communication and Media Arts offers the Bachelor of Arts degree in the following majors:

Cinema and Photography
Radio-Television

The Bachelor of Science degree is awarded in Journalism .

Additional information about the majors offered in the College of Mass Communication and Media Arts is available in Chapter 5. Admission to the University is handled through the Office of Admissions and Records, but those students who desire more specific information about a major should make an appointment with an academic adviser of that department or school. Each department or school of the college has one or more individuals who will advise prospective students about major requirements, curriculum, activities, careers, and opportunities. Transfer students may also discuss transfer credit and placement in courses at Southern Illinois University at Carbondale.

Faculty of the college are engaged in research/creative activities concerning mass communication and the media arts. They also provide consulting service and other community services to schools, newspapers, radio and television stations, museums, businesses, and governments. They hold professional memberships and serve as officers in various local, state, national, and international organizations in the mass communication and arts media. A number of special events are presented each year, including lectures by noted artists, photography exhibits, and film showings.

The Broadcasting Service is also part of the college. The Broadcasting Service operates WSIU (FM), a public radio station, and WSIU (TV), channel 8, a public television station, both located in Carbondale. It also operates a second public television station, WUSI (TV), channel 16, at Olney.

Administrative offices of the college are located in the Communication Building, which includes the broadcasting facilities, film production facilities, and office of the *Daily Egyptian.*

School of Medicine

Southern Illinois University School of Medicine was established in 1970 after the Illinois General Assembly passed a bill calling for a second state medical school to be established in downstate Illinois. The school graduated an advanced standing class in 1975 and its charter class of all Illinois students in 1976. Currently, 72 students are admitted each year. Today, the school encompasses a complete sequence of medical education beginning with the M.D. degree and progressing through residency training and on to continuing medical education for practicing physicians.

The school's competency-based curriculum has brought the school national attention. Since students are not evaluated in competition with their peers, they are stimulated to cooperate with one another, a situation which more closely resembles what takes place in the actual practice of medicine. Problem-based learning concepts, including active learning situations with paper and simulated patients, are used to help students work toward competency throughout the curriculum. The four-year M.D. degree begins the first year in Carbondale where students concentrate on the basic sciences. The remaining three years are spent in Springfield where students study clinical medicine along with medical humanities and non-clinical electives.

The instructional program in Carbondale is based in Lindegren Hall and Memorial Hospital. In Springfield, it is based in the Medical Instructional Facility, Memorial Medical Center, and St. John's Hospital.

The school's Medical Education Preparatory Program (MEDPREP) in Carbondale is designed to assist minority and other students with educationally disadvantaged backgrounds to prepare for success in medical and dental schools. The school has one of the highest percentages of minority students enrolled of any Illinois medical school.

The University residency programs include family practice, internal medicine, medicine/pediatrics combined, neurology, pediatric neurology, obstetrics and gynecology, pediatrics, psychiatry, radiology and five surgical specialties. There are ten fellowships for advanced clinical work.

The school's continuing medical education program provides and accredits an extensive schedule of conferences and symposia for physicians and other health care professionals in central and southern Illinois. Springfield is the location for about three-fourths of the programs; the rest are coordinated through Regional Health Education Centers located throughout the lower half of the state and the school's Family Practice Centers.

The faculty in Carbondale's four basic science departments as well as Springfield's two medical sciences departments divide their time between teaching responsibilities and independent and collaborative research projects and regional support services. Both clinical investigators and the basic scientists collaborate on a wide-range of medical and scientific projects; they work in the various basic science laboratories on both campuses and in the clinical facilities located in the affiliated hospitals in Springfield. The faculty's commitment to research is further characterized by the offering of graduate programs leading to master's and doctoral degrees in physiology, in pharmacology and in medical microbiology and immunology.

Interfaced with all of its various educational and research programs is the provision of patient care through the various clinical departments and specialized clinics of the school and the practice of its physician faculty.

Although preference is given to applicants from central and southern Illinois intending to practice medicine in the state, up to ten percent of the places available may be offered to out-of-state applicants who apply through the early decision program. Inquiries regarding admissions and requests for a School of Medicine catalog should be addressed to the associate dean for students/admissions, Southern Illinois University School of Medicine, P.O. Box 19230, Springfield, Illinois 62794-9230.

College of Science

Departments: Chemistry and Biochemistry; Computer Science; Geology; Mathematics; Microbiology; Physics; Plant Biology; 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
Chemistry
Computer Science
Geology
Mathematics
Microbiology
Physics
Physiology
Plant Biology
Zoology

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 Education 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 Education courses, but may be substituted for the latter in meeting the General Education 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*.

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 the University. If the language is presently taught at Southern Illinois University, academic credit may be earned. If the language is not presently taught at the University, 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 the University 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 108 and 109 or 111 or its equivalent or Mathematics 140 or 141 or (b) by proficiency credit.

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 Education courses, but may be substituted for the latter in meeting the General Education 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, medicine, optometry,

physical therapy, podiatry or pharmacy. Students pursuing a career in veterinary science should register in the College of Science or the College of Agriculture. Students planning a double major need register only in the College in which they will earn a degree. Preprofessional students should refer to the baccalaureate section in this chapter.

School of Social Work

Mary E. Davidson, *Director*

The undergraduate social work program offers a professional social work curriculum designed to prepare students for beginning social work practice. The program focuses on direct services and leads to a Bachelor of Science degree with a major in social work.

Social work offers stimulating and challenging career opportunities that are expected to increase into the next century; this reflects public and private response to the social service needs of a growing and aging population and to stresses caused by social change. Social workers hold jobs in state or local government agencies, children and family services, mental health, medical care, housing, education and corrections. Those in the private sector work primarily for voluntary nonprofit agencies, community and religious organizations, hospitals, nursing homes and health agencies. The social work profession is committed to maximizing opportunities for minority and disadvantaged populations and this commitment is reflected throughout the social work program.

The undergraduate curriculum provides an interdisciplinary approach (grounded in the liberal arts) to understanding the relationship of people with their social and community environments. The practice courses provide basic social work skills for prevention and treatment of a variety of human problems. Course content integrates human behavior with the social environment and focuses on ethnic and minority issues, service delivery issues in rural areas, and the effects of discrimination and poverty on populations-at-risk. Experimental learning (simulations, role playing, volunteer experience) is an integral part of the curriculum.

A unique aspect of social work education is an intensive field practicum. The practicum will guide students from the classroom into the settings and situations they will encounter as professionals. During the practicum, which will occupy one semester fulltime, students will work in an approved agency chosen from among private or public agencies in settings such as mental health and developmental disabilities, child welfare, public health, hospitals, corrections, youth services, group services, crisis intervention, and social planning. Agencies may be located in rural areas, small towns, or cities, and their clients may be infants, children, adolescents, adults or the aged. During the practicum students will participate in a required seminar in which they will discuss their work, share their experiences, examine issues of ethics and professionalism, and develop intervention strategies. The remainder of time in the social work program can be devoted to a minor in a related field or to courses selected to meet individual interests or career goals.

Accreditation. The undergraduate Social Work Program is fully accredited by the Council of Social Work Education, the nationally recognized accrediting agency for social work. Graduation from an accredited program gives students an advantage both in the job market and in pursuit of graduate education. Many graduate programs in social work will give advanced standing to students who have completed an accredited bachelor's degree in social work. For requirements for the graduate degree in social work, see the Graduate Catalog.

Admission. Effective Summer 1992, the School of Social Work implemented a new admission policy. This policy applies to all new and currently enrolled students at Southern Illinois University at Carbondale.

Beginning freshmen who qualify for admission to the School of Social Work are granted admission with a pre-social work classification. Freshmen are advised by a social work academic adviser for the purpose of completing the courses required to become a social work major. To be considered a social work major, students must complete 56 semester hours with an overall grade point average of 2.25 (4.0 scale). In addition, students must complete satisfactorily the following general education courses: GEA 115, GEB 108, 114, 202 and 211. Students must also achieve a grade of *C* or higher in social work courses 375 and 383.

Transfer students who have completed fewer than 26 semester hours must meet the admission requirements of beginning freshmen as well as have a collegiate grade point average of 2.0 (4.0 scale) to be granted admission with a pre-social work classification. Students who have completed more than 26 semester hours must have a grade point average of 2.0 to be admitted as a pre-social work major. Students will be considered for the social work major when they have completed 56 semester hours and earned an overall grade point average of 2.25; completed the following general education courses or their equivalents: GEA 115, GEB 108, 114, 202 and 211; and completed social work courses 375 and 383 with a grade of *C* or higher. Social Work 375 and 383 may not be repeated for eligibility to the social work major.

Students who are currently enrolled or previously attended SIUC in a major other than social work may request admission to the School of Social Work as a pre-social work major provided they have an overall grade point average of 2.0. To be considered for admission as a social work major, re-entering and currently enrolled students must have completed 56 semester hours with a grade point average of 2.25; completed social work courses 375 and 383 with a grade of *C* or higher; and completed the following general education courses or their equivalents: GEA 115, GEB 108, 114, 202 and 211.

The grade point average required for admission to the School of Social Work is calculated by using all grades earned at SIUC and other collegiate institutions. This includes repeated courses.

Student Advisement. Students in social work have access both to the School's Office of Student Services and to a faculty adviser. Help is offered in course selection and registration, in long range planning for the degree program and career information. Students are encouraged to meet with their adviser on a regular basis.

Requirements for the Degree. The program leads to the Bachelor of Science degree with a major in social work. In addition to 49 semester hours of general education requirements, majors must also complete a minimum of 54 hours of undergraduate social work courses. Students are also required to take 17 semester hours of general electives for a total of 120 semester hours.

Class Availability for Non-Social Work Students. Non-social work students may register for the following social work courses: 375, 383, 391, 400a, 400b, 411, 421, 450, 461, 463 and 466.

Retention Policy. Students admitted to the School of Social Work will be required to fulfill the School's scholastic standards (e.g. maintain a 2.25 GPA for all work taken at this University). In addition, social work majors must maintain at least a 2.5 GPA in the core social work curriculum (see Chapter 5.) No more than

three core courses may be retaken. Students who fail to meet these retention requirements will be dismissed from the School of Social Work.

College of Technical Careers

Elaine M. Vitello, *Dean*

The College of Technical Careers offers technically-oriented academic programs which can lead to the Associate in Applied Science and Bachelor of Science degrees.

Departments in the College of Technical Careers are:

Applied Arts
Applied Technologies
Aviation Management and Flight
Aviation Technologies
Health Care Professions
Information Management Systems
Technical and Resource Management

The educational offerings of the college include:

1. Associate degree programs structured for entry of beginning students, transfer students from other institutions, or transfer students from other units within SIUC;
2. Post- or extra-associate offerings in occupational areas related to the associate degree programs; and
3. Baccalaureate of Science programs for students with career goals in selected technical/professional areas.

The College of Technical Careers offers majors leading to the Associate in Applied Science degrees in the following programs:

Allied Health Career Specialties
Architectural Technology
Automotive Technology
Aviation Flight
Aviation Maintenance Technology
Avionics Technology
Commercial Graphics — Design
Computer Information Processing
Construction Technology
Dental Hygiene
Dental Technology
Electronics Technology
Law Enforcement
Mortuary Science and Funeral Service
Office Systems and Specialties
Photographic Production Technology
Physical Therapist Assistant
Radiologic Technology
Respiratory Therapy
Tool and Manufacturing Technology

Requirements for Associate in Applied Science degrees as well as additional information for each of these majors can be found in program listings in Chapter 5. Several of these majors offer third-year post-associate specializations to provide students who possess associate degrees with additional competencies.

The College of Technical Careers offers Bachelor of Science degree programs designed to provide technically-oriented programs of study comprised of: a core curriculum; program major requirements; approved major and technical electives; and SIUC's general education requirements. Students may select one of the on-campus programs including:

Advanced Technical Studies
Aviation Management
Consumer Economics and Family Management
Electronics Management
Health Care Management
Interior Design

Programs offered in a variety of off-campus locations include:

Aviation Management
Electronics Management
Fire Science Management
Health Care Management

Persons interested in off-campus programs should contact the Office of Off-Campus Academic Programs.

Students with educational and/or occupational backgrounds or with career objectives in the fields of aviation, electronics, fire science, health care, or interior design are encouraged to apply for admission to these career-specific programs. Students also may choose to apply for admission to the Advanced Technical Studies which is designed especially for technically-oriented students seeking career enhancement where no specific Bachelor of Science degree is available. Admission to the Bachelor of Science degree program in Advanced Technical Studies does not imply admission to any College of Technical Careers' associate degree program. Requirements for Bachelor of Science degree programs as well as additional information for each of these majors can be found in the program listings in Chapter 5.

Students eligible for admission to the Bachelor of Science programs must have earned a minimum of 26 semester hours of recognized postsecondary credit or equivalent determined by the academic unit or with the consent of the department. Eligible students must have a cumulative SIUC grade point average (gpa) of 2.00 or better on a 4.00 scale. Transfer students admitted to SIUC in good standing are also eligible for admission to these programs. A minimum of 30 semester hours in the core and major courses *must* be taken at SIUC, with at least 24 of these hours to be taken *after* admission to a program. Students must complete all course work in the program core and major requirements as well as the elective areas with a gpa of 2.00 or better to qualify for completion. Additionally, students must fulfill all SIUC requirements including general education requirements, total hour requirements, residence requirements, and gpa requirements to qualify for completion.

The Capstone Option is an alternative to completion of the University general education requirements and is available to qualified students. Students eligible for the Capstone Option are able to complete their bachelor's degree in 60 additional semester hours as approved by a faculty advisor. To make an application to the Capstone Option, the student must have a 60-hour Associate of Science degree, or its equivalent from an occupational or technical training program; a 2.25 or higher gpa on all accredited work prior to the associate degree; and send an application for the Capstone Option by no later than the student's first semester in a participating Capstone major. The student may not have more than 12 hours of course work from the chosen baccalaureate major prior to application. More information about the Capstone Option can be found in Chapter 4.

Provision is made for recognizing various forms of previous educational, military, and occupational experience. This credit is awarded via program/departmental evaluation. Also, cooperative education experience, as well as internship and independent study opportunities, are available.

Additional information on the college of Technical Careers and its programs and course offerings is available through the Office of Enrollment Services, College of Technical Careers, Southern Illinois University at Carbondale, Carbondale, Illinois 62901.

Other Academic Activities

Pre-Major Advisement Center

The Pre-Major Advisement Center is the academic home of students who have not yet declared a major. The advisors have a wide knowledge of the many programs offered by the University and are ready to help students select a suitable area of specialization. Advisers are available for academic advisement and aca-

demic review by appointment throughout each semester. There is also an adviser available at selected times each day for problem solving on a drop-in basis. The Pre-Major Advisement Center is located in Woody Hall, Wing C-117. Call 453-4351 for more information.

Center for Basic Skills

The Center for Basic Skills offers special academic assistance for a select group of entering freshmen through laboratory instruction, small group sessions, workshops, seminars, and tutorials in study/learning skills, speech communication, selected General Education courses, and personal and career counseling and guidance. For additional information, contact the director of the Center for Basic Skills.

Upward Bound

This is a pre-collegiate support program which identifies and recruits ninth to twelfth grade students in specific areas of southern Illinois who have the potential for serious academic work. The program provides developmental, personal, and academic opportunities for underprivileged students who might not otherwise see themselves as future college students. Persons interested should direct inquiries to the director, Upward Bound.

Southern Illinois Regional Career Preparation Program

The Southern Illinois Regional Career Preparation Program is a Higher Education Cooperation Act program funded by the Illinois Board of Higher Education and sponsored by Southern Illinois University at Carbondale with John A. Logan and Shawnee colleges. The program is designed to increase motivation, to provide academic enrichment, to encourage career exploration and continued enrollment in school for promising southern Illinois minority students who are 5th, 6th, 7th, 8th, or 9th graders. Instruction in critical thinking, computer science, mathematics, and career development is provided in the academic year and summer programs. Parents are given information about financial aid and specific guidance in assisting their children in academic and career pursuits. For additional information contact the project director.

Library Affairs

Morris Library, named after the late Delyte W. Morris, University president from 1948 to 1970, features LINKS, a remotely accessible information network providing entry to library catalogs, abstract and index services, full-text databases, and local and national technological resources. The Library contains over two million volumes, some 13,000 current periodicals and serials, and two and a half million microforms. Collections of government documents, maps, films, and sound recordings are prominent as well. With the exception of materials in Special Collections, most items are arranged on open shelves and are available for browsing.

The on-line bibliographic search services provide access to over 800 Illinois libraries through Illinois Online (IO) plus numerous academic libraries nationwide. CD-ROM (compact disk) stations located throughout the Library provide access to recent information in thousands of periodical titles as well as abstracts and indexes for many specialized areas of study. Many of these resources can be accessed from personal computers in dormitories, offices, and homes by direct connection with the University computer network or via modem. Illinois Online also provides an on-line circulation system to participating libraries and supports computerized interlibrary loan activity, promoting and enhancing resource sharing on a statewide basis.

Morris Library houses four subject divisions in Humanities, Social Studies, Education and Psychology, and Science; Special Collections; a combined Reserved Reading and Self-Instruction Center; and an Undergraduate library.

The Undergraduate library, located on the first floor, maintains a core collection of volumes that are considered basic to the undergraduate curriculum. The combined reserved-reading and self-instruction services are located within the Undergraduate library, as well. Course-related materials in various media are made available to all class participants for limited-time usage. The central circulation desk, a part of Access Services, where all books are checked out, also is on the first floor. Books recalled from the Library's off-site storage facility are picked up at the circulation desk. The Browsing room, containing recent books of a popular nature to provide recreational and avocational reading, also is found on the first floor.

Special Collections, on the second floor of Morris Library, maintains the rare books and manuscript collections, and the University archives. It contains important research collections in American Philosophy, First Amendment Freedoms, American and British expatriate literature, the Irish literay renaissance, proletariat theater, and the history of southern Illinois. Special Collections has numerous interesting exhibits of materials from its collections.

The Humanities division, which includes sound recordings and a listening area, also is on the second floor. The Social Studies division is on the third, and it includes Government Documents. The Social Studies division contains special computer equipment capable of combining statistical, governmental, and geographical data.

The Education and Psychology division is on the fourth floor. It also includes a center for Curriculum materials. The Science division on the fifth and sixth floors also houses an extensive map collection.

The Ulysses S. Grant Association, which is another unit of Library Affairs, collects, edits, and publishes the entire correspondence of President Grant. It has its editorial office on the third floor of Morris Library.

The Library faculty and staff recognize the complexity involved in using a research library and are eager to help students, faculty, staff and others in satisfying their research needs. Seminars and tutorials and printed handouts for bibliographic instruction, library use, and information retrieval are provided on a continuing basis by Library faculty and staff. Reference librarians in the Undergraduate library and each of the subject divisions are available to help researchers with their search strategies and to acquaint them with the ever-expanding range of electronic finding aids.

Division of Continuing Education

The Division of Continuing Education extends the University's educational mission beyond regular course offerings and campus boundaries. The division's off-campus credit programs, the Evening/Weekend Program, credit free classes, workshops and conferences, the Individualized Learning program, and the contractual services program offer the University's resources to a variety of groups and individuals both on and off campus.

Off-Campus Credit. Off-Campus credit programs are designed to meet the educational needs of adults wishing to pursue a degree but who are unable to travel to the Carbondale campus. Faculty teaching off-campus courses are approved by the appropriate department. Graduate courses in agriculture, education, and rehabilitation administration, as well as a variety of upper division undergraduate courses are offered at various locations throughout Illinois. An undergraduate degree program in University Studies is available to students at selected, off-campus sites.

Evening and Weekend Program. The Evening and Weekend Program provides individuals within commuting distance of the campus the opportunity to take up to 26 undergraduate hours of college work on a special admission basis. Tuition is the same as for all other undergraduate courses, but students in the program pay reduced fees.

Individuals who possess a high school diploma or GED certificate and who have not been academically suspended from Southern Illinois University at Carbondale or any other institution of higher education during the twelve months prior to application for the Evening and Weekend Program are eligible for admission. Students may take course loads not to exceed eight semester hours during fall and spring semesters and up to five hours during summer session. Registration may be completed by telephone and mail.

Individualized Learning. Individuals who cannot attend classes at scheduled times may wish to enroll in an individualized learning course. Such courses are designed to be completed by the students at their own pace and time and, in many instances, in their own home. All courses in the Individualized Learning program are developed by University faculty and approved for academic credit.

Contractual Services. The contractual services office provides specialized educational services to groups, organizations, governmental agencies, and businesses on a cost-recovery basis. These services are provided regionally, nationally, and internationally.

Credit-Free Activities. Conferences, workshops, seminars, and symposia in virtually every field of study are conducted either on or off campus. The division assists with all aspects of program development and implementation, including identification of the clients, design of the program, selection of the facility and final evaluation and reports. Major emphasis is placed upon utilizing the campus for annual national conferences and conventions of professional and specialized organizations.

The Professional Development Series features instruction by University faculty, as well as carefully selected specialists from business, industry, and other professions. A spectrum of educational offerings provides an opportunity to enhance one's personal and professional development. Continuing Education Units (CEUs) are available for many of these offerings and other learning experiences provided by the division.

An award winning Community Listener's Permit Program opens classrooms of SIUC to the people of Southern Illinois. It is a special program that provides people of all ages and walks of life the opportunity to access the college classrooms without enrolling for credit. For a modest fee and the permission of the instructors, participants can sample subjects that interest them the most from "art history" to "zoology".

Military Programs

The Office of Military Programs is the central administrative unit for the University's various programs for military personnel. Currently, baccalaureate programs are offered through the College of Education, the College of Technical Careers, and the College of Engineering. 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 section on the Financial Aid Office in Chapter 1, to the Capstone Option in Chapter 4, and credit granted for military experiences in Chapter 2. Additional information on the academic unit descriptions and majors may also be found in this chapter and Chapter 5. Students interested in admission should

consult the Southern Illinois University at Carbondale base representative on the appropriate military base.

Aerospace Studies — Air Force ROTC

Aerospace Studies offers two-year and four-year programs 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 for which cadets are competitively selected. Students in the four-year program attend a four-week field training course in the summer between their sophomore and junior year. Students can qualify to enter the two-year program at the POC level by attending a six-week field training course during the preceding summer. Cadets must complete a course in mathematical reasoning during Air Force ROTC membership.

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, understanding, 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. Students contracted into the POC and federal scholarship recipients receive a $100 per month subsistence allowance during the school year.

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 scholarships and State of Illinois (Senate Bill 381) tuition waivers are available on a competitive basis. Federal scholarship recipients must agree to successfully complete at least two semesters of instruction in a major Indo-European or Asian language or equivalent prior to commissioning.

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 all undergraduates. Angel Flight assists with community and campus service-oriented projects. The Saluki AFROTC Drill Team is open to selected AFROTC cadets on a competitive basis. Members participate in local community events and in selected drill competition meets throughout the region.

Further information may be obtained from the Department of Aerospace Studies, 807 South University Avenue, 453-2481.

Army Military Science — Army ROTC

The senior Army Military Science program offers a progressive adventure-filled two-year and four-year program, designed to teach students the leadership and management skills needed to pursue an exciting career in the United States Army. The student who successfully completes the program will normally receive a commission either in the Regular Army, the Army Reserves, or the Army National Guard. Students may request and be guaranteed reserve forces duty, which allows the student to pursue parallel dual careers in the reserve components of the Army and civilian economy. The four-year program is divided into the basic course, covering freshman and sophomore years, and the advanced course covering the junior and senior years. Students qualify for direct entry into the advanced course level (two-year program), by completing a six-week basic leadership course during the summer at Fort Knox, Kentucky.

Veterans, National Guardsmen, Army Reserve personnel, students who have completed the basic course, and students who have completed three or more years of junior ROTC may also qualify for entry into the ROTC advanced course.

The basic course prepares students for the advanced course and provides them with an education in national defense, basic leadership, and management skills. The advanced course is designed to provide training and instruction encompassing a wide range of subjects from organizational and managerial leadership, ethics and professionalism, and military justice, to the United States military history. The understandings and experiences derived from these courses and adventure training exercises are required to enable a student to grow into an effective junior officer in the U.S. Army.

The student additionally learns about the wide range of Army career specialties available and has the opportunity to request duty in those fields where qualified. Those students currently in the Guard or Army Reserves may continue to participate in their Guard/Reserve unit and pursue a commission through the Army's Simultaneous Membership Program. Those students who qualify and are contracted for the advanced ROTC program will receive $100 per month subsistence allowance during the school year.

Freshman and sophomore students enrolled in the four-year program are eligible to compete for Army Military Science scholarships for three years. These scholarships pay full tuition, fees, books, and a $100 per month subsistence allowance. Illinois residents, who are enrolled in ROTC, can compete for state Army ROTC scholarships, which pay tuition and other selected fees.

In addition to courses offered for academic credit, the Department of Army Military Science sponsors extracurricular activities. The Ranger Company, Pershing Rifles Drill and Color Guard Teams, and AUSA Company are open to all ROTC students. Adventure training takes shape in the form of rappelling clinics conducted at Giant City State Park, field training exercises, survival training conducted at Touch of Nature Environmental Center, Shawnee National Forest, and Civil War Battlefield terrain walks. The department also sponsors numerous formal social functions throughout the year.

Further information may be obtained from the Department of Army Military Science, telephone (Area Code 618) 453-5786.

Southern Illinois University at Carbondale in Niigata, Japan

In May, 1988, Southern Illinois University at Carbondale initiated an Off-Campus Academic Program in Nakajo, Niigata, Japan, underwritten and in cooperation with the Municipality of Nakajo. The program offers one year of intensive English and two years of pre-major general education classes to Japanese and other students from the Pacific Rim. The courses are taught by SIUC faculty or by faculty approved by SIUC's respective academic departments. It is expected that students will transfer to SIUC or other U.S. universities at the junior level. Transcripts and credits for the students are generated by SIUC.

A semester or academic year of study abroad in Nakajo, Japan emphasizing Japanese language, culture, and intercultural competence is offered to SIUC and other U.S. students in conjunction with this program. See the following "Opportunities for Study Abroad" for details.

Opportunities for Study Abroad

International Programs and Services serves as an information, advising and referral center for study, work and travel abroad in addition to administering university study abroad programs and exchanges. Additional information for all programs may be obtained from the Study Abroad Programs division, International Programs and Services, 803 South Oakland Street.

1. The University sponsors a number of group programs which include the following:

International Studies in Austria. One or two semesters of study in German, Austrian life and culture, political science, business, fine arts and communications at the SIUC program in Bregenz, Austria. All courses, except German, are taught in English and will vary from term to term. Bregenz is located on Lake Constance near the border with Germany and Switzerland. No prior German is required although it is recommended.

International Studies in Japan. One or two semesters of study in Japanese language, culture and society are offered at the University's off-campus program in Nakajo, Japan. This program features the opportunity to live with Japanese students and to interact with members of the local community. In addition to Japanese studies courses, students will have the opportunity to take regular general education and departmental courses offered in Japan.

Year Abroad in Austria. Two semesters are offered in Vienna at the Wirtschaftsuniversitalt (University of Economics) and other institutions. All courses are taught in German and require the student to have completed five semesters of college-level German or equivalent with a 3.0 grade point average. Students may earn 30 to 34 semester hours of undergraduate credit in German language, literature, and civilization and in certain other areas with prior approval. Additional information may be obtained from the Department of Foreign Languages and Literatures.

International Student Exchange Program. This exchange program is multilateral and involves one-year placements at 100 study sites worldwide. It is a one-for-one exchange plan under which students pay their normal tuition and fees, including room and board, and apply credit earned toward their degrees. There are study sites in Africa, Asia, Australia, the British Isles, Canada, Europe, and Latin America. Applicants must be mature, have a minimum grade point average of 3.25, and possess the appropriate foreign language skills. Acceptance into the program is considered an honor bestowed in lieu of a scholarship. Most forms of financial aid can be used for this program.

Travel / Study Program. Travel/Study courses are offered during intersessions as well as during the summer months. Students must register four to six months prior to the start of the course and may earn graduate or undergraduate credit depending upon the nature of the course. Approximately ten offerings are available during each academic year, ranging in length from one week to two months. Courses are taught by full-time faculty of Southern Illinois University and most do not require a specialized foreign language background.

Partnership for Service-Learning. Service-Learning programs unite academic study and community service, so that the service makes the study immediately relevant, and the study relates to and supports the service. The Partnership offers programs in Jamaica, England, Ecuador, the Phillipines, France, Mexico, India, Liberia and South Dakota (Native Americans).Programs are offered for a summer, semester or academic year. Sophomore status or above is recommended. Most of the programs are taught in English except for Ecuador and France. The program is rigorous, demanding the ability to fulfill the commitment to the service and the academic requirements. Service-Learning programs are strongly recommended for students considering the Peace Corps or other long-term volunteer experiences after graduation.

Council on International Educational Exchange. The University participates in various study abroad consortia sponsored through the Council on International Educational Exchange. These include language and culture programs in Brazil, China, the Dominican Republic, France, Indonesia, Spain, and the U.S.S.R.; Business and Society programs in China, Japan and Spain; the Summer Tropical Biology Program in Costa Rico; the Paris Internship and

Study program; the Paris Center for Critical Studies; and Cooperative East European Studies Programs in Hungary and Poland.

2. The University sponsors a number of exchange programs with institutions of higher education in other countries. These include the following:

Australia: Curtin University of Technology, Perth (International Programs and Services).

China: Liaoning University, Shenyang; Northeast Normal University, Changchun.

France: University of Caen (Foreign Languages and Literatures).

Germany: University of Hamburg, Hamburg (Foreign Languages and Literatures); University of Mainz, (English/Foreign Languages and Literatures), University of Regensburg, Regensburg (English).

Great Britain: Victoria University of Manchester (International Programs and Services); West Surrey College of Art and Design, Surrey (School of Art and Design).

Japan: Kansai University of Foreign Studies, Hirakata; Meiji University, Tokyo (International Programs and Services).

Switzerland: Dolmetscherschule, Zurich Interpreters School, Zurich (Foreign Languages and Literature).

West Bank: An-Najah National University, Nablus, West Bank via Israel (International Programs and Services).

Information concerning eligibility, requirements, program offerings, and application deadlines may be obtained from the International Programs and Services or the department listed.

3. The University provides the opportunity for a student to arrange travel and study abroad on an independent basis. Credit might be earned through (a) a department's independent study courses such as readings, individual research, practicum or related types of courses with prior departmental approval; or (b) a department or college's travel/study course where offered.

4. Southern Illinois University at Carbondale may also grant credit for programs not sponsored by the University. A student may enroll in a study/travel program conducted by a regionally accredited United States institution and transfer the credit to this university. Credits earned in this manner will be evaluated as electives unless a department, program, or the Office of Admissions and Records approved the courses in advance to apply toward specific requirements. Additional information may be obtained from International Programs and Services.

A student may enroll in either a foreign institution or an independent location of a foreign institution. It is important that the student check with the Office of Admissions and Records before registering since many foreign institutions are not accredited. Graduate students should check with the Graduate School. Credits earned in this manner will count as electives only unless a department or program approves them to apply toward specific requirements.

Internships in Washington

Eligible students from Southern Illinois University at Carbondale can combine a work and learning experience for credit through the Washington Center. Participants can intern in congressional offices, executive agencies, and with groups in many other areas such as the environment, consumer affairs, journalism, communications, legal affairs, labor relations, health policy, arts, education, science, public relations, urban affairs, and women's issues. Interns also attend seminars taught by representatives of major governmental agencies, interest groups, and corporations.

The Washington Center internships at the University are coordinated through the office of the University Honors Program.

4 General Education and Courses

General Education Goals

AREA A: OUR PHYSICAL AND BIOLOGICAL INHERITANCE

To understand the general principles of phenomena in a physical and biological environment and to recognize the implications.
To apply standards of scientific rationality to societal problems.

AREA B: OUR SOCIAL INHERITANCE AND SOCIAL RESPONSIBILITIES

To develop, for understanding of personal and civic life, a grasp and skillful assessment of alternative ethical and aesthetic principles.
To understand the nature and limitations of social science methods and theories about individuals and society.
To gain a historical and contemporary understanding of social, economic, and political problems of the community, state, nation and world.

AREA C: OUR INSIGHTS AND APPRECIATIONS

To foster a basis for understanding and enjoying literature, art, music, and cultural acts as forms of expression and to participate in some creative experience.
To acquire and use the skills and habits involved in logical, critical, imaginative, and constructive thinking.

AREA D: ORGANIZATION AND COMMUNICATION OF IDEAS

To understand the ideas of others and to express one's own effectively in both written and spoken language.
To develop a facility for understanding quantitative processes.

AREA E: HUMAN HEALTH AND WELL BEING

To understand the essential relationship between mental health, good nutrition, and physical exercise.

General Education Requirements

The University believes in a strong, well-rounded general education which includes a common core of knowledge. It has, therefore, established General Education course requirements which serve as the general education requirements for all baccalaureate degrees. The University also recognizes that not all students have the same interests or goals so the General Education requirements provide for flexibility in making course selections to fulfill requirements.

General Education Requirements 46

Area A: Our Physical Environment and Biological Inheritance 9

Core: Select one 3-hour course from each of the following two groupings:

1. GEA 101 or GEA 106 or GEA 110
2. GEA 115 or GEA 117 or GEA 118

Elective: One additional course selected from any other courses offered in GEA other than the above.

Area B: Our Social Inheritance and Social Responsibilities 9

Core: Select one 3-hour course from two of the following three groupings:

1. GEB 103 or GEB 104 or GEB 105
2. GEB 114 or GEB 211

3. GEB 108 or GEB 202

Elective: One additional course selected from any other courses offered in GEB other than the above.

Area C: Our Insights and Appreciations 9

Core: Select one 3-hour course from two of the following three groupings:

1. GEC 100 or GEC 101
2. GEC 102 or GEC 208
3. GEC 122 or GEC 330

Elective: One additional course selected from any other courses offered in GEC other than the above.

Additional coursework from areas A, B, or C 3

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 with the required distributions. The remaining three semester hours may be selected from any other coursework offered in areas A, B, or C or from a course on the approved substitution list. The substituted course cannot be for a General Education course that has already been counted in General Education.

Area D: Organization and Communication of Ideas 12

Composition: GED 101 and GED 102 6

GED 101 must be completed with a grade of *C* or better. GED 120, if completed with a grade of *C* or better,will also complete the composition requirement.

Speech: GED 152 or GED 153 3

Mathematics: Math 110 or 113 or an approved substitute 3

Area E: Human Health and Well Being ..... 4[1]

Health: GEE 107 or GEE 201 or GEE 236 2

Physical Activity: Two hours selected from physical education activity courses offered in GEE 2

Total 46

[1]Physical Education Requirement exceptions: 1) the student who has served one year or more in active military service and is eligible for military benefits may request physical education activity and health credit through the Office of Admissions and Records; 2) a student who has completed basic training in military service may request physical activity credit through the Office of Admissions and Records; 3) a student who is at least 30 years old will automatically receive a waiver of the 2 hours of physical activity requirements. Students in teacher certification programs must still meet the requirements of their specific programs.

Some programs and upper division academic units require specific General Education courses. A student may determine these requirements by referring to program descriptions in Chapter 5.

MEETING GENERAL EDUCATION 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 Education courses with a satisfactory grade;
2. Proficiency credit by examination for General Education courses or approved substitute courses. Substitutions for General Education courses are limited to 15 hours.

3. Proficiency credit via General Examinations of the College Level Examination Program or Advanced Placement Examinations of the College Board (See Program Flexibility in Chapter 2);
4. Transfer credit for courses evaluated as equivalent to General Education courses or approved substitute courses; and
5. Completion of departmental courses listed as substitutions for General Education courses. (See List of Approved Substitutions below.)

General Education 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 Education courses.

Beginning students are not restricted to enrolling in only General Education 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 department courses which have been approved as substitutions for General Education 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 Education course.

GENERAL EDUCATION COURSE	APPROVED SUBSTITUTES
GEA 101-3	One of: Physics 203, 205, or 3 semester hours of technical physics.
GEA 106-3	One of: Chemistry 115, 140, 222, or 4 semester hours of technical chemistry
GEA 110-3	Geology 220
GEA 115-3	One of: Biology 306, 308, 309 or Physiology 209
GEA 117-3	Plant Biology 200
GEA 118-4	Zoology 220a or 220b
GEA 202-3	Physics 203b or 205b or three semester hours of a second technical physics.
GEA 240-3	Biology 307
GEA 330-3	Military credit for meteorology
GEA unassigned-3, 6, 9	Three, six, or nine semester hours from University Honors 251a and/or 351a
GEB 103-3	Geography 300
GEB 211-3	One of: Agribusiness Economics 204; Economics 214, 215
GEB unassigned-3, 6, 9	Three, six, or nine semester hours from University Honors 251b and/or 351b
GEC 100-3	Music 101, or 3 hours of 102, 013, 014, 017, 020, 021, 022
GEC 101-3	Art and Design 100
GEC 204-3	Art and Design 207
GEC-Elective Area	A student with a full year or its equivalent of study in a single foreign language may substitute up to four semester hours in General Education Area C.
GEC unassigned-3, 6, 9	Three, six, or nine semester hours from University Honors 251c and/or 351c
GEA/B/C unassigned-3	Three semester hours for University Honors 251a/b/c or 351a/b/c
GED 101-3	Linguistics 101
GED 102-3	Linguistics 105

GENERAL EDUCATION COURSE	APPROVED SUBSTITUTES
GED MATH-3	Any higher level Mathematics numbered 108 and above with the exception of Mathematics 114.
GEE 101-114-1 to 2	Two semester hours from: Physical Education 115, 116, 117, 120, 170
GEE 201-2	Health Education 350
GEE unassigned-1 to 2	1 to 2 semester hours from University Honors 251e and/or 351e
GEE activity-1 to 2	ROTC field training (Army Military Science 358)

A maximum of 15 semester hours of comparable course work can be substituted for General Education requirements, with the exception of approved University Honors substitutions.

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 course or program in meeting the objectives. Therefore, considerable latitude is permitted the student in meeting the objectives; alternate routes are provided within the General Education framework.

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

1. Substitutions to a maximum of 15 hours of approved departmental courses can be made for General Education courses as previously outlined;
2. Proficiency examinations are offered regularly for some General Education courses; students should consult with their academic advisers for information concerning these examinations;
3. A University Studies Program (See Chapter 5) allows the students to design a broad undergraduate education.

The Transfer Student and General Education. A transfer student who expects to graduate from the University with a baccalaureate degree must meet the General Education requirements as outlined previously. All work done at other institutions will be evaluated and comparable courses will be applied toward the General Education requirements.

Completion of an associate degree in a baccalaureate-oriented program in an accredited Illinois two-year institution, provides that the student will (a) be accepted with junior standing and (b) be considered to have completed the General Education requirements. Associate degrees earned at other than Illinois two-year institutions will be reviewed by the Office of Admissions and Records. If the degree is determined to be baccalaureate-oriented and to have comparable content and credit hour criteria, the same benefits will be extended to those graduates. 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 the University or at any other approved four-year institution and must complete the residence requirements for a degree from the University.

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 programs.

General Education Courses

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 or seniors depending on whether the digit is 1, 2, 3, or 4. If the digit is 0, the course is not properly in the above categories.

Next is the title, followed by a description of the course. If certain requirements must be satisfied before enrollment in a course, they are listed as prerequisites. If a course is a part of the undergraduate pass/fail system, it is so indicated by the term "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 Electronic Communications, Southern Illinois University at Carbondale, Carbondale, Illinois 62901. When requesting a schedule, please specify *semester.*

OUR PHYSICAL ENVIRONMENT AND BIOLOGICAL INHERITANCE (GEA)

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, radio, and television, and laser beams. There will be a strong emphasis on the nature of home entertainment equipment with discussions on the nature of waves and sound, electricity, and electromagnetism. The students will develop an understanding of the technical vocabulary necessary to judge high fidelity equipment.

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.

110-3 Earth Science. Earth and its major domains with Earth's substances and processes emphasized. Lecture, laboratory. Laboratory manual $3.

115-3 Biology. For students with a weak biology background or for students who are nonbiology 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.

117-3 Plant Biology: Plants and Society. An introduction to the basic principles of plant science, historical and modern applications of plants to the human experience, and modern concepts of plant ecology and conservation. Laboratories will include trips to woodlands, wetlands, farms, greenhouses, herbarium, supermarket, farmer's market, and various plant research facilities. A modest field trip fee may be assessed.

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.

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. Purchase of exercise sheets under $1.00.

221-3 Survival: Living in the Environment. (Same as GEB 221 and GEC 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.

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. Fundamental biological and ecological processes important in the individual, population, and community life of organisms including humans are discussed in the context of ecological systems. Lectures are supplemented by one hour of laboratory, field work, or other student options.

312-3 Conservation of Natural Resources. A study of people's use and misuse of natural environment emphasizing the ecological perspective.
330-3 Weather. Introduction to the processes that create the world's weather and its seasonal and geographic variations; basics of weather forecasting; issues of managing the atmospheric environment, including air pollution meteorology, causes and hazards of storms, human-induced climatic change, weather modification. May be taken as self-instruction or lecture/laboratory course. Weekly workshop emphasizes laboratory experiments, field observations, and computer simulations of atmospheric processes.

OUR SOCIAL INHERITANCE AND SOCIAL RESPONSIBILITIES (GEB)

Courses

102-3 The Western World. A topical study of the fundamental social, economic, and political elements constituting the traditions of western civilization which are still relevant today.
103-3 Geography of World Environments. Contemporary geography of the world's major geographic realms (Europe, North America, Australia, USSR, Japan, China, India, Southeast Asia, Africa, Middle East, South and Middle America) emphasizing patterns of physical and cultural environments, economic development, as well as current political and environmental problems.
104-3 The Human Experience: Anthropology. An exploration of different human lifeways around the world, past and present - for example, American Indians, Aztecs, and Egyptians. The question of what is universal to all humans as opposed to how they differ is investigated by studying modern peoples, the remains of past cultures through archaeology, and human origins and physical variation.
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.
108-3 The Sociological Perspective. An examination of the range of social relationships among people: basic sociological concepts and theories, social groups, social institutions, social and cultural change, and social deviance.
112-3 Comparative Economic Systems. Introductory investigation of the historical development of the theoretical economic systems of capitalism, socialism, and communism and the practical workings of those systems in such nations as the U.S., the U.S.S.R., Great Britain, China, Yugoslavia, Iran, Poland, et al.
114-3 Introduction to American Government and Politics. An introduction to the structure of American national government as well as the cultural context and operation of our political system. Attention will be given to the Constitutional foundation of American government; how differences in race, gender and culture affect the dynamics of the political system; and the American attempt to deal with themes such as equality, liberty and order, conflict and cooperation.
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 from local vendor required.
205-3 Consumer Decision-Making. To acquaint students with the influence of resource limitations, markets, government, and other socio-cultural forces on individual consumption decision; to analyze the information and apply the economic principles relevant to rational decisions; to increase awareness of consumer rights and responsibilities and the consumer's role in the economy. Students should be able to make more effective purchase decisions and to critically appraise the U.S. economy from the viewpoint of consumers.
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.
215-3 Comparative Race and Ethnic Relations. Comparative study of race and ethnic relations in the U.S., in other developed societies, and in selected developing countries: the persistence of ethnic/racial identities; inter-group relations; government policy; assimilation, segregation, amalgamation, conflict, social problems; separatist and other social movements.
221-3 Survival: Living in the Environment. (See GEA 221.)
250-3 Politics: Foreign Nations. An introduction to the range of developed and developing nations with special attention to the importance of geographical, racial, ideological, ethnic, and socioeconomic explanations of political institutions, processes, and behavior in these states.
262-3 Marriage and Family in Contemporary Society. Survey of contemporary family life within historical and cross-cultural perspectives. Overview of recent trends in mate selection, marriage, parenthood, employment, and communication in the family.

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.

OUR INSIGHTS AND APPRECIATIONS (GEC)

Courses

100-3 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.
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.
102-3 Problems in Philosophy. Introductory survey of some main philosophic problems concerning people, nature, society, and God, as discussed by major Western thinkers.
103-3 Introduction to Theater. Introduces students to the world of theater. Through lectures, films, plays, and text readings, students examine various aspects of theater, including history, aesthetics, criticism, and production. The course provides a general background in theater and an opportunity to develop an understanding and appreciation of this art form.
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.
122-3 Appreciation of Literature. A study of masterpieces of fiction, drama, and poetry stressing the timeless nature of world literature. This course is designed to teach and delight by reading, among others, the great works of Shakespeare, Whitman, Poe, Lewis Carroll, Kafka, Arthur Miller, Camus, Sylvia Plath, and Kurt Vonnegut.
200-3 Oral Interpretation of Literature. Beginning study of the oral interpretation of literature: appreciation, analysis, performance. Emphasis is upon literature as human experience and upon the creative role of the reader in engaging the literary text. Incidental costs not to exceed $2.
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.
208-3 Elementary Logic. Study of the basic forms of reasoning, with emphasis on the evaluation of arguments encountered in everyday life.
213-3 East Asian Civilization. An introduction to East Asian cultural traditions. Literature, philosophy, history, and art of China and Japan.
215-3 Types of Religion. An introductory study of selected world religions, emphasizing their meanings for their respective participants, their socio-cultural contexts, and their contributions to the religious history of civilization.
221-3 Survival: Living in the Environment. (See GEA 221.)
230-3 Classical Civilization. (Same as Women's Studies 260.) A study of the ancient Greeks and Romans, against a background of the world they inhabited. Literature, history, art, philosophy, and sex roles of these peoples, especially at the height of their respective civilizations.
330-3 Classical Mythology. (Same as Women's Studies 364.) An inquiry into the nature of myth and its relevance today while studying selected myths principally of the Greeks and Romans.
340-3 The Western Cultural Tradition. The historical evolution of the visual arts, architecture, and music in the context of society and literature, from ancient Greece to the present.
345-3 Literature and the Modern World. The study of poetry, drama, and fiction of British, American, and world literature written since 1914. Themes, patterns, and artistic achievements will be studied in connection with the intellectual and cultural backgrounds of the modern age.

ORGANIZATION AND COMMUNICATION OF IDEAS (GED)

Courses

Mathematics courses that may be used for the general education mathematics requirement of 3 hours are listed under the Mathematics department. They in-

clude all Mathematics prefix courses with the exception of Mathematics 107 and 114.

101-3 English Composition. This first course in the two-semester freshman English sequence is aimed at developing the ability to write effective expository prose. It presupposes competence in grammar, usage, and mechanics and emphasizes the writing of a set of informative and argumentative essays. The work of the course is based on a study of rhetorical forms and the analysis of selected readings. A minimum grade of *C* is required.
102-3 English Composition II. This is the second part of the two-semester freshman English sequence. It includes a review of rhetorical principles and practice in critical reading and analytical writing. The main emphasis is on methods of research and the writing of documented research papers or technical reports. Prerequisite: GED 101 or equivalent with a minimum grade of *C*.
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.
152-3 Interpersonal Communication. Designed to enable students to better understand and exercise interpersonal communication skills. Includes both theoretical content and performance sessions.
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.

HUMAN HEALTH AND WELL-BEING (GEE)

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 GEE 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. 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. For some activity classes, students are required to furnish equipment, provide own transportation, and pay a course charge.

100-1 to 4 Restricted Physical Education. For physically handicapped students as recommended by Health Service. Mandatory Pass/Fail.
101-1 to 24 (1 or 2 credits per activity) Aquatics. Swimming suits and towels are provided, however, students may wish to provide their own swimsuit, towel, and cap (optional). A fee of $2 is required for all classes listed. **(a)** Beginning swimming. **(b)** Intermediate swimming. Prerequisite: 101a or equivalent. **(c)** Diving. Prerequisite: 101b or equivalent. **(d)** Skin diving. Prerequisite: consent of instructor. Course charge. **(e)** Scuba diving. Prerequisite: consent of instructor. Course charge, special sections have a charge for field trips. **(f)** Lifeguarding. Prerequisite: 101m, pass swim test first day of class, 500 yards, tread water. **(g)** Canoeing. Prerequisite: pass swim test first day of class, tread water 15 minutes while clothed. **(h)** Synchronized swimming. Prerequisite: 101b or equivalent. **(i)** Aquacises. Prerequisite: 101b or equivalent. **(j)** Water sports. Prerequisite: GEE 101b or equivalent. **(l)** Sailing. Prerequisite: pass swim test first day of class, tread water 15 minutes while clothed, own transportation required. **(m)** Emergency Water Safety. Course prepares students to meet the requirements for certification by the American Red Cross in Emergency Water Safety. Prerequisite: GEE 101a or equivalent swimming skill; five minutes continuous swim; fifty yards each of sidestroke and front crawl in good form; jump into deep water, swim twenty feet under water, surface and tread water water for one minute.
102-1 to 10 (1 or 2 credits per activity) Fitness. A fee of $2 is required for all classes listed. **(a)** Physical fitness. **(b)** Relaxation. **(c)** Weight control. **(d)** Weight training. **(f)** Aerobic dance.

103-1 to 16 (1 to 2 credits per activity) Dance. A fee of $2 is required for all classes listed. **(a)** Square. **(b)** Folk. **(c)** Ballroom. **(d)** Introduction to modern dance. **(f)** Ballet. **(g)** Tap. **(h)** Jazz.
104-1 to 34 (1 to 2 credits per activity) Individual and Dual Activities. A fee of $2 is required for all classes listed except 104c and 104k. **(a)** Archery. Eight arrows required. **(b)** Badminton. Three shuttlecocks required. **(c)** Bowling. Lane fee $18 per credit hour and bowling shoes required. **(d)** Distance running. **(e)** Cycling. Cycle required. **(g)** Fly and bait casting. Rod and reel required. **(h)** Golf. Five hard covered practice balls required. **(i)** Gymnastics apparatus. **(j)** Handball. Glove and ball required. **(k)** Horseback riding. Course charge, own transportation required. **(l)** Orienteering. Own transportation required. **(m)** Racquetball. Racquet and one can of balls required. **(n)** Tennis. Racquet and one can of new balls required. **(o)** Track and field. **(p)** Stunts and tumbling. **(q)** Wrestling.
105-1 to 12 (1 or 2 credits per activity) Team Activities. A fee of $2 is required for all classes listed. All classes are coeducational. **(a)** Basketball. **(b)** Flag football. **(c)** Floor hockey. **(d)** Soccer. **(e)** Softball. A glove is required for 12 inch softball. **(f)** Volleyball.
106-1 to 6 (1 or 2 credits per activity) Martial Arts. A fee of $2 is required for all classes listed. **(a)** Self defense. **(c)** Karate. Karate uniform required.
114-1 to 4 (1 or 2 credits per activity) Intermediate Individual and Dual Activity. **(c)** Intermediate bowling. Prerequisite: 104c or equivalent. Lane fee $18 per credit hour and bowling shoes required; shoe rental available. **(n)** Tennis. Prerequisite: 104n or equivalent. Racquet and one can of new balls required. Fee of $2 required.
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.
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 to $5.

Capstone Option

The Capstone Option is for the transfer student who has earned an Associate in Applied Science degree or the equivalent certification and 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 Capstone Option's purpose 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 Option 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 Option at Southern Illinois University at Carbondale can lead to the baccalaureate degree in any of the following areas:

College of Agriculture
- Agribusiness Economics
- Agriculture, General
- Animal Science
- Plant and Soil Science

College of Education
- Clothing and Textiles
- Early Childhood
- Workforce Education and Development

College of Engineering
- Industrial Technology

College of Liberal Arts
- Administration of Justice
- Paralegal Studies for Legal Assistants

College of Technical Careers
- Advanced Technical Studies
- Aviation Management

Consumer Economics and Family Management
Electronics Management
Fire Science Management
Health Care Management

The listing of majors which participate in the Capstone Option may change from time to time. Specializations that are offered under the majors are listed in Chapter 5.

REQUIREMENTS FOR THE BACCALAUREATE DEGREE THROUGH CAPSTONE

A student completing the degree through the Capstone Option must complete the hour requirements, residence requirements, and average requirements required for all bachelor's degrees. These requirements are explained at the beginning of Chapter 3. The course requirements for the Capstone Option are explained below.

The following General Education requirements must be satisfied:

General Education Requirements for Capstone 30
- Science ..... 6 semester hours
  - Two courses chosen from two different groups in GEA[1]
- Social Science ..... 6 semester hours
  - Two courses chosen from two different groups in GEB[1]
- Humanities ..... 6 semester hours
  - Two courses chosen from two different groups in GEC[1]
- English Composition ..... 3 semester hours
  - One course equivalent to GED 101 with a grade of *C* or better
- Speech ..... 3 semester hours
  - One course equivalent to GED 152 or GED 153
- Mathematics ..... 3 semester hours
  - One Mathematics prefix course numbered 108 or above or equivalent with the exception of 114.)
- Health and Physical Education ..... 3 semester hours

Minimum Total 30

[1]For explanation of groups in Areas A, B and C see General Education Requirements above.

In addition to the General Education 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 must include two years of work (60 semester hours) after receiving the associate degree or equivalent certification and must list the remaining requirements for the baccalaureate degree.

PROCEDURES FOR APPLYING TO THE CAPSTONE OPTION

In order to qualify for admission to the Capstone Option, the student must:

1. Have made application for admission to Capstone by not later than the end of the first semester in the bachelor's degree program. The student may not have earned more than twelve hours toward the baccalaureate degree program prior to approval for Capstone. A student registered in a program in which Capstone is not available who changes to a program which does participate, must submit the Capstone application by no later than the end of the first semester in the new bachelor's program. The student who has been approved for Capstone in one program, who changes to another program which also participates in Capstone, must receive approval of the new program for continued participation in Capstone by not later than the end of the first semester in the new program and no more than twelve semester hours toward the new baccalaureate program.

2. Have earned an associate degree, or equivalent certification,in a non-baccalaureate-oriented program of 60 semester hours prior to the completion of the first semester in the baccalaureate program at Southern Illinois University at Carbondale. Equivalent certification, for the purposes of Capstone admission, is defined as the formal completion of a technically oriented program of two years duration (60 semester hours), resulting in the receipt of an equivalent associate degree, certificate, diploma, or other documentation as provided by the student's educational institution.

3. Have submitted all documentation of work prior to the associate degree by no later than the end of the second semester or session at the University. This documentation includes all official transcripts from institutions previously attended and may include test reports, evaluation of military experience or whatever other kind of training has been used to award the associate degree.

4. Have earned a minimum grade point average of 2.25 (4.0 scale) as calculated by the University grading regulations. The grade point average will be calculated on all accredited work prior to the awarding of the associate degree. An applicant denied admission to Capstone as a result of a low average upon completion of the associate degree may not be considered again after raising the average in subsequent work (credit beyond the associate degree).

5. Have entered a bachelor's degree program at the University which participates in the Capstone Option. The student must not have earned more than 12 semester hours in the baccalaureate major prior to Capstone approval.

6. Have received certification from the academic unit at the University that a bachelor's degree program can be completed within the 60 semester hours of additional work required for the bachelor's degree. The certification will be determined after the Capstone application has been filed.

Copies of the application for admission to the Capstone Option are available in the Office of Admissions and Records.

5 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 only. Courses offered for graduate students 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 alphabetical order.

Explanation of the Curricular Guides

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 animal science, ECON 204 satisfies part of the General Education requirements and contributes 3 hours toward the 46 hours required. The 3 hours are also required for the major in animal science, but do not contribute to the printed total of 74 hours.

How to Read Course Numbers

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, or seniors, depending on whether the digit is 1, 2, 3, or 4. If the digit is 0, the course is not properly in the above categories with the exception of Music courses. 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, Physics 203-6 (3,3) indicates a first-level, two-part course of 6 hours in the Department of Physics. The two parts of the course may be referred to as Physics 203a,b. The credit may also be variable, such as Accounting 491-1 to 6. 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 section).

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

Course Fees

Some courses have fees attached to their registration. These fees cover such items as laboratory fees, field trips, printing of materials, and supplies. These fees are published in the class schedule but are subject to change. For the correct fee, contact the department that offers the class or Admissions and Records.

Accountancy (School)

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, both internal and external to a business, a not-for-profit organization, and other entities.

The curriculum is designed to prepare a student with basic conceptual accounting and business knowledge necessary to develop a foundation for accounting career development. The curriculum consists of three segments, each designed for a specific purpose. The general education segment is designed to develop students' capacity for inquiry, abstract logical thinking, and critical analysis. A knowledge of humanities, arts, sciences, and general literacy which includes writing, reading, speaking, and listening provides the broad knowledge base and skills upon which to build professional study. The second segment provides general business and professional accounting education. The primary purpose of this segment is to provide students with the knowledge, sensitivities, and abilities all accountants should have for entry into the accounting profession and the capacity to apply these qualities under reasonable supervision. A broad systems orientation as well as a more specific professional accountancy orientation is developed within this segment. The third segment dealing with specialization is very limited at the undergraduate level. A student desiring to specialize in taxation, information systems, auditing, not-for-profit, or other areas should consider graduate study through a fifth year and the Master of Accountancy degree. The five year sequence is recommended by most authoritative accounting groups and required for CPA examination purposes in several states.

Accounting majors must achieve a 2.5 grade point average in accounting prefix courses taken at Southern Illinois University at Carbondale, as well as meet 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. In addition they must also achieve a grade of *C* or better in accounting-prefix courses taken at Southern Illinois University at Carbondale and offered to satisfy the requirements of the professional business core and the major in accounting.

Accounting (Major, Courses)

Bachelor of Science Degree, College of Business and Administration

General Education Requirements		46
Professional Business Core (See Chapter 3.)		41
Requirements for Major in Accounting		24
Accounting 321 and 322 (financial)	6	
Accounting 331 (managerial)	3	
Accounting 341 (tax)	3	
Accounting 351 (systems)	3	
Accounting 361 (auditing)	3	
Accounting 400-level electives. At least 3 hours must be from courses numbered 420 through 469	6	
Electives		9
Total		120

Courses (ACCT)

208-3 Business Data Analysis. (Same as Management 208). Uses of 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: MATH 139 or equivalent.

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 220.

220-3 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 220 if credit is claimed for 210. Prerequisite: sophomore standing.

230-3 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: for accounting majors, pass 220 or equivalent with a grade of *B* or better; sophomore standing.

240-3 Individual Income Tax. Preparation of income tax returns. Federal income tax as applied to individuals. No credit given for 240 if credit is claimed for 341. Not open to those with a major in accounting.

321-3 Intermediate Accounting I. Current accounting principles and procedures relating to elements of financial reporting. Particular emphasis on current and fixed asset valuation. Includes learning Lotus 1-2-3. Prerequisite: junior standing and limited to business majors (not pre-business) or consent of school; pass both 220 and 230 or equivalent with grade of *B* or better.

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: junior standing and limited to business majors (not pre-business) or consent of school; passed 321 with grade of *C* or better.

331-3 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: junior standing and limited to business majors (not pre-business) or consent of school; for accounting majors, pass 230 with a grade of *B* or better.

341-3 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. No credit given for 341 if credit is claimed for 240. Prerequisite: junior standing and limited to accounting majors or consent of school; for accounting majors, a grade of *B* or better in both 220, 230, or equivalent courses.

351-3 Accounting Information Systems. Accounting systems analysis 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. Also covers Lotus 1-2-3 and DBASE software. Prerequisite: junior standing and limited to accounting majors or consent of school; a grade of *C* or better in both 322 and 331; Computer Science 212 or equivalent.

361-3 Auditing. Standards, objectives, and procedures involved in examining and reporting on financial statements of business organizations. Prerequisite: junior standing and limited to accounting majors or consent of school; a grade of *C* or better in 322.

421-3 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: junior standing and limited to accounting majors or consent of school; a grade of *C* or better in 322.

422-3 Current Development in Accounting Theory. Critical analysis of current developments in accounting theory, especially as reflected in the publications of major accounting associations. Prerequisite: junior standing and limited to accounting majors or consent of school; 322 with grade of *C* or better.

431-3 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: junior standing and limited to accounting majors or consent of school; 331 with grade of *C* or better.

441-3 Advanced Tax. Study of income tax problems which arise from sole proprietorship, partnership, corporation, estate, and trust 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: junior standing and limited to accounting majors or consent of school; 341 with grade of *C* or better.

451-3 Advanced Accounting Information Systems. A review of current systems design and operation methodologies with special attention to the advantages and disadvantages these provide to an integrated information system. Prerequisite: junior standing and limited to accounting majors or consent of school; 351 with grade of *C* or better.

461-3 Advanced Auditing. The study and application of selected auditing concepts and techniques. Hands-on application will be emphasized. Prerequisite: junior standing and limited to accounting majors or consent of school; 361 with grade of *C* or better.

471-3 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: for accounting majors, 230 with grade of *B* or better.

491-1 to 6 Independent Study in Accountancy. Independent study of specialized aspects of accountancy not available through regularly scheduled courses. Not for graduate credit. Prerequisite: a grade of *C* or better in each of 322, 331, 341, and consent of school.
495-3 Internship. Supervised work experience in professional accounting. Prerequisite: outstanding record in accounting and recommendation of the school committee on internship. Mandatory Pass/Fail only. Not for graduate credit.

Administration of Justice (Major, Courses)

The Bachelor of Arts degree with a major in administration of justice meets the objectives of students interested in law enforcement, the courts, corrections, juvenile justice, criminal behavior, and other aspects of crime and criminal justice.

The curriculum is designed to provide students with a broad view of crime and criminal justice. Building on the fundamental knowledge developed in core courses and a restricted set of electives, students can select from a variety of other courses to gain in-depth, specialized knowledge about their particular areas of interest within the curriculum. Under faculty guidance, students may take supplemental courses — computer science, accounting, management, and foreign language, for example — to complement their special interests. This approach provides a sound foundation in administration of justice while allowing the flexibility necessary to accomodate individual interests and needs.

A field internship placement may be an important element in the program and is encouraged for interested students who meet departmental criteria.

Bachelor of Arts Degree, College of Liberal Arts

ADMINISTRATION OF JUSTICE MAJOR

General Education Requirements		46
College of Liberal Arts Academic Requirements (See Chapter 3)		4 + 8-14
Requirements for Major in Administration of Justice		33
Core Requirements: 201, 290, 310, 316, 492	15	
Administration of Justice Electives: 18 hours, at least 9 of which must be selected from 302, 306, 317, 320, 415, 450, 472, 473, 474; in addition at least 6 of the 18 hours must be selected from 400-level courses.	18	
Minor		18
Electives		9-15
Total		120

Completion of AJ 201 and AJ 290 (or consent of the instructor) is required for taking any 300- or 400-level administration of justice course. In addition, completion of AJ 316 (or consent of instructor) is required for taking any 400-level administration of justice course. Other prerequisites may be associated with individual courses; refer to the catalog description of the specific course.

No more than three hours of AJ 395 can be counted toward the major.

A student may substitute Psychology 323 or Social Work 383 for AJ 301; Political Science 340 for AJ 302; Psychology 211, Sociology 312, or Political Science 300 for AJ 316.

Minor

A minor in administration of justice consists of 18 hours of administration of justice courses, which must include 201 and 290.

Courses (AJ)

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 sys-

tem, including underlying ideologies, procedures, fundamental legal concepts, and the roles and functions of police, courts, and correctional services.

290-3 Introduction to Criminal Behavior. Multidisciplinary study of the etiology and patterning of offender behavior.

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: 201 and 290 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: 201 and 290 or consent of instructor.

302-3 Introduction to Criminal Justice Administration. An introduction to the principles of administration and organization of criminal justice agencies. Prerequisite: 201 and 290 or consent of instructor.

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: 201, 290, and 302 or consent of instructor.

306-3 Policing in America. Examines police as part of society's official control apparatus. Major topics include historical development of the police, role of the police in the criminal justice system, functions and effectiveness of the police, and the relationship of the police to the communities they serve. Prerequisite: 201 and 290 or consent of instructor.

310-3 Introduction to Criminal Law. The nature and theories of law and social control; legal reasoning and case analysis; simple legal research; statutory construction; principles and history of punishment; constitutional, historical, and general legal principles applicable to the criminal law. Prerequisite: 201 and 290 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, measurement issues, reporting of research and program evaluation. Emphasis on problems peculiar to criminological research. Prerequisite: 201 and 290 or consent of instructor.

317-3 Data Analysis in Criminal Justice. Covers basic statistical issues such as properties of single variables, association between pairs of variables, and statistical inference in relation to criminal justice data. Additional topics, such as analysis of aggregated data and prediction, address specific criminal justice concerns. Prerequisite: 201, 290, and 316 or consent of instructor.

320-3 Prosecution and Adjudication. Examination of the structure and process involved in the prosecution, adjudication, and sentencing of criminal defendants. The exercise of prosecutorial and judicial discretion is analyzed, with emphasis placed on understanding the influence of legal, organizational, and environmental contexts on decision-making. Prerequisite: 201 and 290 or consent of instructor.

344-3 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: 201 and 290 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: 201 and 290 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: 201 and 290 and consent of instructor.

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: 201, 290, 12 additional hours of administration of justice courses at SIUC; minimum GPA of 2.5 overall in AJ courses prior to the internship experience or consent of department. Mandatory Pass/Fail.

402-3 Group and Family Treatment in Criminal Justice. Presentation of theoretical knowledge and practical techniques utilized in major group and family treatment approaches for adults and juveniles in institutions, community-based correctional programs, and transitional living situations. Prerequisite: 201, 290, and 316 or consent of instructor.

403-3 to 9 (3 per topic) Enforcement Operations. **(a)** Advanced investigation; **(b)** Enforcement management; **(c)** Enforcement discretion. Each course topic focuses on a major theme in law enforcement. Prerequisite: **(a), (b),** and **(c)**: 201, 290 and 316 or consent of instructor; additionally for **(a)**: 303; for **(b)** and **(c)**: 306 or consent of instructor.

408-3 Criminal Procedure. An introduction to the procedural aspects of criminal law 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: 201, 290, 310, and 316 or consent of instructor.

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: 201, 290 and 316 or consent of instructor.

450-3 Public and Private Security. An overview of important issues related to security and loss prevention in the public and private sectors. Covers security's historical development, its current role, and the relationship between the public and private sectors. Prerequisite: 201, 290, and 316 or consent of instructor.

451-3 Forensic Interrogation. Forum on forensic interrogation. Conceptual framework for understanding behavioral and psychological aspects of the process; discussion of historical and philosophical development, use in criminal and private security investigations, legal proceedings, and role in a democratic society. Provides both theoretical grounding and hands-on experience. Prerequisite: 201, 290, and 316 or consent of instructor.

460-3 Women and the Criminal Justice System. (Same as Women's Studies 476.) Addresses the topics of women as offenders, as victims and as workers in the criminal justice system. Prerequisite: 201, 290, and 316 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: 201, 290, and 316 or consent of instructor.

473-4 Juvenile Delinquency. (See Sociology 473.) Prerequisite: 201, 290, and 316 or consent of instructor.

474-3 Juvenile Justice. The evolving definition of juvenile misbehavior and the legal mechanisms that have emerged to control it. The problems and promise of juvenile justice in terms of the juvenile code and court, law enforcement, custodial and treatment institutions, and community treatment. Prerequisite: 201, 290, and 316 or consent of instructor; 473 or equivalent is recommended.

476-3 Crime and Criminal Justice: International Dimensions. Examination of sociocultural and political factors shaping criminality and responses to crime around the world. Similarities and differences in criminogenic conditions and practices of law enforcement and corrections are traced. Prerequisite: 201, 290, and 316 or consent of instructor.

485-3 Corrections and the Community. Traditional correctional functions are redefined to emphasize the development of resources in communities, diversion of convicted offenders from institutions, and direct involvement of correctional programs in community affairs. Prerequisite: 201, 290, and 316 or consent of instructor.

490-1 to 3 Independent Study in the Administration of Justice. Supervised readings or independent research projects in various aspects of crime control, treatment of offenders, and the management of criminal justice programs and agencies. May be repeated up to a maximum of three credit hours. Prerequisite: 201, 290, and 316 and consent of the instructor.

492-3 Contemporary Issues in Administration of Justice. A forum, geared toward seniors majoring in administration of justice, that focuses on criminal justice issues of concern to students and faculty. May re-enroll for a maximum of six credits. Prerequisite: 201, 290, and 316 and consent of instructor.

Advanced Technical Studies (Major, Courses)

The Bachelor of Science degree in Advanced Technical Studies is designed specifically for the student who has entered a career path for which a traditional baccalaureate degree is not available. The student develops an individualized learning contract with the assistance of a faculty adviser.

The Advanced Technical Studies major is designed to build upon an individual's educational and occupational experiences through courses selected to meet technical career objectives. It is ideally suited for community college and technical institute graduates possessing occupationally-oriented associate degrees. The Capstone Option is available to eligible students entering this program. More information about the Capstone Option can be found in Chapter 4.

Students interested in technical areas not available through associate degrees are also encouraged to consider this major. The individualized nature of this program affords the flexibility to meet the needs of students from many diverse technical backgrounds who desire to develop and expand the skills to enhance their career opportunities.

Graduates find employment in business and industry in such fields as construction, automotive, data processing systems, office management, architectural drafting/design, graphic design, advertising, property management, small business applications, and allied health careers.

Bachelor of Science Degree, College of Technical Careers

General Education Requirements		46
Requirements for Major in Advanced Technical Studies		36
Core Requirements (or Approved Equivalents): Advanced Technical Studies 364, 383, 416, and one of the following: 332 or 421	12	
Twenty-four hours of approved advanced technical studies requirements with at least 15 hours at the 300-400 level	24	
Approved Technical or Career Electives		38
An associate in applied science degree from an accredited community college meets this requirement. A maximum of 12 credit hours of internship, work experience or independent study may be part of these 38 hours.		
Total		120

Courses (ATS)

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 preceptor 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. This course is designed to allow College of Technical Careers' students to become knowledgeable of specific and current requirements in the profession to which they aspire. Subject matter will be determined by academic major.

332-3 Labor-Management Problems. Students will gain a general understanding of the economic situation of which labor-management problems represent a subset. 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.

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. This course may be classified as independent study. Prerequisite: consent of instructor.

361-3 Fiscal Aspects of Technical Management. An introduction to fiscal structures and problems encountered in the technically oriented enterprise. Lecture three hours.

362-3 Legal Aspects of Technical Management. An introduction to the types of legal problems encountered in the technically oriented enterprise. Lecture three hours.

363-3 to 15 (3, 3, 3, 3, 3) Special Topics in Technical Management. Specialized study for the investigation of management problems relating to the student's career objective. **(a)** Management field experience. Structured practical experience in a controlled management environment. **(b)** Research management applications. Studies of management techniques as practiced in the profession. **(c)** Comparison analysis of organizational strategies in the professions. **(d)** Current trends. Readings regarding economic trends impacting upon the business or profession. **(e)** Employee relations. Study of the techniques of employee relationships to include the dynamics and procedures required for managing the work center. Need not be taken sequentially.

364-3 Work Center Management. A study of the problems of managing a small working unit (division, department, work center, section, etc.) within a larger unit (agency, company, regional office, etc.). Included items will be work center goals identification, staffing needs, monitoring of work process reporting, work center communications, and interpersonal relations within the work center. Lecture three hours.

383-3 Data Interpretation. A course designed for students beginning their major program of study to examine data use in their respective professions. Emphasis will be placed upon an understanding of the basic principles and techniques involved with analysis, synthesis, and utilization of data.

412-3 Grantsmanship. Provides the student with an understanding of the availability of public and private funding in a specific technical area, how to apply for such funds, the process for approving such applications for funding, how the grants are administered once awarded, and who the funding agencies, companies, or foundations are. Each student will prepare a grant proposal including objective state-

ments, study methodology, work program, work schedule, program budget, end products, and overall packaging. Not for graduate credit.

416-1 to 4 Applications of Technical Information. This course is designed to increase student competence in analyzing and utilizing the various types of technical information encountered by managers in technical fields. Not for graduate credit.

421-1 to 3 Professional Development. 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 the College of Technical Careers baccalaureate program or consent of instructor.

426-3 Technical Training for International Development. A better understanding of the necessary relationships between technology, technical training, and development, especially in third world countries. The successful completion of this course allows for a more effective appreciation in the transfer of technical training from the United States to other developing areas of the world which may include not only other nations but also underdeveloped parts of the United States. Not for graduate credit.

Aerospace Studies (Department, Minor, 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 — POC 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 courses 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 POC level without completing the general military courses 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.

Students are required to complete one three-hour course in mathematical reasoning as part of the program.

Leadership laboratory is a supervised laboratory taken concurrently with the aerospace studies courses. In the first two years, students develop leadership potential by participating in practical leadership situations, participating in and leading drill and ceremonies, learning customs and courtesies, and preparing for field training. In the final two years of AFROTC, students develop leadership potential by assuming command and staff responsibilities, supervising the GMC cadets, and implementing the goals and objectives of the leadership laboratory.

Minor

A minor in aerospace studies consists of a minimum of 26 semester hours, including 301, 302, 401, and 402 plus any combination of designated courses in history, political science, management, computer science, foreign languages, geography, communications, aviation, or professional studies. This minor is structured to broaden the background of future Air Force officers by recognizing efforts in a discipline other than the student's major area of study. Students must

discuss their minor program with an aerospace studies advisor to design a coherent program to meet their individual needs.

Courses (AS)

101-2 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. Prerequisite: concurrent enrollment in leadership laboratory.
102-2 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. Prerequisite: concurrent enrollment in leadership laboratory.
201-2 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. Prerequisite: concurrent enrollment in leadership laboratory.
202-2 The Development of Air Power II. History of United States Air Force from separate military department status into early 1980's. Highlights the versatility of air power and the changing role of machines, people, and tactics in air warfare. Prerequisite: concurrent enrollment in leadership laboratory.
258-4 Field Training Equivalency. Work experience credit for 101, 102, 201, and 202. This credit will be evaluated by the Department of Aerospace Studies. Prerequisite: satisfactory completion of either the four-week or six-week field training course for AFROTC POC applicants.
301-4 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: consent of instructor and concurrent enrollment in leadership laboratory. Non-AFROTC members may enroll with instructor consent.
302-4 Management and Leadership II. Continuation of 301. 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: 301 or consent of instructor and concurrent enrollment in leadership laboratory. Non-AFROTC members may enroll with instructor consent.
351-2 Field Work Experience. Approved field work experiences with an Air Force or Department of Defense-related installation gives students opportunities to apply classroom theory to an active duty environment. Prerequisite: 302 or consent of department chair.
401-4 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: 302 or consent of instructor and concurrent enrollment in leadership laboratory. Non-AFROTC members may enroll with instructor consent. Not for graduate credit.
402-4 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: 401 or consent of instructor and concurrent enrollment in leadership laboratory. Non-AFROTC members may enroll with instructor consent. Not for graduate credit.
471-1 to 3 Independent Study. Supervised study or project to improve skills or to explore interests related to professional development of an Air Force officer. Not for graduate credit. Pass/Fail only. Prerequisite: 301 or concurrent enrollment or consent of department chair.
491-1 to 8 Advanced Leadership Skills. Student applies special skills or interests to the professional environment of an Air Force officer. Original research or project to deal with current aspect of Air Force duty required. Amount of credit dependent on work involved. Not for graduate credit. Pass/Fail only. AS elective only. Prerequisite: 301 or concurrent enrollment and consent of department chair.

African Studies (Minor)

An African Studies minor is available with the College of Liberal Arts. African studies is 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 470A, 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 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.

Related courses which do *not* count toward the minor are: Anthropology 410h, 470f, Black American Studies 311a,b, Economics 322, History 362a,b, or Political Science 452.

Aging Studies (Minor)

An Aging Studies minor is available with the College of Liberal Arts. The minor is designed for the student with career interests in the field of gerontology and for students who wish to add an understanding of aging to their knowledge. The curriculum provides an interdisciplinary approach to understanding the aging process, basic issues related to aging and the aged, and an opportunity to acquire greater knowledge of gerontological theory and research. A component of the minor is a practicum that will assist the student in developing skills for working with and on behalf of older persons. The minor is structured to complement a major or individual courses in disciplines such as psychology, sociology, social work, recreation, health education, and rehabilitation.

The minor in aging studies consists of a minimum of 18 semester hours which includes nine hours of core courses consisting of Psychology 304, Sociology 465 and Rehabilitation 447; six hours of approved electives to be selected from Communication Disorders and Sciences 438, English 487, Health Education 402, Health Education 440, Recreation 440c, Rehabilitation 405, Rehabilitation 446, Social Work 463 and Social Work 466; and three hours of practicum. The practicum, which may be oriented either toward research or caregiving, requires that the student work in an environment that involves direct contact with older people including, but not restricted to, senior centers and nursing homes. Time in the field should be approximately twelve hours per week for a semester. Terms of supervision will be consistent with practices in the student's major area of study if that area of study requires a practicum. Where the student's major area has no practicum program, the aging studies coordinator can assist the student in meeting this requirement.

The student should check with the coordinator of the aging studies minor or his/her academic adviser as early as possible in order to plan an orderly progression of study.

Core Courses 10
Ten hours selected from Health Education 440, Psychology 305, Rehabilitation 446, 447; Social Work 463, 466; Sociology 465.

Approved Electives 5
Five hours selected from Communication Disorders and Sciences 438; Health Education 402, Mortuary Science and Funeral Service 415, 108; Psychology 489; Recreation 475i.

Practicum 7-10
The field practicum should be consistent with the student's major and career interest. If a practicum is offered in the student's major, the student should register for that practicum which will meet the requirements for the aging studies minor. If a practicum is not offered in the student's major, the student should consult the adviser for the aging studies minor about possible alternative courses to be substituted.

Other courses which relate to studies of aging are offered and students should check with individual departments. Appropriate substitutions for the aging studies minor may be approved by the adviser for the minor.

Agribusiness Economics (Department, Major, Courses)

Agribusiness economics is a dynamic and challenging field of study serving the needs of farmers as well as businesses in agriculture. Its scope encompasses domestic and foreign agriculture. The department provides a curriculum designed to equip students with 1) professional skills in applied economics and management as related to agriculture, 2) analytical and planning abilities necessary for solving problems, and 3) knowledge and understanding to allow them to perform an effective professional role in a changing economic and social environment.

Agribusiness economics courses are offered in the following fields: farm management, agricultural prices, agribusiness management, agricultural marketing, agricultural finance, international agricultural development, land and resource use, and farm policy.

Students take additional courses in other departments in the College of Agriculture, in the College of Business and Administration, the Department of Economics, and other units of the University.

There are two specializations within the agribusiness economics major. The 40-hour option (agricultural) provides for a broad training in agriculture by requiring 40 hours of courses in the College of Agriculture. The 32-hour option (business-economics) requires the student to take more courses in business and economics and reduces the hours in the College of Agriculture to 32.

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, College of Agriculture

AGRIBUSINESS ECONOMICS MAJOR — 40-HOUR OPTION (AGRICULTURAL)

General Education Requirements and Substitutes			50
GEA 106 and 115 or equivalent		6	
GED 101, 102, 153		9	
Mathematics 139 and 140 to substitute for GED 107		7	
Requirements for Major in Agribusiness Economics			55
Courses in Agriculture		40	
Agribusiness Economics 204[1], 350 or 360, 351, 362, 381-1, 450 or 461	16		
Other Agribusiness Economics	7		
Animal Science	3		
Plant and Soil Sciences	3		
Electives in Agriculture including Agribusiness Economics	11		
Courses in Business, Economics, and Quantitative Methods		15	
Economics 214, 215	6		
Quantitative Methods[2]	9		
Electives			15
Total			120

AGRIBUSINESS ECONOMICS MAJOR — 32-HOUR OPTION (BUSINESS-ECONOMICS)

General Education Requirements and Substitutes			50
GEA 106 and 115 or equivalent		6	
GED 101, 102, 153		9	

Mathematics 139 and 140 to substitute for GED 107		7	
Requirements for Major in Agribusiness Economics			55
Courses in Agriculture		32	
Agribusiness Economics 204[1], 350 or 360, 351, 362, 381-1, 450 or 461	16		
Other Agribusiness Economics	7		
Animal Science	3		
Plant and Soil Sciences	3		
Electives in Agriculture including Agribusiness Economics	3		
Courses in Business, Economics, and Quantitative Methods		23	
Economics 214, 215	6		
Quantitative Methods[2]	9		
Business and Economics	8		
Electives			15
Total			120

[1]Agribusiness Economics 204 substitutes for GEB 211.
[2]Must include 3 hours of statistics and 3 hours of accounting.

Minor

A minor in agribusiness economics is offered. A minor consists of 16 semester hours of credit. Normally 12 hours must be taken at Southern Illinois University at Carbondale. An adviser within the department must be consulted before selecting this field as a minor.

Courses (ABE)

204-3 Introduction to Agricultural Economics. Agriculture in local and national economy; distribution; size and organization of the farm business units; policies affecting agriculture.
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 Agribusiness Economics. 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.
318-3 Agribusiness Statistical Methods. Statistical methods applied to agribusiness economics, including survey design, sampling, graphic presentation of data, index numbers, statistical inference, basic linear regression and correlation.
333-3 Professional Agriselling. Focuses on professional agriselling and the sales process. Topics include different methods of selling, steps and techniques in the selling process, customer service, sales ethics, consumer behavior concepts and sales management. Critical skills of self-management, communication, and interpersonal values are examined. Opportunities of a career in agriselling are surveyed.
340-3 Food and Agricultural Policy. An economic analysis of the structure, problems, and alternative public policies of the food production industry. Emphasis on price, income, foreign trade, and development policies. Prerequisite: 204 or consent of instructor.
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. Prerequisite: 204 or one course in economics.
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.
359-1 to 6 Intern Program. Supervised work experience program in either an agricultural agency of the government or agribusiness. Prerequisite: junior standing or consent of instructor. Mandatory Pass/Fail.
360-3 Cooperatives and Agribusiness 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.

361-2 Distribution in Agribusiness. The nature of agribusiness distribution, opportunities to improve the effectiveness of the distribution system through an understanding of the function involved. Prerequisite: 204 or equivalent.

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.

363-3 Commodity Futures Market. The mechanics of futures market trading, a description of institutions, technical and fundamental analysis, speculation, hedging, spreading, and market risk. Agricultural commodities, exchange rates, and financial instruments are considered.

381-1 to 4 (1, 1, 1, 1) Agricultural Seminar. Discussion of special topics and/or problems in the field of agribusiness economics. Prerequisite: junior standing and consent of department.

388-1 to 16 (1 to 8 per semester) International Studies. 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: major department or program approval.

390-1 to 4 Special Studies in Agribusiness Economics. Assignments involving research and individual problems. Field trips. Prerequisite: consent of chairperson.

391-1 to 4 Honors in Agribusiness Economics. 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 a 3.25 in major; approval of staff member, department chairperson.

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.

402-1 to 6 Problems in Agribusiness Economics. Designed to improve the techniques of agribusiness economics 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. Prerequisite: consent of chairperson.

440-3 Land Resource Economics. The use of land as an economic variable in production of goods and services; land markets; public versus private land use conflicts; and land-use planning in an institutional setting. Prerequisite: 12 hours of agricultural economics or economics credit, or graduate status or consent of instructor.

444-3 Agricultural Development. Analysis of the economic, social, political, cultural, and institutional factors related to economic growth and development in agricultural sector. Framework for evaluating outcome of alternative strategies in agricultural production, marketing, and government policies that affect output, income distribution, and resource use in agriculture and the related agroindustrial complex. Prerequisite: 204.

450-3 Advanced Farm Management. Application of production economic principles and modern decision-making techniques to farm management problems. The importance of information, sources of agricultural risk and management of risk in farm planning will be integrated. Prerequisite: 350 or equivalent, and GED 107.

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.

453-3 Agribusiness Planning Techniques. Application of mathematical programming to agribusiness and farm planning, including enterprise selection, resource allocation, least cost ration formulation, decision making under risk and uncertainty, transportation and location problems. Emphasis placed on modeling problems and interpretation of results. Prerequisite: 350 or consent of instructor.

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. Examination of agribusiness firm management with emphasis on the management and control of financial resources and the interrelationship between the agribusiness firm and human resource management. Other topics in agribusiness will include effective communication in the management process, business ethics, and workable credit programs for customers. Prerequisite: 351 and 360 or equivalent.

462-3 Advanced Agricultural Marketing. Advanced treatment of marketing issues from both theoretical and practical decision-making perspectives. Marketing margins, intertemporal, and spatial price relationships are reviewed in detail. Historical and current grain and livestock price series are utilized in decision-making exercises. Prerequisite: 362 or equivalent.

476-3 Agricultural Safety and Health. Analysis of safety and health issues important to managers and supervisors in agricultural operations. Topics include agricultural accident data, causes and effects of accidents, hazard identification, strategies for accident prevention, response to accidents, and health risks and safeguards. Developments and documentation of accident and illness prevention activities in the workplace. Prerequisite: junior standing.

Agricultural Education and Mechanization

(Department, Major [General Agriculture], Courses)

The faculty in the Department of Agricultural Education and Mechanization do teaching, research, and service activities in the area of agricultural education, agricultural information transfer and processing, and in agricultural mechanization. The department offers the general agriculture major with four specializations. The primary objectives of this major are (1) to provide broad, basic academic preparation in agriculture for the specializations of the major, or for the undecided agriculture major, by requiring all students to complete an extensive core of agriculture classes, distributed among four of the departments of the College of Agriculture and (2) to provide the quality academic and professional preparation necessary for success in the several career fields of the four specializations. The following statements identify typical career opportunities for persons completing the respective specialization.

Agricultural Education Specialization. In this program a student receives the technical and professional training for certification as a teacher of applied biological and agricultural occupations in secondary schools, or to be employed in industry.

Agricultural Information Specialization. This specialization is intended for those students who plan to be involved in agricultural education programs in communication, extension, post-secondary educational institutions, and industry.

Agricultural Mechanization Specialization. Agricultural mechanization specialists pursue careers which apply technology to agricultural problems in the areas of power and machinery, structures and environment, electrical power and processing, and surveying for soil and water management.

Agricultural Production Specialization. This specialization provides basic preparation for many agricultural careers in general farming and in production-agriculture related positions in agricultural services, agricultural business and agricultural industry.

Qualified candidates for the Capstone Option are accepted in the department.

For a number of courses taught in the department, there will be additional charges for field trips, laboratory manuals, or supplies.

Bachelor of Science Degree, College of Agriculture

GENERAL AGRICULTURE MAJOR

General Education Requirements		46
GED 153	(3)	
Refer to the respective specializations for other specific General Education Requirements.		
Requirements for Major in General Agriculture		74
Agribusiness Economics 204	(3)	
Agricultural Education and Mechanization 170, 314, 318	7-10	
Animal Science 121, 122	4	
Plant and Soil Science 200	3	
Completion of the requirements of one of the four following specializations	57	
Total		120

AGRICULTURAL EDUCATION SPECIALIZATION

GEA 106, 115	(6)
GEB 114, 202, and 301	(9)
GEC 213 and one English course	(6)
GED 101, 102, 107	(9)
GEE 201 and two semester hours of physical education activity courses	(4)
Agricultural Education and Mechanization 311a, 311b, and 411, 414 or AGRI 323	9
Agriculture or Forestry electives	11
Professional Education Requirements (See Chapter 3.)	28
Electives	9-10
Must include at least one additional hour of General Education in order to fulfill certification requirements.	
Total	57

AGRICULTURAL INFORMATION SPECIALIZATION

GEA 106, 115	(6)
GEB 108 or 202	(3)
GED 107	(3)
Agribusiness Economics elective	3
Agricultural Education and Mechanization 311a, 418, AGRI 323	8
Animal Science elective	3
Plant and Soil Science elective	3
One additional course in speech and in writing beyond General Education Requirements	6
Agriculture or Forestry electives	2
Electives	32
Total	57

AGRICULTURAL MECHANIZATION SPECIALIZATION

GEA 106, 115	(6)
Physics 203a,b, 253a,b	(3) + 5
Mathematics 108, 109	(3) + 3
Agricultural Education and Mechanization: 14 hours selected from 371, 372, 373, 374, 384, 472, 473, 474, 483	14
Plant and Soil Science or Forestry	3
Agriculture or Forestry electives	5
Electives	27
Total	57

AGRICULTURAL PRODUCTION SPECIALIZATION

GEA 118	(4)
GED 107	(3)
Plant Biology 200	(3) + 1
Chemistry 140a and 140b	(3) + 5
Select 18 hours with 6 semester hours in each of three of the four following areas	18
A. Agribusiness Economics including either 350 or 351	6
B. Agricultural Education and Mechanization including 372 or 384	6

C. Animal Science 315 or 331 plus one production course	6	
D. Plant and Soil Science 240 plus one production course	6	
Agriculture or Forestry electives		2
Electives		31
Total		57

Minor

A minor in General Agriculture is offered. A total of 16 hours within the department is required. A counselor with the department must be consulted before selecting this field as a minor.

Courses (AGEM)

170-4 Introduction to Physical Principles in Agriculture. An analytical introduction to physical and mechanical principles related to agricultural land measurement, power and machinery, electricity and electronics, structures, environment and handling of agricultural materials.

180-1 to 2 (1, 1) Introduction to Agricultural Communications Experience. Study, observation and participation in **(a)** agricultural news activities, **(b)** graphic/photographic activities of an agricultural extension communication office. Prerequisite: consent of instructor.

257-1 to 10 Work Experience. Credit for on-campus work experience through a cooperative program developed between the department and the Financial Aid Office. 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 Education and Mechanization. No grade for past work experience. Prerequisite: consent of chairperson.

274-2 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.

311-6 (3, 3) Agricultural Education Programs. Nature and scope of the different programs involved in teaching agricultural occupations and methods of developing them.

314-3 Agricultural Information Programs. Preparation for an agricultural information internship; an in-depth study into the nature, scope, integral parts, and methods of a total agricultural information program.

318-3 Introduction to Computers in Agriculture. An introductory course about the use and role of computers in agriculture. The major thrust includes a basic understanding and application of microcomputers in agriculture with special emphasis on how to save time, money, and increase efficiency in agriculture.

359-1 to 6 Intern Program. Supervised work experience in either an agricultural agency of the government or agribusiness. Prerequisite: junior standing or consent of instructor. Mandatory Pass/Fail.

364-3 Leadership of Youth and Peer Groups. (See Workforce Education and Development 364.)

371-2 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.

372-3 Agricultural Production Machinery. A course in selection capacities, application, performance, operation, maintenance, adjustments, and calibration of agricultural production machinery.

373-3 Small Engines and Electricity in Agriculture. A basic agricultural power course emphasizing principles, maintenance, and overhaul of small engines. The course also includes electrical circuit planning, practical wiring, a study of electric motors, and basic electrical controls. There is a $10 additional charge for this course.

374-2 Applied Graphics. Fundamentals of interpreting graphic illustrations, sketching, drawing, and lettering in agriculture, forestry, and landscape design.

380-1 to 2 (1, 1) Agricultural Communications Seminar. Readings, discussions, and activities related to **(a)** current problems, issues, and practices in agricultural communication, **(b)** career opportunities, professional development, and ethical standards in agricultural communication. Prerequisite: junior and senior standing and consent of instructor.

381-1 to 4 (1, 1, 1, 1) Agricultural Seminar. Discussion of special topics and/or problems in the field of agricultural education and mechanization. Prerequisite: junior standing and consent of department.

384-3 Agricultural Shop and Construction Processes. Principles of shop organization and safety; tool and equipment utilization as related to hot and cold metals, woodworking, plumbing, and concrete construction. There is a $15 additional charge for this course.

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 Education and Mechanization. Assignments involving research and individual problems. Field trips. Prerequisite: consent of chairperson.

391-1 to 4 Honors in Agricultural Education and Mechanization. Completion of honors paper and 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 a 3.25 in major; approval of staff member, department chairperson.

402-1 to 12 (1 to 6 per topic) Problems in Agricultural Education and Mechanization. (a) Agriculture education, **(b)** agriculture mechanization. Designed to improve the techniques of agricultural education and mechanization 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 master's degree program. Prerequisite: consent of chairperson.

411-3 Human Resource Development Programs in Agriculture. Principles and procedures of human resource development (HRD) programs in agriculture with emphasis on program determination and methods. Prerequisite: junior standing.

412-3 Methods of Agriculture Mechanization. Theory and use of educational materials and devices adaptable to the needs and interests of educators involved in agricultural mechanization laboratories. There is a $15 laboratory fee for this course.

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.

418-3 Applications of Integrated Software/Agriculture. Design of agricultural or educational applications of integrated software. Spreadsheet, database, word processing, graphic and communications software will be applied to the solution of agricultural problems. Individual student projects will be the focus of the applied nature of the class. Prerequisite: junior standing or consent of instructor.

472-3 Agricultural Tractors and Engines. Tractor performance and selection, principles of operation, maintenance analysis, and tune-up of multi-cylinder farm type internal combustion engines. There is a $5 laboratory fee for this course.

473-2 Advanced Agricultural Electricity. Application of electricity to agricultural problems. An emphasis on principles of electrical distribution on the farm and/or the agribusiness operation. Planning the efficient usage of electricity. Prerequisite: 373 or equivalent.

474-3 Advanced Agricultural Structures. A study of design characteristics, construction, methods, and environmental control applicable to agricultural structures. Design construction and environment are considered from the standpoint of the function of the building of an agricultural enterprise. Prerequisite: 384 or equivalent.

476-3 Agricultural Safety and Health. Analysis of safety and health issues important to managers and supervisors in agricultural operations. Topics include agricultural accident data, causes and effects of accidents, hazard identification, strategies for accident prevention, response to accidents, and health risks and safeguards. Development and documentation of accident and illness prevention activities in the workplace. Prerequisite: junior standing.

483-3 Agricultural Materials Handling, Processing, and Storage. Arrangement of systems for animal waste disposal, feed handling and processing, and storage of agricultural products. Prerequisite: 373 or 384 or 473 or 474.

Agriculture (Courses)

Courses (AGRI)

110-3 Agriculture and Society. An introductory and general inquiry about the role and characteristics of farm and off-farm agriculture in our non-agrarian society. To acquaint students with important aspects of the various fields of agriculture and agrarian relationships to our society.

259-2 to 40 Technology in Agriculture. For credit earned in technical or occupational proficiency above the high school level (by departmental evaluation).

323-2 Career Development in Agriculture. Explores the information necessary for a participant to enter into an agricultural career with government, business or industry. Participants will complete a personal skills assessment, a resume, research a prospective employer, complete a mock interview and negotiate employment.

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 College 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: College of Agriculture or department within the college 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.) Principles 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.

450-2 Farming Systems Research and Development. An introduction to farming systems, which is an interdisciplinary approach to agricultural research and development emphasizing small farms. The whole farm is viewed as a system of interdependent components controlled by the farm household. Focuses on analyzing interactions of these components as well as the physical, biological, and socioeconomic factors not controlled by the household. Techniques of analysis are applicable domestically and internationally.

481-1 International Agricultural Seminar. Discussion of special topics relating to worldwide agricultural development. Prerequisite: consent of instructor.

Agriculture, General (Major)

(SEE AGRICULTURAL EDUCATION AND MECHANIZATION)

Allied Health Careers Specialties

(Major, Courses)

Individual courses of study leading to specialties in allied health career fields are offered by the College of Technical Careers through programs which combine clinical experience with appropriate courses from throughout the University, from community colleges, and from other educational institutions.

Because programs are individually designed, prospective students must consult with the faculty about course and program requirements. Persons interested in the allied health careers program should contact the department chairperson of Health Care Professions.

The program is intended to accommodate non-traditional students. Enrollment is limited by the availability of clinical facilities and supervising faculty. Prospective students who must meet baccalaureate admission requirements 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 will be incurred to cover the cost of uniforms, travel, laboratory fees, etc.

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, College of Technical Careers

Requirements for Major in Allied Health Careers Specialties

GED 101, 107, and 152	9
Chemistry or Physics	3
Allied Health Careers Specialties 105 and 141	6
Computer Information Processing 229	3
Electives/support courses	16
Allied Health Careers major will consist of	25
Total	62

Courses (AHC)

102-4 Introduction to Radiologic Technology and Radiographic Technique. Designed to introduce the student to the medical radiography profession. Students will begin their study of medical terminology, professional behavior, ethics, theory of radiographic exposure, and radiation protection. Prerequisite: admission to program and consent of program adviser.

104-4 Introduction to Medical Assisting. Introduction to the roles and functions of the medical assistant. Emphasis is placed on personal and community health, medical law and ethics.

105-2 Medical Terminology. Introduction to the study of medical language with a working knowledge of the most common word roots, prefixes, suffixes in medical terminology. Emphasis placed on spelling, pronunciation, use of the medical dictionary, vocabulary building, common abbreviations, and charting terms.

112-3 Anatomy and Positioning I. Designed to provide the student radiographer with didactic instruction and laboratory experience which will lead to the development of clinical competencies. It will serve as a foundation for the development of advanced clinical skills as well. The competencies developed are chest, abdomen, upper and lower extremities. Prerequisite: admission to program and consent of program adviser. Laboratory fee: $75.

114-4 Medical Assistant Clinical Procedures I. To familiarize the medical assistant student with preparing the patient for examination in the physician's office; taking temperature, pulse, respiration, blood pressure, assisting the physician; care and preparation of sterile equipment, methods of sterilization; knowledge and care of instruments and ordering supplies. Prerequisite: 104.

124-2 Disease Conditions. Introduction to the study of diseases and disorders of the various body systems. The disease processes as they relate to bodily functions, their signs, symptoms, and treatment will be covered within the scope of medical assisting. Prerequisite: 105.

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.

132-3 Anatomy and Positioning II. A continuation of 112 designed to further develop clinical skills and competencies through continued didactic and laboratory experience. Positioning competencies developed in this course include radiography of the pelvic girdle, spine, and digestive system. Eight weeks. Prerequisite: 112 and consent of program adviser.

141-4 Introduction to Physiology and Human Anatomy. The student will survey the functions and structures of the nine basic body systems: circulatory, digestive, endocrine, excretory, muscular, nervous, skeletal, reproductive, and respiratory.

161-2 Infection Control. It is the responsibility of all health care workers to prevent and to help control infection. This course introduces infection control practices that are important in the prevention and spread of disease. This course will assist the successful student in the development of knowledge needed to provide quality care for patients and to protect yourself from the spread of infection. Prerequisite: anatomy and physiology.

202-3 Radiographic Physics. This course will concentrate on general theories of physics as they relate to matter, mechanics, and electricity. It also involves the study of the nature and production of radiation and understanding of the complexity of radiographic equipment and circuitry. Prerequisite: 102 and 112.

203-5 Principles of Respiratory Therapy. Introduction to the state of the art and fundamental principles and devices used in respiratory care practices. Significance is given to indications and contraindications for therapeutic modalities, appropriate equipment selection, airway management, and rehabilitative practices. Five hours lecture per week. Prerequisite: consent of instructor.

204-3 Medical Assistant Clinical Sciences: Radiology and Physical Therapy. Aide-level competencies in radiologic technology and physical therapy will be achieved. Emphasis placed on the use of these skills within a physician's office. Prerequisite: 105.

209-4 Water Analysis I. Overview of major problems related to the waste and drinking water. Introduction to the terminology and basic concepts. Student will be taught the role and importance of sampling in obtaining water quality data. In addition to sampling techniques, the student will learn to evaluate sampling data. Two hours lecture; four hours laboratory. Prerequisite: consent of instructor.

212-2 Special Procedures. Includes the study of contrast producing agents which are used to visualize specific parts of the body. Radiographic technique employed in this type of imaging is highly specialized and will be studied in depth. Prerequisite: 222, 372a and consent of program adviser.

213-1 Respiratory Therapy Exercises. Concepts and theories are applied in a laboratory setting to enhance a working knowledge with respiratory therapy equipment, physical principles, and pulmonary therapeutic techniques. Two laboratory hours per week. A $25 laboratory fee is required. Prerequisite: concurrent enrollment in 203.

214-4 Medical Assistant Clinical Procedures II. To familiarize the medical assistant with the metric system, basic pharmacology, and preparation of medicine; proper techniques for drug administration, oral, parenteral, and topical; observing and doing EKG procedures; emergency medical care and first-aid and cardiopulmonary resuscitation. Prerequisite: 114.

219-5 Water Analysis II. Student will be taught to analyze all the basic water parameters. Student will develop skill in performing these parameter tests on a variety of sample types, including natural, wastewater, and sludges. Three hours lecture; five hours laboratory.

222-10 Radiography Clinic I. The student is assigned to a selected clinical education center for the entire semester. During this semester, the student radiographer is expected to practice and perfect the professional skills developed the previous semester on campus. The student is supervised by a qualified radiographer and directed in specific experiences designed to meet the objectives for the semester. Prerequisite: 102, 112, 132, 202.

223-2 Patient Care Techniques. Basic principles and essential skills necessary to perform patient care safely and effectively. Skills include surgical asepsis, terminology, communication, patient assessment and positioning, medical ethics, and behavioral problems unique to patients with respiratory illness. Two lecture hours per week. Prerequisite: consent of program adviser.

224-6 (2, 4) Medical Assisting Internship. Medical Assisting experience in both front-office and back-office skills will be obtained by placement in a local physician's office under close supervision. **(a)** Administrative/clerical practice will be gained. **(b)** Clinical experience as well as those advanced administrative procedures not completed in (a) will be covered. To be taken in conjunction with 234. Prerequisite: 214.

229-3 Solid Waste Management. An introductory field course in solid waste management. Students will be introduced to the day-to-day operations of a sanitary landfill such as what the landfill operator needs to know to perform the duties and what the manager must do to insure proper environmental compliance. Also covered will be aspects of solid waste management from collection to regulations, as well as resource recovery options.

232-4 Selected Systems Radiography. Designed to instruct the student in the anatomy and positioning of the skull, digestive, excretory, biliary, and human reproductive systems. Routine projections common to most health facilities will be described, demonstrated, and then practiced on a phantom in the energized lab. A $50 laboratory fee is required. Prerequisite: 222, 372a, and consent of program adviser.

234-3 (1, 2) Medical Assisting Seminar. Students will review patient care, office procedures, medical forms, and all other aspects of the administrative/clinical duties performed in their internship. Specific needs and problems encountered in the individual offices will be discussed. 224a and 234a must be taken concurrently. 224b and 234b must be taken concurrently. Prerequisite: 214.

243-3 Basic Cardiopulmonary Physiology. Physiological functions are presented which include acid-based relationships, gas perfusion, controlling mechanisms of ventilation, ventilation/perfusion relationships, hemodynamics of the cardiopulmonary and renal systems, and blood gas analysis. Three lecture hours per week. Prerequisite: consent of program adviser.

253-1 Clinical Practice I. Orientation to the clinical setting with special emphasis on basic procedures and the role of the respiratory therapy department as part of the health care system. Equivalent to one eight-hour session per week for the semester. Corequisite: 203, 213, 223, 243, and 283.

263-3 Principles of Mechanical Ventilation. Introduces mechanical function of equipment used in continuous and intermittent ventilation of adult, pediatric, and neonatal patients. Indications, contraindications, and hazards of continuous ventilation with significance given to ventilatory management and monitoring techniques. Three lecture hours per week. Prerequisite: 203 and concurrent enrollment in 273.

265-3 Epidemiology of AIDS. Designed to provide the student with a study of the occurrence, distribution, and types of related diseases pertaining to AIDS. Topics will include, but not be limited to, reassessing the issues from 1979 to 1986, current issues and trends, hospital wide management approach, patient confidentiality, legal aspects, public relations, precaution techniques and preventive education, and assessing the future. Designed for continuing education of health care personnel.

273-1 Mechanical Ventilation Laboratory. Emphasis on functional mechanical ventilation characteristics, the assembly of patient circuits, ventilator monitoring, and weaning techniques. Also included is the analysis of arterial blood gas parameters and assessment of the ventilator patient. Two laboratory hours per week. A $25 laboratory fee is required. Prerequisite: concurrent enrollment in 263.

283-3 Survey of Pulmonary Diseases. The study of the nature and cause of pulmonary diseases which involve changes in structure and function. The etiology, pathogenesis, clinical manifestations, laboratory data, and treatment for major chronic and acute pulmonary disease entities will be presented. Three lecture hours per week. Prerequisite: admission to program or consent of program supervisor.

293-2 Clinical Practice II. Supervised clinical experience which emphasizes fundamental respiratory therapy procedures and introduces the student to critical care management. Equivalent to sixteen clinical hours per week. Prerequisite: 253 and 313.

299-1 to 16 Individual Study. Provides 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 of 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.

300-1 to 3 Seminar in Allied Health. A topical seminar conducted by staff members or distinguished guest lecturers on pertinent areas of allied health. Prerequisite: consent of instructor and department.

303-1 Clinical Simulation Study. Designed for the advanced respiratory care student or practitioner in preparation for the clinical simulation examination required for the NBRC advanced practitioner

credential. Content will review format, matrix and examples of clinical simulations and typical case studies used on the examination. Conducted via independent study with a computer emphasis. One lecture/assessment hour per week. Computer lab as necessary. Prerequisite: consent of instructor.

312-3 Radiographic Pathology. Deals with the etiology and processes of trauma and disease. Emphasis will be placed on radiographic pathology of the body systems and the manifestation of this pathology. Prerequisite: 320, 372b, and consent of program adviser.

313-3 Respiratory Pharmacology. The study of drugs; their origin, nature, properties, and effects on living tissues. Significance is given to drugs which reflect changes on the cardiopulmonary and renal systems. Three lecture hours per week.

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 preceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail.

322-3 Sectional Anatomy, Computed Tomography and Magnetic Resonance Imaging. Includes the study of anatomical structures from the transverse, sagittal, and coronal section perspectives. Also included is an introduction to computed tomography and magnetic resonance imaging technology. Emphasis will be placed on a) identifying the imaging plane demonstrated; b) identifying anatomy visualized in a given plane; and c) differentiating between images produced by computed tomography and magnetic resonance imaging. Prerequisite: 332 and 372b.

323-3 Respiratory Pathophysiology. Discussion of pulmonary complications with obstructive and restrictive disease components and their relationships with pulmonary function studies and blood gas analysis. Emphasis is given to patients with complications directly or indirectly affecting respiration. Three lecture hours per week. Prerequisite: 243 and 283.

332-10 Radiography Clinic II. The student returns to the clinical education center for this semester. The student radiographer is expected to continue to practice previously developed professional skills and to assume performance of additional examinations studied during the previous semester. This semester of clinical study includes proficiency testing which, when completed, will allow the student to assume full responsibility for the examination in the future.

342-3 Radiation Biology, Therapy, and Nuclear Medicine. Designed to instruct the student radiographer in the principles and terminology of radiobiology. Emphasis will be placed on how these principles relate to radiation protection for both the patient and radiographer. Also included are introductions to nuclear medicine and radiation therapy technology. Prerequisite: 332 and 372b.

343-2 Neonatal/Pediatric Respiratory Care. Respiratory care of the neonate and pediatric patient is presented with special emphasis on physiology, pulmonary complications, and related general and intensive care procedures. Also included is neonatal transportation and assessment of the sick newborn and child. Two lecture hours per week. Prerequisite: 243.

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 credits to be individually arranged. This course may be classified as independent study. Prerequisite: consent of instructor.

352-4 Special Imaging Modalities. This course provides the student with the knowledge and understanding relevant to the function, operation, and application of the various techniques used in image production.

353-8 Clinical Internship. Integration of clinical practice and knowledge for the advanced student. Students receive clinical experience in neonatal and adult intensive care units with an emphasis in ventilatory management. Students should plan to attend a major medical institution off campus for sixteen weeks in the fall. Prerequisite: 263, 293, 323, 343, and 363.

362-4 Radiography Clinic III. Last clinical course of the program. Students are expected to demonstrate knowledge and competency of radiographic examinations listed in categories one through nine. Image evaluations will be performed on a weekly basis by the clinical instructor as well as behavioral/attitudinal ratings. Prerequisite: 312, 322, 342, 352.

363-3 Pulmonary Evaluation and Monitoring. Emphasis on diagnostic and monitoring principles used in determining clinical evaluation of patients. Cardiopulmonary assessment is presented utilizing electrocardiography, chest roentgenology, laboratory tests, and physiologic shunt and deadspace calculations. Three lecture hours per week. Prerequisite: 283.

372-6 (2,2,2) Radiographic Film Critique. (a) Concurrent with clinical study, the student will participate in the technical review of the films taken fulfilling introductory objectives set for this course. Prerequisite: 102, 112, 132, 202. **(b)** The student will continue to develop abilities to review an examination from a technical standpoint utilizing more advanced knowledge to fulfill course objectives. Prerequisite: 212, 232, **(c)** Final competencies in the technical production and review of the finished radiograph are determined and evaluated. Also included is a review of the knowledge learned in the program. Prerequisite: 312, 322, 342, 352 or consent of program adviser.

373-4 (2, 2) Clinical Practice III. (a) Supervised clinical experience emphasizing diagnostic and monitoring procedures used in evaluating patients with cardiopulmonary complications. **(b)** Research seminar: a faculty supervised research project identifying clinical problems relevant to cardiopulmonary care is completed by the student. The project requires application of both research instrument and analysis. Prerequisite: 293.

375-3 Advanced Modalities: Diagnostic, Therapeutic and Prosthetic. A course designed to provide the student with a study of advanced instrumentation and techniques involved with the Allied Health Sciences. Topics will include an introduction to the modality, theoretical and physical principles, and hands-on instruction of each instrument/technique. Prerequisite: junior standing or licensure/certification.

Animal Science (Major, Courses)

The animal science program is a part of the Department of Animal Science, Food and Nutrition. SIUC's internationally known animal science faculty is dedicated to teaching and to student development. Animal Science teachers at SIUC represent the range of topics in animal agriculture. There are specialists in animal genetics, reproductive physiology, nutrition and management for each of the species, international food programs, and veterinary medicine. The animal science teachers bring their exciting experience with them into every class they teach. The combination of the visionary and the practical makes a strong and vital faculty for students who want the best professional education they can get.

The department offers three specializations leading to a B.S. degree: production, equine science, and science and pre-veterinary medicine. In addition, the department offers a two-year and a three-year curriculum in pre-veterinary medicine. The latter allows qualified students to transfer to accredited colleges of veterinary medicine prior to receiving the Bachelor of Science degree in Animal Science.

Most of the students' agriculture courses for the major will be in animal science, but students can also select courses from agronomy, horticulture, forestry, agricultural education, microcomputers in agriculture, agricultural mechanization, agribusiness and economics, and farm management. Other classes help the student meet basic University requirements in a way that will strengthen their abilities to think, understand, and communicate about the social, physical and natural sciences important to animal scientists. Other departments offer supplemental coursework in physiology, genetics, nutrition, animal behavior, and other topics that many animal science students find valuable.

The animal science major is backed up with extensive facilities for several species of livestock, and every student has the opportunity to get involved in work, research, or observation at the University Farm. The core of our animal science program is the 2,000 acre farm system, which includes special centers for beef, dairy, horses, and swine.

Hundreds of distinct occupations exist within the animal agriculture field. There are opportunities in animal production work at farm operations, ranches, feedlots, stables and zoos. There are opportunities in feed and meat-packing industries, equipment suppliers, government and international agencies, veterinary medicine, and numerous other supporting industries that serve producers. Within each of these areas, animal science graduates are employed in such jobs as sales, service, education, communication, finance and business management.

There may be extra expenses for field trips, manuals or supplies in some courses.

Bachelor of Science Degree, College of Agriculture

General Education Requirements 46
GEA: See requirements of the specialization
GED 153 required; mathematics as required for specialization
Requirements for Major in Animal Science 74
Core Requirements 33
Animal Science 121, 122, 210, 215, 315, 331, 332, plus
one course from 409, 420, 430, 465, 480, or 485 23

Agribusiness Economics 204 to substitute for GEB 211	(3)	
Agriculture electives, excluding Animal Science	5	
Microbiology 201	4	
Physiology 208	1	
Specialization Requirements		41
Fulfill the requirements of one of the following specializations:		
Total		120

PRODUCTION SPECIALIZATION

Substitute Chemistry 140a,b for GEA 106	(3) + 5	
GEA 118 or substitute Biology 306, 308, or 309 for GEA 115 or Botany 200 for GEA 117	(3) + 0-1	
General Education mathematics	(3)	
Any Mathematics prefix course with the exception of 107 or 114.		
Animal Science 381 or 481 plus Animal Science electives including one additional 400-level course		7-9
Electives		26-30
Total		41

EQUINE SCIENCE SPECIALIZATION

Substitute Chemistry 140a,b for GEA 106	(3) + 5	
GEA 118 or substitute Biology 306, 308, or 309 for GEA 115	(3) + 0-1	
General Education mathematics	(3)	
Any Mathematics prefix course with the exception of 107 and 114.		
Agribusiness Economics 350		3
Animal Science 219, 409, 419, 431, 481, 490, and a minimum of 4 credit hours in 112, 212, 312, or 412		29
Electives		2-3
Total		41

SCIENCE AND PRE-VETERINARY SPECIALIZATION

Substitute chemistry for GEA 106; physics for GEA 101 and biology for GEA 115.		
Chemistry 222a,b, 344, 345, 346, and 380b or 222a,b, 380a and 380b	(3) +13-17	
Physics 203a,b and 253a,b	(6) + 2	
Biology—8 semester hours required	(3) + 5	
Mathematics 108 and 109	(3) + 3	
Three hours of mathematics will substitute for general education mathematics.		
Animal Science 381 or 481 plus Animal Science electives including one additional 400-level course		7-9
Electives		5-7
Total		41

Minor in Animal Science

The minor in animal science requires 16 semester hours, of which at least 12 must be earned at Southern Illinois University at Carbondale. An adviser within the department must be consulted before selecting this field as a minor.

Minor in Equine Studies

The minor in equine studies requires 16 semester hours, of which at least 12 must be earned at Southern Illinois University at Carbondale. Courses required are 215, 219, 315, 409, and 331 or Physiology 310, with additional hours to reach the 16 hour total selected from 319, 419, 431, 481 or other courses in equine studies not to exceed 2 credit hours from equitation (112, 212, 312, or 412). The minor in Equine Studies is not awarded to students who have a major in Animal Science.

Courses (ANS)

112-2-16 (2 per semester) Introduction to Riding. For students with little or no riding experience. A combination of mounted and classroom work will introduce the rider to safe and responsible riding practices. Students will gain an understanding for the natural function of the horse under saddle and the influence of rider position and aids on horse and rider safety and comfort. Riding emphasis will involve work on basic position and aids. Classroom work will cover safety procedures, before and after riding care, and care and use of tack. Facilities/riding expenses are $200-$250 per class. Prerequisite: No prior riding experience required. Concurrent or prior enrollment in 219 or equivalent.

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 people. 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.

123-1 to 8 (1 to 2 per discipline) Animal Production. (a) Beef; **(b)** Dairy; **(c)** Horse; **(d)** Swine. Provides students with limited previous livestock experience an opportunity to participate in the routine care and management procedures at one of the University's livestock centers.

210-3 Livestock Products and Evaluation. Processing and distribution of meat and dairy products. Consumption, nutritional value, cooking and serving of these products. Nomenclature and identification of meat cuts. Breeds, classes, and evaluation of meat and dairy animals.

212-2 to 16 (2 per semester) Riding and Position Control. Through the combination of mounted and classroom work, students will learn theory and implementation of the six rein aids and three leg aids used in riding. Students will be introduced to the principles and use of basic training aids. Mounted work will center on obtaining an independent seat and mastery of intermediate aids. Riders will begin to deal effectively with the common challenges that can arise during riding. Classroom work will cover gait recognition and control, principles and use of tack and mechanical aids. Facilities/riding expenses are $200-$250 per class. Prerequisite: 112 and/or permission of instructor (tryouts required); concurrent or prior enrollment in 219 or equivalent.

215-2 Introduction to Nutrition. (Same as Food and Nutrition 215.) 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.

219-4 Introductory Horse Management. Designed for the beginning science student or non-science majors with an interest in horses. Information on topics related to horse selection and care coupled with laboratory experience provide essential information for the care of horses owned for pleasure.

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 Financial Aid Office. Only 10 hours of credit may be taken in 257. Prerequisite: consent of chairperson. Mandatory Pass/Fail.

311-2 Livestock Selection and Evaluation. Selection of breeding animals including beef, sheep, and swine; evaluation and grading of market animals. Includes competitive judging, but participation on SIUC livestock judging team is not a required part of this course.

312-2 to 16 (2 per semester) Riding Form and Function. Mounted and classroom work will explore principles and practices used to develop the competitive equine athlete. Advanced training aids will be presented and practiced. Goals of riding will be to develop an independent seat through knowledge of all aids, and to apply these to mounted problem solving in a variety of riding disciplines. Classroom work will emphasize the evaluation of equine form in determining ultimate athletic function and performance potential. Facilities/riding expenses are $200-$250 per class. Prerequisite: 212 and/or permission of instructor (tryouts required); concurrent or prior enrollment in 219 or equivalent.

315-3 Feeds and Feeding. Principles of applied animal nutrition. Ration formulation to meet specific nutrient needs of livestock. Feedstuff evaluation, including cost will be discussed. Prerequisite: general education mathematics.

319 -1,1 Training, Fitting and Sales Preparation. Students train and prepare yearling racehorses for sale at public auction. Students must complete both 319a and b in order to receive credit. Prerequisite: 219 and consent of instructor.

331-4 Physiology, Growth, and Development of Farm Animals. Physiology is presented using the organ system approach. Growth and development of meat animals with emphasis on bone, fat, and muscle tissue, and the factors which influence their relative rate of formation.
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.
337-3 Animal Hygiene. Principles of prevention and control of infectious, nutritional, and parasitic disease of farm animals. Prerequisite: a course in chemistry.
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 agribusiness. 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 agribusiness 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.
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 Science. Assignment involving research and individual problems. Prerequisite: juniors and seniors only and consent of chairperson.
409-4 Equine Science. Designed for students interested in the more scientific aspects of equine physiology and management. The class will take a more advanced look at anatomy and physiology of the systems of the equine and consider how they relate to selection, use, and management. Lecture and laboratory. Prerequisite: 219, 220, 331 or Physiology 310, or equivalent.
410-3 Meat Science. Chemical, physical, and nutritional properties of meat and meat products. Topics covered include muscle function, tissue growth and development, aspects of post mortem change including rigor mortis, meat microbiology, methods of analysis, and quality control. Prerequisite: 210, Chemistry 140 or equivalent, and a course in physiology.
412-2 to 16 (2, 2 per discipline) Horsemastership. Designed to involve the advanced equestrian in evaluation and resolution of special problems in horse training involving one specific riding discipline: **(a)** Hunt seat, **(b)** Dressage, **(c)** Stock seat, **(d)** Saddle seat. Emphasis will be placed on the use of resistance-free training techniques. Not for graduate credit. Prerequisite: 312 or concurrent enrollment and permission of instructor. Special application. Facilities/riding expenses are $200-$250 per class.
414-3 Animal Feed Quality Control. Laboratory procedures for nutrient determinations used in animal feed quality control. Prerequisite: Chemistry 140 or equivalent.
415-4 Advanced Animal Nutrition. Advanced principles and practices associated with digestion, absorption, and metabolism of nutrients as related to domestic monogastrics, ruminants and horses. Prerequisite: 215 and 315.
419-4 Stable Management. Designed for the advanced equine science student planning a career in the horse field. Teaches in-depth management techniques on an applied basis. Students will have the opportunity to learn both theory and application of management in one course. One hour lecture, four hours laboratory. Laboratory fee: $20. Prerequisite: 219, 409, and consent of department.
420-4 Commercial Poultry Production. Principles and practices of management of broilers, layers, and turkeys as adapted to commercial operations. Field trip. Offered fall semester of even numbered years. 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.
430-4 Dairy Cattle Management. Application of the principles of breeding, 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.
433-4 Introduction to Agricultural Biotechnology. (Same as Plant and Soil Science 433.) This course will cover the basic principles of plant and animal biotechnology using current examples; gene mapping in breeding, transgenic approaches to improve crop plants and transgenic approaches to improve animals will be considered. Technology transfer from laboratory to marketplace will be considered. An understanding of gene mapping, cloning, transfer and expression will be derived. Prerequisite: senior standing or consent of instructor.
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. Offered only fall semester of odd numbered years. 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.
481-1 Current Topics in Equine Science. Seminar exploring selected topical concerns in the horse industry. Students will prepare and present an individual seminar on current scientific work in the equine area. Such areas of study might include but are not limited to behavior, nutrition, reproduction, management, veterinary advances, and general and exercise physiology. Prerequisite: 419.
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.
490-8 Horse Industry Internship. Provides the equine science students with the opportunity for diversified, practical experience in their area of career-goal interest. One semester will be spent working in a commercial horse-related industry. Not for graduate credit. Prerequisite: 409, 419, senior standing, and consent of instructor.

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. Anthropology is a special major providing capable students with an intensive program emphasizing early integration into upper division coursework. While oriented toward preparation for graduate work, this major is also appropriate for the outstanding liberal arts student seeking a distinctive program. Students must meet a minimum 2.5 GPA requirement for admission into the Anthropology major. The highly motivated student failing to meet this requirement is encouraged to petition the Undergraduate Studies Committee with a one-page statement justifying their admission.

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 one each of the 310 and 410 course series. Anthropology seniors are required to participate in the Senior Seminar (ANTH 480), usually held in the Fall semester. No more than six hours of Anthropology 460 and no more than six hours of 200-level course work may be applied to the major. It should be noted that graduate departments often require foreign language and mathematical background beyond that required by the undergraduate program. 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 the writing of an honors thesis, usually in the Spring semester of the senior year, under the direction of a departmental faculty member.

Bachelor of Arts Degree, College of Liberal Arts

General Education Requirements	46
College of Liberal Arts Academic Requirements	(4) + 8-14
Requirements for Major in Anthropology	32
Anthropology 300A, 300B, 300C, 300D and 480 required, and an additional nine hours: three of 310 series, three of 410 series, and three more of 400-level course work in anthropology.	
Electives	28-34
Total	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 of 310 series or 400-level courses.

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 and Design. Required courses for the minor are drawn from the following: Anthropology 450a,b; Art and Design 207, 447; Geology 445; and History 497, 498.

Courses (ANTH)

201-3 Archaeology of Illinois. A survey of prehistoric cultural development, its causes and consequences, as seen through the archaeology of Native American cultural development in the Illinois region, from the earliest foragers to European contact.

203-3 World Archaeology: Humans Before History. Survey of the development of human societies around the world up to the beginnings of agriculture and city life. Groups such as the Aztecs, Incas, Egyptians, and early Chinese and Indian cultures will be discussed.

221-3 The Anthropology of Sexual Behavior. Current issues of sexism and gender roles are brought into focus by a study of patterns of primate and human sexuality. Attitudinal and cultural distinctions between men and women are related to need and pressures on a cross-culture basis.

225-3 Separate Realities. Anthropological approaches to altered states of consciousness. A survey of popular and scholarly works on altered states and the functions of these states in societies, including our own.

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.

251-3 Anthropology Through Science Fiction. Basic concepts of anthropology are used to interpret the imaginary worlds of science fiction. Fictional alien cultures are examined to see how features of human biology, language, social organization, technology, etc. are patterned after or are different from known human cultures.

261-3 Issues in Popular Anthropology. A presentation of issues of popular interest which can be clarified through anthropological examination. Among these are the issues of creationism versus evolution, ancient astronauts, the Abominable Snowman, the lost civilization of Atlantis, primitive languages and peoples, and the diversity of sexual practices. The course traces the origins of these issues and beliefs as aspects of American popular culture.

300A-3 Introduction to Biological Anthropology. An overview of human biology, including genetics and evolutionary theory, the fossil record, nonhuman primate behavior and evolution, and the concept of race and biological differences in modern humans.

300B-3 Introduction to Anthropological Linguistics. Presents language as a facet of cultural anthropology with emphasis on the methods of linguistic analysis, language history, the functions of language in social and cultural behavior, and the variety of ways different languages classify and organize reality. Open to both majors and non-majors.

300C-3 Introduction to Archaeology. Covers basic theories and methods used in archaeology to study life-styles of past cultures through an examination of their tools, house and community remains, and art works. Includes methods of excavation, dating techniques, and other methods of analysis. Open to both majors and non-majors.

300D-3 Introduction to Social-Cultural Anthropology. An exploration of current anthropological theories and methods for understanding human cultures from a comparative perspective; also examines human institutions such as religion, politics, and family cross-culturally. Although non-Western societies are emphasized, comparisons with our own are treated as well.

301-3 Language in Culture and Society. The problem of the uniqueness of human language and how it fits into culture and society. The origin and development of language. Topics covered include animal and human communication, language and world view, and the meaning of meaning.
302-3 Indians of the Americas. A region by region survey of the native Americans of North, Middle, and South America. Emphasis is on lifeways: ecology and environment, subsistence, economy, social organization, religion, art, music, and other aspects of culture. A brief introduction to pre-history and language is included.
303-2 Native American Art and Culture. A survey of native American art from traditional through contemporary forms, with a focus on the changing role that art has played in native American culture.
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).
310-3 to 24 (3, 3, 3, 3, 3, 3, 3, 3) Introduction to Peoples and Cultures. An introduction to the prehistory, cultural history, and modern cultures of peoples in 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)** South America, **(f)** Near East and North Africa, **(g)** North America, **(h)** Oceania.
330-3 Biological Foundations of Human Behavior. Discussion of human sexual behavior, the opposition of violence and aggression with cooperative behavior, and the anthropological background of facts concerning whether these behaviors are driven by biological (instinctual) or purely cultural fac-
340-3 Coping in Other Cultures. Applications of anthropology to practical, daily problems faced by professionals working in other cultures. General exploration of the common misconception that one's own culture is the best and only way to get things done, and that one's own language is the best means of communication. Case studies of professionals coping in other cultures.
341-3 Slavery and the Black Diaspora. Focuses on slavery in the Americas and the early phases of the Black Diaspora from a comparative historical and anthropological perspective; the Caribbean, Brazil, and the southern United States will be treated as well as the transatlantic slave trade.
360-3 American Culture. A study of the United States and its subcultures, using anthropological concepts and description to provide a focus for American students on their own culture and an understanding for foreign students of the complexities of American behavior, values, and social structure. Examines subcultures defined by race and ethnicity, immigrant assimilation and culture contact, and experiments in alternative living.
370-3 Anthropology and Contemporary Human Problems. The contribution of anthropology to an understanding of contemporary human problems of environmental crisis, world hunger and overpopulation, social stratification and internal order, war and international order. The approach is cross-cultural drawing on knowledge of all societies and cultures in space and time. Anthropological fundamentals are introduced at the beginning.
376-2 to 8 Independent Study in Classics Program.
400A-3 Theory and Method in Physical Anthropology. Current topics in biological evolution and variation, including the theoretical and methodological background to each. Topics will be drawn from the four major areas of physical anthropology: genetics and evolutionary theory, primate studies, human fossil record, and human variation. Prerequisite: Consent of the department or enrollment in one of the graduate programs in the Department of Anthropology.
400B-3 Theory and Method in Linguistic Anthropology. History of linguistic anthropology. Description and analysis of languages. Origin, development, and acquisition of language. Theory of symbolic systems. Human and animal communication. Historical linguistics. Languages in culture and society. Prerequisite: Consent of the department or enrollment in one of the graduate programs in the Department of Anthropology.
400C-3 Theory and Method in Archaeology. Overview of the currents and controversies in anthropological archaeology in their historical and theoretical context. Topics include history of archaeological theory, explanation in archaeology, limitations of the archaeological record, and archaeological approaches to the study of cultural variation. Prerequisite: Consent of the department or enrollment in one of the graduate programs in the Department of Anthropology.
400D-3 Theory and Method in Sociocultural Anthropology. Overview of contemporary approaches to social and cultural research in anthropology. Attention is given to such topics as structural functionalism, cultural ecology, dialectical and cultural materialism, ethnoscience, sociobiology, neo-Darwinism, symbolism, and cross-cultural comparison. Problem areas investigated include kinship, social structure, comparative economics, political organizations, religion, culture and personality, environmental adaptation, cultural change. Prerequisite: Consent of the department or enrollment in one of the graduate programs in the Department of Anthropology.
402-3 People and Culture. Offered primarily for non-anthropology majors. Focuses on the nature of culture, cultural processes, and cultural change with emphasis on social, political, economic, artistic, religious, and linguistic behavior of humans as individuals and in social 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 technical 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 in the four subfields of the discipline (sociocultural, physical, linguistics, archaeology). Emphasis is on concepts, ideas, and work and major practitioners of the early 19th to the middle of the 20th centuries, and on the major trends that have led to specialties found in anthropology today. The present status of anthropology as an academic discipline is briefly explored, and an attempt is made to assess the future of the discipline in terms of intellectual and practical concerns. Prerequisite: Consent of the department or enrollment in one of the graduate programs in the Department of Anthropology.

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, taletypes, 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. (Same as Religious Studies 410f.) 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 "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.

410K-3 Ecological Anthropology. An examination of the relationship of past and present human populations in the context of their natural and social environments. Prerequisite: 300C and 300D or equivalent.

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.

430E-3 Archaeology of the Eastern Woodlands. Detailed study of the early cultures of the North American Eastern Woodlands with emphasis on the evolutionary development of cultures. Prerequisite: 300C, 302, 400C or 430A 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.
441-6 (3, 3) Laboratory Analysis in Archaeology. **(a)** Emphasizes methods of analysis in archaeology as part of a larger research design created by the student. May be taken independently or as a follow-up to 496. **(b)** Emphasizes technical methods of the physical and natural sciences in archaeological analysis, as used in environmental reconstruction, dating, and for the investigation of production and exchange.
442-1 to 12 Working with Anthropological Collections. Management, curation, and analysis of anthropological collections as part of a research project created by the student. May be taken independently or as a follow-up to 450, 495, 496, or 597.
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).**
455-3 to 27 (3 per topic) Topics in Bioanthropology. Intensive study of one of the major subfields within biological anthropology. Topical areas include: **(a)** Dental Anthropology. **(b)** Laboratory Methods. **(c)** Primate Behavior and Ecology. **(d)** Quantitative Methods. **(e)** Biomedical Anthropology. **(f)** Human Growth, Development, and Adaptation. **(g)** Primate Biology and Evolution. **(h)** Osteology. **(i)** Comparative and Functional Primate Anatomy.
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 areas.
480-3 Senior Seminar. Readings and discussion concerning major issues in the study of humankind, with an emphasis on anthropological writing. Not open to graduate students or non-majors. Fulfills the CoLA Writing-Across-the-Curriculum requirement. Prerequisite: 300a,b,c,d.
490-3 Field Methods and Analysis in Linguistic Anthropology. Includes theoretical background and a project in the linguistic aspects of culture. Prerequisite: 300B, 301, or 400B.
495-3 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 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.

Aquatics (Minor)

(SEE PHYSICAL EDUCATION)

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. The program has been approved by the American Institute of Architects.

Intelligent, motivated students with mathematical, artistic, or manual skills will be most successful in the program. Students are required to provide their own drafting equipment and normal supplies.

An advisory committee, whose members are practicing architects, assists the faculty in maintaining a current curriculum. The advisory committee members are chosen for their understanding of today's needs in the profession and their interest in education.

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 additional 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, College of Technical Careers

Requirements for Major in Architectural Technology

GED 101, 102, 153	9
Technical Careers 105a,b, 107a,b	8
Architectural Technology 111, 112, 113, 124, 125, 214, 215, 216, 217, 219, 220, 224, 225, 226, 229 each with a minimum grade of *C*	57
Total	74

Courses (ARCH)

111-6 Architectural Drafting. Basic principles in the geometry of architectural drawings to include orthographic projection and pictorial drawing. Lecture: three hours. Laboratory: six hours. Prerequisite: major in architectural technology or consent of coordinator of architectural technology.

112-3 Architectural Graphics. Materials, methods and techniques in architectural graphics through sketching and drawing in various black and white media, theory and use of color, and delineation in various color media. Lecture: one hour. Laboratory: five hours. Prerequisite: major in architectural technology or consent of coordinator of architectural technology.

113-3 Architectural History. The study of the influences and development of architectural from prehistoric through the contemporary period. In particular, the study of structure, aesthetics, and language of architecture. Prerequisite: Major in architectural technology or consent of coordinator of architectural technology.

124-5 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 wood frame construction to practice current procedures, dimensioning, notation, and design correlation, with standard and creative detailing. Lecture three hours. Laboratory six hours. Prerequisite: 111 and major in architectural technology or consent of coordinator of architectural technology.

125-4 Architectural Design I. Problem solving in architectural design with emphasis on design elements and principles, human scale, methods and procedures, composition, and presentation. Architectural projects of relatively small scope and simple nature. Lecture: one hour. Laboratory: five hours. Prerequisite: 111, 112, and 113 and major in architectural technology or consent of coordinator of architectural technology.

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 of 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.

214-6 Architectural Drawings II. Continuing study of materials and practices in document preparation for non-complex buildings using masonry and reinforced concrete construction. Investigation and use of local, state, and federal codes regulating health and safety. Construction techniques relating to

criteria or permanence, low maintenance and budget requirements. Working drawings for two-level, light commercial/industrial buildings. Lecture: three hours. Laboratory: six hours. Prerequisite: 124 and major in architectural technology or consent of coordinator of architectural technology.

215-4 Architectural Design II. Continuing study of architectural design with application of principles and procedures for 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 and major in architectural technology or consent of architectural technology coordinator.

216-4 Architectural Structures I. Elementary study of forces and force systems using graphic and analytic methods. Basic structural concepts: reactions, shear and moment diagrams, axial, eccentric and combined loading on beams and columns. Review of principles used in the design of floor and roof structural systems: load analysis, acting and resisting stresses. Analytic and graphic truss stress analysis. Lecture: four hours. Prerequisite: Technical Careers 105a and b, 107a and b, and architectural technology major or consent of architectural technology coordinator.

217-2 Architectural Systems. Basic principles of mechanical and electrical equipment of buildings. Familiarization with water supply and sanitation systems. Fundamentals of properties of heat, air conditioning, and purification systems. Fundamentals of illumination and electrical systems. Fundamentals of acoustics and materials for reflection, attenuation, and isolation. Lecture: two hours. Prerequisite: Technical Careers 105a, b, 107a, b, and major in architectural technology or consent of architectural technology coordinator.

219-2 Architectural Site Planning. Fundamentals of topography, site planning, building location, preparation of detailed site drawing, introduction to use of surveying equipment. Lecture: two hours. Prerequisite: 124 and major in architectural technology or consent of architectural technology coordinator.

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: concurrent with 224 and major in architectural technology or consent of architectural technology coordinator.

224-6 Architectural Drawings III. Continuing study of materials and practice in document preparation for construction of multi-floor 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, 219, and major in architectural technology or consent of architectural technology coordinator.

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 and major in architectural technology or consent of architectural technology coordinator.

226-4 Architectural Structures II. Continued study of structural framing systems. Investigation of materials and design of structures through selection of the safest and most economical shapes to satisfy the requirements for structural members commonly used in building construction. Formulation and use of structural design procedures, with regard to material limitations and code requirements, and the selection of structural members. Lecture: four hours. Prerequisite: 216 and major in architectural technology or consent of architectural technology coordinator.

229-2 Architectural Estimating. Study of estimating methods including material lists and quantities, material and labor costs, and factors affecting construction costs. Lecture: two hours. Prerequisite: Technical Careers 105a,b; 214 and major in architectural technology or consent of architectural technology coordinator.

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 of 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.

315-4 Architectural Design IV. Correlation of the schematic design and design development phases of the project from the initial program with appropriate drawings required for each phase. Lecture two hours. Laboratory four hours. Prerequisite: ARCH 224, 225, College of Technical Careers baccalaureate major or consent of Architectural Technology coordinator.

316-3 Architectural Structures III. Continuing study of framing materials and systems for buildings using advanced concepts of structural analysis. Included are earthquake resistant structures, composite beams, plastic theory, statically indeterminate structures, long spans, moment distribution, multi-story structures, etc. Lecture: three hours. Prerequisite: 226 or consent of architectural technology coordinator.

318-3 Architectural CADD I. Introduction to, and the development of the competencies and skills in the use of computer aided design and drafting in the architectural disciplines. Includes the development of two dimensional drawings using the C.A.D. system. Prerequisite: 111 and consent of instructor.

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 preceptor and coordinator. Reports and as-

signments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail.

324-4 Architectural Drawings IV. Correlation of the design development and construction documents phases of a building project. Development of the project from design development through construction drawing phases with appropriate drawings required for each phase. Lecture two hours. Laboratory four hours. Prerequisite: ARCH 315, College of Technical Careers baccalaureate major or consent of Architectural Technology coordinator.

328-3 Architectural CADD II. Skill development of the computer aided drafting system in the preparation of contract documents in all architectural disciplines and specifically working drawings. Emphasis will be placed upon developing competencies in data and graphics repeatability. Prerequisite: 318 and consent of instructor.

338-3 Architectural CADD III. Skill development in the computer aided design system in the schematic and design development phases of all architectural disciplines. The use of the computer aided design system as a tool for three dimensional creative problem solving. Prerequisite: 328 and consent of instructor.

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. This course may be classified as independent study. Prerequisite: consent of instructor.

371-3 Lighting and Acoustical Systems. The study of lighting and acoustics as major tools in designing interior spaces through actual problem solving. Emphasis is on task, ambient, and specialty lighting as well as noise reduction within and between spaces. Lecture. Prerequisite: Consent of instructor.

372-3 Mechanical and Plumbing Systems. Study of interior architectural mechanical equipment as it relates to the proximate environment. Emphasis is on heating, cooling, ventilation, and plumbing systems with attendant building codes. Lecture. Prerequisite: consent of instructor.

471-3 Professional Practice. Introduction to the organization, management, and practice of architecture and interior design as a business and profession. Emphasis is placed on the range of services provided, professional ethics, business management, marketing, contracts and negotiations, design cost analysis/control, and other aspects of professional practice. Lecture. Not for graduate credit. Prerequisite: consent of coordinator.

Army Military Science (Department, Courses)

Army Military Science studies is a voluntary coursesequence which leads to a commission as an officer in the United States Army (Active Army, Army Reserves, or Army National Guard). The basic course, consisting of four 100 and 200 level courses is open to all students and carries no military obligation. Students may take one or all the basic courses offered, receiving credit hours for each course, without incurring a commitment to further study in Army Military Science or any branch of the armed forces. If a student continues into the advanced course, the student will then incur a military obligation. The obligation may be served in the Active Army, Army Reserves, or Army National Guard after the student is commissioned an officer, upon completion of the Army Military Science program. Students who wish to complete the program must complete a bachelor's degree, although the field of study is unrestricted. History 393 and courses in communication skills, human behavior, computer literacy, and math reasoning are also required.

Veterans of any service, students who are currently members of the armed forces (Reserve or National Guard), and students who have successfully completed four years of Junior Reserve Officer Training Corps instruction, may be eligible to enroll into the advanced course once they have obtained junior academic status at the University. Students who have no prior military service may attend a six week basic camp at Fort Knox, Kentucky, which will qualify them for entrance into the advanced course of Army Military Science. This six week camp incurs no obligation on the part of the student.

All students enrolled in the advanced course must attend a six week advanced camp at Fort Lewis, Washington between the first and second years of the advance course (normally the summer between the junior and senior school year).

Both the basic and advanced camp pay the student for travel and attendance at camp, plus provide free room, board, and uniforms.

Financial assistance is available in the form of Illinois State ROTC scholarships, national ROTC scholarships, and a tax free $100 per month (for ten months) subsistence pay for all students in the advanced course.

Army ROTC classes are open to all University students with the permission of the professor of Army Military Science. Non-contracted students participating in the advanced course are not eligible for Army scholarships or financial aid, and will not be commissioned as Army officers.

Courses (AMS)

101-1 Introduction to Military Science. An examination of the realities of conflict and the U.S. response to conflict. Particular emphasis is on the U.S. Army's role. Includes the history, organization, and mission of the U.S. military and explores the opportunities resulting from the individual's decision to exercise leadership within the military organization.

102-1 or 2 Land Navigation and Traverse. An introduction to land navigation involving the use of the compass, topographic maps, the sun, and prominent stars. Includes terrain traverse techniques such as free climbing and rappelling. Competitive compass exercises will also be presented as well as other outdoor practical exercise. Two credit hours will be given for those who attend the Leadership Laboratory.

201-3 Basic Leadership Skills. Applied leadership in a small group context. Exercises in self-confidence, group communications, and leadership evolved from situations where the group is required to function and survive on a self-sufficient basis. Principles of survival and cooperative effort will be explored in depth, with maximum involvement of the student in leadership and problem-solving roles. Includes Leadership Laboratory.

202-2 Leadership and Management Techniques. A study of the Military Management System, including the functional aspect of leadership within the military structure. Includes the presentation of military leadership traits, styles, approaches, managerial techniques, and communications.

258-1 to 13 Leadership Equivalency. Experience credit for 101, 102, 201 and 202 are given upon successful completion of this leadership camp held at Ft. Knox, Kentucky. Advance placement into 301 or 302 will be given based on the consent of the professor of military science. Prerequisite: satisfactory completion of the academic phase of the six-week field training program.

301-4 A Study of Organizational Leadership. A multi-faceted approach to the study of leadership in both a military and civilian setting. Emphasis is placed upon human behavior, communication, the individual as a leader, group dynamics, and the military's interface with society. An extensive block on ethics, morality and the Code of Conduct is also presented. Physical training techniques are taught with practical application. Includes Leadership Laboratory. Prerequisite: consent of the professor of military science.

302-3 Small Unit Tactics. The student is introduced to small unit tactical operations at the platoon and company level. Offensive, defensive, and retrograde operations are covered in detail. Unit organization and patrolling are also stressed. Practical exercises are conducted in the classroom and in field environments. Physical training is also conducted. Prerequisite: consent of the professor of military science.

358-6 Advanced Leadership Camp. A special six-week field study training program designed to further prepare Army ROTC advanced course students for the basic tasks that will be required of them as junior officers and leaders in the Army. The course is normally conducted at a major Army installation during the summer. Prerequisite: consent of the professor of military science.

401-4 Advanced Leadership and Management. An analysis of selected leadership and management problems in the following military subjects: unit administration at company level emphasizing correspondence; fundamental concepts of military justice in the armed forces of the United States, including the procedures by which judicial and nonjudicial disciplinary measures are conducted; U.S. Army readiness program as it deals with unit maintenance; the position of the United States in the contemporary world scene discussed in the light of its impact on leadership and management problems of the military service; and a fundamental knowledge of the logistical support available to the unit. Leadership development is continued by the application of leadership principles, stressing responsibilities of the leader, and increasing experience through practical exercises. Includes Leadership Laboratory. Not for graduate credit.

402-3 Fundamentals and Dynamics of the Military Team. This course is designed to give the students a working knowledge in the theory and dynamics of the military team. Generally this includes a study of combat operations by the various military teams, with emphasis on the planning and coordination necessary between the elements of the team. The subjects to be presented during this three-hour block of instruction include an understanding of command and staff organization at the battalion level, military intelligence methods and procedures used to obtain intelligence, and an analysis of the principles used in internal defense and development, emphasizing tactical operations which include civil affairs. Since this course is presented just prior to the commissioning of the cadets, several hours of in-

struction are presented near the end of the school year on the obligations and responsibilities of an Army officer. Includes Leadership Laboratory. Not for graduate credit.

403-1 to 3 Independent Study in Military Science. Directed independent study in selected areas. Students may register for one hour per semester or may register for one hour for the first semester and two hours for the second. They may not register for three hours during one semester. Not for graduate credit. Prerequisite: consent of the professor of military science.

Art and Design (School, Majors [Art and Design], Courses)

The School of Art and Design offers two majors: art and design; and offers two degrees: the Bachelor of Arts and the Bachelor of Fine Arts. Ten specializations are offered in art: the B.A. degree offers art education, art history and general studio; and the B.F.A. degree offers drawing, painting, printmaking, sculpture, ceramics, metalsmithing and fibers/weaving. Two specializations are offered in design under the B.A. degree: visual communication and product design.

The education of teachers, scholars, artists and designers requires both comprehensive learning in the specialization and broad learning in studies outside the major. In meeting these objectives, the School honors the importance of general education and emphasizes both theory and practice in its specializations. Studies are sequentially planned to facilitate orderly progression throughout the baccalaureate curriculum.

The specializations in art education and art history are offered within a liberal arts curriculum format. Upon completion of the program, students in art education are prepared and certified to teach in the public schools. In art history, graduates are prepared for advanced study or for careers that require scholarly and liberal arts training. General studio is the most flexible program offered. By means of both requirements and elective options, students may plan interdisciplinary programs in art and design or develop programs leading towards a specific career objective.

The B.F.A. specializations in art and B.A. specializations in design are professional programs. With a B.F.A. degree, students are prepared to practice as studio artists, go on to advanced study or enter careers in their studio specializations. The B.A. in design prepares students with the intellectual, technological and practical knowledge required in the professional world of design. With a specialization in visual communication, students are accustomed to the discipline practiced in the various fields of application for graphic design. With a specialization in product design, students are prepared to practice in the industrial field of contemporary product development.

Prior to entry into a selected specialization, all majors are required to complete foundation studies: beginning coursework in art history, drawing, and two- and three-dimensional design. In addition, for entrance into the art B.F.A. and the design B.A. specializations, students must have successfully completed a portfolio review of work from previous art studies (at SIUC or elsewhere). The review will be conducted no later than upon completion of the foundation studio courses.

Transfer students seeking admission from another program at Southern Illinois University at Carbondale must meet the same requirements as those seeking admission from another institution (see Chapter 2). Evaluation of a studio course for transfer credit from another institution will be made on the basis of a presentation of the work (or professional quality slides of the work) executed in the course to determine whether the course will be considered equivalent to a specific course or accepted as studio elective credit.

Most prerequisite courses must be completed with a grade of *C* or better before a student may advance into the next course. Students should refer to individual course descriptions for specific information.

ART MAJOR

Bachelor of Fine Arts Degree, College of Liberal 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, or fibers/weaving.

ART MAJOR—DRAWING SPECIALIZATION

General Education Requirements 46
Art and Design 100a and 207a must be taken as approved substitutes in GEC

Requirements for Specialization in Drawing ..... (6) + 89
Foundation requirements: Art and Design (100a), 100b, 107, 110, 120, (207a), 207b, ... (6) + 15
Major requirements: Art and Design 200, 201, 202, 203, 204 or 205 or 206, 300-9, 301a, 301b, 302a or 302b or 302c, 400a, 400b, 400c 48
Art and Design history electives: 300- or 400-level 6
Studio art electives 20

Total 135

ART MAJOR—PAINTING SPECIALIZATION

General Education Requirements 46
Art and Design 100a and 207a must be taken as approved substitutes in GEC

Requirements for Specialization in Painting ..... (6) + 89
Foundation requirements: Art and Design (100a), 100b, 107, 110, 120, (207a), 207b, ... (6) + 15
Major requirements: Art and Design 200, 201, 202, 203, 204 or 205 or 206, 300-6, 301a, 301b, 301c, 302a or 302b or 302c, 401a, 401b, 401c 48
Art and Design history electives: 300- or 400-level 6
Studio art electives 20

Total 135

ART MAJOR—PRINTMAKING SPECIALIZATION

General Education Requirements 46
Art and Design 100a and 207a must be taken as approved substitutes in GEC

Requirements for Specialization in Printmaking ..... (6) + 89
Foundation requirements: Art and Design (100a), 100b, 107, 110, 120, (207a), 207b ..... (6) + 15
Major requirements: Art and Design 200, 201, 202, 203, 204 or 205 or 206, 300-6, 301a, 302a, 302b, 302c, 402a, 402b, 402c 48
Art and Design history electives: 300- or 400-level 6
Studio art electives 20

Total 135

ART MAJOR—SCULPTURE SPECIALIZATION

General Education Requirements 46
Art and Design 100a and 207a must be taken as approved substitutes in GEC

Requirements for Specialization in Sculpture ..... (6) + 89
Foundation requirements: Art and Design (100a), 100b, 107, 110, 120, (207a), 207b ..... (6) + 15
Major requirements: Art and Design 200, 201, 203, 204 or 205 or 206, 300-3, 303-9, 403a, 403b, 403c 39
Art and Design history electives: 300- or 400-level 6
Craft electives 6
Studio art electives 23
Total 135

ART MAJOR—CERAMICS SPECIALIZATION

General Education Requirements 46
Art and Design 100a and 207a must be taken as approved substitutes in GEC.
Requirements for Specialization in Ceramics ..... (6) + 89
Foundation requirements: Art and Design (100a), 100b, 107, 110, 120, (207a), 207b ..... (6) + 15
Major requirements: Art and Design 200 or 201 or 202, 203, 204, 6 credits from 205 or 206 or 214, 304a, 304b, 404a, 404b, 404c, 404d-6 39
Art and Design history electives: 300- or 400-level 6
Craft or sculpture electives 9
Studio art electives 20
Total 135

ART MAJOR—METALSMITHING SPECIALIZATION

General Education Requirements 46
Art and Design 100a and 207a must be taken as approved substitutes in GEC
Requirements for Specialization in Metalsmithing ..... (6) + 89
Foundation requirements: Art and Design (100a), 100b, 107, 110, 120, (207a), 207b ..... (6) + 15
Major Requirements: Art and Design 122, 213, 203, 205, 6 hours from 204, 206, or 214, 305a, 305b, 405a, 405b, 405c, 405d-6 42
Art and Design history electives: 300- or 400-level 6
Craft or sculpture electives 9
Studio art electives 17
Total 135

ART MAJOR—FIBERS/WEAVING SPECIALIZATION

General Education Requirements 46
Art and Design 100a and 207a must be taken as approved substitutes in GEC
Requirements for Specialization in Fibers / Weaving ..... (6) + 89
Foundation requirements: Art and Design (100a), 100b, 107, 110, 120, (207a), 207b ..... (6) + 15
Major requirements: Art and Design 200, 213, 202, 201 or 203, 204 or 205 or 214, 206, 306a, 306b, 406a, 406b, 406c, 406d-6, Cinema and Photography 425 45
Art and Design history electives: 300- or 400-level 6
Craft electives 6
Studio art electives 17
Total 135

Bachelor of Arts Degree, College of Liberal Arts

A student majoring in art with a specialization in art history, art education, or general studio should select the specialization by the end of the sophomore year.

ART MAJOR—ART HISTORY SPECIALIZATION

General Education Requirements 46
Art and Design 100a and 207a must be taken as approved substitutes in GEC. 8 hours of foreign language (French or German) are required, four of which will not count toward General Education Requirements.

Requirements for Specialization in Art History ..... (10) + 74
Foundation requirements: Art and Design (100a), 100b, 107, 110, 120, (207a), 207b ..... (6) + 15
Major requirements: Art and Design 201, 203, 204 or 205 or 206, 347, and 27 hours from 327, 357, 407, 417, 427, 437, 447, 457, 467, 477, 487, 497 39
French or German ..... (4) + 4
Art and Design electives 6
Electives 10
To be chosen from philosophy, history, anthropology, classical studies, foreign languages, religious studies, or other courses approved by the School of Art and Design

Total 120

ART MAJOR—GENERAL STUDIO SPECIALIZATION

General Education Requirements 46
Art and Design 100a and 207a should be taken as approved substitutes in GEC

Requirements for Specialization in General Studio ..... (6) + 74
Foundation requirements: Art and Design (100a), 100b, 107, 110, 120, (207a), 207b ..... (6) + 15
Major requirements: Seven courses from Art and Design 200, 201, 202, 203, 204, 205, 206, 213, 214 or 222 21
300-level studio courses in at least three disciplines 15
400-level studio courses in two disciplines 6
Art and Design history elective 3
Liberal Arts electives (300- and 400-level) 14

Total 120

Bachelor of Arts Degree, College of Liberal Arts or Bachelor of Science Degree, College of Education

ART MAJOR—ART EDUCATION SPECIALIZATION

General Education Requirements 46
Art and Design 100a and 207a must be taken as approved substitutes in GEC; GEB 114, GEB 202 and GEB 301; GEC literature (or a third English course); GEC 213 and GEE 201.

Requirements for Specialization in Art Education ..... (6) + 49
Foundation requirements: Art and Design (100a), 100b, 107, 110, 120, (207a), 207b ..... (6) + 15
Studio requirements: Art and Design 201, 203, 204, 205, 202 or 206 15
Art education requirements: Art and Design 308, 318, 328a, 338a, 328b or 338b 10
Art and Design history electives 3
Studio Art and Design electives 6

Professional Education Requirements 28
See Teacher Education Program, Chapter 3.
Total 123

Minor

A total of 21 hours is required for the minor. The student must complete Art and Design 100a, 100b, 107, and 207a for 12 hours and may then elect studio or art history courses for the remaining nine hours.

DESIGN MAJOR

Bachelor of Arts Degree, College of Liberal Arts

A student majoring in design should select one of the following specializations by the end of the sophomore year.

DESIGN MAJOR—PRODUCT DESIGN SPECIALIZATION

General Education Requirements 46
Art and Design 100a and 207a must be taken as approved substitutes in GEC
Requirements for Specialization in Product Design ..... (6) + 74
Foundation requirements: Art and Design (100a), 100b, 107, 110, 122, (207a), 207b ..... (6) + 15
Major requirements: Two courses from Art and Design 203, 204, 205 or 206; 213, 249, 253, 263, 323, 339, 363, 383, 413, 423, 429, 489 43
Art and Design history elective 3
Approved electives 13
Total 120

DESIGN MAJOR—VISUAL COMMUNICATION SPECIALIZATION

General Education Requirements 46
Art and Design 100a and 207a must be taken as approved substitutes in GEC
Requirements for Specialization in Visual Communication ..... (6) + 74
Foundation requirements: Art and Design (100a), 100b, 107, 110, 122, (207a), 207b ..... (6) + 15
Major requirements: Art and Design 222, 232, 249, 302a or 302b or 302c, 322, 339, 342, 372, 422, 429, 452, 472, Cinema and Photography 225 39
Art and Design history electives (347 recommended) 3
Approved electives 17
Total 120

Courses (AD)

100A-3 Two-Dimensional Design. A fundamental design class dealing with two-dimensional concepts and materials. Emphasis will be placed on design problems which will develop perceptual skills and critical judgement. Studio fee $3. Incidental expenses not to exceed $50.

100B-3 Three-Dimensional Design. A fundamental design class dealing with three-dimensional design concepts and materials. Emphasis will be placed on design problems which will develop perceptual skills and critical judgement. Studio fee $10. Incidental expenses not to exceed $30.

107-3 Fundamentals of Art. A study of the language of visual art and its use to communicate through visual media. Critical thinking is developed through visual awareness and the understanding of the universality of visual concepts.

110-3 Introduction to Drawing I. Designed to help the student experience the concepts and processes that constitute the language of graphic expression. The goal is a working understanding of the still life. Studio fee $5. Incidental expenses not to exceed $50.

120-3 Introduction to Drawing II. Designed to help the student experience the concepts and processes that constitute the language of graphic expression. The goal is a working understanding of inanimate and animate forms in space. Studio fee $5. Incidental expenses not to exceed $50. Prerequisite: *C* or better in 110.

122-3 Drawing for Communication. An introduction to graphic thinking and the visualization of ideas using the materials, tools and techniques employed in design. Students will develop skills and knowledge necessary to effectively think and communicate using pencils, markers and mixed media. Recommended prerequisite: *C* or better in 110.

200-3 Introduction to Drawing III. Concerned with the introduction to various media, compositional devices, spatial investigation, and the human figure. Studio fee $30. Incidental expenses not to exceed $75. Prerequisite: *C* or better in 120.

201-3 Introduction to Painting. Emphasizing material, techniques, processes, and ideas fundamental to the discipline of painting. Studio fee $5. Incidental expenses not to exceed $100. Prerequisite: *C* or better in 100a, b, 107, 110, 120.

202-3 Introduction to Printmaking. Lectures and films on the basic printmaking processes: relief, intaglio, plano graphic, stencil, and cast paper. Emphasis on studio lab work in relief and intaglio, printmaking processes. Studio fee $35. Incidental expenses not to exceed $35. Prerequisite for art majors: *C* or better in 100a, b, 107, 110, 120.

203-3 Beginning Sculpture. Emphasis experience in materials, techniques, processes, and ideas fundamental to the discipline of sculpture. Studio fee $35. Incidental expenses not to exceed $25. Prerequisite: *C* or better in 100a, b, 107.

204-3 Beginning Ceramics. Introduction to ceramic forming techniques of hand building and throwing on the potter's wheel. Students will explore traditional methods of ceramic form construction and will develop fundamental building skills through dialogue, projects, and problem-solving experiences. Studio fee $39. Incidental expenses not to exceed $15. Prerequisite: *C* or better in 100a, b, 107.

205-3 Beginning Jewelry and Metalsmithing. An introduction to the fundamental skills and technology of jewelry and metalsmithing through practical experience. The properties of the medium will be explored and a survey of the field will be made. Studio fee $30. Incidental expenses not to exceed $10. Prerequisite: *C* or better in 100a, b, 107.

206-3 Beginning Fibers. A studio course providing experience in the material, techniques, processes, and ideas in basic dyed, printed, stitched, and non-loom fibers. Emphasis will be on the expressive use of the two- and three-dimensional qualities of fibers. Studio fee $50. Incidental expenses not to exceed $50. Prerequisite: *C* or better in 100a, b, 107.

207-6 (3, 3) Introduction to Art History. Introduction to the scope, methods, and subject matter of art history as a discipline. Emphasis in methodology and problem solving. **(a)** Covers ancient, medieval, Renaissance and non-European art. Prerequisite: *C* or better in 107 or consent of instructor. **(b)** Covers Baroque, Rococo, Nineteenth Century and modern art. Prerequisite: *C* or better in 107, 207a or consent of instructor.

213-3 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. Studio fee: $10. Prerequisite: 100a and 100b with a grade of *C* or better.

214-3 Introduction to Stained Glass. Practical application of basic techniques of stained glass design and construction to include cartoon making, leading, foiling, pattern cutting, and soldering. Studio fee: $45. Prerequisite: 100a, 100b, 107, 110, and 120 or consent of instructor.

219-2 to 18 Workshop. Workshop experience in specific studio and academic disciplines: **(a)** drawing, **(b)** painting, **(c)** watercolor, **(d)** printmaking, **(e)** sculpture, **(f)** ceramics, **(g)** glass, **(h)** fibers, **(i)** metals, **(j)** art education, **(k)** art history, **(l)** papermaking. Studio fee $3 to $50, depending on course discipline. Each topic restricted to two hours per section.

222-3 Type as Image. An introduction to skills, techniques and design as it relates to typography. The skills and techniques include sketching and drawing letterforms, and preparing typographic, rough, and comprehensive layouts, as well as type specification. A general knowledge of type categories and visual techniques used to complement and enhance typographic messages is emphasized. Studio fee: $20. Prerequisite: *C* or better in 100a and 100b.

232-3 Graphic Reproduction. An introduction to the tools, skills, techniques and methods used by designers to insure proper preparation of image and text for reproduction. The course covers fundamentals of the printing production process; including mechanical preparation, sizing and scaling, paper and color specification, and the integration of typography into the process. Studio fee: $20. Prerequisite: 100a, 100b and 222 with a grade of *C* or better.

249-3 Two- and Three-Dimensional Presentation. An introduction to the basic knowledge, skills, methods and materials utilized by the practicing designer to effectively present and communicate a design concept in both two- and three-dimensional form. Development of skills and knowledge necessary to effectively plan, develop and fabricate boards, models and mockups in order to present concepts according to professional design standards is emphasized. Prerequisite: *C* or better in 213 or 222.

253-3 Human Factors. An introduction to basic human-machine concepts specifically oriented to design students. Subjects include sensory and motor processes, space and arrangement, and environmental factors in design. Prerequisite: *C* or better in 213.

257-1 to 30 Work Experience. Credit for concurrent 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 15 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.
263-3 Materials and Methods I. Exploration of methods, tools, and materials for developmental prototyping. Prerequisite: *C* or better in 213.
300-9 (3, 3, 3) Intermediate Drawing. Intermediate figure drawing, a studio orientation to drawing the figure. Included in the course are: materials and methods pertinent to drawing the figure; an historical perspective regarding the figure in art; and problems relative to human figuration in drawing. Studio fee: $50. Incidental expenses not to exceed $50 for each section. Prerequisite: *C* or better in 200.
301-9 (3, 3, 3) Intermediate Painting. (a) Oil painting emphasizing the figure. Studio fee: $50. Prerequisite: *C* or better in 201. **(b)** aqueous medium emphasized. Studio fee: $5. Prerequisite: *C* or better in a and b. **(c)** beginning individual problem solving. Studio fee: $5. Prerequisite: *C* or better in 201a,b. Incidental expenses not to exceed $100 for each section.
302A-3 Beginning Etching. Introduction to the basic processes of intaglio printmaking, including etching, aquatint, engraving, and drypoint. Emphasis will be placed on black and white printing. Studio fee $40. Incidental expenses not to exceed $50.
302B-3 Beginning Lithography. Introduction to the history and basic processes of lithography, including use of stone and plate. Emphasis will be on black and white printing. Studio fee $40. Incidental expenses not to exceed $45.
302C-3 Beginning Silkscreen. Introduction to the basic processes and history of silkscreen; including construction of screen and hand and photographic stencil-making techniques. Studio fee $45. Incidental expenses not to exceed $45.
303-9 (3, 3, 3) Intermediate Sculpture. A studio orientation to tools, techniques, materials, and problems involved in historical and contemporary sculpture. Metal fabrication, figure, wood and stone carving, and plaster fabrication will be emphasized. Studio fee: contingent upon type of materials used by student. Incidental expenses not to exceed $50. Prerequisite: *C* or better in 203.
304-6 (3, 3) Intermediate Ceramics. (a) Focuses on structured problems designed to encourage the student to apply basic forming skills experienced at the introductory level. Pottery shapes requiring singular and multiple form components will be investigated and simple glazing techniques will be introduced. **(b)** Stresses studio problems of a group nature and introduces glaze calculation as both theory and a practical tool. Personal and creative interpretation of assignments; some problems requiring group effort. Must be taken in a, b sequence. Studio fee: $50. Incidental expenses not to exceed $10 for each section. Prerequisite: *C* or better in 204.
305-6 (3, 3) Intermediate Metalsmithing. (a) Exploration of various processes emphasizing the diversity of the technical possibilities within the discipline of metalsmithing. **(b)** Emphasis placed on the use of these processes to develop individual styles. Studio fee $30. Incidental expenses not to exceed $25 for each section. Prerequisite: *C* or better in 205.
306-6 (3, 3) Intermediate Fibers. (a) Introduction to weaving; simple and floor looms; work in spinning, dyeing, stitching, printing, and non-loom fibers is encouraged. Studio fee: $50. **(b)** Continued work in weaving and dyeing with emphasis on double weave, sculptural fibers, and warp and weft ikat. Emphasis on personal expression, craftsmanship, and imagery. Studio fee $50. Prerequisite: 206 with a grade of *C* or better.
308-3 Theories and Philosophies of Art Education. Students develop an understanding of the major art issues in art education through examining theories and philosophies of art education. Areas of focus include trends in art education, child development in art, perceptual and psychological development, learning theory, and teaching methods. Requirements include extensive reading and preparation of a major paper.
309-1 to 12 Independent Study. To be used by majors in the School of Art and Design to pursue independent research activities. Prerequisite: completion of all foundation courses, 3.0 grade point average, major in the School of Art and Design, and consent of instructor.
318-2 Curriculum Development in Art Education. Prepares students to organize art resources, materials, and concepts into effective art learning experiences. The focus is on integrating art concepts from art history, aesthetics, criticism, etc., with studio methods and techniques. Requirements include extensive reading, the preparation of a position paper on teaching art, and developing a curriculum document.
319-3 Art Studio for Non-Majors. General studio for the non-art major. Studio fee $15 to $40. Incidental expenses will be at least $10 per semester.
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. Studio fee: $10. Prerequisite: *C* or better in 222 and 232.
323-3 Product Design Analysis. An introduction to product evaluation techniques, such as human engineering, consumer safety, environmental impact, design liability, and patent protection. Prerequisite: *C* or better in 253.

327-3 Esthetics. General survey of historical and contemporary philosophies of the beautiful with particular emphasis upon their relation to visual works of art and individual student research leading to the organization and presentation of a personal esthetic concept. Prerequisite: 207b or consent of instructor.

328A-2 Art Education Methods: Elementary. Lecture and studio. Prepares students to teach children the fundamentals of art production. Areas of focus include teaching strategies and methods, art processes and techniques, and the appropriate use of tools and materials. Studio fee $10. Incidental expenses not to exceed $15.

328B-1 Internship Laboratory. Observation and pre-teaching experiences in educational settings.

338A-2 Art Education Methods: Secondary. Lecture and studio. Prepares students to teach adolescents the fundamentals of art production. Areas of focus include teaching strategies and methods, art processes and techniques, and the appropriate use of tools and materials. Studio fee $10. Incidental expenses not to exceed $15.

338B-1 Internship Laboratory. Observation and pre-teaching experiences in educational settings.

339-3 Survey of Design. An examination of design within the last two centuries emphasizing industrial design and visual communication; *ie.*, advertising/promotions, packaging, publication, exhibition, signage and informational graphics. A review of designs, designers, processes and methodologies in relation to technological, scientific and cultural movements of the past and present. Looks at implications for the future. Prerequisite: 107, 207a,b.

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: 232.

347-3 Survey of 20th Century Art. A survey of the major developments in painting, sculpture, architecture, and other selected areas of the visual arts from the beginning of the 20th Century to the present. These developments are examined in relation to other significant cultural, scientific, and philosophical events of the 20th Century. Prerequisite: 207b or consent of instructor.

348-3 Art Education for Teachers. Lecture and studio for non-art majors. Especially applicable to pre-school and K-6 grades. Introduction to uses and applications of art media, approaches to teaching and artistic awareness, concept development, creative expression, appreciation, art judgment, and knowledge of our art heritage. Studio fee $10. Incidental expenses not to exceed $15.

357-3 19th Century Art. Survey of painting, sculpture, and architecture in Europe from the French Revolution to the end of the century. Includes such major stylistic movements as Neoclassicism, Romanticism, Realism, Impressionism, Post-Impressionism, and the roots of modern art. Prerequisite: 207b or consent of instructor.

363-3 Product Development. Investigation and identification of significant product related human need areas. Application of development methodologies in selected product design projects. Studio fee: $10. Prerequisite: *C* or better in 323 and to be taken concurrently with 383.

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: *C* or better in 322.

383-3 Practicum in Product Design. Advanced comprehensive product design projects developed into production prototypes. Prerequisite: *C* or better in 323 and to be taken concurrently with 363.

388-1 to 36 Study Abroad. Provides credit toward the undergraduate degree for study at an accredited foreign institution or approved overseas program. Final determination of credit is made on the student's completion of work. Prerequisite: one year of residence at this university, good academic standing, and prior approval of the department.

400-3 to 30 (6, 6, 3, 3 to 15) Advanced Drawing I. (a) Figure drawing. Not for graduate credit. Prerequisite: 9 hours of 300 with a grade of *C* or better. **(b)** Individual research. Not for graduate credit. Prerequisite: *C* or better in 400a. **(c)** Senior seminar and exhibition. Not for graduate credit. Prerequisite: *C* or better in 400b, **(d)** Independent study in drawing. Prerequisite: for undergraduates, *C* or better in 400b; for graduates, consent of major adviser. Studio fee: for a and b, $70; for d, $5. Incidental expenses may exceed $100 for each section.

401-3 to 30 (6, 6, 3, 3 to 15) Advanced Painting I. (a) and **(b)** Individual problem solving with emphasis on technical and conceptual synthesis. Not for graduate credit. Prerequisite: for a, 301a, b, c with a grade of *C* or better; for b, 401a with a grade of *C* or better. **(c)** Senior seminar and exhibition. Not for graduate credit. Prerequisite: *C* or better in 401b. **(d)** Independent study in painting. Prerequisite: for undergraduates, *C* or better in 401b; for graduates, consent of major adviser. Studio fee for a, b, and d, $5. Incidental expenses may exceed $100 for each section.

402-3 to 30 (6, 6, 3, 3 to 15) Advanced Printmaking I. (a) Advanced techniques in printmaking to include intense work in color printing. Not for graduate credit. Prerequisite: *C* or better in 301-6 hours. **(b)** Individual research with emphasis on history, processes, and ideas which lead to the formation of personal content. Not for graduate credit. Prerequisite: *C* or better in 402a. **(c)** Senior seminar and exhibition. Not for graduate credit. Prerequisite: *C* or better in 402b. **(d)** Independent study in printmaking. Prerequisite: for undergraduates, *C* or better in 402b; for graduates, consent of major adviser. Studio fee: for a and b: $60; for d: $10 per credit hour enrolled. Incidental expenses may exceed $50 for each section.

403-3 to 30 (6, 6, 3, 3 to 15) Advanced Sculpture I. (a) Foundry techniques and direct metal fabrication. Not for graduate credit. Studio fee: $48. Prerequisite: *C* or better in 303-6 hours. **(b)** Individual research with emphasis on history, materials, processes, and ideas that form personal content. Not for

graduate credit. Studio fee: $48. Prerequisite: *C* or better in 403a. **(c)** Senior seminar and exhibition. Not for graduate credit. Prerequisite: *C* or better in 403b. **(d)** Independent study in sculpture. Studio fee: contingent upon type of materials used by the student. Prerequisite: for undergraduates, *C* or better in 403b; for graduates, consent of major adviser. Incidental expenses may exceed $75 for each section.

404-3 to 27 (3, 6, 3, 3 to 15) Advanced Ceramics I. (a) Assigned individual problems with emphasis on ceramic form and glazing. Not for graduate credit. Prerequisite: *C* or better in 304-6 hours. **(b)** Individual research with emphasis on kiln theory and design. Not for graduate credit. Prerequisite: *C* or better in 404a. **(c)** Senior seminar and exhibition. Not for graduate credit. Prerequisite: *C* or better in 404b. **(d)** Independent study in ceramics. Prerequisite: for undergraduates, *C* or better in 404b; for graduates, consent of major adviser. Studio fee: for a, b, and d, $27 per credit hour enrolled. Incidental expenses may exceed $20 for each section.

405-3 to 27 (3, 6, 3, 3 to 15) Advanced Metalsmithing. (a) Emphasis will be placed on advanced processes to develop individual expression. Not for graduate credit. Studio fee: $30. Prerequisite: *C* or better in 305a, b. **(b)** Media exploration to develop individual styles. Not for graduate credit. Studio fee: $60. Prerequisite: *C* or better in 405a. **(c)** Senior seminar and exhibition. Not for graduate credit. Prerequisite: *C* or better in 405b. **(d)** Independent study in metalsmithing. Studio fee: $10 per credit hour enrolled. Prerequisite: for undergraduates, *C* or better in 405b; for graduates, consent of major adviser. Incidental expenses may exceed $75 for each section.

406-3 to 27 (3, 6, 3, 3 to 15) Advanced Fibers I. (a) Individual design problems. Not for graduate credit. Studio fee: $50. Prerequisite: *C* or better in 306b. **(b)** Individual research with emphasis on the intensive use of fibers as a creative medium. Not for graduate credit. Studio fee: $100. Prerequisite: *C* or better in 406a. **(c)** Senior seminar and exhibition. Not for graduate credit. Prerequisite: *C* or better in 406b. **(d)** Independent study in fibers. Studio fee: $17 per credit hour enrolled. Prerequisite: for undergraduates, *C* or better in 406b; for graduates, consent of major adviser. Incidental expenses may exceed $75 for each section.

407-3 Ancient Art. Ancient art of the Mediterranean area from the Egyptians to the end of the Roman Empire. A survey of the major cultures, with emphasis upon visual analysis, media and techniques, function, and icongraphy. Field trip required. Documented research paper on an aspect of ancient art required for graduate credit. Prerequisite: 207a or consent of instructor.

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. Prerequisite: *C* or better in 363, 383 and senior standing or consent of instructor.

414-3 to 21 Glass I. A studio course designed for the beginning glass student focusing initially upon basic "flat glass" and cole working techniques and processes. Coursework includes projects intended to familiarize the student with designing and executing products in stained glass. Student will be introduced to forming techniques in glassblowing. Studio fee $20 per credit hour enrolled. Prerequisite: consent of instructor.

415-4 A Creative Look at Reclamation Possibilities for Massively Disturbed Land. Presents the possibility that massively disturbed areas can be aesthetic resources if potential inherent in these sites can be recognized and addressed. Seminar/lecture/studio format with selected lectures given by invited speakers. Discussions include recognition of massive land disturbance; reclamation as a concept; environmental art and design; the questions a potential developer or designer of disturbed land should ask and where they might look for expert advice; and group critiques on student studio projects. Studio projects will involve the visualization in two- and three-dimension formats of plans for the reclamation of the students' chosen site with accompanying documentation.

417-3 Medieval Art. Medieval art from the Fourth to the Fifteenth Century in Western Europe. Examination of selected art objects in terms of media and techniques, iconography, function, and cultural milieu. Field trip required. Documented research paper on an aspect of medieval art required for graduate credit. Prerequisite: 207a or consent of the instructor.

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. Studio fee: $10. Prerequisite: *C* or better in 372.

423-4 Research in Product Design. An in-depth investigation and exploitation of a selected production material (plywood, sheet metal, plastic sheeting, etc.). Not for graduate credit. Studio fee: $10. Prerequisite: *C* or better in 363 and senior standing or consent of instructor.

427-3 Renaissance Art. An examination of various topics appropriate to a study of Renaissance art, both Northern and Italian, during the Fifteenth and Sixteenth Centuries in Europe. The emphasis is on a range of art history problems and methods of approach. Field trip required. Prerequisite: 207a or consent of instructor.

429-3 Portfolio. Presents to the graduating senior an insight into the adventure of locating an open position and the type of graphic samples required to procure employment. Includes preparation of resume, preparation of samples of work for presentation, customization of portfolio for different positions, how to dress, present yourself and work, and to negotiate salary, corporate structure, politics and promotion. Finally, how to survive once you are hired. Not for graduate credit. Prerequisite: senior standing.

437-3 Baroque and Rococo Art. An examination of various topics appropriate to a study of Baroque and Rococo art in Western Europe. Emphasis upon a range of art historical problems and methods of approach. Field trip required. Prerequisite: Art 207a or b or consent of instructor.

447-3 Introduction to Museology. A survey of museum and gallery techniques (emphasis upon practical exhibit development) which will involve 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 the studio. Prerequisite: art major or consent of instructor.

448-3 Art of Tribal Cultures. Covers a broad range of arts of Africa, Native North America, Pre-Columbian America and Oceana, primarily sculpture, textiles, masking and performance, body decoration and textiles, architecture, and ceramics of small-scale village societies.

452-3 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. Prerequisite: *C* or better in 372.

453-4 Environmentally-Integrated Products. Development of products integral to comprehensive environmental planning. Not for graduate credit.

457-3 Women in the Visual Arts. (Same as Women's Studies 427.) Consists of a survey of women's contributions and participation in the visual arts from the middle ages through the Twentieth Century. Through lecture, discussion and research, painting, sculpture, architecture, crafts, film, photography, and other forms of visual art will be covered. Screening fee: $10.

458-3 African Arts. Covers a broad range of the arts primarily of west and central Africa, as well as north, south, and east Africa. Includes sculpture, masking and performance, body decoration and textiles, and architecture. Shows how arts are used in the daily life of traditional village societies in these areas.

459-1 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 design area head. Mandatory Pass/Fail.

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.

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. Prerequisite: 207a and b or consent of instructor.

468-3 Pre-Columbian Art. Covers architecture, textiles, pottery, metal, and 2-D arts of Meso-, Central, and South America during the Pre-Columbian era. Also includes hieroglyphic and calendrical systems and some Post-Columbian era arts as well.

472-3 Visual Communication IV. Advanced problems in visual communication: the development of a corporate identity. Assigned projects simulate design studio procedures for solving contemporary visual identity problems. Not for graduate credit. Studio fee: $10. Prerequisite: *C* or better in 422.

477-3 American Art of the Thirties. A socio-political and artistic study of American art during the decade of the Great Depression. Course material will be divided in three parts: (1) a survey of art trends during the Thirties concentrating on traditional art forms such as painting, sculpture, and architecture, (2) an investigation into government-subsidized art programs, and (3) recent governmental and corporate patronage of the arts through such programs as the National Endowment for the Arts. Prerequisite: 207a and b or consent of instructor.

487-6 (3, 3) American Art. (a) U.S. Art to 1913. Study of American art from native Indian settlements through Colonial period to 20th Century. Attention to such art forms as painting, sculpture, and architecture, as well as the rich varied Indian folk and craft traditions. **(b)** U.S. Art Since 1876. Study of American art and design from Industrial Revolution to present. Attention to such traditional art forms as painting, sculpture, and architecture, as well as the many facets of modern design. Prerequisite: 207a,b or consent of instructor.

489-3 Senior Thesis. Creative project development individualized by the student with the faculty sponsor. Not for graduate credit. Prerequisite: senior standing.

497-3 to 6 (3 per topic) Problems in Art History. A close examination of selected categories of works of art from various periods, media, and cultures as illustrative of particular art historical problems. Topics will vary and include **(a)** portraiture, **(b)** landscape and still life, **(c)** narrative, **(d)** other selected topics. Sections **a** through **c** may be taken only once each, section **d** may be repeated as topics vary. Art historical perspectives to include formal analysis, iconography, art theory, social history, connoisseurship. Prerequisite: 300-level art history course or consent of instructor.

499-1 to 21 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 students' individual needs in problem research. Prerequisite: senior standing in the School of Art and Design, a 3.0 average, and consent of instructor.

Asian Studies (Minor)

Asian Studies is a minor offered in the College of Liberal Arts. 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 Education, and the College of Liberal Arts requirements. The student's special major will 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.

Athletic Training (Minor)

(SEE PHYSICAL EDUCATION)

Automotive Technology (Program, Major, Courses)

The Automotive Technology program in the College of Technical Careers provides students with an opportunity to obtain a solid foundation of knowledge, experience, and skills that will assist in job entry and career advancement in the automotive service field. Fundamental concepts are emphasized in lecture classes and reinforced with practical laboratory activities including the diagnosis and repair of automobiles and laboratory units.

Current automotive trends indicate that the automobile will continue to experience changes that include expanded use of electronics and computerized controls for improving engine performance, fuel efficiency, exhaust emissions, and passenger comfort and safety. These changes will require service technicians who are knowledgeable and highly skilled in specialized areas of automotive technology. This program offers the student an opportunity to develop areas of specialization during the last two semesters of study in the associate degree program and, in addition, elective specialization classes are offered for those students who continue in a bachelor's degree program. The student should expect to spend about $600 for a required basic tool kit consisting of both standard and metric tools.

The Automotive Technology program has achieved master certification by the National Institute for Automotive Service Excellence. Instruction is offered in all eight areas of ASE certification—engine repair, automatic transmissions/transaxles, manual drive trains and axles, front end, brakes, electrical systems, heating and air conditioning, and engine performance. All graduates are encouraged to complete the certification process by taking the ASE certification tests.

An advisory committee composed of leaders in the automotive field provides additional guidance to the program. Current members include representatives from General Motors Corporation, Ford Motor Company, Chrysler Corporation, Toyota Motor Sales, Nissan Motor Corporation, Mitsubishi Motor Sales, Moog Automotive, NAPA, various automotive dealerships, and wholesale/retail outlets.

Associate in Applied Science Degree

During the first year, each student will enroll in core courses that provide opportunities to develop technical skills considered essential to all automotive technicians. During the second year, the student may choose four areas of study from seven possible areas offered. This allows the student to select courses that will assist in developing the chosen career path.

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 educational experience.

Other Programs

Third Year Offerings. Any student who has successfully completed the Associate in Applied Science degree with a major in Automotive Technology at Southern Illinois University at Carbondale, a community college, or other accredited post-secondary institution, may continue advanced automotive technical studies at the post-associate level. These advanced courses may apply toward the bachelor's degree.

Bachelor's Degree. Graduates with the Associate in Applied Science degree with a major in Automotive Technology may continue study toward a bachelor's degree. Graduates may pursue the Bachelor of Science degree in Advanced Technical Studies in the College of Technical Careers with the program of study being Automotive Service Operations. This bachelor's degree program is designed for those interested in technical/management positions in the automotive industry.

General Motors Automotive Service Educational Program. A cooperative work/study program is offered by General Motors Corporation, its participating dealers, and the College of Technical Careers Automotive Technology program. This associate degree program is two calendar years in length. Final selection for admission to this program is determined by the corporation and its dealers.

Moog Cooperative Program / Oldsmobile Cooperative Program. Two cooperative work/study programs are offered by these two corporations in conjunction with the Automotive Technology and Advanced Technical Studies programs. These programs are four calendar years in length and lead to the Bachelor of Science degree in Advanced Technical Studies. Participants are selected each year by the employer from students currently enrolled in the Automotive Technology program.

Associate in Applied Science Degree, College of Technical Careers

Requirements for Major in Automotive Technology

GEB	3
GED 101, 102 and 153	9
Technical Careers 105a, 107a,b	6
Automotive Technology 101, 103, 105, 107, 115, 121, 123, 125, 127	27
Twenty-six hours of selected 200-level Automotive Technology courses	26
Total	71

Courses (AUT)

101-3.5 Automotive Engine and Fuel System Laboratory. Enables the student to acquire knowledge of fundamental service techniques and procedures required to service current automotive engines through actual hands-on experience on laboratory engines. The student will disassemble an engine using approved procedures, inspect and measure for wear and damage, investigate design features, and reassemble the engine to operating condition. The student will investigate numerous diagnosis procedures used in determining an engine's mechanical condition prior to disassembly. Instruction in the adjustment, repair, and diagnosis of carburetors with an introduction to infra-red testing of the carburetor and the emission control devices will be included. Laboratory will be fourteen clock hours per week for eight weeks. Prerequisite: concurrent enrollment in 121.

103-3.5 Brakes and Chassis Laboratory. Provides an opportunity for the student to perform approved procedures for diagnosis and repair of various brake and suspension systems. Experience in the use of brake, alignment, and wheel balancing equipment will be provided on live vehicles and laboratory units. Laboratory will be fourteen clock hours per week for eight weeks. Prerequisite: concurrent enrollment in 123.

105-3.5 Engine Electrical Laboratory. Provides the student with an opportunity to apply the fundamental theories of electricity/electronics to actual diagnosis and testing of the battery, charging, starting, and ignition systems. Special emphasis is placed on meter use and diagnostic procedures. Provides hands-on experience on both live and laboratory components and complete vehicles. Laboratory will be fourteen clock hours per week for eight weeks. Prerequisite: concurrent enrollment in 125.

107-3.5 Drive Trains Laboratory. Provides the student an opportunity to acquire modern technical skills necessary to service and rebuild drive line components. Course includes servicing, rebuilding, and adjusting rear drive axle assemblies, clutch assemblies, manual three-, four-, and five-speed transmissions, single and double cardan universal joints, drive shaft and drive line angles, torqueflight automatic transmissions, manual and torqueflight transaxles, and front drive axle assemblies. Laboratory will be fourteen clock hours per week for eight weeks. Prerequisite: concurrent enrollment in 127.

115-1 Related Shop Laboratory. Provides the student with an opportunity to learn and perform routine service operations and small repairs 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 Automotive Engine 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 emission control systems. The different engine designs, factors affecting combustion, compression systems, valve trains, crankshaft and bearings, cooling systems, and systems used to control engine emissions of NOX, HC, and CO are examples of topics studied. Theory will be six clock hours per week for eight weeks. Concurrent enrollment in 101.

123-3 Brakes and Chassis Theory. Provides instruction in the physical laws of hydraulics and pneumatics and their application to automotive brake and steering systems. Subject areas include steering geometry, suspension system designs, diagnosis and repair, brake system diagnosis and repair, and brake machining procedures. 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 fundamental theories of electricity and electronics applicable to the automotive field. Subject areas include starting, charging, and ignition systems. Special emphasis is placed on electrical measurements and logical diagnostic procedures. Theory will be six clock hours per week for eight weeks. Prerequisite: concurrent enrollment in 105.

127-3 Drive Trains Theory. Provides the student the opportunity to learn the basic concepts of component design, theory of operation, and diagnosis of the modern drive line. Topics studied include rear axle assemblies, manual three-, four-, and five-speed transmissions, clutch and clutch components, propeller shafts, universal joints, manual and automatic transaxles, planetary gear sets, fluid couplings, and also complete rebuilding procedures and theory of a basic three-speed automatic transmission. Theory will be six clock hours per week. Prerequisite: concurrent enrollment in 107.

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 of facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor and department chair.

201-3.5 Automatic Transmission Laboratory. Permits the student to acquire practical experience in the latest diagnostic and service techniques required of current automatic transmissions. Customer vehicles along with laboratory units will be utilized to instruct in the proper diagnosis, disassembly, inspection, and reassembly, along with dynamic testing on a transmission dynamometer. Automatic transmissions covered include rear wheel drive, transaxles, overdrive transmissions and torque converter clutch operation. Laboratory will be fourteen clock hours per week for eight weeks. Prerequisite: 101, 107, 121, 127, and concurrent enrollment in 221.

203-3.5 Automotive Body and Chassis Electrical Laboratory. Assists the student in developing a comprehensive understanding of the diagnostic and repair procedures required of the various body and chassis electrical systems, accessories, and comfort options commonly found on current production au-

tomobiles. The development of sound diagnostic techniques in the solution of real problems on live automobiles will be emphasized. Laboratory will be fourteen clock hours per week for eight weeks. Prerequisite: 105, 125, and concurrent enrollment in 223.

204-3.5 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. Activities presented will consist of all operations required of the refrigeration systems including compressor service and the diagnosis and repair of factory-equipped systems. Laboratory will be fourteen clock hours per week for eight weeks. Prerequisite: 105, 125, and concurrent enrollment in 224.

205-3.5 Electronic Fuel and Emission Controls Laboratory. Provides the student with an opportunity to apply the theories of automotive fuel and emission control system operation in the diagnosis of system problems. Special emphasis is placed on diagnosis and testing of system problems. Special emphasis is placed on diagnosis and testing of computer controlled fuel and emission components. Laboratory will be fourteen clock hours per week for eight weeks. Prerequisite: 101, 105, 121, 125, 209, 229, and concurrent enrollment in 225.

207-3.5 Brakes and Suspension Systems Laboratory. Provides the student an opportunity to learn the techniques in servicing the latest production braking and suspension systems using computerized equipment. Students will receive instruction in wheel balancing, four-wheel alignment, and power assist rack and pinion steering gears. Automatic load leveling devices and air suspension will also be studied. The MacPherson strut and conventional front suspension designs including front drive configurations will be serviced. Brake system service will include electronic power brakes, hydro-boost, and vacuum assist units. Laboratory will be fourteen clock hours per week for eight weeks. Prerequisite: 103, 123, and concurrent enrollment in 227.

208-3.5 Engine Service - Laboratory. Allows the student the opportunity to develop skills and service techniques considered essential in performing quality engine service. Service operations such as water pump replacement, cam drive service, various engine gasket replacement, cylinder head removal, oil pressure tests, cooling system service and engine overhaul procedures are examples of activities that will be performed. Engine diagnosis of mechanical failures and noises will be emphasized. Laboratory will be fourteen clock hours per week for eight weeks. Prerequisite: 101, 105, 121, 125, and concurrent enrollment in 228.

209-3.5 Engine Electronics Laboratory. Provides an opportunity for the student to perform the approved procedures for diagnosis and repair of various engine electrical problems. Includes diagnosis of electronic ignition, computerized oxygen feed-back systems, charging and starting systems. Experience in the use of electronic diagnostic equipment will be provided on live vehicles and laboratory units. Laboratory will be fourteen clock hours per week for eight weeks. Prerequisite: 101, 105,121, 125, and concurrent enrollment in 229.

210-3.5 Diesel Fuel and Electrical Systems Laboratory. Enables the student to learn the fundamental service techniques and procedures required to diagnose and service current automotive diesel fuel injection and electrical systems. The student will diagnose and disassemble diesel fuel injection components, inspect for wear or damage, and reassemble to operating condition. The diagnosis and repair of automotive diesel glow plug systems will be presented including thermal-mechanical and electronic controlled systems. Laboratory will be fourteen clock hours per week for eight weeks. Prerequisite: 101, 105, 121, 125 and concurrent enrollment in 230.

219-1 to 24 Automotive Cooperative Work Experience. The student will apply knowledge and skills learned in the classroom to on-the-job situations. Work experience may be completed in dealerships, independent repair centers, or with the automotive manufacturers. Prerequisite: major in automotive technology and consent of program coordinator.

221-3 Automatic Transmission Theory. Deals with automatic transmission torque converters, clutch systems, planetary gear sets, hydraulic clutch units, computer related controls, and hydraulic controls. The transmissions presented will include rear wheel drive, transaxles, and overdrive transmissions. Emphasis will be placed on theory of operation and current diagnostic procedures. Theory will be six clock hours per week for eight weeks. Prerequisite: 101, 107, 121, 127, and concurrent enrollment in 201.

223-3 Automotive Body and Chassis Electrical Theory. Allows the student to obtain a sound understanding of the theory of operation of the various chassis and body electrical systems, components, accessories, and popular comfort options. Examples of the units studied are body lighting and signal systems, dash instrumentation, windshield wiper and washer systems, cruise control, power windows and tailgates, power seat systems, and power door locks. Assisting the student in interpreting 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 Electronic Fuel and Emission Controls Theory. Provides the student with an opportunity to learn the theories of automotive fuel and emission control system operation. Special emphasis is placed

on computer control of fuel and emission components. Theory will be six clock hours per week for eight weeks. Prerequisite: 101, 105, 121, 125, 209, 229, and concurrent enrollment in 205.

227-3 Brakes and Suspension Systems Theory. Provides the student with the introduction to computer braking systems and radial tuned suspensions. Other important topics are power rack and pinion steering gear operation and power steering pump service procedures. Also, theory will include MacPherson strut suspension operation and service, four-wheel independent suspension service, automatic load leveling devices, and air suspension operation. Electronic power brake units, hydro-boost, and vacuum brake units will be studied. Theory will be six clock hours per week for eight weeks. Prerequisite: 103, 123, and concurrent enrollment in 207.

228-3 Engine Service Theory. Emphasis will be on factors which determine engine component wear and the appropriate service techniques which will return the engine to satisfactory operating condition. Examples of topics covered include engine diagnostic procedures, engine design factors, engine service-theory procedures and the analysis of customer complaints. Theory will be six clock hours per week for eight weeks. Prerequisite: 101, 105, 121, 125, and concurrent enrollment in 208.

229-3 Engine Electronics Theory. Emphasis will be on the basic theories of solid-state electronics as applied in the engine electrical systems. Includes an in-depth study of operational characteristics of transistor ignition, computer engine control, charging, and starting systems. Theory will be six clock hours per week for eight weeks. Prerequisite: 101, 105, 121, 125, and concurrent enrollment in 209.

230-3 Diesel Fuel and Electrical Systems Theory. Provides the student with an opportunity to learn the fundamentals of automotive and light truck diesel fuel systems along with the electrical systems unique to the operation of light duty diesel engine. The principles of operation of a diesel engine, diesel combustion, and operation of the fuel injection pump will be presented. The diagnosis of the fuel system and engine performance will be presented along with the study of thermal-mechanical and electronically controlled glow plug systems. The starting, charging, and glow plug systems will be covered dealing specifically with operation and diagnosis. Theory will be six clock hours per week for eight weeks. Prerequisite: 101, 105, 121, 125, and concurrent enrollment in 210.

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 of facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor and departmental chair.

301-20 (5, 5, 5, 5) Advanced Studies in Automotive Electronics. Provides the student with the opportunity for advanced studies in theory, diagnosis, and service of electronic circuitry and computerized controls that are now an integral part of the automobile. The student may choose any of the following areas: **(a)** electronic engine controls, **(b)** computer controlled fuel and emission systems, **(c)** body and chassis electronics, **(d)** comfort control systems. Emphasis will be on development of advanced technical skills and diagnosis techniques within the subject area. Students will be required to complete a project under the supervision of the sponsoring faculty member. Each area of study will require 20 clock hours of class per week for eight weeks. Prerequisite: AAS degree in automotive technology or consent of program coordinator and required tool set.

302-20 (5, 5, 5, 5) Advanced Studies in Automotive Power Trains. Allows the student to gain practical experience in the latest diagnosis and service techniques required of the new and emerging technologies that constitute the modern automobile design. The student may choose any of the following areas: **(a)** engine machining techniques, **(b)** diesel fuel injection service, **(c)** conventional and front wheel drive transmissions, **(d)** uni-body and front wheel suspension and brake systems. Emphasis will be on the development of advanced technical skills within the subject area. Students will be required to complete a project under the supervision of the sponsoring faculty member. Each area of study will require 20 clock hours of class per week for eight weeks. Prerequisite: AAS degree in automotive technology or consent of program coordinator and required tool set.

319-1 to 12 Automotive Occupational Internship. Students will be assigned to a University approved work site engaged in activities related to the student's academic program and career objectives. The student will perform duties and services as assigned by the employer and the SIUC internship coordinator. Reports and assignments are required to be completed by the student. One hundred hours of successfully completed work is required for each semester hour of credit. Mandatory Pass/Fail. Prerequisite: junior standing, consent of department, and employment at an approved work site.

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. This course may be classified as independent study. Prerequisite: consent of instructor.

419-1 to 12 Automotive Service Operations Internship. Students will be assigned to a University approved work site to engage in work experience related to the Automotive Service Operations curriculum and the student's career objectives. The student will perform duties as assigned by the work site supervisor and internship coordinator. A written assignment is also required as determined by the department. One hundred hours of successfully completed work is required for each semester hour of credit. Not for graduate credit. Prerequisite: senior standing, consent of department, and employment at an approved work site.

Aviation Flight (Program, Major, Courses)

The Aviation Flight program is designed to prepare beginning students for the Federal Aviation Administration Commercial Pilot Certificate including the multi-engine and instrument ratings. Instruction is conducted at Southern Illinois Airport, Carbondale, Illinois. Flight theory courses will supplement and complement each flight course. In order to maintain the highest possible standards for flight and theory courses, each lesson of every course is submitted to and approved by the Federal Aviation Administration. FAA designated check pilots will examine the student's performance and effectiveness periodically during each flight course. General education and basic science courses will be supplemented with a required core of flight courses and other related technical courses to enhance the student's professional value to the aviation industry. In addition to the University tuition and fees, substantial lab fees are assessed for each flight course. For current charges, contact CTC Aviation Flight.

The program has an advisory committee formed from among industry and community leaders. The advisory committee has the following functions: 1) assist in developing policy relative to the program, which includes performance measures in the review and evaluation of the program; 2) analyze labor market and industry needs relative to program intake and output; 3) communicate between industry and the program; 4) assist in conducting activities designed to assist the community as it relates to the program.

The associate of Applied Science degree can be completed in two academic years plus one summer semester at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-instructional educational experience, however, the twenty-one semester hours of aviation flight courses must be taken at SIUC.

Associate In Applied Science Degree, College of Technical Careers

General Education Requirements	
GEA 330	3
GED 101, 102, 107, 153	12
Requirements for the Major in Aviation Flight	
Physics 203a and 253a or College of Technical Careers 107a and 107b	4
Avionics Technology 101, 200	7
Core Requirements	
Aviation Flight Courses: AF 201, 203, 204, 206, 207a, b	21
Aviation Technical Courses: AF 200, 202, 205, 260	13
Total	60

Courses (AF)

200-3 Primary Flight Theory. Prepares the beginning aviation student for the FAA Private Pilot Written Examination. Consists of instruction in aerodynamics, FAA regulations, primary navigation, use of computer, weather, and radio navigation.

201-5 Flight — Primary. Provides flight instruction in preparation for the acquisition of the Private Pilot Certificate. Consists of dual flight instruction, solo and ground instruction in conjunction with each training flight and other flight-related topics.

202-3 Flight — Basic and Intermediate Theory. Instruction in Federal Aviation Administration regulations pertaining to commercial flight operations. Includes advanced instruction in aerodynamics, weather and safe operation of aircraft. Prerequisite: 200.

203-5 Flight — Basic. Beginning course in preparation for the Commercial Certificate. Major emphasis is upon solo and solo cross-country flight, with ground instruction in conjunction with each training flight and other flight related topics. Prerequisite: 201 and a valid Private Pilot Certificate.

204-5 Flight — Intermediate. Continuing preparation for the Commercial Certificate. Including dual, solo and night flight instruction and advanced maneuvers. Ground instruction is provided in conjunction with each training flight. Prerequisite: 203.
205-3 Flight — Instrument Theory. Course is directed to the theory of flight by instrument. Includes classroom instruction in Federal Aviation Administration regulations pertaining to instrument flight, navigation by radio aids, aviation weather, and function, use, and limitations of instruments required for instrument flight. Prerequisite: 202.
206-2 Flight — Instrument. This course continues preparation for the Commercial Certificate. Includes instrument flight instruction. Prerequisite: 203, 204.
207a-2 Flight Advanced. This course completes the requirements for the Commercial Certificate. Includes dual and solo flight maneuvers. Prerequisite: 206.
207b-2 Flight Multi-Engine Operations. Prepares the student for the FAA Multi-Engine rating (airplane). Includes multi-engine flight instruction and individual ground instruction. Prerequisite: 207a.
260-4 Reciprocation and Jet Airplane Systems. Students will have knowledge of construction, operation, and components of reciprocating and jet powerplants. They will understand the operation and components of cabin pressurization and air conditioning systems, flight control systems, landing gear systems, fuel systems, electrical systems, anti-icing systems, and fire detection systems.
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. Prerequisite: 206.
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 flight instructor certificate for the addition of the multi-engine flight instructor rating. Prerequisite: 300.
302-1 Flight-Instructor (Airplane Instrument). Designed to prepare the flight instructor to teach instrument flying, and to acquire the Instrumental Flight Rating. Course consists of ten hours of dual flight instruction and 15 hours of classroom instruction. Prerequisite: 300.
303-3 Flight Instructor Ground School. This course is designed to aid the student who is obtaining a flight instructor's rating. It will cover principles to teaching as well as practical aspects of teaching flight maneuvers necessary for instruction. Prerequisite: 205.
304-2 Practicum in Air Carrier Operations. Students gain practical experience and training by participating as flight officers on passenger aircraft flights. Enables students to practice, under close supervision, the role of first officer within a passenger carrier format. Course includes 20 hours of flight time and a minimum of 40 hours pre- and post-flight activities and instruction. Mandatory Pass/Fail. Prerequisite: 206, 207 and consent of department.

Aviation Maintenance Technology (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.

Students enrolled in Aviation Maintenance Technology learn 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 (A+P) Certificate 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 approximately $500 for a tool kit and special study materials.

Executives in the aviation industry constitute an advisory committee which serves the Aviation Maintenance Technology program. Current members are: J.W. (Bruce) Camp, Manager of Customer Training, Bell Helicopter Textron, Fort Worth, Texas; Robert Bauman, RAB Consulting Services, Makanda, Illinois; Raoul Castro, Aerospace International Management, Upland, California; Joe Cooley, UPS, Aircraft Records, Louisville, Kentucky; Joseph DePaola, Xionix Simulation Inc., Euless, Texas; Patrick Graham, Section Manager, Douglas Aircraft Company, Long Beach California; Robert A. Harms, Chief of Maintenance,

Archer Daniels Midland Co., Decatur, Illinois; Dennis Hitt, Manager of Customer Service, Bendix-King Radio Corporation, Olathe, Kansas; James A. Kennedy, Manager, Avionics Department, Midcoast Aviation, Inc., Cahokia, Illinois; Robert Kopitzke, Aviation Consultant, Hurst, Texas; Robert Long, Hartzell Propeller Products, Piqua, Ohio; James F. McNamara, Captain, Fleet Manager A300, American Airlines, DFW Airport, Texas; Terry Washow, Manager, Maintenance Administration, American Airlines, Chicago, Illinois; Mike Kelly, Bendix/King Radio Corporation, General Aviation-Avionics Division, Olathe, Kansas.

Associate in Applied Science Degree, College of Technical Careers

Requirements for Major in Aviation Maintenance Technology

GED 101, 102, 152	9
Technical Careers 105a	2
Aviation Maintenance Technology 110, 111, 112, 113, 114, 116, 201, 203, 204, 205, 206, 210, 211, 212, 213, 214, 215, 216	67
Elective (in social science)	5
Total	83

Courses (AMT)

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.

111-4 Materials 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.

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.

113-2 Federal Aviation Regulations. Students will be able to select and use FAA technical and legal publications in order to perform the duties of an aircraft technician.

114-2 Aircraft Weight and Balance. Students will fully understand and solve problems of aircraft weight and balance. They will be able to perform weighing, computation of C.G., and establishing of equipment list.

116-3 Aircraft Instruments. Students will have a knowledge of operation, installation, marking, and interpretation of synchro and servo systems, aircraft and powerplant instruments. They will be able to install, adjust, and calibrate these instruments in accordance with FAA and manufacturers' recommendations.

201-2 Applied Science. The student will be able to understand and demonstrate the application of physical laws including pressure, force, motion, mechanical advantage, heat and sound. The student will interpret blueprints and schematic diagrams and be able to perform basic mechanical drawing using drawing instruments to accomplish orthographic projections, sections and dimensioning of working drawings. Hydraulic tubes, hoses and fittings will also be studied. Course material is directed toward aviation oriented subject matter.

203-2 Aircraft Aerodynamics. 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.

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.

205-6 Cabin Environment and Jet Transport Systems. Students will understand the atmospheric variables at different altitudes and the basic equipment required to cope with 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 and to diagnose and resolve malfunction problems. They will have knowledge of procedures for aircraft ground handling, APU operation, and system servicing.

206-3 Metals Processing. Students will be able to make appropriate sheet metal repairs using correct repair procedures, tools, and materials. They will be required to demonstrate correct use of and interpretation of structural repair diagrams and correct interpretation of charts and tables from AC 43.13-1A pertaining to materials and methods.

210-2 Aircraft Electrical Systems. 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.

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.

213-5 Ignition Systems. Successful students 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.

214-3 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 ADs', 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.

301-3 Helicopter Theory and General Maintenance Practice. The student will have indepth 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. Lecture three hours. Prerequisite: Federal Aviation Administration Airframe and Powerplant Technician license or consent of program coordinator.

302-6 Helicopter General Maintenance Laboratory. The student will perform general maintenance on rotary wing main rotor systems, tail rotor systems, flight and powerplant control systems to include malfunction analysis, tracking, static and dynamic balancing, rigging, and repair. Laboratory six hours. Prerequisite: concurrent enrollment in 301 or consent of program coordinator.

304-3 Helicopter Power Train and Inspection. The student will have indepth knowledge of the operation, function, and inspection of all rotational components of a rotary wing aircraft to include transmission, gear boxes, drive trains, and drive shafts. Lecture three hours. Prerequisite: 301 or consent of program coordinator.

306-6 Helicopter Power Train Laboratory. The student will perform all functions of overhaul concerned with rotary wing transmissions, gear boxes, and drive trains. The student will demonstrate skill in disassembly, inspection, discrepancy analyzation, reassembly, and non-destructive testing. Laboratory six hours. Prerequisite: concurrent enrollment in 304.

Aviation Management (Major, Courses)

The Aviation Management major is designed to build upon technical training in aviation maintenance, flight, avionics technology, air traffic control, aircraft operations support, or other aviation-related fields. The technical training may be gained through Southern Illinois University at Carbondale, other post-secondary institutions, proprietary schools, the military, government agencies (international or domestic), or through government certified flight or maintenance training schools. Students entering the Aviation Management major are encouraged to complete the requirements of an aviation-related associate degree under the provision of the Capstone option as explained in Chapter 4. As an alternative to an associate degree in aviation, students in aviation management should have aviation-related work experience, internship experience, or technical training. Finally, concurrent enrollment in aviation-related degree programs, internships, or technical training is required for those students not having prior aviation training, experience, or education.

Students who major in Aviation Management have the opportunity to participate in the following aviation management-related programs:

1. The Federal Aviation Administration approved Airway Science Curriculum at SIUC.
2. The Federal Aviation Administration approved Air Traffic Control Cooperative Education Program at SIUC.
3. The United Airlines/SIUC Cooperative Education Program in Aviation Flight and Aviation Management

Graduates of the Aviation Management program obtain professional, technical and management training in aviation manufacturing, the airlines, general aviation, military aviation, and government agencies related to aviation.

Bachelor of Science Degree, College of Technical Careers

General Education Requirements		46
Requirements for Major in Aviation Management		48
Core Requirements: Advanced Technical Studies 364, 416, and two of the following: 332, 383, 421	12	
Fifteen hours selected from Aviation Management 370, 371, 372, 373, 374, 375, 376, 377, 386, 401	15	
Twelve hours of internship, independent study, or approved equivalent	12	
Nine hours of aviation management electives approved by the adviser	9	
Approved Career Electives	26	
Total		120

Courses (AVM)

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. This course may be classified as independent study. Prerequisite: consent of instructor.

360-3 The Air Traffic Control System, Procedures and Rules. This course introduces student pilots and prospective career air traffic controllers to the history, evolution and operation of the United States Air Traffic Control System. Air traffic control procedures and rules are emphasized with student pilots treated as users of the system and prospective career air traffic controllers treated as future air traffic service providers. Students will be able to apply air traffic control procedures and rules when operating aircraft or as air traffic specialists. Prerequisite: Instrument Flight Certificate or consent of department.

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 Aviation Industry Regulation. 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 General Aviation Operations. A study of general aviation operations including fixed base operations (fuel, sales, flight training, charter, etc.), corporate aviation (business aviation, corporate flight departments, executive air fleets, etc.) and the general aviation aircraft manufacturing industry.
375-3 Legal Aspects of Aviation. The student will develop an awareness of air transportation. The course will emphasize basic law as it relates to contracts, personnel, liabilities, and legal authority of governmental units and agencies. Lecture three hours.
376-3 Aviation Maintenance Management. To familiarize the student with the functions and responsibilities of the aviation maintenance manager. Maintenance management at the fixed base operator, commuter/regional airline, and national air carrier levels will be studied. Aviation maintenance management problems areas will be reviewed using the case study method.
377-3 Aviation Safety Management. This course will survey the various aspects of aviation flight and ground safety management. Weather, air traffic control, mechanical and human factors in aviation safety management will be reviewed. Case studies of individual aviation accidents and incidents will be analyzed.
386-3 Fiscal Aspects of Aviation Management. An introduction to the fiscal problems encountered in the administration of aviation facilities.
401-3 Current Issues in Aviation Management. A review of current problems affecting the aviation industry with particular emphasis on resource allocation, planning, and internal and external constraints. Not for graduate credit. Prerequisite: a course in economics or marketing, senior standing, consent of instructor.
460-3 National Airspace System. The evolution, current state, and future of the National Airspace System with emphasis on its current and future impact on the domestic and international aviation industry. Defines the Federal Aviation Administration's role in the operation, maintenance, and planned modernization of Air Traffic Control facilities, airways and navigational aids, landing aids, and airports. The users of the system, their needs, and issues with the system's operation and planned modernization are examined. Not for graduate credit. Prerequisite: 360 or consent of department.

Avionics Technology (Program, Major, Courses)

Avionics, or aviation 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.

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, instrumentation systems, and aircraft integrated flight systems, receivers, and transceiver pulse and microwave systems, antenna types, wave propagation and transmission lines, and Federal Aviation Administration and Federal Communication Commission regulations.

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 $600.

Executives in the aviation industry constitute an advisory committee which serves the program. The current members are listed under aviation maintenance technology and they serve both programs.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale.

Associate in Applied Science Degree, College of Technical Careers

*Requirements for Major in Avionics Technology**

GED 101, 102, 152	9
Technical Careers 105a,b	4
Avionics Technology 101, 120, 125, 130, 135, 203, 204, 210, 233, 234, 235, 236, 237, 238	66
Total	79

*To meet Federal and industry requirements, the student should plan to take additional 300-level courses offered as a post-associate specialty.

Courses (ATA)

101-3 Aircraft Systems. An introductory course in aviation primarily designed for the student who has little or no background in aviation, but desires to learn about the aircraft and its systems in use today. The course will cover light, heavy, and rotary wing aircraft found in today's civil fleet.

120-8 Avionics Circuit Analysis. The student will have an understanding of the laws and theories of elementary AC and DC circuits as they apply to avionics, as well as a basic understanding of avionic circuit devices. Various basic circuits and individual components will be analyzed from a theoretical and operational standpoint, utilizing both descriptive and analytical approaches. Lecture eight hours. Prerequisite: concurrent enrollment in Technical Careers 105a and 105b or consent of program coordinator.

125-5 Avionics Laboratory I. The student will be able to demonstrate and apply the theory studied in 120. Laboratory ten hours. Prerequisite: concurrent enrollment in 120 or consent of program coordinator.

130-5 Avionics-Electronics Circuits. This course will introduce the student to the theory of operation of solid state and other electron devices used in analog avionics circuits. Device operation will be analyzed from a theoretical perspective, and applied to circuits for power supplies, amplifiers, and oscillators, with emphasis on applications to avionics equipment. Lecture five hours. Prerequisite: 120 or consent of program coordinator.

135-5 Avionics-Electronics Circuit Laboratory. This course allows the student to apply the theory discussed in 130. Circuits will be constructed and tested under experimental conditions. An emphasis will be placed on troubleshooting circuit problems and in applying logic to isolate and correct circuit malfunctions. Laboratory ten hours. Prerequisite: 125, concurrent enrollment in 130 or consent of program coordinator.

200-4 Electronics for Aviators. Introduces aviation flight students to the fundamental concepts and principles of aircraft, electrical, and electronic systems. Coverage includes direct current and alternating current power generation, control and distribution aboard aircraft, as well as a brief introduction to avionics systems. Emphasis will be placed on analyzing operational parameters and fault detection. Lecture four hours. Prerequisite: none.

203-3 Avionics Shop Practices. The student will study avionics installation requirements, layout procedures and equipment location. They will understand repair station certification, regulations, records, and certification of repairmen. Lecture three hours.

204-3 Avionics Shop Laboratory. The student will make and follow installation drawings or layouts. They will use the equipment and tools requirement to perform avionics equipment installations. Given a list of avionics equipment, they will make the installation, perform acceptance check on the equipment, and fill out required records. Laboratory six hours. Prerequisite: concurrent enrollment in 203 or consent of program coordinator.

210-2 Avionics Electrical Systems. This course will introduce the student to electrical power distribution systems found on all types of aircraft. Upon successful completion of the course, the student will be able to perform operational checks of aircraft electrical systems and diagnose malfunctions in system operation. Lecture one hour. Laboratory two hours. Prerequisite: 120 or consent of program coordinator.

233-5 Aircraft Communication and Navigation Systems Theory. Student will have knowledge of the theory of operation, calibration, and frequency selection of NAY-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 analyze the use and operation of logic gates, gate expanders, invertors, flip-flops, shift regestors, decade chounters and operational amplifiers as used in avionics circuits. They will have knowledge of pulse circuits used in distance measuring equipment and ATC transponders. 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 accordance 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 aircraft station licenses, aeronautical ground station and operator's licenses. Lecture four hours.

304-4 Avionics Radar System 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 adjustment, trouble shooting, and general repair of the airborne radar system.

320-5 Avionics Flight Line Maintenance. Students will study basic avionics systems, their components, and learn how to perform flight line preventive maintenance and troubleshooting of the systems to the specific malfunctioned unit. The student will learn how to evaluate avionics system performance as dictated by Federal Aviation Administration Regulations and performance criteria as well as the manufacturer's and flight line system testing procedures for selected avionics systems. For non-avionics majors. Lecture five hours.

325-4 Avionics Flight Maintenance Laboratory. Students will demonstrate their understanding of basic avionics systems and system components, and perform flight line preventive maintenance and troubleshooting on selected avionics systems. The student will demonstrate an understanding of the ramp-test criteria of selected avionics systems and the utilization of the appropriate portable test equipment. For non-avionics majors. Laboratory eight hours.

350-4 Microcomputers for Aviation Professionals. Students will demonstrate a basic understanding of microcomputer systems and their utilization as related to the aviation industry. The student will demonstrate a working knowledge of the application of commercially available software such as a word processor, electronic spreadsheet, data base management system, and telecommunications software for aviation professional tasks. Lecture/demonstration four hours.

360-5 Avionics Data Bussing and Electronic Flight Instrument Systems. Students will study current avionics data bussing, glass cockpit display system concepts, and data multiplexing. The student will demonstrate a basic understanding of the control of the microprocessor using machine, mneumonic (assembly), and ADA software languages. Lecture five hours.

365-4 Avionics Data Bussing and Electronic Flight Instrument Systems Laboratory. The student will develop skill in troubleshooting advanced digital, tri-state, buss input/output, CRT display, character generation, and microprocessor buss controller circuits. The student will demonstrate a basic understanding of the control of the microprocessor using machine, nmeumonic (assembly), and ADA software languages. Laboratory eight hours.

370-5 Reliability, Maintainability, Fault Prediction and Analysis. Students will demonstrate the ability to understand and perform analysis and prediction of the logistical concepts of reliability, maintainability, and fault prediction and analysis of products and systems. A conceptual understanding of logic symbols, fault tree analysis, and fault criticality as well as logistical management. Lecture five hours.

Biological Sciences (Major)

The biological sciences major consists of courses selected from the Departments of Microbiology, Physiology, Plant Biology 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 Education Requirements	46
Supplementary College of Science Requirements	8
Foreign Languages	(4) + 4
Requirements for Biological Sciences	43-45
Physiology 310	5
Biology 305, 306, 307, 308, 309 (any two)	6
Plant Biology 200, 204	8
Microbiology 301, 302	7
Zoology 220a,b	8
Biological sciences electives at 400-level	6
Chemistry 222a,b	(4) + 4
Mathematics 108 and 109 or 111 (or its equivalent) or 140 or 141	(3) + 1-3
Electives	23-25
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 and Instruction 468. See Teacher Education Program, Chapter 3.

Minor

A minor in biological sciences consists of a minimum of 24 hours. It must include two of the following biology courses: Biology 305, 306, 307 (6 hours), plus 9 hours selected from the following courses: GEA 312, Plant Biology 200, 204, Microbiology 301, 302; Physiology 310; and Zoology 220a,b or other courses approved by the director of the undergraduate program in biological sciences. The remaining nine hours may be selected from courses offered by the Departments of Microbiology, Physiology, Plant Biology, and Zoology. A student with a major in one of the life sciences may not take a minor in biological sciences.

Biology (Courses)

Courses (BIOL)

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. Principles of genetics including Mendelism; chromosome behavior; genetic mapping; mutation and allelism; replication, transcription and translation; gene function and regulation; polygenic systems; population genetics and evolution; and genetic applications. Prerequisite: introductory biology course for majors and at least one semester of general chemistry.

306-3 Cell Biology. 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. Prerequisite: introductory biology course for majors and at least one semester of general chemistry.

307-3 Principles of Ecology. 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. Prerequisite: introductory biology course for majors and at least one semester of general chemistry.

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. Prerequisite: introductory biology course for majors and at least one semester of general chemistry.

309-3 Developmental Biology. Basic principles and processes of embryonic development including contemporary research on molecular, cellular and genetic mechanisms of differentiation and morphogenesis; selected invertebrate and vertebrate animals and plants will be considered. Prerequisite: introductory biology course for majors and at least one semester of general chemistry.
315-2 History of Biology. The interrelationships between the development of biological knowledge and the history of the human races.

Black American Studies (Minor, Courses)

The Black American Studies program is a part of the College of Liberal Arts and follows the academic requirements of the College of Liberal Arts as listed in Chapter 3.

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 (BAS)

109-3 Introduction to Black America. 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 to use especially in this course and is supplemented by guest lecturers and audiovisual materials.
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.
209-3 Critical Issues in the Black American Experience. Insights into the black American experience. Concepts including race, ethnicity, class, caste, minorities, prejudice, discrimination will be analyzed. Main focus is on exploration of critical socio-economic, political, and cultural themes such as demographic trends; migration and urbanization, political participation and strategies, income and employment, housing, health, education, black family, black religion, law, and justice. Prerequisite: 109 recommended but not required.
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: 109.
257-1 Black American Studies Choir. Prerequisite: consent of instructor.
311-6 (3, 3) Black American History. (Same as History 362.) **(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 other minorities 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. Focuses on the effect of the American legal system upon the Afro-American from slavery to the present; uses theory and knowledge from the law, history and sociology; will explain the historical perspectives of specific laws as well as their effect upon the Afro-American.
333-4 The Black Family. Exploring the myths and realities of the black family from sociological and psychological perspectives through a critical examination of scholarly controversies and research. Prerequisite: 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 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: English 201 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: English 210, English 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: English 325, or consent of department.
360-3 Race and History in the United States. (See History 361.)
391-2 Social Services and Minority Groups. (See Social Work 391.)
399-1 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.
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.
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 contribution 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: Black American Studies 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.

Business (College, Courses)

Courses (BUS)

259-1 to 6 Intern-Work Experience. Current practical experience in a business or other work directly related to coursework in a College of Business and Administration program and to the student's educational objectives may be used as a basis for granting credit in the college. Credit is given when specific program credit cannot be granted and may only be used for elective credit. Credit is sought by petition and must be approved by the dean before registration. Mandatory Pass/Fail. Prerequisite: College of Business and Administration major (including pre-business) with at least twelve hours with a 2.5 grade point average.
402-1 Business Career Transitions. This one credit, required course is designed to prepare business students to make a successful transition from the academic community to the business and professional world. Students develop a personal career strategy, learn how to conduct a pro-active job search campaign, and explore the types of challenges they are likely to experience in the workworld. The class features alumni and business guest speakers as well as videos, case studies, and discussion seminars. Not for graduate credit.

Business Administration (Major, [Graduate only], Courses)

The graduate faculty in business administration, consisting of members of the Departments of Finance, Management, Marketing and the School of Accountancy 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 (BA)

410-3 Financial Accounting Concepts. Basic concepts, principles, and techniques used in the generation of accounting data for financial statement preparation and interpretation. Asset, liability, equity valuation and income determination are stressed. Prerequisite: Enrollment in MBA program or consent of department; MBA program "computer ability" foundation requirement met.
420-3 Production/Operations Management. A survey of the design, operation, and control of systems that produce goods and services. Topics include forecasting, production planning, facility location and layout, inventory management, scheduling, and quality control. Prerequisite: enrollment in MBA program or consent of department; 452 or equivalent.
426-3 Managerial Economics. Develops conceptual framework for business decision-making with emphasis on demand, costs, prices, and profits. Prerequisite: enrollment in MBA program or consent of department.
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 department; 410, Educational Psychology 506, and MBA program "computer ability" foundation requirement met, or equivalent.
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 department.
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 department.
451-3 Methods of Quantitative Analysis. (Same as Mathematics 457.)
452-3 Operations Research. A survey of operations research techniques with emphasis on problem formulation, model building, and model solution. Topics include mathematical programming, waiting-line models, simulation, and decision theory. Prerequisite: enrollment in the MBA program or consent of department; 451, Educational Psychology 506, and MBA program "computer ability" foundation requirement met or equivalent.
470-3 Legal and Social Environment. An overview of the legal, social, and ethical dimensions which influence business with particular attention to the role of law as a control factor of society in the business world. Prerequisite: enrollment in MBA program or consent of department.

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, business economics, finance, management, 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 interest 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 development plan and at least 20 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

General Education Requirements 46

Professional Business Core (See Chapter 3.) 41
Requirements for Major in Business and Administration 20-23
Secondary concentration approved by the dean
Business Prefix Electives 12
Total 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

General Education Requirements 46
Professional Business Core (See Chapter 3.) 41
Requirements for Major in Business Economics 21
Economics 315, 340, 341 9
Finance 462 or 463 3
Three courses from the following list, two of which must be in economics 9
Economics 310, 329, 330, 436, 443, 465
Accounting 331, 341, 471
Finance 331, 361, 464
Management 345, 352, 361
Marketing 390, 435
Electives 12
Total 120

Chemistry and Biochemistry (Department, Major [Chemistry], Courses)

The Department of Chemistry and Biochemistry offers three degree programs with a major in chemistry. First there 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. Within this degree there are two options. A more rigorous program of study carries American Chemical Society (ACS) certification, while a program with fewer hours does not. Although students are encouraged to seek ACS certification it should be understood that ACS certification is not a requirement for graduate study or employment as a chemist.

The Bachelor of Arts degree in the College of Science is designed primarily for students who wish to complete a major in chemistry but will specialize in areas related to it. Students complete a group of core courses, along with additional courses that will lead to a specialization in biochemistry, business, environmental or forensic chemistry.

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.

If the College of Science foreign language requirement has not been met by high school or proficiency examination credit, it is recommended that German, French, or Russian be taken to satisfy that requirement.

A knowledge 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 and safety glasses. All students enrolled in a chemistry class that includes a laboratory session will be assessed a breakage charge for all glassware broken. The amount assessed will be based on actual replacement costs.

Students wishing more detailed information should contact The Undergraduate Advisor, Department of Chemistry and Biochemistry, Southern Illinois University at Carbondale, Carbondale, IL 62901.

Bachelor of Science Degree, College of Science

General Education Requirements	46[1]
Supplementary College of Science Requirements	6-7
Foreign Language	(4) + 4[2]
Mathematics 108 and 109 or 111	(3) + 2-3
Biological Sciences (not general education)	(6)[1]
Requirements for Major in Chemistry	53-54
Chemistry 222a,b; 226a,b; 344, 345, 346, 349; 380b or 451a; 411; 434; 466a; 467a,b	(3) + 37-38
Mathematics 150, 250 and 221 or 305	11
Physics 205a,b; 255a,b	(3) + 5
Electives	13-15
Total	120

American Chemical Society Certification:

To receive certification by the ACS a student must complete the following courses: Chemistry 466b, 451b (if 451a taken in lieu of 380b), 396 or 496 plus additional courses for a minimum of 49 hours in Chemistry; and Mathematics 251. These courses may substitute for electives.

Bachelor of Arts Degree, College of Science

General Education Requirements	46[1]
Supplementary College of Science Requirements	6-7
Foreign Language	(4) + 4[2]
Mathematics 108 and 109 or 111	(3) + 2-3
Biological Science (not general education)	(6)[1]
Requirements for Major in Chemistry	46-60
Required Core Courses: Chemistry 222a,b; 226a; 380b, 411, 466a	19
Required Curriculum Specialization:	27-41

Biochemistry Specialization 27-28

For students interested in the biological aspects of chemistry.

Required: Chemistry 380a, 347, 444 (or 344, 345, 346, 349 are preferred and may substitute for 380a, 347, and 444); 456; plus an additional nine hours at the 300-400 level in biochemistry, microbiology, physiology, plant biology, or zoology,

chosen in consultation with an advisor in chemistry and approved by the chair of the department. Chemistry 451a,b are strongly recommended in lieu of 380b and three of the additional nine hours above. A course at the 300-400 level that includes a lab in a bioscience area is recommended. 467b can substitute for 456. Mathematics 150 and Physics 203a,b or 205a,b and 253a,b.

Business Specialization 41

For students interested in pursuing a career in chemistry, but with an interest in the business aspects of it such as management, marketing, and production, rather than research and development.

Required: 344, 345, 346, 349, 467b, plus an additional three hours in chemistry at the 300-400 level, chosen in consultation with an advisor and approval of the chair of the department; Mathematics 150, 250; Physics 203a,b or 205a,b, 253a,b or 255a,b; Accounting 220, 230; Economics 215; Finance 330; Management 304; and Marketing 304.

Environmental Chemistry Specialization 37

For students interested in chemistry as it relates to air, water, and soil in the environment.

Required: 226b, 344, 345, 346, 349, 431, 467b, and six hours from among Chemistry 434, Civil Engineering 314, Mechanical Engineering 416, or Plant and Soil Science 446 (has 240 as a prerequisite); Mathematics 150, 250 and 283 or 483; Physics 203a,b or 205a,b and 253 a,b or 255 a,b.

Forensic Chemistry Specialization 32

For students interested in chemistry applied to solving problems encountered in crime labs.

Required: 226b, 344, 345, 346, 349, 434, 467b, 489-3 (Special Topics in Forensics Chemistry), 396-2 (Chemistry 396 will involve research on problems of interest to the State Crime Lab or a formal internship at the State Crime Lab. The latter is subject to availability and approval of the crime lab.); Mathematics 150 and 250; Physics 203a,b or 205 a,b and 253a,b or 255a,b.

Electives 7-22

Total 120

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[1]The 46 hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Education courses.

[2]German, Russian or French recommended.

Bachelor of Science Degree, College of Education

General Education Requirements ..... 49[1]

Must include GEB 114, 202, and 301; GEC 213; GED 101, 102 and 152 or 153; GEE 201 and two hours of physical education activity courses.

Requirements for Major in Chemistry ..... 49-50[2]

Chemistry 222a,b; 226a,b; 344, 345, 346 and 349; 380b or 451a; 466a, 467b plus an additional course to total ..... (3) + 31

Mathematics 108 and 109 or 111, 150, 250, 305 or 221 ..... (3) + 13-14

Physics 205a,b and 255a,b ..... (3) + 5

Modern foreign language recommended

Professional Education Requirements 28

See Teacher Education Program, Chapter 3. Secondary education majors must take a special methods course. Curriculum, Instruction 468 fulfills this requirement.

Total 126-127

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[1]Refer to Professional Education Experience for General Education courses which may be required.
[2]Chemistry majors must meet a qualification for a second teaching area. Students wishing to qualify for teaching mathematics in the secondary schools should take, in addition, Mathematics 221 and 305, 311, 319, 319e, and 335. Students wishing to qualify for teaching physics must take an additional two semester hours of Physics.

Minor

The minor in chemistry requires a minimum of 16 semester hours of chemistry in formal course work at the 200 level or above including 222a,b. At least 8 of the 16 hours must be taken at SIUC.

Courses (CHEM)

115-3 Introductory General Chemistry. A preparation for 222a for students without a year of high school chemistry or for those who feel their background is inadequate. The course concentrates on many of the topics of 222a, but at a lower level. Emphasis is placed on elementary concepts, dimensional analysis, and problem solving skills. A calculator with scientific notation is required. Three lectures per week, except that every other week a three hour lab is substituted for one of the lectures that week. Prerequisite: one year of high school algebra or the equivalent.

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, preprofessional, engineering, or technological programs. Atomic structure, molecular structure and bonding, stoichiometry, properties of gases, liquids and solids, thermodynamics and kinetics, chemical equilibria, pH, electrochemistry. Three lectures and one three-hour laboratory per week. Must be taken in a,b sequence. The student will need a calculator with log and inverse log capability (base 10 or base e). Prerequisite: one year of high school chemistry; or 115; two years of high school algebra or concurrent enrollment in GE-D 107.

222C-3 Introduction to Chemical Principles. Students in the College of Engineering and Technology may take 222c instead of 222b. The three lectures per week are the same as for 222b but there is no laboratory work for 222c. This course, 222c, cannot be used to satisfy a 222b prerequisite. The student will need a calculator with log and inverse log (base 10 or e) capability. Prerequisite: 222a and registration as an engineering major.

226-5 (3, 2) Introduction to Quantitative Chemical Principles. Fundamental concepts of quantitative chemical analysis emphasizing classical techniques such as gravimetry, colorimetry, and titrimetry. Chemical aspects of solubility, equilibria, competitive reactions, etc., are related to practical analysis of real samples. Major emphasis is placed on development of the proficient laboratory skills required for accurate and precise analysis. For a, two lectures and a three-hour laboratory per week; for b, one lecture and a three-hour laboratory per week. A reasonable knowledge of logarithms and algebra is assumed; a calculator with log/inverse log capability is required. Must be taken in a,b sequence. Prerequisite: for a, 222b; for b, 226a.

344-3 Organic Chemistry I. The chemistry of carbon compounds. A course for chemistry and other science majors including premedical students and others requiring a year of organic chemistry. Three lectures per week. Prerequisite: 222b and concurrent enrollment in 345.

345-2 Organic Chemistry Laboratory I. Techniques for studying organic reactions. Two three-hour laboratories per week. One hour of the laboratory period will be used for discussion. Prerequisite: 222b and concurrent enrollment in 344.

346-3 Organic Chemistry II. The organic chemistry of functional groups including compounds of biological interest. Three lectures per week. Prerequisite: either 344 and 345 or 380a; concurrent enrollment in 347 or 349 is recommended.

347-2 Organic Chemistry Laboratory II. A laboratory for those majoring in sciences other than chemistry and for premedical students. Synthesis and reactions of organic compounds, including those of biological interest. Two three-hour laboratories per week. Prerequisite: either 344 and 345 or 380a; concurrent enrollment in 346.

349-2 Organic Chemistry Laboratory III. A laboratory course for chemistry majors. Synthesis and structural identification of organic compounds, with emphasis on instrumental procedures. Two three-

hour laboratories per week. One hour of the laboratory period will be used for discussion. Prerequisite: either 344 and 345 or 380a; concurrent enrollment in 346.

380-8 (4, 4) Introductory Organic and Biological Chemistry. (a) Survey of basic elements of organic chemistry. Three lectures per week, plus seven laboratory/lecture and seven three-hour laboratories per semester. Prerequisite: 222b. This course can serve as a prerequisite to 346.**(b)** Survey of basic elements of biochemistry. Three lectures per week, plus seven laboratory/lecture and seven three-hour laboratories per semester. Prerequisite: 380a or 346. This course does not satisfy the prerequisite requirement for any other course in chemistry or biochemistry.

396-1 to 6 (1-2 per semester) Chemical Problems. Chemical investigations under the direction and supervision of a faculty member. Student may take 1 - 2 hours per semester and a total of 6 hours. Prerequisite: consent of instructor and one semester 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: 456 or 465a or concurrent enrollment.

431-3 Environmental Chemistry. Chemical principles applied to the environment and environmental problems. Chemical kinetic, thermodynamic, and equilibrium concepts as they relate to the atmosphere, water, and soil will be discussed to include current problems of pollutants, pollutant evaluation, and pollutant remediation. Discussion of methods for the chemical analysis of environmental samples will also be included. Prerequisite: 226a,b and 380a or 344 or consent of instructor.

434-2 or 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 for four credits. Enrollment for two credit hours is restricted to graduate students in the Department of Chemistry and Biochemistry advised to take instrumental analysis. Prerequisite: one semester of physical chemistry or concurrent enrollment in 467a or 467b.

444-3 Intermediate Organic Chemistry. Intended for incoming graduate students and advanced preprofessional students. Provides students with intermediate level coverage of organic reactions, mechanisms, syntheses, and structure of determination. Emphasis will be placed on problem solving, including structure elucidation, road map sequences, multistep synthetic sequences, and elucidation of reaction mechanisms including those with stereochemistry and multiple sites of reactivity. Prerequisite: 344, 346, or equivalent and consent of instructor.

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.

456-3 Biophysical Chemistry. A one semester course in biophysical chemistry intended for biochemists and molecular biologists. Emphasis will be on solution thermodynamics, kinetics, and spectroscopy applied to biological systems. Prerequisite: Mathematics 141 or 150, Chemistry 380a,b or 344 and 346, Chemistry 451a or concurrent enrollment.

465-9 (3,3,3) Physical Chemistry. A three semester sequence of physical chemistry. Three lectures per week. **(a)** Classical thermodynamics, its applications, and reaction kinetics. **(b)** Quantum chemistry and group theory. **(c)** Spectroscopy and statistical mechanics. To be taken an a,b,c sequence. Prerequisite: **(a)** Mathematics 250; **(b)** Mathematics 305 or 221 **(c)** 465b.

466-2 (1,1) Physical Chemistry Laboratory. A two semester laboratory sequence for 465. One three hour laboratory per week per semester. **(a)** Experiments relating to topics covered in 465a. Prerequisite: 467b or concurrent enrollment. **(b)** Experiments relating to topics covered in 465b,c. Prerequisite:

467-6 (3,3) Physical Chemistry. (a) Quantum mechanics and spectroscopy. Prerequisite: Mathematics 221 or 305. **(b)** Classical thermodynamics and kinetics. Prerequisite: Mathematics 250 recommended. Need not be taken a,b sequence.

468-3 Application of Symmetry to Chemistry. The concepts of symmetry elements, groups and character tables will be taught. Symmetry will be applied to molecules in order to simplify and characterize their wave functions and vibrational frequencies. Prerequisite: 467a or consent of instructor.

489-1 to 3 Special Topics in Chemistry. Prerequisite: consent of instructor and of chairperson.

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.

Cinema and Photography (Department, Major, Courses)

The major in cinema and photography provides undergraduate students with experience and background in the history, theory, and practice of cinematic and photographic communication and expression. The program is structured to make available a foundation for professional, fine arts, and educational careers in cinema and photography; to explore the social, critical, and ideological implications of still and motion pictures; and to provide opportunities for study of and experimentation with both cinema and photography as media for communication and personal expression.

The major requires a minimum of 38 hours in cinema and photography coursework, including the required courses in the department. Students may tailor coursework selection to meet specific areas of emphasis: cinema production, cinema studies, fine arts photography, professional photography.

Students are urged to declare their major as soon as possible. To be admitted to the major, a student must have a grade point average of *C* or better. In order to remain in the major, each student must maintain an overall grade point average of at least a *C* and at least a *C* average for all cinema and photography coursework. Grades below *C* in cinema and photography courses will not be accepted as fulfilling minimum major requirements. Cinema and photography courses in which students have received grades of *D, F, AU,* or *INC* may not be used to satisfy prerequisite requirements for other cinema and photography courses.

Courses in cinema and photography have limited enrollment, especially advanced courses. Not all courses are offered each semester. Admission to certain cinema and photography courses is restricted, and permission must be obtained prior to registration. Permission to register for some courses is based upon submission of photographic portfolios or films. Students are encouraged to plan their course scheduling well in advance to ensure necessary prerequisites and fulfillment of major requirements.

Students may design their own programs of study within the requirements for graduation. The department recommends that students choose an area of emphasis to give a sense of direction to their studies. Students interested in cinema production are encouraged to enroll in 349, 355, 356, 360, 368, 452, 455 and 456, 470b, 472, and nine hours of cinema history courses; cinema studies, 349, 355, 356, 360, 368, 449, 462, 463, 466, 467, 470a, and 499b; fine arts photography, 310, 311, 320, 322, 401, 402, 420, 421, 422, 425, 426, 470c and 471; professional photography, 310, 311, 320, 322, 401, 402, 404, 405, 406, 407 and 408; photojournalism, 310, 311, 320, 322, 407, 408 and Journalism 300, 310, and 311.

Cinema and Photography 499 or its equivalent is required of all majors who have not completed 320 and 322 and optional for others. This senior thesis will consist of the preparation of a film, screenplay, research or critical paper under the supervision of a cinema and photography faculty member. A copy of the thesis is to be provided for the department by the student.

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 fee for laboratory materials is charged for each still photography production course in which the student enrolls. In cinema 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, and many cinema courses have an equipment usage 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.

No more than nine hours from a combination of the following courses may count toward the first 38 hours in the cinema and photography major: 491, 495, 497.

Electives, required for the major in cinema and photography, are defined as coursework outside the minimal General Education requirements and not offered for major credit in the department. There is no required minor.

Bachelor of Arts Degree, College of Mass Communication and Media Arts

General Education Requirements	46
Requirements for Major in Cinema and Photography	38-54
Either Cinema and Photography 310 and 311 or 360 and 368	6
Either Cinema and Photography 320 and 322 or 355 and 356	8
Cinema and Photography courses numbered 400 to 499	24
Must include 499 or its equivalent if 320 and 322 have not been taken.	
Cinema and Photography electives	0-16
Electives	20-36
Total	120

Courses (CP)

220-2 Introduction to Photography. An introduction to the basic technical information and black and white laboratory processes. The emphasis is upon an exploration of the technical process rather than photographic vision. Students will have hands-on experience in the labs. Students will supply their own film and paper. Laboratory fee: $15.

225-3 Photography for Design Majors. An introduction to the principles of photographic language and techniques specifically tailored to the need of the art and design student. Will cover the basic photographic skills as well as specific techniques of interest to art and design students. Students use the arrow type ($3.95) plastic camera. Students will supply their own materials and some chemicals. Laboratory fee: $15.

257-1 to 6 Work Experience. Used to recognize concurrent work experience related to the student's educational objective. One to six hours of credit may be applied toward graduation requirements following departmental evaluation and approval. Mandatory Pass/Fail. Prerequisite: consent of the department.

258-1 to 6 Work Experience. Used to recognize past work experience related to student's educational objectives. One to six hours of credit may be applied toward graduation requirements following departmental evaluation and approval. Student must apply for this credit during first year as declared major. Prerequisite: consent of department.

310-3 History of Still Photography. A survey of the important images, ideas, people, and processes that make up the history of still photography. Covers from 1839 to the mid-twentieth century. Students purchase texts.

311-3 Contemporary Photography. A survey of contemporary photographers, their concepts, and the influences of their work upon culture. Covers from mid-twentieth century to the present. Students may be required to purchase texts. Completion of 310 may be helpful, but is not required.

320-4 Basic Photography. An introduction to black and white still photography; its materials, processes, and vision. Designed to give technical knowledge and to explore visual perception. Students must have fully adjustable camera, may purchase texts, and will supply own materials and some chemicals. Laboratory fee: $15.

321-3 Intermediate Black and White Photography. Continuation of the exploration of vision and craft in black and white photography begun in 320. Concentration on idea development with the objective of producing a portfolio demonstrating unique vision. Students supply materials and some chemicals, may purchase texts. Laboratory fee. Prerequisite: 320 and consent of department.

322-4 Color Photography. Introduction to color still photography, its materials, processes, and vision. Students purchase materials and may purchase texts. Laboratory fee: $15. Prerequisite: 320 or equivalent and consent of department.
349-3 The Cinema. The cinema as a communicative and expressive media. Study of film types illustrated by screenings of selected films. Screening fee: $10.
355-4 Film Production I. Basic techniques for filmmaking. Production of Super 8 motion pictures. Students purchase texts, film stock and processing. Requires access to Super 8 camera and cassette recorder. Non-majors by consent of department. Equipment usage fee: $10.
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, sound materials and laboratory services. Equipment usage fee: $50. Prerequisite: 355 and consent of department.
360-3 Film Analysis. The relationships among structure, style and meaning in all types of films. Screening fee: $10. Students purchase texts.
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: $10. Students purchase texts. Prerequisite: 360.
401-3 Large Format Photography. Introduction to the aesthetics and techniques of large format (sheet film cameras) photography with emphasis on personal expression and commercial/professional applications. Students purchase texts and provide photographic materials and chemicals. $15 for additional laboratory materials. Prerequisite: 322 or concurrent enrollment and consent of department.
402-3 Sensitometry. An advanced course dealing with the technical and visual applications of the black and white process. Explores the zone system, density parameter system, and practical chemistry. Also deals with the visual application of these systems. Laboratory fee: $15. Prerequisite: 320 and consent of department.
404-3 Introduction to the Studio. Problems and possibilities in the aesthetics and techniques of studio photography: lighting, visual perception, environment, history, theory. Students purchase texts and provide photographic materials. $15 laboratory fee. Prerequisite: 320 or consent of department.
405-3 Applied Photography I. Theory and practice of contemporary commercial/industrial photography. Students provide materials and may purchase texts. Laboratory fee: $15. Prerequisite: 322 and consent of department.
406-3 Applied Photography II. Practice and ideas of advertising/illustrative and editorial photography. Students purchase materials and may purchase props, texts, and equipment. Laboratory fee: $15. Prerequisite: 405 and consent of department.
407-3 Photography and the Mass Media. Exploration of the use, context, and meaning of photography in the mass media. The photograph as a communications tool will be evaluated along with the role and responsibility of the photojournalist. Students will apply theoretical concepts through group and individual assignments. Students purchase texts and provide photographic materials. $15 laboratory fee. Prerequisite: 320 and consent of department.
408-3 Documentary Photography: Method, Format, and Distribution. Exploration of the techniques, history, and contemporary context of documentary photography. Audience, publication, and distribution of documentary projects will be addressed. Each student will produce an in-depth documentary photographic project. Students purchase texts and provide photographic materials. $15 laboratory fee. Prerequisite: 322 and consent of department.
420-3 Experimental Camera Techniques. Experimental approaches to the creation of photographic images in the camera. Students provide materials and may be required to purchase texts. Laboratory fee: $15. Prerequisite: 322 and consent of department.
421-3 Experimental Darkroom Techniques. Experimental darkroom manipulations of the straight camera image. Students provide materials and may purchase texts. Laboratory fee: $15. Prerequisite: 322 or consent of department.
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 provide materials and may purchase texts. Laboratory fee: $15. Prerequisite: 322 and consent of department.
425-3 to 9 Studio Workshop. An intensive workshop focusing on current trends in photography. Topics have included landscape photography, architectural photography, environmental portraiture, and imagemaking, among others. Students provide photographic materials and may purchase texts. Laboratory fee: $15. Prerequisite: 322 or consent of department.
426-3 Non-Silver Photography. Intensive introduction to hand-applied emulsions of cyanotype, Vandyke brownprinting, gum printing, etc. Students purchase materials and may purchase texts. Laboratory fee: $15. Prerequisite: 322 and consent of department.
449-3 Survey of Film History. Intensive study of major historical periods of the cinema, including technological developments, national cinema movements, sociological and aesthetic determinations, and concerns of film historiography. Prior completion of 349 and 360 is strongly recommended for cinema and photography majors. Screening fee: $10.
452-3 Film Planning and Scripting. The screenplay as a basis for production. Practice in preparing film plans, treatments, storyboards, and scripts. Examination of the film industry. Prerequisite: 355, junior standing or consent of department.

454-3 Animated Film Production. Practical course for visual expression exploring various animation techniques: developmental, filmographic, rear lit, cut out, line, cel, etc. Students purchase texts, art supplies, film materials, and processing. Equipment usage fee $10. Prerequisite: 355 and/or consent of department.

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. Equipment usage fee $50. Prerequisite: 356, 452 or consent of department.

456-3 Film-Production IV. Continuation of 455 through post production to a first answer print. Intensive study of editing, sound mixing, laboratory procedures and distribution. Students provide editing and sound materials and are responsible for laboratory costs. Equipment usage fee: $50. Prerequisite: 455 and consent of department.

462-3 History of the Documentary Film. Study of the development of the non-fiction film with emphasis on the documentary. Screening fee: $10. Students purchase texts.

463-3 History of the Experimental Film. Study of experimentation in cinema from the turn of the century to contemporary avant-garde films. Student purchase texts. Screening fee: $10.

466-3 to 6 (3, 3) Film Styles and Genres. Intensive study of specific body of films grouped by similarities in style, genre, period and cultural origin. Emphasis of historical, theoretical, and critical issues. Topics vary each semester. Sample topics: the Western; the French new wave: Third World cinema: Surrealism in film. Screening fee: $10.

467-3 to 6 (3, 3) Film Authors. Intensive study of the work of one or more film authors (directors, screenwriters, etc.). Emphasis is on historical, theoretical, and critical issues. Topics vary each semester. Sample topics: the films of Alfred Hitchcock, the films of Jean Renoir. Screening fee: $10.

470-3 to 9 (3, 3, 3) Advanced Topics. An advanced course concentrating on special topics in cinema and photography. **(a)** Advanced studies in cinema history/theory. Topics offered have been the information film, feminist and ideological criticism of film. **(b)** Advanced topics in film production. Topics offered included motion picture sound workshop, narrative film workshop. **(c)** Advanced studies in photography. Topics offered have included publication and presentation, the figure, multi-image, fantasy photography among others. **(d)** Advanced studies in interdisciplinary topics. Not more than six semester hours may be counted for graduate credit. Screening fee for a): $10. Laboratory fee for c): $15. Equipment usage fee: $50. Prerequisite: consent of department.

471-3 to 6 (3, 3) Problems in Creative Production: Photography. Conceptual exercises involving different aspects of photographic production. Emphasis is placed upon individual creative response to assignments. Topics vary; may be repeated for a total of 6 credits. Students provide photographic materials and chemicals and may purchase texts. Prerequisite: 322 and consent of department.

472-3 to 6 (3, 3) Problems in Creative Production: Cinema. An intensive examination, through readings, screenings, and filmmaking, of a cinematic genre, style, movement, or technical challenge. Theory is combined with practice, resulting in a group film production. Previous problems studied have been the pseudo-documentary, 35mm filmmaking, and film as performance. Topics may vary; may be repeated for a total of 6 credits. Equipment usage fee: $50. 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. Not more than 9 semester hours of 491, 495, and 497 combined may count toward the first 38 hours for the B.A. in cinema and photography. Not for graduate credit. Prerequisite: consent of department.

492-1 to 3 Practicum. Practical experience in the presentation of photographic theory and procedures. Does not count toward the first 38 hours for the B.A. in cinema and photography. 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 more than 9 semester hours of 470, 491, 495 and 497 combined may count toward the first 38 hours for the B.A. in cinema and photography. Not for graduate credit. Prerequisite: consent of department. Mandatory Pass/Fail.

497A-1 to 9 Projects in Cinema. Individual or crew projects in motion picture production. Not more than 9 semester hours of 491, 495, and 497 combined may count toward the first 38 hours for the B.A. in cinema and photography. Not for graduate credit. Equipment usage fee: $50. Prerequisite: consent of department.

497B-1 to 9 Projects in Photography. Individual projects in still photography. Not more than 9 semester hours of 491, 495 and 497 combined may count toward the first 38 hours for the B.A. in cinema and photography. Not for graduate credit. Laboratory fee: $15. Prerequisite: consent of depart-

498-1 Senior Portfolio. Preparation of senior portfolio project. Required of all photography students. To be taken during last year in residence. Mandatory pass/fail. Not for graduate credit.

499A-4 Senior Thesis-Production. Preparation of a film 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. The department will retain one copy of all theses. Students interested in producing a film should have completed 355, 356, 368, 452, and nine hours of cinema history courses. Not for graduate credit. Equipment usage fee: $50. Mandatory Pass/Fail. Prerequisite: consent of department.

499B-4 Senior Thesis-Studies. Preparation of a screenplay, critical or research 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. The department will retain one copy of all theses. Not for graduate credit. Mandatory Pass/Fail. Prerequisite: consent of department.

Civil Engineering and Mechanics (Department, Major [Civil Engineering], Courses)

The Department of Civil Engineering and Mechanics offers a program leading to a Bachelor of Science degree in civil engineering (see civil engineering).

The civil engineering curriculum is designed to give the student a foundation in the basic principles used in the practice of civil engineering and how these principles are applied both in theory and design. Civil engineering is often called a people-serving profession. This program prepares the student to work in a wide range of civil engineering career options.

CIVIL ENGINEERING MAJOR

Civil Engineering is broad in scope, and it encompasses a number of technical disciplines. A civil engineer may deal with research, planning, analysis, design, construction, operation and maintenance of buildings; bridges; dams; harbors; water and power facilities; water works; sewage, nuclear and toxic waste disposal facilities; transportation systems such as highways, railways, waterways, airports and pipelines. The Civil Engineering program leading to the Bachelor of Science degree at SIUC is fully accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology, the recognized agency for accrediting engineering curricula in the United States. The program is designed to provide the students with the broad educational background essential to modern Civil Engineering practice with training in specialized areas of engineering mechanics, environmental engineering, geotechnical engineering, hydraulic engineering and water resources, and structural engineering.

Bachelor of Science Degree, College of Engineering

General Education Requirements		31[1]
GEA: Substitute basic sciences		
GEB: GEB 105, 301, and one of the following: GEB 108, 114, 202 or 211		9[2,3]
GEC: Select one of the following: GEC 101, 102, or 208; plus GEC 122 and 345, or GEC 330 and 345		9[2,3]
GED: GED 101, 102; 152 or 153 and substitute mathematics		9
GEE		4
Requirements for Major in Civil Engineering		103
Basic Sciences		18[3]
Physics 205a,b; 255a,b	8	
Chemistry 222a,c	7	
GEA 115	3	
Mathematical Analysis		17
Mathematics 150, 250, 251, and 305	14	
Engineering 351	3	
Civil Engineering		68
General: Engineering 102, 222, 361; Civil Engineering 480	7	

Engineering Sciences	32
17 semester hours from Engineering 260a,b, 300, 311, 313, 335	
15 semester hours from Civil Engineering 312, 314, 321, 340, 413[4], 415[5], 444[6]	
Engineering Design	18
12 semester hours from Civil Engineering 413[4], 415[5], 442, 444[6], 483	
A minimum of 6 semester hours of design electives to be chosen from Civil Engineering 409[7], 410[5], 419[5], 421[5], 427[7], 431[4], 441[7], 445[5], 446, 492; Mechanical Engineering 416[7], 419[7]	
Technical Electives	11
Technical electives, including the unused hours of design electives, to be chosen from an approved list.	
Total	134

[1]Courses required for the major will apply toward 15 hours of General Education making a total of 46 in that area.
[2]Engineering requirements for GEB and GEC are more restrictive than those of the University as a whole.
[3]Transfer students holding an associate degree in a baccalaureate-oriented program must have a sequence of courses in social science or humanities terminated by a junior level course. See departmental adviser for an approved course. Students transferring from other programs or institutions will be required to (a) complete a course sequence in the humanities or social sciences which includes a junior level course or (b) meet the General Education requirements for engineering students.
[4]This course is used for one and one-half semester hours of engineering science and one and one-half semester hours of engineering design for a total of three semester hours.
[5]This course is used for one semester hour of engineering science and two semester hours of engineering design for a total of three semester hours.
[6]This course is used for one-half semester hour of engineering science and two and one-half semester hours of engineering design.
[7]This course is used for two semester hours of engineering science and one semester hour of engineering design.

Courses (CE)

Safety glasses, a hand-held scientific calculator, and textbooks are required of all civil engineering students.

312-3 Materials of Construction. Introduction of cements and aggregates; production and evaluation of concrete structures; mechanical properties of steels and timber; mixing and evaluation of pavement materials; testing of asphalt and masonry. Prerequisite: Engineering 311.

314-3 Introduction to Environmental Pollution. Basic engineering aspects of water pollution and control. Problems, sources, and effects of pollution. State and federal water quality standards. Water and wastewater treatment analyses. Laboratory supply fee $15. Prerequisite: Chemistry 222c.

321-3 Soil Mechanics. Physical and mechanical properties of soils, flow through soils, effective stresses, consolidation, shear strength, soil improvement, lateral earth pressures. Prerequisite: Engineering 222 and 311.

340-3 Structures. Loads. Types of structures. Structural materials. Safety. Analysis of statically determinate beams, trusses, and frames under static loads. Influence lines. Moving loads. Cables. Arches. Space trusses. Deflection of beams, trusses, and frames. Moment distribution for beams. Prerequisite: Engineering 311.

392-1 to 6 Civil Engineering Cooperative Education. Supervised work experience in industry, government or professional organization. Students work with on-site supervisor and faculty advisor. Reports are required from the student and the employer. Hours do not count toward degree requirements. Mandatory Pass/Fail. Prerequisite: sophomore standing.

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 222, 313 or equivalent or consent of instructor.

410-3 Solid and Hazardous Waste Engineering. Engineering aspects of solid and hazardous waste prevention, treatment, recycling and disposal. Design of recycling programs, solid and hazardous waste treatment and disposal facilities. State and federal regulations. Problems, sources, and effects of solid and hazardous waste. Design projects required. Prerequisite: 314.

413-3 Fluid Systems Design. Two to three week projects involving the identification, modeling, analysis, and design of fluid-engineering systems. Prerequisite: Engineering 313 and 351.

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, vis

cous, and compressible flows. Isentropic flow of a perfect gas. Normal and oblique shock waves, Prandtl-Meyer flow. Prerequisite: Engineering 313 or equivalent.

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 and reuse of wastewater. Prerequisite: 314 and Engineering 313 and 351.

417-1 Water Quality Laboratory. Measurements of water quality parameters performed. Use of modern instrumental techniques demonstrated. Safety glasses are required. Laboratory supply fee $15. Prerequisite: 314.

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 and Engineering 313.

421-3 Foundation Design. Application of soil mechanics to the design of the foundations of structures; bearing capacity and settlement analysis; design of shallow footings; stability of earth slopes; design of retaining walls, design of pile foundations, coffer dams. Prerequisite: 321.

427-3 Physical and Chemical Treatment in Environmental Engineering. Physical and chemical treatment as applied to water and wastewater. Topics include coagulation, flocculation, sedimentation, adsorption, ion exchange, and oxidation in dilute aqueous systems. Design of systems. Laboratory. Prerequisite: 314, 415.

431-3 Pavement Design. Design of highway and airport systems: subgrades, subbases, and bases; soil stabilization; stresses in pavements; design of flexible and rigid pavements; cost analysis and pavement selection; and pavement evaluation and rehabilitation. Prerequisite: 312 and 321.

440-3 Statically Indeterminate Structures. Analysis of trusses, beams, and frames. Approximate methods. Method of consistent deformations. Three-moment theorem. Slope deflection. Moment distribution. Column analogy. Plastic analysis. Matrix methods. Prerequisite: 340.

441-3 Intermediate Vibrations and Design. Theory: Review of second order ordinary linear differential equations. Matrices and determinants. Phasor and trigonometric solutions, Duhamel integrals, Fourier Series. Applications: equipment mounts, deflection of rotating shafts, resonance, vibration absorbers, vibrometer and accelerometer design, analysis of accelerometer and vibrometer data, seismic design loads on buildings, vibration linkages. Prerequisite: Engineering 222, 260b, 311 and Mathematics 305.

442-3 Structural Steel Design. An introduction to structural steel design with emphasis on buildings. Composite design. Plate girders. Rigid frames. Design project and report required. Prerequisite: 340.

444-3 Reinforced Concrete Design. Behavior and strength design of reinforced concrete beams, slabs, compression members, and footings. Prerequisite: 340.

445-3 Reinforced Masonry Design. Materials. Loads. Walls. Columns and pilasters. Beams. Lateral-load resisting elements. Connections and joints. High-rise structures. Environmental features. Quality control. Design project and report required. Prerequisite: 444.

446-3 Prestressed Concrete Design. Fundamental concepts of analysis and design. Materials. Flexure, shear, and torsions. Deflections. Prestress losses. Composite beams. Indeterminate structures. Slabs. Bridges. Prerequisite: 444.

451-3 Introduction to Finite Elements in Engineering Applications. Introduction to finite element techniques and computer methods in finite element applications. Theory and structure of algorithms for one-dimensional and multi-dimensional problems. Introduction to boundary element methods. Applications in solid mechanics, structural analysis, groundwater flow, and heat transfer. Prerequisite: Engineering Mechanics 351 or equivalent.

462-3 Matrix Methods of Structural Analysis. Flexibility method and stiffness method applied to framed structures. Introduction to finite elements. Prerequisite: 340 and Engineering 222.

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.

480-1 Civil Engineering Seminar. Civil engineering as a profession. Basic concepts of professionalism. Engineers' inherent responsibilities to society, client or employer, and other members of the profession. The role of ethics in engineering. Prerequisite: senior standing.

483-3 Senior Design Project in Civil Engineering. A comprehensive design course emphasizing preliminary and overall design of civil engineering projects using a team approach. Students will define and design the various components and subsystems of the project, define subsystem interface requirements, integrate the subsystems into the final design and document the whole design in the form of a final report and an oral presentation. Laboratory. Not for graduate credit. Prerequisite: 321, 413, 415, 442, 444, and senior standing in civil engineering.

484-3 Engineering Design. Provides the senior engineering student with a design experience involving two or more of the following disciplines: solid mechanics, fluid mechanics, dynamics/vibrations, and materials. The course is directed toward the development of attitudes and approaches to the design process rather than specific design techniques. Students working in small teams will select a problem, de-

fine and design the system components into a final design, and document the design effort. Not for graduate credit. Prerequisite: graduating senior standing.

492-1 to 4 Special Problems in Civil Engineering. Selected engineering topics or problems in **(a)** structural engineering, **(b)** hydraulic engineering, **(c)** environmental engineering, **(d)** applied mechanics and **(e)** geotechnical engineering. Four hours maximum course credit. Prerequisite: consent of instructor.

493-1 to 4 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. Four hours maximum course credit. Not for graduate credit. Prerequisite: consent of instructor.

Clothing and Textiles

(SEE WORKFORCE EDUCATION AND DEVELOPMENT)

Coaching (Minor)

(SEE PHYSICAL EDUCATION)

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, finished lettering, fashion illustrations, airbrush and photo-retouching, and many others. Students in the 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 $1,500 to $2,000 for supplies, equipment, and materials over a two year period.

An active advisory committee whose members represent large corporations and departments, large and small advertising agencies, and freelance designers and illustrators, serve the program. At the general meeting each year in April all graduating students will be interviewed with their portfolios to prepare them for their first job search efforts.

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. Eligible students may wish to continue work toward the Advanced Technical Studies bachelor of science degree in the College of Technical Careers.

An individual must first be accepted academically to the university, present a portfolio of required pieces, and participate in a workshop drawing test. The 45 best qualified will be invited to enter the program the following fall.

Associate in Applied Science Degree, College of Technical Careers

Requirements for Major in Commercial Graphics-Design

GEB 202	3
GED 101, 102, 153	9

Commercial Graphics 110, 120, 122, 124, 130, 132, 133, 134, 210, 215, 222, 224, 230	56
Commercial Graphics 109 or 150	2
Graphic Design Proficiency Examination requirement	0
Total	70

Courses (CG)

101-3 Fundamentals of Drawing for Commercial Graphics — Design. An introduction to the materials and techniques utilized in graphic design and illustration. The basic elements of art and design will be identified and incorporated in a series of exercises designed to better acquaint students with the concepts, processes, and skills needed by professionals employed in the commercial graphics field.

109-2 Basic Photography for Commercial Graphics—Design. An introduction to the fundamentals of photography directed toward the needs of graphic design. Through a basic understanding of film exposure and development processes, its use as a graphic medium will be attained. By creative studio and laboratory assignments an insight into the possibilities and limitations of the photographic process will be gained. The cost of film, processing, and printing will be borne by the student. Laboratory fee: $10. Lecture and laboratory.

110a-3 Survey of Graphic Design to the 19th Century. A survey of the influential images, ideas, movements, graphic artists and illustrators that have contributed to the evolution and history of graphic design from prehistoric origins through the 19th century. Lecture.

110b-3 Survey of Graphic Design—20th Century. A survey of the influential images, ideas, movements, graphic artists and illustrators that have contributed to the evolution and history of graphic design in the 20th Century (1900 to present). Lecture.

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 ability to design, organize and structure through compositional arrangement. Lecture and laboratory. Laboratory fee: $20. 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 and laboratory. 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 and laboratory. Concurrent enrollment in 120 and 122.

126-2 Fundamentals of Drawing and Composition. The student will demonstrate awareness of perspective, light and shade, color theory and application, and composition through basic drawing techniques. Non-majors only. Lecture and laboratory.

128-2 Fundamentals of Graphic Processes. The student will be made aware of the various principles and styles of layouts, letter forms and typography and prepare mechanicals to demonstrate a knowledge of the various printing methods. The student must supply all materials used. Lecture and laboratory.

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 and laboratory. Laboratory fee: $20. Prerequisite: 120, 122 and concurrent enrollment in 132 and 134.

132-4 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 and laboratory. Laboratory fee: $10. 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. 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 work with offset lithography, letterpress, gravure, and silk screen printing processes. Lecture and laboratory. Prerequisite: 122 and 124 and concurrent enrollment in 130, 132, and 133.

150-2 Computer Applications for Commercial Graphics Design. Introduction to microcomputer-based techniques. Includes a survey of history and current computer generated graphics. The student will become familiar with basic computer operation and keyboard, and develop business graphics visu-

als in full color to be produced on 35mm film. Programming not required. Incidental expenses will be borne by the student. Laboratory fee: $10. Prerequisite: 120, 122 and 124 or permission of the instructor.

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 of 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.

200-1 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 develop a systems flow chart for the effective and smooth operation of an exhibition including hands-on operation of exhibit construction and location. Laboratory.

210-6 Advertising Graphics. Students will demonstrate their ability in the preparation of professional assignments in lettering, logo, and letterhead design and the development of line art and cartoons for advertising illustration. In addition, students will have their work selected for production on various client-oriented projects. Lecture and laboratory. Laboratory fee: $20. Prerequisite: 130, 132 and 134 and concurrent enrollment in 224.

215-6 Dimensional Design. Students will demonstrate their ability to research and analyze information to create a precise original concept and to visually render point-of-purchase displays, exhibits, signs, and package designs. Lecture and laboratory. Laboratory fee: $20. Prerequisite: 210 and 224 and concurrent enrollment in 222.

222-6 Graphic Design and Advertising Illustration. Students will demonstrate their ability to prepare professionally acceptable assignments in poster panels and billboard designs, diecut tent cards, folder designs and multi-unit advertising, and advertising and cover illustration and client oriented projects for promotions and product. Lecture and laboratory. Laboratory fee: $20. Prerequisite: 210, 224, and concurrent enrollment in 215.

224-6 Publication Graphics. Students will demonstrate their ability to create new and unusual concepts in advertising layout and design, folder design, color keys, marking up copy, and doing complete production art. Contemporary techniques in design and production will be emphasized. Students also have the opportunity to have work selected for production on various client-oriented projects. Lecture and laboratory. Laboratory fee: $20. Prerequisite: 130, 132, 134, and concurrent enrollment in 210.

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.

240-3 to 12 Special Study. A student with a special interest in a particular advertising art or graphic design area will do selected projects and research to develop additional professional skill. Requires approval of the program supervisor. Lecture and laboratory.

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 of 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.

310-6 (3, 3) Advanced Illustration. Provides the student with the opportunity for advanced studies in methods and techniques used by recognized illustrators in the development of fiction and non-fiction story visualizations. **(a)** Visual development. To depict the climax or visually stimulating moment of the story through the use of thumbnails, roughs, value studies and to secure models, costumes, props, etc., as may be needed to photograph for rendering studies. Laboratory fee: $10. **(b)** Renderings to be in any medium approved by the faculty sponsor. Number of projects to be determined by complexity of each. Student must have access to a 35mm SLR camera and tripod. Laboratory fee: $10. Prerequisite: 120, 130, and successful completion of graphic design proficiency requirement, or permission of coordinator.

312-6 (3, 3) Advanced Airbrush/Technical Illustration. Provides the opportunity for advanced studies in methods and techniques used in airbrush and technical illustration. **(a)** Perspective or isometric projections rendered in ink, overlay films, or airbrush. Laboratory fee: $15. **(b)** Airbrush rendering of commercial advertising or products. Students will be required to complete a specific number of projects that lead through the production to a finished commercial rendering, from concept to touch-up, based on the complexity of each as determined by the sponsoring faculty member. Must have own airbrush and portable compressor. Laboratory fee: $15. Prerequisite: 122, 132, and successful completion of graphic design proficiency requirements, or permission of coordinator.

315-3 Advanced Dimensional Design for Commercial Graphics—Design. Provides the opportunity to advance skills, development, and knowledge in the diverse field of dimensional graphics. The student will utilize dimensional design in the conceptualization and creation of 1) advanced dimensional design (package and exhibit design, point of purchase displays, etc.) and/or 2) paper engineering graphic design ("pop-up" advertisements, dimensional inserts, etc.). The student will be expected to successfully

complete several challenging projects chosen from a field of eight. Laboratory fee: $20. Prerequisite: 215, 224, and successful completion of the graphic design proficiency examination, or permission of coordinator.

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 preceptor and coordinator. Reports and assignments are required to be completed by the student. Course and credits to be individually arranged. Mandatory Pass/Fail.

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. This course may be classified as independent study. Prerequisite: consent of instructor.

360-3 Advanced Computer Applications. Provides an opportunity for the advanced study of artistic and technical solutions for commercial graphic problems using the computer as a tool. Demystifies computer graphics for artists and designers and helps them use computer graphics in their work. Hands-on computer painting is explored as well as a library of type fonts. An understanding of commercial graphic print tools and color separation are studied and used. Animation and special effects may be created and saved on a disk. Lecture/laboratory. Expenses approximately $25. No programming required. Prerequisite: 150 and associate degree in commercial graphics and successful completion of graphic design proficiency requirements, or consent of coordinator.

Communication Disorders and Sciences (Major, Courses)

The major in Communication Disorders and Sciences is part of the Rehabilitation Institute.

The program in communication disorders and sciences has as its objective the training of qualified personnel to aid people who are speech, language, or hearing impaired. The undergraduate curriculum is broad in scope and gives the student the necessary preprofessional background for the clinical-research program offered at the master's level. Both state and national certification require the master's degree. Students who complete the graduate program at the master's level and have certification are qualified for positions in public or private clinics, schools, hospitals, or rehabilitation agencies. In addition, the broad scope of the program provides a solid foundation for many graduate professional programs in rehabilitation, such as rehabilitation counseling, behavioral analysis and therapy, and rehabilitation administration.

Communication Disorders and Sciences is dedicated to preparing students for leadership roles in the profession. Students are expected to develop programs that will enhance their individual strengths in light of their professional goals. The undergraduate program permits students to develop significant concentration areas outside of the department while laying the foundation for graduate education.

Proficiency in communication skills must be demonstrated prior to enrollment in clinical coursework. The undergraduate program is designed to provide the student with sufficient information and experience to determine the advisability of pursuing a graduate degree in communication disorders and sciences. Those students choosing not to continue in the profession will find themselves well prepared to enter the job market with a broadly based education or to pursue graduate work in allied rehabilitation professions.

All students are encouraged to plan programs of study to meet the academic and practicum requirements for the Certificate of Clinical Competence of the American Speech-Language-Hearing Association, the Standard Special Certificate in Speech and Language Impaired of the State of Illinois or both. Programmatic planning at the bachelor's level will facilitate completion of certification requirements of American Speech-Language-Hearing Association and State of Illinois in conjunction with the master's degree program.

Bachelor of Science Degree, College of Education

COMMUNICATION DISORDERS AND SCIENCES — PREPROFESSIONAL PROGRAM

General Education Requirements		46
Including GEA 115; GEB 108 and 202; GED 101, 102, 152 or 153 and 3 hours of GE Mathematics.		
Requirements for a Major in Communication Disorders and Sciences		38
Psychology 211, 301	7	
Communication Disorders and Sciences 300, 301, 302, 303, 314, 410, 419, 420, 492, and 493	31	
Electives by Advisement		36
Total		120

A student in the College of Education who plans to be a public school speech and language clinician in Illinois, thereby needing to meet the requirements for the Standard Special Certificate — Certificate in Speech and Language Impaired, should follow the program of course requirements listed above. In addition, the requirements for the Teacher Education Program must be completed as part of the electives by advisement. Recommendation for admission to the Teacher Education Program for the speech-language impaired requires a minimum grade point average of 2.75 on a 4.0 scale. The student teaching requirement may not be undertaken at the undergraduate level. See also Teacher Education Program, Chapter 3.

Courses selected must include:

GEB 114, GEB 301, GEC 122, GEC 213, GEE 201, EDUC 308, EDUC 310, EDUC 311, EDUC 314A, EDUC 314B, EDUC 315.

Courses (CDS)

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.

105-3 Introduction to Communication Disorders. 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.

300-3 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.

301-3 Introduction to Speech-Language and Hearing Science. An introduction to the science of general speech including the history of research in the field and significant experimental trends. Open to all students.

302-3 Voice and Articulation. 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. Physioacoustic parameters of voice quality variables evidenced in verbal communication are also studied. Lectures and demonstrations emphasize basic information necessary to study for the treatment of voice disorders.

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.

307-3 Introduction to Organics. An introduction to the organic bases of communication disorders. An emphasis will be placed on the foundations of development and teratological events and influences which result in specific communication disorders, and overview of those disorders, and their implications for the individual. Observations as directed. Prerequisite: 314 or consent of instructor.

314-3 Anatomy and Physiology of the Speech and Hearing Mechanism. Structure and function of the speech and hearing mechanism.

385-3 Computer Technology in Communication and Fine Arts. An introduction to the basic terminology, concepts and techniques being used in the various areas of the College of Communications and Fine Arts. A foundation course to prepare students for the impact of computer technology in the professional lives of those who work in the occupational settings represented within the college.

408-3 Communicative Disorders: Craniofacial Anomalies. An introduction to the ontology, teratology, and management of cleft palate and various craniofacial syndromes important to majors and non-majors interested in this aspect of communication and its disorders. Associated problems of personal and social adjustments are also examined. Prerequisite: 314 or consent of instructor.

410-3 Muticultural Aspects of Communication Disorders. Students will explore different cultures and communication within these cultures. Emphasis will be placed on the relationship between cultural differences and communication disorders. Review of speech and language disorders in muticultural populations, as well as assessment and intervention strategies for use with this diverse group will be provided. Prerequisite: 302, 303, 417 or consent of instructor.

417-3 Stuttering. Reviews the data and theories that relate to the etiology, onset and development of stuttering.

418-3 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.

419-3 Communication Problems of the Hearing Impaired. Objectives and techniques for the teaching of lip reading, speech conservation, and auditory training. Prerequisite: 302, 303, and 420 or equivalents and consent of instructor.

420-3 Introduction to Audiological Disorders and Evaluation. Bases of professional field of audiology (orientation, anatomy, and physiology of the auditory system), major disease processes influencing hearing and their manifestations, measurement of hearing loss. Prerequisite: 301 and 314.

428-3 Communication 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 Speech Physiology. Course focuses on the physiologic parameters of the supraglottal tract, and respiratory and laryngeal systems related to speech production. Discussion and laboratory experiences involve physiological characteristics of normal and disordered speech production, measurement and research procedures, and implications for neuromotor control of speech. Prerequisite: 301 and 314 or consent of instructor.

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. Prerequisite: senior or graduate standing.

450-3 Neuroanatomical Basis of Human Communication. Examination of the central nervous system (brain and spinal cord) as it relates to normal and disordered human communication. Presentation of basic neuroanatomy, common neuropathologies relevant to communication disorders, and strategies in neurogenic problem solving. Prerequisite: 307, 314, or consent of instructor.

460-3 Augmentative and Alternative Communication Systems. An introduction to alternative and augmentative communication systems for non-vocal clients. Discussions include: use of aided and unaided augmentative systems, assessment procedures and training. Prerequisite: 301, 307, 314 or consent of instructor.

485-1 to 9 (1 to 3 per 700 section number) Special Topics in Communication Disorders and Sciences. Topical presentations of current information on special interests of the faculty not otherwise covered in the curriculum. Designed to promote better understanding of recent developments related to disorders of verbal communication. Open to advanced undergraduate and graduate students with consent of instructor.

491-1 to 9 (1 to 3 per semester) 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.

492-3 Diagnostic Procedures in Communication Disorders. A 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: 302, 303, and one additional 300-level course or consent of instructor.

493-1 Basic Clinical Practice. Current information regarding diagnostic, treatment and documentation procedures in speech-language pathology will be presented through active observation in the clinical environment and classroom instruction. Prerequisite: 302, 303 and two additional 300-level courses or equivalents or consent of instructors. CDS majors only.

494-1 to 18 (1 to 3 per semester) Advanced Clinical Practice: Therapy/SLP. Active, supervised participation in the clinical process with emphasis on individualized assessment, treatment, counseling and documentation procedures. Overview of clinical practice in various settings, federal legislation and standards of ethical practice. Prerequisite: 492, 493, graduate status and consent of instructor.

495-1 to 18 (1 to 3 per semester) Advanced Clinical Practice: Diagnostics/SLP. Advanced clinical practicum in speech and language diagnostic. Populations of children and adults will be evaluated. Emphasis will be placed on diagnostic techniques used in evaluation, as well as preparation of evaluation reports. For CDS majors only. Prerequisite: 492, 493, 494 or equivalent and consent of instructor.

497-1 to 2 Advanced Clinical Practice: Hearing Diagnostics. Advanced clinical practice in hearing diagnostics. Emphasis will be placed on diagnostic techniques used in the preparation of basic and advanced audiological reports. Prerequisite: consent of instructor.

Community Development (Major [Graduate only], Minor, Courses)

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 (CD)

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.

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.

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.

295-1 to 6 Field Service Practicum in Southern Illinois. (Same as Social Work 295.) This course is designed for freshmen and sophomores who are volunteering service to community, social service, or health service agencies in southern Illinois. Credit based upon time spent in direct service. Approval of agency required for registration. Mandatory 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 Third World Community Development. Analysis 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.

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.
489-3 Field Service Seminar. (Same as Social Work 489.) This seminar is to be taken concurrently with 495 or Social Work 495. May not be taken for credit if credit has been earned in 289 or Social Work 289. Prerequisite: consent of instructor.
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.
495-1 to 6 Advanced Field Service Practicum in Southern Illinois. (Same as Social Work 495.) This course is directed at upperclassmen and graduate students volunteering service to community, social science, or health agencies in southern Illinois. Credit based on time spent in direct service. Approval of agency required for registration. Mandatory Pass/Fail for undergraduates.
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.

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 literature other than those in which the student is majoring.

Computer Information Processing (Program, Major, Minor, Courses)

The growth of information processing in both the expansion of installations and the complexity of hardware and software has increased the need for competent information processing personnel. The curriculum in Computer Information Processing prepares students for employment as business computer programmers, systems analysts, and related occupations. Skills which the graduate obtains include competency in programming languages such as COBOL, RPG, and Assembler and associated areas such as accounting and systems design.

Students enrolled in the program have access to a modern large scale IBM computer with batch and interactive facilities to an IBM PC lab. The hardware and software configurations are representative of large computer installations in industry. The data center is available for student use approximately 100 hours each week.

The 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 experiences. Students beginning the program in the spring semester may require five semesters to complete the degree. Students should plan for minor expenses related to special laboratory materials and needs.

Students completing this program may seek employment as entry level business applications programmers and systems analysts. Students may choose to further their educations by applying for admission to the Advanced Technical Studies bachelor of science degree program in the College of Technical Careers.

An advisory committee comprised of professional people and educators meets annually to review the program to assure its continuing responsiveness to current industrial needs.

Associate in Applied Science Degree, College of Technical Careers

Requirements for Major in Computer Information Processing

GED 101, 102, 152 or 153 each with a minimum grade of *C* or better	9
Technical Careers 120, 220,	6
Computer Information Processing 101, 102, 103, 111, 121, 131, 212, 213, 222, 232, 233 , 281 each with a minimum grade of *C*	40
Approved social and technical electives (list available)	9
Total	64

Minor

A minor in Computer Information Processing requires a minimum of fifteen hours with a grade of *C* or better in each course used for the minor.

Required Courses:

CIP 101 or 109
CIP 102

Elective Courses:

CIP 111, 121, 229 or 131, 212, 213, 222, 232, 233, 323, 334, 335, or approved computer related course.

All prerequisites for computer information processing courses must be satisfied for the minor.

Courses (CIP)

101-3 Introduction to Information Processing. The successful student should be able to demonstrate an understanding of basic terminology, procedures, applications, and equipment used in information processing. Topics covered will range from simple computer processing techniques to advanced contemporary applications. Credit cannot be given for both 101 and 109. Lecture three hours. Restricted to majors and minors.

102-3 Introduction to Programming. The successful student should be able to flowchart and code logical solutions to business data processing problems using general approaches to totaling, table processing, and file updating. Lecture three hours. Prerequisite: 101 or concurrent enrollment or equivalent.

103-3 Information Processing Mathematics. The successful student should be able to use various types of logic diagrams, such as flow charts and truth tables to solve problems; to work problems using basic algebra, business mathematics, number bases, and related concepts. Lecture three hours. Prerequisite: high school algebra.

109-3 Information Processing Concepts. The successful student should be able to demonstrate an understanding of basic terminology, procedures, applications, and equipment used in information processing. Topics covered will range from simple computer processing techniques to advanced contemporary applications. Credit cannot be given for both 101 and 109. Lecture three hours. Intended for nonmajors.

111-3 Cobol Programming I. The successful student should be able to flowchart, code, and run a variety of simple problems using disk input, disk and printer output, control breaks, and one dimensional tables. Lecture three hours. Prerequisite: 102.

121-3 RPG Programming. The successful student should be able to code and run a variety of business problems in the Report Program Generator language with disk and printer files, multiple record formats, multiple file input, tables, arrays, matching records, and selected special features. Lecture three hours. Prerequisite: 102.

131-3 Information 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 payable and receivable, inventory control, and payroll. In addition, the successful student will implement selected business procedures on microcomputers using appropriate applications software packages, such as word processing, data base, and spread sheets. Lecture three hours.

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 of facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor, program coordinator, and division chairperson.

212-3 COBOL Programming II. The successful student should be able to flowchart, code, and run a variety of complex problems using disk and printer files and advanced COBOL language features. Lecture three hours. Prerequisite: 111 or equivalent with a grade of *C* or better.

213-6 Information Processing Project. The successful student will design and implement a minisystem for a problem approximating the type encountered in industry by entry-level programmers. The student draws upon knowledge gained in previous courses and develops an understanding of how the various subject matter fits together. Lecture three hours. Independent laboratory four hours. Prerequisite: 212 with a grade of *C* or better, 232, 233 or consent of instructor.

222-4 Assembler Programming. The successful student should be able to code and run a variety of business oriented problems using disk and printer files, character, decimal, and binary instruction sets, table/array processing, and subroutines. Lecture four hours. Prerequisite: two prior programming classes or consent of instructor.

229-3 Computing for Business Administration. The successful student will acquire an understanding of information systems concepts and of the use of computers to process business data through solving a variety of business related problems. Emphasis is on the computer as a management tool. Lecture three hours.

232-3 Systems Design and Development. The successful student will demonstrate in class discussion, on examinations and by preparing a case study the ability to design an effective business information processing system, including system flow chart, specifications, feasibility, implementation procedure, and essential documentation. Lecture three hours. Prerequisite: 111 and 131 or consent of instructor.

233-4 Job Control Language and Utilities. The successful student will demonstrate by examination an understanding of operating systems, and should be able to code and run problems involving JCL statements and utility programs to create, edit, sort, copy, and execute files. Lecture four hours. Prerequisite: 111 or consent of instructor.

280-1 to 8 Information Processing Internship. The successful student will study, observe and participate in a practical experience closely related to and supplementing studies in information processing. Hours and credit arranged individually. May be repeated for credit up to eight hours total. Prerequisite: consent of department. Mandatory Pass/Fail.

281-2 Career Development. The successful student should be able to demonstrate an understanding of the skills required for finding and changing employment, for functioning successfully in a job environment, and for assessing and improving interpersonal skills. Lecture two hours. Prerequisite: CIP major or consent of department.

291-1 Introduction to VM/CMS. A short course introduction to the terminology and procedures necessary to create and modify files in CMS. Execs, macros and IBM manual notation are included. Lecture one hour. Mandatory Pass/Fail.

292-1 Introduction to Microcomputers. A short course introduction to concepts and procedures related to using microcomputer hardware and software. Lecture one hour. Mandatory Pass/Fail.

293-1 Introduction to Spreadsheets. A short course introduction to the main features of a spreadsheet to solve a variety of problems. Lecture one hour. Mandatory Pass/Fail.

294-1 Introduction to Databases. A short course introduction to the main features of a data base to solve a variety of problems. Lecture one hour. Mandatory Pass/Fail.

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 of facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor, program coordinator, and division chairperson is required.

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 preceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credits to individually arranged. Mandatory Pass/Fail.

323-3 Pascal Programming. The successful student should be able to code and run a variety of business problems in Pascal with disk and printer files. Programs range from simple to complex problems employing a variety of language features and business related programming techniques. Lecture three hours. Prerequisite: two programming courses or consent of instructor.

334-3 Database Processing. The successful student will demonstrate by examination an understanding of database terminology, structure, languages, implementation, and administration. Lecture three hours. Prerequisite: 212 or consent of instructor.

335-3 Data Communications. The successful student will demonstrate by examination an understanding of concepts and vocabulary related to designing, implementing, and maintaining communication networks. Lecture three hours. Prerequisite: 101 and 111 or equivalent or consent of instructor.

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 credits to individually arranged. This course may be classified as independent study. Prerequisite: consent of instructor.

381-1 to 9 Special Topics. Intensive study of selected topics relevant to the contemporary business information processing environment. Offered as need exists, and as time and interests permit. May be repeated for credit up to nine hours total. Prerequisite: CIP/ATS major or consent of department.

Computer Science (Department, Major, Courses)

Computer Science encompasses the theory, tools and techniques by which information is derived, stored, manipulated, and communicated using computers. It deals particularly with the study of algorithms that are used to direct the computer and with the expression of these algorithms as programs. Of central concern is the study and further development of the computer systems, including both hardware and software, that support the execution of these programs.

The Computer Science department offers courses covering all major areas of computer science leading to a Bachelor of Science degree through the College of Science. These courses prepare 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.

The department enforces the following retention policy: A computer science major will not be permitted to enter any of the courses, 220, 302, 306, 315, 330, or 411, unless that student has achieved a grade point average of at least 2.00 for all required precedent computer science courses. Any exceptions to this policy will require the written approval of the departmental chairperson.

The department also enforces the following restriction on students repeating its courses: a student cannot repeat a course or its equivalent, in which a grade of *B* or better was earned, without the consent of the department.

Bachelor of Science Degree, College of Science

General Education Requirements 46
College of Science Academic Requirements (See Chapter 3.) 4
- Foreign Language ..... (4)[1] + 4
- Biological Sciences ..... (6)[2]
- Physical Sciences ..... (6)[2]

Requirements for Major in Computer Science 56-65
- Computer Science 202, 215, 220, 302, 306, 315, 330, each with a grade of *C* or better 21
- Computer Science 401, 411, 414 9
- Computer Science electives 9
  - At least 6 of these hours must be chosen from an approved list[3] of 400-level courses.
- Mathematics 150, 250, 221 ..... (3)[2] + 8-11
- Mathematics 349 or 380 3
- Science or Engineering ..... (9-12)[2] + 3-9
  - A two-semester sequence of laboratory science or engineering courses chosen from an approved list.[3,4] Two additional science or engineering courses.[4]
- A third English composition course beyond GED 101 and GED 102 chosen from an approved list[3] 3

[1]Up to four hours of foreign language may be applied toward General Education requirements.
[2]The 46 hour General Education requirement is reduced by taking science and mathematics courses which are approved substitutes for General Education requirements.
[3]See the departmental adviser for the current approved list.
[4]These courses can be chosen to satisfy the College's science requirement.

Electives	5-14
Total	120

Minor

A minor consists of Computer Science 202, 215, 220, 302, 306 and 330.

Courses (CS)

102-3 Computers in Society. An introduction to computers, their history, their uses, present and future roles of computer technology in society, and related social issues. Includes a discussion of hardware and software components, and basic use of some application software. Enrollment restricted to non-majors.

200-3 Introduction to FORTRAN Programming. An introduction to computers and programming. Primary emphasis will be given to the design and implementation of algorithms using FORTRAN. Enrollment is restricted to non-majors.

202-3 Introduction to Computer Science. An introduction to computers and programming using a high-level structured language including a discussion of programming constructs and data representation. Primary emphasis will be given to problem solving, algorithm design and program development.

210-3 Introduction to C Programming. An introduction to programming in the language C. Primary emphasis will be given to the design and implementation of algorithms using C. Enrollment is restricted to non-majors. Prerequisite: A first course in a high-level programming language or consent of instructor.

212-3 Introduction to Business Computing. An introduction to concepts and features of computing systems with reference to business information processing. Includes an overview of information system concepts with basic treatment of database, electronic spreadsheet, and word processing application software as they relate to the business environment. Enrollment restricted to non-majors.

215-3 Discrete Mathematics. (Same as Mathematics 215.) Number systems and computer arithmetic. Sets, logic and truth tables. Boolean algebra with application to computer logic design, functions, and relations. Elementary matrix operations and systems of equations. Combinations, permutations, and counting techniques. Elementary probability and statistics. Prerequisite: Mathematics 108 or equivalent.

220-3 Programming with Data Structures. A course in advanced programming, data structures and algorithm design. Emphasis on structured design techniques and program development. Topics include advanced language features, recursion, stacks, queues, linked lists, trees, internal sorting and searching, and storage representation of data structures. Prerequisite: 202 and 215 each with a grade of *C* or better.

302-3 Computer Organization with Assembly Language Programming. Basic computer organization. An extensive treatment of a specific assembly language, including macros and conditional assembly. The assembly process. Comparison of various computer architectures. Prerequisite: 220 with a grade of *C* or better.

306-3 Introduction to Systems Programming. An introduction to system software used at the different levels in a computing system. Design and implementation of system software. Introduction to the UNIX operating system. The language C will be taught as a component in the course and used throughout the course. Prerequisite: 302 with a grade of *C* or better.

312-3 COBOL Programming. COBOL and its use in business data processing. Prerequisite: 202.

315-3 Computer Logic and Digital Design. Introduction to switching algebra and its applications. Combinatorial and Sequential circuits. Designing a simple computer. Introduction to coding theory. Prerequisite: 302 with a grade of *C* or better.

330-3 Data Structures and File Organization. An in-depth treatment of secondary storage devices, files, and advanced data structures used in file organization. Topics include hardware, sequential files, indexed files, hashed files and inverted files. Prerequisite: 302 with a grade of *C* or better.

361-3 Numerical Calculus. (Same as Mathematics 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: Mathematics 221 and 250 and a working knowledge of FORTRAN.

401-3 Computer Architecture. Review of logical circuit design. Hardware description languages. Algorithms for high speed addition, multiplication, and division. Pipelined arithmetic. Implementation and control issues using PLA's and microprogramming control. Cache and main memory design. Input/Output. Introduction to interconnection networks and multiprocessor organization. Prerequisite: 315 with a grade of *C* or better.

411-3 Design and Implementation of 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, representation of data objects, implementation of procedure calls, coroutines and concurrency, heap management, and static and dynamic scoping. Introduces object oriented programming, and symbolic, functional or logic programming languages. Prerequisite: 306 with a grade of *C* or better.

414-3 Operating Systems. An extended treatment of the components of operating systems, including I/O programming, memory management, virtual memory, process management, concurrency, device management and file management. Prerequisite: 306 and 330 each with a grade of *C* or better.

416-3 Compiler Construction. Introduction to compiler construction. Design of a simple complete compiler, including lexical analysis, syntactical analysis, type checking, and code generation. Prerequisite: 306 with a grade of *C* or better.

420-3 Parallel and Distributed Computing. This course serves as an introduction to the areas of parallel and distributed computing. The major approaches to parallel programming, including shared-memory multiprocessing and message-passing multicomputing, will be covered in some detail. Students will have programming experience in each of paradigms. Architectural considerations, algorithm design, and measures of performance will be covered. In addition, the course will provide an introduction to distributed computing on a network of computers. Parallel and distributed computing will be contrasted. Other approaches to parallelism including data parallelism (SIMD) and vector processing will be surveyed. Prerequisite: 306, 315, and 330 each with a grade of *C* or better.

430-3 Database Systems. A comprehensive treatment of database systems, including network, hierarchical, and relational systems. Prerequisite: 330 with a grade of *C* or better.

435-3 Software Design and Development. 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, system specification, human interfaces, modular design, improved programming techniques, and program verification and validation. Prerequisite: 306 and 330 each with a grade of *C* or better.

436-3 Artificial Intelligence I. Search and heuristics, problem reduction. Predicate calculus, automated theorem proving. Knowledge representation. Applications of artificial intelligence. Parallel processing in artificial intelligence. Prerequisite: 306 with a grade of *C* or better.

440-3 Computer Networks. Design and analysis of computer communication networks. Topics to be covered include queuing systems, data transmission, data link protocols, topological design, routing, flow control, security and privacy, and network performance evaluation. Prerequisite: 315 with a grade of *C* or better and Mathematics 380.

447-3 Introduction to Graph Theory. (Same as Mathematics 447.) Introduction to theory of graphs, digraphs, and networks and applications to electrical systems and computer science. Topics include blocks and cutpoints, Eulerian graphs, trees, cycle and cocycle spaces, planarity and Kuratowski's Theorem, connectivity and Menger's Theorem, Hamiltonian graphs, colorability and Heawood's Theorem, flows in networks and Ford-Fulkerson Theorem, critical path analysis. Prerequisite: Mathematics 349 or consent of instructor.

449-3 Introduction to Combinatorics. (Same as Mathematics 449.) An introduction to combinatorial mathematics with computing applications. Topics include selections and arrangements, generating functions, recursion, inclusion and exclusion, coding theory, block designs. Prerequisite: Mathematics 349 or consent of instructor.

451-3 Theory of Computing. 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: 315 with a grade of *C* or better.

455-3 Design and Analysis of Computer Algorithms. An extensive treatment of the design, analysis and complexity of algorithms. Searching/sorting algorithms, polynomial and matrix algorithms, graph theoretic algorithms. Introduction to complexity theory. Prerequisite: 330 with a grade of *C* or better and Mathematics 349 or consent of instructor.

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. Prerequisite: for a, Mathematics 221 and 250 and a working knowledge of FORTRAN; for b, 464a and Mathematics 305.

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 Mathematics 380.

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 and Mathematics 221 and 250.

472-3 Linear Programming. (Same as Mathematics 472.) Nature and purpose of the linear programming model. Development of the simplex method. Application of the model to various problems. Duality theory. Transportation. Assignment problem. Postoptimality analysis. Prerequisite: 202 and Mathematics 221.

484-3 User Interface Design and Development. Human-computer interaction and the importance of good interface design. Interface quality and methods of evaluation. Interface design examples and case studies. Protyping and implementation techniques. Task analysis and the iterative design cycle. Dialogue techniques, basic computer graphics, I/O device, color and sound. Use of at least one interface toolkit and development methodology to complete an interface design project. Prerequisite: 306 with a grade of *C* or better.

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 with a grade of *C* or better; Mathematics 150 and 221 are recommended.
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.

Construction Technology (Program, Major, Courses)

The Construction Technology curriculum is designed to meet the needs of the construction industry. Particular emphasis is placed upon residential and light commercial construction. The technician working in construction must be able to communicate in the language of the industry, understand and interpret construction drawings, specifications, and methods of building fabrication and assembly. Technicians also must be capable of working in the area of middle management that exists between architect and craftsman. The technician is expected to carry out the mandates of building design. The program provides sufficient theory and laboratory work so that the graduate can perform in areas of design, drafting, construction methods, estimating, and supervision.

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.

Students entering this program should expect to spend about $150 over a two-year period for instruments, tools, materials, and supplies.

The program is served by an advisory committee whose members have extensive experience in the construction field.

Graduates of the program may find employment as construction engineering aides, assistants within the construction supervision field, building materials sales representatives, building code 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 Science Degree, College of Technical Careers

Requirements for Major in Construction Technology

GED 101 and 153	6
Technical Careers 105a,b, 107a,b, 120	11
Construction Technology 100, 102, 103, 104, 105, 110, 111, 125, 203, 207, 208, 209, 210, 211, 212, 225	48
Electives (in Humanities or Social Sciences)	3
Total	68

Courses (CST)

100-1 Construction Orientation. The student will be given an overview of the construction industry and the various job opportunities available. Guest speakers and field trips are included.
102-4 Construction Drawing and Blueprint Reading. Students will learn to read architectural drawings, to sketch shop drawings and construction details, and to mechanically draw typical plans often included in a set of house plans. Lecture/laboratory six hours. Materials fee, $3.
103-4 Concrete Technology. The student will obtain knowledge of concrete, its physical and mechanical properties, and the design and control of concrete mixes. In addition, forming systems and the use

of concrete as a building material in residential and light commercial construction will be demonstrated. Materials fee, $3.

104-4 Surveying in Construction. The student will perform basic surveying operations necessary for the location, lay-out and construction of a building. Interpretation of plat books, site plans, and topographic maps is included. A major portion of the course will be spent in field work. Lecture/laboratory six hours. Material fee, $2.

105-2 Construction Codes, Specifications, Inspection and Safety. This course is designed to make the students aware of safety practices on the job site, OSHA standards and accident prevention. Also, knowledge of building codes, architect and government specifications and building inspection procedures as commonly found in residential and light commercial construction will be discussed. Lecture two hours.

110-5 Residential Framing and Exterior Finish. Students will acquire the basic skills necessary to layout and build a wood frame home. Emphasis is placed on proper layout, fabrication, and erection techniques for floor, wall, and roof frame systems. Lecture/laboratory eight hours. Materials fee, $6.

111-3 Interior Finish. The student will acquire the skills and knowledge necessary to complete the interior of residential or light commercial buildings. Emphasis will be given to shop and site operations required to install moldings, cabinets, doors, windows, and wall, floor, and ceiling finishes. Lecture/laboratory eight hours. Eight weeks. Materials fee, $6. Prerequisite: 110.

125-3 Structural Mechanics I. Students will learn fundamental principles of mechanics as they apply to stationary structures. Students will apply these principles and use tables and formulas in the determination of loads and the selection of wooden members and steel connectors which will safely carry these loads on floor and roof systems. Lecture three hours. Prerequisite: School of Technical Careers 105 or consent of department.

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 of 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,

203-3 Construction Materials. The student will gain knowledge of physical properties, material composition, and use of materials in residential and light commercial construction. Lecture three hours. Materials fee, $2.

207-3 Construction Management. Students will gain knowledge of construction management functions, primarily from the point of view of the building contractor. Emphasis will be placed on business operations as they relate specifically to the construction industry. Lecture three hours. Materials fee, $3.

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. Materials fee, $3. Prerequisite: 102.

209-4 Mechanical Systems. The student will obtain knowledge of electrical, plumbing, heating, and air conditioning systems commonly found in residential and light commercial buildings. Emphasis is placed on interpretation of local, state, and national codes. Active and passive solar systems are also studied as alternatives to conventional heating and cooling systems. Lecture four hours.

210-3 Remodeling and Renovation. Students will acquire knowledge of the techniques and technologies necessary to remodel, repair, or renovate existing residential and small commercial buildings. The student will study the design and construction techniques required to convert unused areas into additional living space, additions to existing structures, upgrading of mechanical and electrical systems to meet building codes and repair, renovation and maintenance of older buildings. Lecture/laboratory eight hours. Eight weeks. Materials fee, $6. Prerequisite: 111.

211-3 Commercial Construction. Students will acquire the technical background necessary to perform operations in the construction of prefabricated single family and multi-family dwellings, agricultural buildings, prefabricated commercial and industrial metal buildings, and prefabricated concrete buildings. Lecture three hours. Prerequisite: 111.

212-3 Scheduling and Advanced Cost Estimating. Students taking this course will study the methods used in preparing a schedule and the methods used in developing a bid from take-off until a contract is finalized. The student will complete a total and comprehensive estimate for commercial buildings and develop the skills and techniques necessary to coordinate and schedule such work. Lecture 2 hours and lab 8 hours per week for eight weeks. Prerequisite: 208.

225-3 Structural Mechanics II. Students will extend their abilities to assist engineers, architects, builders in determining stresses in members of trusses and in selecting proper-sized steel beams or open web joists, wood or steel columns or struts, welded joints, and reinforced concrete beams, footings, and basement walls. Lecture three hours. Prerequisite: 125, Technical Careers 105.

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 of 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.

303-3 Advanced Concrete Technology. Provides the student with knowledge of the design and use of specialty concrete, admixtured concrete, architectural concrete, structural concrete in commercial

construction, and precast concrete products. Knowledge of types and methods of steel reinforcement, concrete inspection procedures, and ASTM Testing Standards will be acquired. Successful completion of this course can lead to certification by the American Concrete Institute as Concrete Field Testing Technician-Grade I. Lecture/laboratory. Prerequisite: associate degree with construction technology major or consent of department.

307-3 Computer Applications in Construction. Will advance the computer training students received in the associate degree construction technology courses. Students will study advanced computer problems in estimating, scheduling, planning, marketing, mechanical system sizing, and performance. Students should learn to interpret computer-generated data and how to modify programs to meet changing industry needs. Prerequisite: associate degree in construction technology or consent of department.

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 preceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail.

325-3 Quality Assurance in Construction. The student is introduced to the role of the construction inspector, will develop skills of communication with the trades and management, and will acquire knowledge of quality assurance systems, documentation techniques and significant legal aspects of construction failures. Lecture three hours. Prerequisite: 102, 103, 105, 125, 203, 225, and Technical Careers 107, equivalent experiences, or consent of instructor.

350-1 to 31 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. This course may be classified as independent study. Prerequisite: consent of instructor.

Consumer Economics and Family Management (Major, Courses)

The Bachelor of Science degree in Consumer Economics and Family Management focuses on issues in consumer economics and consumer affairs which are of growing interest to consumers, business, and society. A minor in Consumer Studies is also available.

This major is concerned with the consumer's role and effectiveness in the marketplace; the family's management of limited or restricted resources; and consumer affairs in business and government. Students are prepared 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 this major is the application of concepts and the critical analysis of problems and issues affecting the consumer's interests and choices.

The Capstone Option is available to eligible students entering this program. More information about the Capstone Option can be found in Chapter 4.

Bachelor of Science Degree, College of Technical Careers

General Education Requirements 46
GEB 205 and GED 153 are required. See Chapter 4 for General Education requirements.

Requirements for Major in Consumer Economics and Family Management ... 40
- Core Requirements: Advanced Technical Studies 364, 383, 416 and 421 12
- Specialization Electives 3
- Consumer Economics and Family Management 240, 340, 341, 350, 465, 494-4 19
- Finance 270 or 280 3
- Marketing 304 3

Recommended Electives 34

Consumer Economics and Family Management 407; GEA 221, 230, 240, 312; GEB 108, 114, 202, 211; Accounting 210; Vocational Education Studies 335, 337, or 345; Finance 310, 320, 380; Food and Nutrition 156, 215, 321, 335, 356; Marketing 305, 329, 363, Political Science 321; Radio-Television 467; Speech Communication 221, 261; Psychology 307, 323; ATS 361; Health Education 330; Sociology 330; Political Science 321; Consumer Information Processing 229.

Total 120

Minor in Consumer Studies

The Consumer Studies minor offered is designed to give students some background in consumer economics.

Required courses: Consumer Economics and Family Management 240, 340, 341, 350 and 465.

Courses (CEFM)

240-3 Consumer Resources. A history of the consumer movement. 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 areas.

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 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.

465-3 Consumer Relations. A study of the information and skills business representatives need to conduct and manage consumer relations such that the objectives of both consumers and business are met. Emphasis will be placed on consumer service management and communication skills. Consumer relations is viewed as a strategy to generate consumer satisfaction and loyalty, as well as a course of

consumer feedback for upper management regarding the improvement of products and services. Not for graduate credit. Prerequisite: senior standing or consent of instructor.
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.

Curriculum and Instruction (Department, Majors, Minor [Child and Family Services], Courses)

The Department of Curriculum and Instruction offers three majors in its undergraduate program: early childhood with specializations in preschool/primary and child and family services; elementary education; and social studies. A minor in child and family services is also available, as well as courses for those students pursuing the standard high school certification program. The department offers programs to prepare students to qualify for the following Illinois teaching certificates: Early Childhood Certificate (for teaching ages 0-8); standard Elementary Certificate (for teaching in grades K-9); or Standard High School Certificate (for teaching in grades 6-12). Students may enter the department (1) directly from within the College of Education, (2) from the General Education program, (3) from other academic units, or (4) from other institutions of higher education.

Early Childhood Major

This program encompasses the professional training needed to assume a variety of roles such as infant development specialists; child life practitioners; early childhood teachers and administrators; teacher and parent educators; family service workers; and teachers of young children in elementary schools.

EARLY CHILDHOOD MAJOR — PRESCHOOL/PRIMARY SPECIALIZATION

Students interested in teaching children 0-8 years of age in private or state-approved settings may elect to participate in the early childhood major leading to early childhood certification. Specifically designed to prepare future teachers of children up to the age of 8, this program will lead to the State of Illinois Early Childhood Certificate.

There are sequential steps for advancement in the early childhood major with preschool/primary specialization program. Such advancement is based not only on continued satisfactory academic performance, but also on acceptable professional behaviors which the faculty deem essential for competent and effective educators of young children and families.

1. Completion of Curriculum and Instruction 245 and two other courses in the major with a grade of *C* or better, an overall grade point average of 2.25, and a favorable vote of the early childhood faculty.
2. Complete requirements for admission to the Teacher Education Program, Chapter 3.
3. To be eligible for student teaching, a student must have attained a minimum grade point average of 2.50 in the major, successfully completed Curriculum and Instruction 227, 237, 245, 317, 318, 319, 337, 404, 405, 413, 419, Education 312, Special Education 400; have made preliminary application for student teaching; and be approved by the coordinator of the early childhood major based on performance in the above courses. Applications for student teaching must be submitted within the first two weeks of the semester during which the student is enrolled in Curriculum and Instruction 318.

General Education Requirements 56
Including GEB 202; GEB 114 and 301; GEC 122 and 213; GEC Art; Music 101; GED 101, GED 102; GED 152 or 153; Mathematics 114 and 314; GEE 201 and Physical Education activity class.
Area of Concentration 18
9 hours of 300-400 level courses to be from one of the following areas: Mathematics/Science, Humanities, Behavioral Studies (Social Sciences)
Requirements for Preschool/Primary Specialization 77
Curriculum and Instruction 227, 237, 245, 312, 317, 318, 319, 325, 327, 337, 404, 405, 413, 418, 419, 427, 435 54
Education 312, 401[1] 14
Psychology 301 3
Special Education 400, 412 6
Electives 3
Selected to meet general education requirements for certification
Total 136

[1]One-half of the practicum time will be spent in the primary setting and one-half in a preschool or infant/toddler setting.

Further enrichment in special education, infant development, administration of programs, and family studies can be selected by contacting the adviser for a list of recommended courses.

EARLY CHILDHOOD MAJOR — CHILD AND FAMILY SERVICES SPECIALIZATION

This program in child and family services offers preparation leading to positions as administrators and/or teachers in non-public school child care programs, including day care centers, nursery schools, family day care homes, and college child care facilities; administrators or workers in residential living facilities for exceptional children; child care and family life specialists with social and public health agencies; home economics extension specialists in child care; specialists in family life and parenting education; and infant care specialists.

General Education Requirements 46
Including GEB 108 and 202, GED 101, 102 and 152 or 153
Requirements for Major in Early Childhood with Child and Family Services Specialization 51
Curriculum and Instruction 227, 237, 245, 317, 318, 319, 327, 337, 404, 405, 414, 417, 495 44
Education 312 1
Psychology 303 3
Special Education 400 3
Electives 23

Recommended for Preschool Director and Teachers: Curriculum and Instruction 325, 390h, 402, 453, 498h; Accounting 210; Art 348; Health Education 402; Management 350; Physical Education 202, 309; Social Work 375, 383, 391.

Recommended for Child/Family Care Specialists in Social Services: Curriculum and Instruction 390h, 402, 498h; Health Education 404, 444; Psychology 305; Rehabilitation 405; Sociology 426; Social Work 375, 383, 391.

Recommended for Residential Life Directors and Supervisors: Curriculum and Instruction 402; GEA 115; Finance 490; Health Education 334, 402; Management 350; Marketing 350; Psychology 451; Recreation 300; Special Education 401, 402, 403; Social Work 375, 383.

Recommended for Infant Care Specialists: Curriculum and Instruction 402; GEA 115; Finance 490; Health Education 334, 402; Physical Education 309; Psychology 305; Social Work 375, 383, 391.

Total 120

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 grade nine.

Admission. All students who plan to major in Elementary Education will first be admitted as Pre-Elementary Education students provided they meet the University's admission policy and have potential to meet Teacher Education Program requirements as stated in the College of Education section, Chapter 3. Beginning freshmen will be granted pre-elementary education major status. Freshmen are advised by a College of Education academic advisor for the purpose of completing the courses required to become elementary education majors.

Transfer students must meet University admission requirements to be granted pre-elementary education major status for the purpose of advisement toward the elementary education major.

Students who are currently enrolled or previously attended SIUC in a major other than elementary education may request admission to the elementary education program as pre-elementary education majors for the purpose of advisement.

Transfer and reentering students who have earned more than 45 hours of transfer credit and have a grade point average of 2.2 to 2.5 will have their applications reviewed by the department to determine if they are admissible to the pre-elementary education major classification.

To be considered an elementary education major, students must have completed 45 semester hours with an overall grade point average of 2.5 (4.0 scale) and have obtained a satisfactory score on a pre-professional test of basic skills. In addition, students must have successfully completed the following general education courses: (a) Two of the following: GEB 114, 202, 301 and (b) GED 101, 102 and 152 or 153 or equivalent.

Retention. There are sequential steps for advancement in the elementary education major. Such advancement is based not only on continued satisfactory academic performance, but also on acceptable professional behaviors which the faculty deem essential for competent and effective educators.

1. Initial retention in the elementary education major requires completion of two Curriculum and Instruction courses with a grade of *C* or better, attainment of an overall grade point average (gpa) of 2.5, and the favorable vote of the elementary education faculty. (Note: An overall minimum gpa of 2.5 is required to register for the following major courses: CI 312, 315, 423, 426, 427, and 435.)

2. Completion of the requirements (ACT of 18 or conditional requirements) for admission to the Teacher Education Program, Chapter 3.

3. To be eligible for the professional semester the student must have attained a minimum 2.5 gpa in the major; completed Curriculum and Instruction 312, 315, and at least two of the following with a grade of *C* or better: Curriculum and Instruction 423, 424, 426, 427 or 435; have made preliminary application for

the professional semester; and be approved by the department based on performance in all major courses.

Completion of the major requires: completion of Curriculum and Instruction 312, 315, 423, 424, 426, 427, and 435 with a grade of *C* or better, a minimum gpa of 2.5 in the major, and an overall gpa of 2.5. Eighteen hours of electives to be selected from one of the disciplines in the following areas: mathematics and science, humanities, or social studies. Nine of the eighteen hours must be at the 300/400 level. These courses may also be used to meet general education and certification requirements.

General Education Requirements and Additional General Education Requirements for Major		53
Physical and Biological Sciences (GEA)	9	
Social Studies (Including GEB 114, 202, 301 and GEC 213 or equivalent	15	
Fine Arts (Including GEC 101 and GEC 100 or Music 101, (must include one music and one art course, which may be taken as part of GEC)	6	
Language Arts (Including GED 101 and 102, GED 152 or 153 and GEC literature)	12	
Mathematics (Including Mathematics 114 and Mathematics 314 which will substitute for general education mathematics)	7	
Health and Physical Education (GEE)	4	
Professional Education Requirements		28
See Teacher Education Program, Chapter 3.		
Specialization Requirements for Major		40
Curriculum and Instruction 312, 315, 423, 424, 426, 427, 435	22	
Electives	18[1]	
Electives to be selected from one of the following areas: mathematics and science, humanities, or social sciences		
Electives		7[2]
Total		128

[1]Elective hours selected to meet general education requirements for certification. Nine of the 18 hours must be at the 300/400 level.

[2]Many 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.

Majors To Prepare For Secondary School Teaching

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]
Agriculture, General[2]	X	
Art	X	
Biological Sciences	X	X
Black American Studies		X
Chemistry	X	X
Economics		X

TEACHING AREA	MAJOR	MINOR[1]
English	X	X
Foreign Languages[4]	X	X
Health Education	X	
History	X	X
Mathematics	X	X
Microbiology		X
Music	X	X
Philosophy		X
Physical Education	X	X
Physiology		X
Political Science	X	X
Psychology		X
Social Studies	X	
Sociology		X
Speech Communication	X	X
Theater		X
Workforce Education and Development	X	X
Business Education Specialization		
Home Economics Education Specialization		
Zoology[3]	X	X

[1]All minors used for certification purposes must meet the minimum number of hours specified in *State Board Document I.*
[2]Requirements for the major in general agriculture may be found in the catalog section titled Agricultural Education and Mechanization.
[3]A student with a major in zoology should have a minor in plant biology in order to meet certification standards for teaching biology at the high school level.
[4]Majors and minors are offered in the specific languages. The student should consult the academic adviser for information concerning the majors and minors available.

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 GEB 114 and 301 or History 300; (b) taking a course in American history and 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 and 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 GEE 201 and two hours in GEE 100-106 and 114 courses.
5. The individual must have completed the sequence of professional education courses with a grade of *C* or better. See Teacher Education Program, Chapter 3.
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: communication skills, science and mathematics, social sciences, humanities, health and physical development.

Students who wish to prepare to teach in middle school 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 and meet Illinois State Board of Education Document 1 requirements. The student's electives should be planned to include course work in a subject matter area of major interest to the student.

Social Studies Major

This program is designed to meet the needs of students who wish to teach social studies in the middle/junior high school or the senior high school. The graduate of this program will be qualified to teach social studies, history, political science, geography, sociology, and economics, based on requirements of the Illinois State Teacher Certification Board.

The complex nature of our competitive, pluralistic society mandates social studies curricula which prepare future citizens to comprehend and adjust to a changing social environment. The goal of the social studies program is to prepare prospective social studies teachers for the role of leadership in guiding middle school, junior, and senior high school students to live as effective citizens in a democratic society.

Content and professional course work provide the foundation used in the social studies methods course, where teaching methods and strategies are explored and experienced. A series of clinical experiences provide the social studies major an opportunity to use the knowledge and skills acquired in the program. A cooperative teaching and university supervisor will assist the student to blend knowledge and skills with adolescent behavior and curriculum needs.

General Education Requirements		46
Including GED 101 and 102; 3 semester hours of mathematics; 3 semester hours of speech or other oral communications; GEE 201; 2 semester hours of physical education activity courses; one GEC literature course and GEC 213		
Requirements for Major in Social Studies		46[1]
GEB 301, History 300, U.S. history elective	(3) + 6	
History 205a, 205b, world history, plus 3 hours at the 300 or 400 level		9
Economics 214, 215, economics elective		8
GEB 114, Political Science 213, political science elective	(3) + 6	
GEA 330, Geography 300, geography elective	(3) + 5	
GEB 104, 202, Sociology 301	(6) + 4	
Electives to be chosen from one of the three departments of anthropology, psychology, or sociology		5
Curriculum and Instruction 469		3
Professional Education Requirements		28
See Teacher Education Requirements, Chapter 3.		
Total		120

[1]Although the hours shown in parentheses are required for the major, they will also count toward the 46 hour requirement in General Education.

Child and Family Services (Minor)

The minor in child and family services is designed to provide students with basic knowledge in early childhood or family studies. The selection of coursework is flexible so that courses can be adapted to the special interests of students with diverse backgrounds and goals. Students are expected to honor all prerequisites

in their selection of courses. A minimum of 16 hours of coursework is required as follows:

Curriculum and Instruction 227, 237 6
Electives to be chosen from the following: 10
Early Childhood Emphasis: Curriculum and Instruction 245, 337, 390H, 404, 498H
Family Studies Emphasis: Curriculum and Instruction 327, 390Q, 414, 498Q

Courses (CI)

199-1 The 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.

209-2 Philosophy of Creativity. The creative process in 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.)

212-2 Reading College Texts. Textbooks, supplementary materials, and evaluative instruments will be analyzed. Attention will be given to determining usability, feasibility, learnability, and teachability of instructional materials. The following factors will be investigated: content structure and organization, concept density, conceptualization levels, readability, and format.

213-2 Understanding the Elementary School Child. Child development concepts necessary for understanding the elementary school child, with information provided on preschool, primary, and intermediate grade levels.

227-3 Marriage and Family Living. (Same as Women's Studies 286.) 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 Early Child Development I. Principles of development and guidance of children as applied to home situations. Directed observations of children from 0 through 6. Understanding the social, emotional, physical, and intellectual development of the preschool child.

245-3 Professional Development Seminar. Introduction to early childhood with an emphasis on personal and professional development as preparation for work with children, parents, and professional peers. Acquaints students with the varied career options, approaches to programming, and professional personnel in working with children under eight. Some field trips will be taken.

258-1 to 4 Credit for Work Experience. This course includes work experiences relevant to the student's major program, such as work in day care centers, teacher's aid in 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 C&I department and consent of undergraduate affairs committee, Department of Curriculum and Instruction.

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. Prerequisite: junior standing and an overall GPA of 2.5.

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. Prerequisite: Mathematics 114 and 314, or consent of instructor.

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.

317-3 Guiding Play As a Learning Medium. Focuses on play as an integral part of a child's learning. Covers appropriate ways to guide children in their play activities and routines and ways to develop creativity in children. Includes observation of children in the child care setting.

318-4 Instructional Methods for the Preschool-Primary Child I. Planning optimum learning environment for children of the preoperational and concrete operational stages of preschool-primary cognitive development. Emphasis on integrated learning and appropriate instructional methods in the content areas of language arts and social sciences. Practicum experiences will be provided in a preschool setting for one half-day per week for the semester for all students. Preschool/primary specialization students are required to have concurrent enrollment in Education 312 with placement one half-day per week for the semester in a kindergarten setting. Prerequisite 237, 317, or consent of instructor.

319-3 Instructional Methods for the Preschool-Primary Child II. Planning optimum learning environment for children at the preoperational and concrete operational stages of cognitive development (preschool-primary). Emphasis on integrated learning and appropriate instructional methods in the content areas of mathematics and science. Preschool/primary specialization students must have concurrent enrollment in one hour of Education 312 to provide practical experiences one half day per week for

the semester in primary settings. Child and family services specialization students must have concurrent enrollment in Education 312 to provide practicum experiences one half-day per week a semester in a preschool setting. Prerequisite: 318 or consent of instructor.

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.

325-3 Young Children and the Arts. The development of creativity in young children. Methods and curriculum that foster creativity in graphic expression, music, and creative movement among preschool and primary school children. Prerequisite: Music 101.

326-2 Music in Special Education. Deals with procedures and techniques for using music in the special education classroom. Attention will be given to the general education nature of music, listening, singing, using instruments, structuring music, and teaching techniques. Prerequisite: Music 101 or equivalent.

327-3 Family Studies. Study of changing patterns in family living throughout the family life cycle. Insights into common current family problems typical of each stage of the family life cycle. Prerequisite: 227.

328-2 Teaching Music in the Intermediate Grades. For non-music majors only who may be expected to teach music in grades 4-6. Emphasis on music skills and related theory. Contemporary materials and instructional methodology will be utilized. Prerequisite: Music 101 or equivalent.

337-3 Early Child Development II. The specific behaviors of both parents and teachers are examined to determine the effect they have on the development of the preschool child's desirable and undesirable behavior. Prerequisite: 237.

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, **(m)** instruction, **(n)** educational media, **(q)** family studies. 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, **(m)** instruction, **(n)** educational media, and **(o)** environmental education, **(q)** family studies. 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.

402-3 The Study of Cultural Diversity in Education and Family Services. The student examines origins, characteristics of behavior, learning patterns, family constellations, and lifestyles of the diverse cultural groups in our community, state, and nation. Students will identify their own cultural background and biases; recognize diversity resulting from ethnic origin, gender, age, or disability; and experience ways of learning about cultures other than their own that promote constructive communication and integration into all aspects of schooling, teaching, and family services.

404-3 Infant Development. Current theories and knowledge concerning growth and development of infants with related laboratory field experiences. Prerequisite: 237 or Psychology 301 or equivalent.

405-4 Methodologies For Group Care of Infants and Toddlers. Application of theories of development of children up to age 3 in a care and stimulation practicum. Development of competencies and skills needed by Early Childhood professionals. Two hour seminar and four hour practicum required. Prerequisite: 318, 404 or consent of instructor.

407-3 to 9 (3 per topic) Diagnostic Teaching Strategies for Classroom Teachers. Diagnostic instruments and teaching techniques with an emphasis on understanding and teaching students underachieving in the areas of: **(c)** language arts, **(e)** mathematics, and **(f)** reading. Prerequisite: **(c)** 423, **(e)** 315, **(f)** 312, 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.

413-3 Language Development of the Young Child, 0-8. The normal language development and communication skills of the young child will be the focus of this course; attention will be given to an integrated, holistic philosophy toward development and learning in young children ages 0-8; specifically focussing upon social and environmental influences on the development of language and literacy, students will observe, listen, record, and analyze samples of young children's communication.

414-3 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.

415-3 Modern Approaches to Teaching Middle School Mathematics (Grades 4-8). Examines current mathematics materials and teaching approaches. Hands-on experience with a multitude of teaching aids including microcomputers and problem solving materials. Student exchange of ideas and discussion of activities for classroom use. Prerequisite: 315 or consent of instructor and overall GPA of 2.5.

417-3 Administration of Early Childhood and Family Programs. Planning and organizing programs for pre-school or residential facilities including budgeting, staffing, programming, and evaluation. Prerequisite: 318 and 319.

418-3 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. Students' analysis of their personal philosophy of early childhood education. Prerequisite: 318, 319, 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: 318 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. Prerequisite: GED 101, 102, 152 or 153 or equivalent, and a 2.5 overall GPA.

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. Prerequisite: completion of two of the following: GEB 114, 202, 301; and overall GPA of 2.5

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. Prerequisite: junior standing and an overall gpa of 2.5.

427-4 Science Process and Concepts for Teachers of Grades 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.

428-3 Inquiry Skills for Teaching Junior and Senior High School Science. The major focus will be the application of inquiry skills as used in all areas of science instruction at the junior and senior high school levels; students will be expected to demonstrate mastery of basic and integrated science process skills through conducting and reporting results of science investigations.

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. Prerequisite: junior standing, a minimum of 6 hours of college-level English, and an overall GPA of 2.5.

437-3 Instructional Technology in Training Programs in Business and Industry. Examines the role that performance and instructional technology plays in current training practices in business and industry. The organization, staffing, budgeting, and evaluation of training and development departments is presented. The kinds of performance problems typically encountered by corporate training departments are addressed. Field trips are expected.

441-3 Multicultural Literature for Children. Identification, selection and evaluation of books and audiovisual materials dealing with various cultural groups such as African Americans, Asian Americans, Native Americans, Hispanic Americans and European Americans. Prerequisite: 435 or consent of instructor.

445-3 Literature for Young Adults. The selection and use of books and other educational media for students in the junior high and senior high school.

452-3 Small Format Video Production in Education. An introduction to small format black-and-white and color video equipment in educational settings. Emphasis is on understanding the role of video as an instructional and informational tool and on the principles of design that determine instructional video's effectiveness.

455-3 Design and Development of Self-Instruction Systems. Introduction to the theory and practice of self-instruction systems with a particular emphasis on the creation of instruction for mastery. Various self-instruction systems are reviewed and procedures for designing, developing, and evaluating these systems are discussed. Includes planning a teaching unit and creating a self-instruction package for the unit.

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.
461-3 Content Literacy Strategies. For middle grade teachers who desire strategies for helping students comprehend content encountered in narrative and expository text. Materials, lesson plans, and teaching strategies to help middle grade students move from basic to more advanced reading, writing, studying, and learning skills are featured.
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 methods and strategies which are appropriate for secondary and/or post-secondary educators. Both individual and group methods are emphasized.
467-3 Methods and Materials in the Education of the Gifted. Content focuses on the most appropriate instructional strategies and materials to be utilized with the gifted. Time spent practicing teaching models, designing materials and developing teaching units. Emphasis placed on techniques for individualizing instruction for the gifted and talented students.
468-3 Science Methods for Junior and Senior High Schools. A performance-based approach to instructional skills common to teaching natural science at the junior and senior high school levels. Three class hours and one micro teaching laboratory hour per week. Prerequisite: Education 302 or consent of instructor.
469-3 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. Prerequisite: Education 315 or consent of instructor.
480-3 Introduction to Computer Based Education. Introduction to microcomputers and their uses in the classroom, including computer evolution, languages and authoring systems, instructional modalities, word processing, instructional management, and software evaluation. Utility functions and basic commands in programming are also introduced.
481-3 Instructional Applications of Mainframe Computers. Design, development, and programming of computer-assisted instructional materials using interactive, timesharing computer systems. Study of lesson design and programming, including branching and program flow, display techniques, response judging, teaching strategies, organization, and style.
483-6 (3, 3) Instructional Applications for Microcomputers. A study of the development and use of microcomputers systems in educational settings. Emphasis is upon the characteristics, capabilities, applications, and implications of microcomputers and microcomputer lessons, with case studies of their integration into the teaching, learning process.
486-3 Instructional Authoring Systems. Designed to give students experience using authoring systems, languages and utilities for the design, production, and integration of computer assisted instruction into educational settings. Tools will include Superpilot, Author, and various commercial and consortium authoring tools. Prerequisite: 480 or consent of instructor.
495-2 to 8 Field Experience. Supervised learning experiences in settings for children and families and public agencies. Prerequisite: 318, 319, 405 and consent of instructor.
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)** school library media, **(m)** instruction, **(n)** educational technology, **(o)** environmental education. **(p)** children's literature, **(q)** family studies, **(r)** computer based education, **(s)** gifted and talented education, and **(t)** teacher education. Maximum of six hours toward a master's degree. Prerequisite: consent of instructor.

Dental Hygiene (Program, Major, Courses)

This program of study is designed to prepare the student to successfully enter the health profession of dental hygiene. The services provided by the dental hygienist are regulated by laws which may vary among the states. However, most states allow the services of scaling and polishing teeth, radiographic examina-

tion, patient education and nutritional counseling, application of cavity preventing agents and oral cancer and blood pressure screening. The clinical services performed by a dental hygienist are under the supervision of a licensed dentist.

Because dental hygiene is a licensed profession, the graduate must pass a written National Board Examination, as well as the appropriate State/Regional Board Examinations.

A licensed dental hygienist may be employed in private practice dental offices, in school systems, in public health, in research, in administration and education, in government institutions, or as a commissioned officer in the armed services.

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. Students must meet baccalaureate entry requirements. Program enrollment is limited to 36 students to be admitted only in the fall semester. Additional application information and procedures are required other than that required for admission to the University. Expenses, in addition to textbooks and tuition, of approximately $2500 are required to cover the cost of instruments, uniforms, vaccines, personal protective equipment, and other miscellaneous items.

The dental hygiene program offers an on-site clinic to provide the student with practical clinical instruction. Students perform dental hygiene services in the clinic under the direct supervision of dental hygiene faculty. The faculty is composed of licensed dentists and dental hygienists. The entire program is served by an advisory committee composed of representatives from community practices, dental education, dental industry and the professional associations.

The student will graduate with an Associate in Applied Science degree from the College of Technical Careers. This program is fully accredited by the Commission on Dental Accreditation of the American Dental Association.

Associate in Applied Science Degree, College of Technical Careers

Requirements for Major in Dental Hygiene

GEA 106	3	
GEB 202, GEB 108 or Sociology 321	6	
GED 101, 152	6	
Microbiology 201	4	
Allied Health Careers Specialties 141	4	
Dental Hygiene 126, 133, 137, 138, 147, 201, 208, 209, 211a,b, 217, 218a,b, 226, 238, 240, 241, 248, 310a,b, 311a,b, 315, 348	60	
Total		83

Courses (DH)

126-3 Oral Anatomy and Tooth Morphology. 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 teeth, both permanent and primary. Laboratory emphasis will be placed on tooth identification, tooth and root morphology, and occlusal relationships to enhance application of instrumentation techniques. Lecture two hours, laboratory two hours.

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.

137-5 Pre-Clinical Dental Hygiene. This course is the first in a series of five clinical courses which introduces the student to foundational skills and instrument techniques. The professions of dentistry and dental hygiene are introduced with emphasis on preventive and therapeutic patient care. Basic skills and techniques are presented by videotape modules, written exercises and other advanced instructional methods. The faculty team of instructors facilitates learning by student interaction to achieve clinical competency.

138-2 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. Pathologic related physiology is also included over an area on a cellular level such as tissue regeneration, inflammatory process, and wound healing. Lecture two hours. Prerequisite: Allied Health Careers Specialties 141.

147-1 Preventive Dentistry. The course is designed to introduce the student to basic preventive dentistry measures. Subject matter is presented that is important in the understanding of the causes and means to control dental caries and periodontal disease. Emphasis is placed on assessment of patient's dental needs and planning and implementing patient education.

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 of 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.

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 operatory and laboratory in the generalist and specialist type of practices. Lecture three hours. Laboratory three hours. Prerequisite: 209, GEA 106.

208-4 Clinical Dental Hygiene. The student will continue to apply information and skills learned in 137 on selected patients with varying oral hygiene needs. New information, procedures, and skills will be introduced during the course and incorporated into the clinical procedures. Laboratory eight hours. Laboratory fee: $50. Prerequisite: 126, 133, 137.

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. Additional skill 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. Laboratory fee: $50. Prerequisite: 208.

211-2 (1, 1) Seminar. (a) The course presents to the student procedures and techniques that will be incorporated into concurrent clinic courses including advanced instrumentation and clinical problem solving. Emphasis is placed on patient management and advanced emergency techniques. **(b)** The course continues to provide correlation between didactic material and clinical application. Emphasis is placed on development of plaque control programs. Lecture two hours. Prerequisite: 137, 147.

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: GEA 106, Allied Health Careers Specialties 141.

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. The student will also 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, processing, and mounting films. Length of course: 16 weeks. Laboratory fee: $25. **(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: 218a.

226-2 Anatomy of the Head and Neck. The goal of this course is for the dental hygiene student to acquire clinical problem solving skills through a basic understanding of the gross anatomy of the head and neck region of the human body. Through a regional approach to the head and neck, the student will be able to synthesize solutions to clinical problems by understanding the morphological and functional interrelationships of anatomical structures. Length of course 16 weeks.

238-2 Oral Pathology. 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: 138, 226.

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 most commonly used in a dental office and the techniques of administering them. Lecture two hours. Prerequisite: GEA 106, Allied Health Careers Specialties 141, Microbiology 201.

241-2 Periodontology. The student will be introduced to the specialty of periodontology, including the topics of identification, treatment and prevention of pathological conditions that affect the periodontium. Examination and prevention aspects of peridontal therapy will be discussed. A simulated, thorough systemic peridontal examination of a selected patient, planning how to implement a plaque control project for that patient, and how to provide peridontal treatment will be covered.

248-2 Dental Public Health and Community Dentistry. The student is introduced to the general principles of public dental health and community dentistry including hierarchy and history of the public

health system; dental needs, supply and demand; purchase of dental care; and general principles of research in public health. An overview of types of community dental health programs are studied, with emphasis on the role of the dental hygienist in the community. Lecture two hours. Prerequisite: 147, 208, 209.

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 of 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.

310-12 (6, 6) Clinical Dental Hygiene and Radiology. (a) 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 the required clinical experience. Laboratory twelve hours. Laboratory fee: $75. Prerequisite: 209, 217, 218b, Microbiology 201. **(b)** 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 137 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 clinical experience. Laboratory twelve hours. Laboratory fee: $50. Prerequisite: 209, 310a, concurrent enrollment in 311b.

311-2 (1, 1) Senior Seminar. (a) The course presents to the student advanced clinical techniques and provides an opportunity for clinical problem solving. Emphasis in this phase of the course is placed on development of recall systems treating patients with special needs and the use of case presentations. Prerequisite: 211. **(b)** The course focuses on advanced clinical techniques and application. Clinical problem solving is practiced in conjunction with case presentation of actual clinic cases. Emphasis is placed on treatment of patients with special needs, hazards within the dental office, and skills needed for locating employment. Lecture two hours. Prerequisite: 211.

315-2 Ethics, Jurisprudence, and Office Management. Ethical, legal and management issues related to the practice of dentistry and dental hygiene are studied. Case situations are evaluated to determine appropriate management in accordance with the principles of dental ethics and jurisprudence. The practice management section emphasizes the role of the dental hygienist in effective team dentistry. Prerequisite: 208, 209

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 preceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail.

348-2 Practicum in Dental Public Health and Community Dentistry. The student will continue to study the principles of dental public health and community dentistry. Types of dental health education programs are studied with emphasis on special population groups. Program planning, implementation, and evaluation are discussed in detail. The student will develop and present dental health education programs according to these principles. Lecture one hour, laboratory two hours. Prerequisite: 248.

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. This course may be classified as independent study. Prerequisite: consent of instructor.

388-2 Career Options in Dental Health. The course presents an overview of the various career options available in the field of dentistry. Advanced dental hygiene clinical practice, education, marketing, nursing home and other long term resident facilities are possible career options to be examined. The student will select and participate in career options of interest. The experiences will correlate to advanced dental hygiene education and will be designed to meet the needs of the individual student and the selected career option. Two hours lecture. Prerequisite: the student must have completed one semester of the dental hygiene associate degree sequence or have consent of the instructor.

414-3 Oral Health Management of Special Populations. Presents a comprehensive approach to the oral care of special needs patients and populations. Student will be introduced to a variety of settings in which dental care and oral health education may be provided. Provides opportunity to plan and implement programs and treatment. Not for graduate credit.

440-3 Interpretation and Review of Dental Literature. The student is introduced to general principles of research theory, research design, and basic statistics. Library sources are utilized to access dental related research reports. Critical review and interpretation of dental literature is emphasized. Lecture three hours. Not for graduate credit. Prerequisite: 238, 311a and b, or consent of instructor.

Dental Technology (Program, Major, Courses)

The dental 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 technology 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. Admission to the University qualifies the applicant for admission to the Dental Technology program. Students must meet baccalaureate entry requirements.

The program is served by an advisory committee made up of practicing dentists, dental laboratory owners, dental technicians, dental sales representatives, and a second year dental technology student.

Graduates of the two-year dental 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 $1000 for a dental kit, laboratory jacket, Delta Tau Club, and recognized graduate exam 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 Applied Science Degree, College of Technical Careers

Requirements for Major in Dental Technology

GED 101, 152	6
GEA 101, 106	6
Technical Careers 120	3
Computer Information Processing 229	3
Dental Technology 102, 103a,b, 104a,b, 110, 113a,b, 128, 143, 202, 204a,b, 205, 206a,b, 210	61
Total	79

Courses (DT)

102-4.5 Tooth Anatomy. The student will be able to write definitions of the nomenclature of teeth; 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; wax maxillary and mandibular teeth on dentoform models. Lecture three hours. Laboratory 17 hours. Five weeks.

103A-4.5 Complete Dentures I. The student will be able to write the steps of denture construction; identify and use lab stone, lab plaster and acrylic resins; construct edentulous casts, custom trays, base plates, occlusal rims, mount casts on non-adjustable articulators; and set up, contour, invest, and process and finish a complete denture. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 102.

103B-4.5 Complete Dentures II. The student will be able to describe the theory inherent in all phases of full denture construction; bead and box an impression, set up anatomical, semi-anatomical, and non-anatomical teeth on non-adjustable and semi-adjustable articulators; select and set up teeth for different classes of arch forms; contour, flask, process, and finish complete dentures; reline, rebase, and repair full dentures; set up and process an immediate denture and fabricate a surgical tray. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 103A.

104A-4.5 Removable Partial Dentures I. The student will be able to write the basic steps of partial denture construction, identify and use impression materials, gypsum products, surveyors, dental waxes, clasp designs, and partial denture alloys; mount master casts, survey, design, and cast a framework. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 102.

104B-4.5 Removable Partial Dentures II. The student will be able to describe and do the planning, designing, and surveying of partial dentures; construct refractory casts, wax, invest, and finish several partial denture frameworks; articulate, set up denture teeth on partial frameworks, wax, invest, process, and finish acrylic bases; and repair broken frameworks. Lecture three hours. Laboratory 17 hours. Prerequisite: 104A.

110-4 Dental Occlusion. The student will be able to write and identify the basic anatomy of the oral facial structure, and the theory inherent to occlusion. The theory will include the physiology of occlusion, the determinants of occlusion, and popular occlusion theories or techniques. The laboratory aspect will include building wax occlusions such as cusp/marginal ridge and cusp/fossa occlusal contacts, including waxing of natural dentition. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 103B, 104B.

113A-2 Science of Dental Materials. The student will be able to: identify orally, as well as written, the physical and mechanical properties of dental materials, the uses and composition of dental gypsum products, namely, plaster, stones, and investments; impression materials, dental resins, dental cements, and pit and fissure sealants. 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 and nickel cobalt alloys; the control of their physical properties, namely, strain hardening, alloying and heat treatment, the chemistry of tarnish and corrosion, dental waxes, casting and soldering techniques, dental porcelains and polishing agents and abrasives. 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 surrounding 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 pertinent dates and contributions made by people in the history of dentistry and the dental laboratory industry; identify specialties of dentistry and dental technology; identify organizations affiliated with the dental laboratory industry; identify ethics and laws regulating the dental profession; identify laboratory safety procedures, equipment maintenance, infection control, areas of possible cross contamination in the dental laboratory, and identify current issues impacting dentistry.

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 of 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.

202-4.5 Orthodontics and Pedodontics. The student will be able to pour and trim orthodontic models, fabricate a maxillary Hawley, mandibular Hawley, holding arch, space maintainer, arch expander, tongue thrust and thumb habit appliances, occlusal palatal splint, bite planes, operate welding machine, orthodontic model trimmer, orthodontic blowpipe, write the gauges of wire that are used for the orthodontic appliances, identify the functional appliances and their clinical applications, and write the theory associated with the use of the appliance. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 110.

204A-4.5 Crown and Bridge I. The student will be able to write definitions of the nomenclature for crown and bridge I prosthetics; communicate orally and in writing the theory necessary for successful completion of the laboratory projects; construct working models, full cast crowns, inlays and veneer crowns. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 202.

204B-4.5 Crown and Bridge II. The student will be able to write definitions of the nomenclature for crown and bridge II prosthetics; communicate orally and in writing the theory necessary for completion of the laboratory projects; construct working models, multiple unit bridgework, broken stress bridgework, crown under an existing partial denture, opposing crowns, and soldering procedures. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 204B.

205-1 Dental Laboratory Management. The student will be able to identify how the following areas of management relate to the dental laboratory technician and the dental laboratory industry: principles and practices of management, marketing management, financial management, human resource management, and production management.

206A-4.5 Dental Ceramics I. The student will be able to construct porcelain jackets and porcelain-to-ceramic alloy restorations. Included will be cast preparation, waxing for porcelain bonded to ceramic alloy, casting, finishing, and porcelain firing techniques. Related theoretical concepts will be presented. The correct use and function of finishing and casting equipment and porcelain furnaces will be included. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 202.

206B-4.5 Dental Ceramics II. The student will be able to construct porcelain bonded to ceramic alloy restorations. Included will be veneer and full coverage porcelain restorations and bridges using modern methods and techniques. Fabrication of porcelain laminates will be included. Also, the theory involved in conventional and new techniques for porcelain-to-metal restorations will be included as well as color

control, and staining procedures. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 206A.

210-4.5 Applied Prosthodontics. The student will be able to complete removable prosthodontic cases per directions of the dentist's prescription. Emphasis is on fabricating removable dental prosthesis on practical laboratory models. Laboratory 20 hours. Five weeks. Prerequisite: all 100 and 200 level dental technology courses.

299-1 to 16 Individual Study. Provides 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 of 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.

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 preceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail.

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. This course may be classified as independent study. Prerequisite: consent of instructor.

Design

(SEE ART AND DESIGN)

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.

The economics major in the College of Liberal Arts provides a flexible program with 26 to 33 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.

Economic 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 also plan to 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 plan to take Mathematics 250 and Economics 465.

For transfer students, equivalent economics courses will be accepted from other institutions. However, to complete a major in economics, a student must earn credit in no fewer than five economics courses taken at Southern Illinois University at Carbondale. To complete a minor in economics, a student must earn credit in no fewer than three economics courses taken at Southern Illinois University at Carbondale.

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.

Courses where a Pass/Fail grade is earned will not be counted as fulfilling the requirements for a major in economics without the written consent of the director of undergraduate studies.

Bachelor of Arts Degree, College of Liberal Arts

General Education Requirements		46
College of Liberal Arts Academic Requirements (See Chapter 3.)		(4) + 8-14
Requirements for Major in Economics		34-35
One course from the following all of which are approved substitutes for GED 107: Mathematics 117, 140, 150. The student will automatically satisfy a portion of the General Education Area D requirements with any one of these courses. Three hours are already included in total hours shown for General Education Requirements	(3) + 1-2	
Economics 214, 215, 308, 340, 341, 408		18
Any five remaining economics courses except 301		15
Electives		25-32
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 408, 425, 440, 441, 471, and 479.

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, but excluding Economics 301. A minimum grade point average of 2.0 must be achieved in the 15 hours of economics courses counted toward the minor. Students are urged to discuss their minor program with an economics adviser in order to assist students in designing coherent programs to meet their individual needs.

Courses (ECON)

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.

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.

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 GEB 211 or consent of instructor.

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.

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.

308-3 Economics 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 hypothesis about, and estimation of, the important types of population parameters. Prerequisite: Mathematics 117 or 140 or equivalent.

310-3 Labor Problems. A comprehensive overview of the relation of labor to the United States economy. Included are the history of labor in the United States; analysis of institutions affecting labor; the theory of wage and employment determination; as well as analyses of unions and collective bargaining, discrimination, unemployment, and the distribution of income. Prerequisite: 215 or consent of instructor.

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.

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.

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.

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.

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.

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 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.

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.

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 ares and urban blight. Prerequisite: 214, or 215, or consent of instructor.

374-3 Industrial Organization. A survey of economic theories and empirical studies on the nature and consequences of business rivalry in imperfectly competitive markets. Includes such topics as oligopoly, economics of scale, natural monopoly, introductory game theory, advertising, imperfect information, spatial competition, patents, and innovation. Prerequisite: 215.

408-3 Economics and Business Statistics II. A continuation of 308 which includes the construction, interpretation, and use of economic data. Topics include correlation, regression, decisionmaking, index numbers, time series analysis, forecasting, and other statistical techniques used in analyzing economic and business data. This course will not count as graduate credit for economics majors. Prerequisite: 308 or equivalent.

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.

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.

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.

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; and Mathematics 117, or 140, or 150, or consent of instructor.

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.
436-3 Government and Labor. 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: GEB 114 and 211 or equivalents or consent of instructor.
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.
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 income policies facing the United States government. Not open to students who have had 341. Prerequisite: 214 or consent of instructor.
443-3 Honors Seminar in Economics. Application of the tools of economic analysis to the study of contemporary social problems. Enrollment limited to economic 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; and Mathematics 117, or 140, or 150, or consent of instructor.
450-3 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 GEB 211; or consent of instructor.
463-3 Introduction to Applied Econometrics. Applications of statistical tools to specific economic problems. Numerous examples will be examined in order to achieve this goal. Emphasis will be given to model misspecification, non-classical estimation techniques, data analysis, and simultaneous equations. Prerequisite: 408 or consent of instructor.
465-4 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 or 440, and Mathematics 117 or 140, or consent of instructor.
474-3 Antitrust and Regulation. The theory and practice of government policy toward imperfectly competitive markets. Includes such topics as merger policy, unfair trade practices, regulation of natural monopolies, peak load pricing, safety and environmental regulation, and consumer protection. Prerequisite: 340 or 374.
479-3 Problems in Business and Economics. 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; Mathematics 117, or 140, or 150 or consent of instructor.

Education (Courses)

Courses (EDUC)

258-1 to 4 Credit for Work Experience. Credit granted for prior work experience relevant to the student's major program in which specific experiences with children or youth can be documented. Prerequisite: 310, 315, and consent of coordinator of professional education experiences.
259-1 to 60 Occupational Education Credit. Credit for educational experiences in training schools and institutes relevant to the particular departmental program. Credit hours to be determined by the associate dean for undergraduate studies.
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.
308-3 Characteristics and Methods for Teaching Exceptional Children. For preservice teachers and school personnel who serve directly and indirectly handicapped children and youth. The course focuses on providing the essential characteristic information and skills to appropriately educate the handicapped in a variety of settings.
310-2 Study of Teaching. Requirement in professional education sequence which cannot be waived. Introduction to major roles assumed by classroom teachers. Orientation to the Teacher Education Program Reflective Teaching Model and to the teaching profession. During the semester, there are four class meetings, lasting two hours each, scheduled to be held on-campus. Participation and observation in public schools two one-half days per week or one full day per week on Tuesdays, Wednesdays, or Thursdays. Placement in public school settings coordinated by College of Education Student Services. All sections of 310 require a restricted class card which may be obtained in Wham 135. 72 clock hours. Prerequisite: admission to the Teacher Education Program.
311-2 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 philosophy of education. Assists students in developing an understanding of the organization, function, and role of schools in the United States.

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 College of Education Student Services. Prerequisite: 310, 311, 314a, 314b, and 315 or concurrent enrollment.

314A-2 Human Growth, Development, and Learning. A requirement in the professional education sequence. This course 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: GEB 202 or equivalent.

315-3 Organizing and Directing Instruction. A requirement in the professional education sequence. Techniques and procedures applicable to effective teaching including planning for instruction, instructional design, and general teaching strategies. Teaching skills will be demonstrated by the students and evaluated by the instructor on a regular basis in the Teaching Skills Lab. Laboratory work also required in media production laboratory and microcomputer laboratory. Twelve clock hours. A $10 laboratory fee is required. Prerequisite: 310 or concurrent enrollment, 314A, 314B and admission to the Teacher Education Program.

316-2 Classroom Management and Discipline. Includes techniques and procedures intended to provide teachers with skills for managing groups of students. Content includes management techniques, discipline models, child abuse identification and reporting, field observation, and data collection in the public schools. Public school assignments are one-half day per week on Tuesdays, Wednesdays, or Thursdays for ten weeks beginning with week five. Placement in public schools is coordinated by the College of Education Student Services. All sections require restricted class cards. Thirty clock hours. Prerequisite: 310, 314A, 314B, and admission to the Teacher Education Program.

317-2 Evaluation of Learning and Teaching. Covers construction and use of teacher-made tests of classroom learning; interpretation and use of standardized tests of achievement, aptitude, and scholastic ability; procedures for determining and reporting grades; and procedures for measuring and evaluating instructional effectiveness. Prerequisite: 310, 314A, 314B, 315, admission to the Teacher Education Program.

400-1 to 4 Student Teaching. A requirement in the undergraduate professional education sequence, 400 represents preliminary student teaching experiences necessary for certification by entitlement. For undergraduate students who are majoring in special education and are seeking entitlement to more than one teaching certification in the state of Illinois. Enrollment in this course must be arranged through the College of Education Student Services. For undergraduate credit only. Prerequisite: admission to the Teacher Education Program, acceptance for student teaching, and concurrent enrollment in 312.

401-1 to 12 Student Teaching. A requirement in the undergraduate professional education sequence, 401 concludes the student teaching experience necessary for certification by entitlement. For undergraduate credit only. Prerequisite: admission to the Teacher Education Program and acceptance for student teaching.

402-5 to 8 Student Teaching for Provisionally Certified Teachers. Offered for purposes of converting a provisional teaching certificate to a standard teaching certificate. The student teaching experience may be provided for in the position of employment, without pay, under the supervision of a university supervisor. Enrollment in this course must be arranged with the coordinator of professional education experiences in the College of Education Student Services. Prerequisite: consent of instructor, provisional certificate, and teaching experience. For undergraduate credit only.

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.

Educational Administration and Higher Education (Department, Major [Graduate only], Courses)

The Department of Educational Administration and Higher Education does not offer an undergraduate major but offers courses for undergraduate credit over a broad range of subject matter.

Courses (EAHE)

402-1 to 3 Principles of Student Personnel Group Work. Acquaints the student with group work possibilities and functions in higher education.

430-3 History of Education in the United States. An historical study of the problems of American education.

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.
455-3 Introduction to Adult and Continuing Education. Introduces the multifaceted areas of adult and continuing education in traditional and non-traditional settings by reviewing and studying philosophies, directions, program efforts, and activities associated with them.
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.
495 (3 to 9) (3, 3, 3) Workshop in Adult Education. The foci for these workshops are to provide quality educational experiences for students and practitioners in the field of adult and continuing education in three major areas: **(a)** current issues, **(b)** improvement of instruction and programs in adult education, and **(c)** evaluation in adult education.

Educational Psychology and Special Education (Department)

(SEE EDUCATIONAL PSYCHOLOGY MAJOR AND SPECIAL EDUCATION MAJOR)

Educational Psychology (Major [Graduate only], Courses)

Educational Psychology does not offer an undergraduate major but offers courses for undergraduate credit which serve as electives for students in other programs.

Courses (EPSY)

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.
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 and the student may be required to purchase additional materials not to exceed $20. Prerequisite: consent of instructor.
402-3 Basic Statistics. A master's level terminal statistics course. Emphasis on descriptive statistics, graphical representation of data, correlation, and simple regression. Includes an introduction to hypothesis testing procedures and analysis of variance.
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.
418-3 Psychology of the Classroom. Intended to develop interpersonal skills such as values clarification, empathy, and listening. Strategies for the resolution of conflicts and reasons for students demonstrating disruptive behavior will be discussed. Role-playing, group processes, concepts and activities in behavior modification, and activities related to concepts of discipline will be examined. Content should be suited to parents, teachers, and other professionals.
422-3 Introduction to Individual and Group Assessment. The student will be introduced to the basic testing process and the problems related to individual group assessment and will be expected to choose a project for study and investigation. The project must be related in some way to the role and function of the counselor in different settings. The various types of assessment instruments and the manner in which the data derived therefrom can be employed in consultation.
442-3 Introduction to Counseling. The following topics will be covered: purposes of counseling; counselor roles in various settings; approaches to counseling; counseling 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.

482-1 to 3 Seminar in Marriage and Family Counseling. Seminar will focus on current clinical and research topics in the field of marriage and family counseling and the general issues that emerge from the marriage and family counseling practicum. Prerequisite: 494a or b, 490, concurrent enrollment in 494E and permission 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.
491-1 to 6 Special Research Problem—Individual Study. For majors. Formulating, investigating, and reporting on a problem in the area of applied psychology. Prerequisite: advanced standing and consent of department.
493-3 Counseling Skill Development. Through simulated counseling situations and extensive examination of counseling case studies, counseling skills are examined and practiced.
494A-3 School Counseling Practicum. A combined seminar, laboratory, and field experience representing the central focus of the program in school counseling. Enables the student to practice the role of the counselor under close supervision. Prerequisite: 537 and 3 additional hours from substantive course work in the counseling program.
494B-3 Counseling Practicum. Practice of counseling skills with different populations 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 counseling program.
494C-3 Career Counseling 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 Practicum in School Psychology. Observation and participation in case conferences related to the development of psycho-educational assessment and planning, including teacher and parent consultation, field observations, and psychometric applications. Prerequisite: 533, 546 and consent of instructor.
494E-1 to 6 Practicum in Marriage and Family Counseling. Supervised on-campus counseling experience with couples and families. Supervision will be individual as well as within the context of a therapy team. Prerequisite: 493, 494a or b, 490, concurrent enrollment in 482 and consent of instructor.

Electrical Engineering (Department, Major, Courses)

The Department of Electrical Engineering offers courses in the major areas of electrical and computer engineering. The department offers a Bachelor of Science degree in Electrical Engineering and a Bachelor of Science degree in Electrical Engineering with a specialization in Computer Engineering. Students who choose the electrical engineering major prepare themselves for professional and technical employment or graduate studies leading to advanced degrees. 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 major allows students to choose among courses in applications and theory of circuits, systems, communications, digital systems, controls, electronics, instrumentation, electromagnetics, and power systems. Students who choose the electrical engineering degree with a specialization in computer engineering are better prepared for employment or graduate studies in the area of computer engineering.

The curriculum in electrical engineering is fully accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.

Bachelor of Science Degree, College of Engineering

General Education Requirements ..... 31[1]
GEA: Substitute basic science
GEB: GEB 105, 301, and one of the following: GEB 108, 114, 202 or 211 ..... 9[2,3]

GEC: Select one of the following: GEC 101, 102, or 208, plus GEC 122 and 345 or GEC 330 and 345 ..... 9[2,3]
GED: GED 101, 102, 153 and substitute mathematics 9
GEE: 2 hours of health and 2 hours of physical education activity 4

Requirements for Major in Electrical Engineering 102

Basic Sciences 18
- Physics 205a,b; 255a,b 8
- Chemistry 222a and 222c 7
- GEA 115 3

Mathematics 17
- Mathematics 150, 250, 251, and 305 14
- Approved mathematics elective 3

Engineering 67
- General: Engineering 222, 361, 400 5
- Engineering Sciences 33
  - Engineering 260a, 300, Electrical Engineering 225, 235[4], 336, 355, 375, 385. Select one from Engineering 260b or 312. Electrical Engineering 345 (3 hours will count toward the requirement), and 327 and 465 (1 hour for each of these courses will count toward the requirement).
- Engineering Design 19
  - Electrical Engineering 443 (4 hours will count toward the requirement). Electrical Engineering 327 and 465 (2 hours for each of these courses will count toward the requirement). Electrical Engineering 345 (1 hour will count toward the requirement) plus 10 hours of engineering design from the following courses. A maximum of 1 hour for each of these courses will count toward the requirement: Electrical Engineering 321, 448, 468, 478, 483, 484, and 486. A maximum of 2 hours for each of these courses will count toward the requirement: Electrical Engineering 425, 427, 428, 447, 456, 459, 477, 479, 488, and 489. A maximum of 3 hours for each of these courses will count toward the requirement: Electrical Engineering 424, 446, and 487.

Approved technical electives 10

Total 133

Bachelor of Science Degree, College of Engineering

ELECTRICAL ENGINEERING MAJOR - COMPUTER ENGINEERING SPECIALIZATION

The requirements in General Education, Basic Sciences and Mathematics are exactly the same as for the above major in Electrical Engineering.

Engineering 67
- General: Engineering 222, 361, 400 5
- Engineering Sciences 33
  - Engineering 260a, 300, Electrical Engineering 225, 235[4], 336, 355, 375, 385. Select one from Engineering 260b or 312. Electrical Engineering 345 (3 hours will count toward the requirement), and 327 and 465 (1 hour for each of these courses will count toward the requirement).
- Engineering Design 19
  - The following courses are required for the specialization and satisfy the Engineering Design requirements: Elec-

trical Engineering 321, 327, 345, 424, 425, 427, 428, 443, and 456.

Total 133

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[1]Courses required for the major will apply toward 15 hours of General Education making a total of 46 in that area.
[2]Engineering requirements for GEB and GEC are more restrictive than those of the University as a whole.
[3]Transfer students holding an associate degree in a baccalaureate-oriented program must have a sequence of courses in social science or humanities terminated by a junior level course. See departmental adviser for an approved course. Students transferring from other programs or institutions will be required to (a) complete a course sequence in the humanities or social sciences which includes a junior level course or (b) meet the General Education requirements for engineering students.
[4]A grade of *C* or better must be earned in Electrical Engineering 235 before taking 336, 345, and 385.

Courses (EE)

Safety glasses, a hand-held scientific calculator, and textbooks are required of each electrical engineering student.

225-3 Introduction to Digital Systems. Number systems. Boolean algebra. Combinatorial circuits; minimization. Sequential circuits. Logic devices. Introduction to switching algebra. Prerequisite: Engineering 222.

235-4 Electric Circuits I. Concepts and basic laws in analysis of AC and DC linear circuits. Mesh and nodal methods, Thevenin's and Norton's theorems, superposition principle, and phasor notation. Transients. Basic instrumentation. Lecture and laboratory. Prerequisite: Mathematics 250.

321-3 Digital Computation in Engineering. Design of computer models of engineering systems. Solution of linear equations, nonlinear equations, and eigenvalue problems. Use of high-level computer language. Lecture and laboratory. Prerequisite: 235, Engineering 222, Mathematics 305.

327-3 Sequential Circuit Design. Introduction to switching algebra, logic gates, description synthesis and organization of asynchronous and a synchronous sequential circuits, flip flops, registers, counters, and memory. Lecture and laboratory. Laboratory fee of $10 to help defray cost of consumable items. Prerequisite: 225.

336-3 Electric Circuits II. Three phase balanced circuits. Mutual inductance. Series and parallel resonance. Laplace transform and its applications. Transfer function. Two port network. Prerequisite: 235 and concurrent enrollment in Mathematics 305.

345-4 Electronics. Fundamental electronics and basic signal-processing. Characteristics and typical applications of analog and digital electronic modules. Operational amplifiers. Fundamentals of transistors. Lecture and laboratory. Laboratory fee of $10 to help defray cost of consumable items. Prerequisite: 235 and concurrent enrollment in 336.

355-3 Signals and Systems. Concept of continuous and discrete signals and systems. Singularity functions. Differential and difference equations. Convolution. Fourier transform. Z transform. System transfer function. State variables. Stability. Prerequisite: 336.

375-3 Electromagnetic Fields. Electric and magnetic fields using vector analysis. Maxwell's equations, Laws of Coulomb, Gauss, Ampere, and Faraday. Concepts of energy and potential. Poisson and Laplace fields. Wave equation and plane waves. Prerequisite: Mathematics 251 and 305.

385-4 Electromechanical Energy Conversion. Principles of electromagnetic energy conversion and related circuitry. Magnetic circuits. Transformers. DC machines. Single phase and polyphase machines. Polyphase circuits. Lecture and laboratory. Prerequisite: 235 and concurrent enrollment in 336.

392-1 to 6 Electrical Engineering Cooperative Education. Supervised work experience in industry, government or in a professional organization. Students work with on-site supervisor and faculty adviser. Reports are required from the student and the employer. Hours do not count toward degree requirements. Mandatory Pass/Fail. Prerequisite: sophomore standing.

424-4 Design of Microprocessor-Based Systems. Microprocessor terminology. Design, construction, and programming of microprocessor-based systems. Lecture and laboratory. Cost of parts for microprocessor-based system, approximately $80. Prerequisite: 427 or concurrent enrollment, or consent of instructor.

425-3 Computer-Aided Design of Digital VLSI Systems I. Principles of using CAD tools in designing digital VLSI systems: stick diagrams, design rules, and layout diagrams for CMOS technology. Design and implementation of custom VLSI integrated circuits. Projects. Prerequisite: 336, 345 and 427.

427-4 Structure of Digital Computers. Introduction to structure and design of digital computers: central processing unit, arithmetic unit, memory organization including cache and virtual memory concepts, input and output systems, interrupts, direct memory access, hardwired, and microprogrammed control units. Trends in computers. Lecture and laboratory. Prerequisite: 327.

428-3 Digital Hardware Design. Introduction to theoretical concepts and experimental design and construction of digital systems with a microprocessor as system controller. FPGA (Field Programmable Gate Arrays) or similar logic. Lecture and laboratory. Laboratory fee of $10 to help defray cost of consumable items. Prerequisite: 427 or consent of instructor.

443-4 Electrical Engineering Design. Students select suitable project, define and design subsystems, define requirements of interfaces among subsystems, integrate subsystems into final design, and

document, price, and schedule project. Lecture and laboratory. Prerequisite: senior standing in electrical engineering.

446-4 Electronic Circuit Design. Analysis and design of electronic circuits, both discrete and integrated. Computer-aided circuit design and analysis. Consideration of wideband, power, and tuned amplifiers; switching circuits; feedback; and oscillators. Design projects. Lecture and laboratory. Laboratory fee of $10 to defray cost of consumable items. Prerequisite: 336, 345, and 355 or concurrent enrollment.

447-4 Electronic Devices. Physical mechanisms governing the operation of a wide variety of semiconductor devices. Applications of specific devices to illustrate performance characteristics. Device design realted to terminal properties. Term paper on design. Lecture and laboratory. Prerequisite: 336 and 345.

448-4 Laser Electronics. Excitation and lasing in various liquid, solid, and gas lasers. Techniques and principles utilized in design of laser system. Lecture and laboratory. Prerequisite: 375.

456-3 Control Theory. Fundamentals and techniques for analysis and design of linear, dynamic systems: Laplace transformation, signal-flow graphs, state variable equations, stability conditions, time-domain analysis, frequency-domain analysis, root-locus method, and controller designs. Prerequisite: 336 and 355.

458-3 Communications Theory. Signal transmission through linear systems. Applications of Fourier transform in communications. Sampling theory. Digital coding of analog sources: pulse code, differential pulse code, and delta modulations. Data transmission through telephone channels. Amplitude and frequency modulations; signal-to-noise ratio. Prerequisite: 336 and 355.

459-3 Digital Control. Analysis and design of linear, discrete-data and digital control systems: Z-transformation, state variable equations, stability criteria, time-domain analysis, frequency-domain analysis, and digital controller designs. Prerequisite: 456 or concurrent enrollment.

462-3 Biomedical Instrumentation. (Same as Physiology 462.) Diagnostic and therapeutic modalities related to engineering. Cardiovascular, neural, sensory and respiratory instrumentation. Prerequisite: consent of instructor.

465-3 Instrumentation. Measurement systems for research and manufacturing. Instrument characteristics. Digital and analog techniques and devices in instrumentation. Transducers. Signal conditioners. Displays. Control devices. Statistics of measurement. Lecture and laboratory. Laboratory fee of $10 to help defray cost of consumable items. Prerequisite: 336 and 345.

468-3 Digital Signal Processing. Discrete-time signals and systems; sampling; Z-transform; discrete Fourier transform; fast Fourier transform algorithms; digital filter design; digital filter realizations. Prerequisite: 355 and 336.

477-4 Electromagnetic Waves. Transmission-line analysis. Phasor diagrams. Smith chart. General eigen-wave analysis. Guided wave. Plane waves including optical waves. Oblique reflection and transmission. Non-reciprocal wave systems. Design of electromagnetic systems. Lecture and laboratory. Prerequisite: 375 or consent of instructor.

478-3 Digital Communication. Application of probability theory and random processes in digital communication systems. Behavior of digital communication systems in noise. Performance comparisons of digital modulation systems. Optimum signal detection. Entropy and channel coding. Prerequisite: 355.

479-3 Electromagnetic and Optical Measurements. Fundamental measurement techniques in electromagnetic wave systems and optical systems. Accurate measurements of microwave properties of materials, laser transmission reception, modulations, and holographs. Prerequisite: 375.

483-3 Power Electronics. Power semiconductor devices. Power converters. Solid-state control of electro-mechanical systems. Lecture and laboratory. Prerequisite: 336, 345, and 385.

484-3 Computer-Aided Circuit Analysis. Network Topology. Nodal analysis of linear and nonlinear networks. Standard form of state equations of linear networks. Numerical solution of state equations. Sensitivity calculations. Prerequisite: 336.

486-3 Electric Energy Sources. Principles and utilization of nuclear, solar, and fossil-fuel generators. Direct energy-converters. Energy-storage devices. Cost of generating power. Prerequisite: 336 and 385, or consent of instructor.

487-4 Power Systems Analysis . Introduction to analysis of electric power systems. Modeling of power system components. Power system configuration. Per-unit quantities. Network analysis applied to power systems. Load flow. Lecture and laboratory. Prerequisite: 385.

488-3 Power Systems Engineering. Economic operation of power systems; symmetrical components; short circuit analysis; stability. Prerequisite: 487.

489-3 Electric Power Distribution. Design of primary and secondary distribution networks. Load characteristics. Voltage regulation. Metering. System protection. Technical and legal requirements in power distribution. Prerequisite: 487.

492-1 to 3 Special Studies in Electrical Engineering. Individual projects and problems selected by student or instructor. Open to seniors only. Prerequisite: consent of instructor.

493-1 to 3 Special Topics in Electrical Engineering. Lectures on topics of special interest to students in various areas of electrical engineering. Designed to test new and experimental courses in electrical engineering. Prerequisite: consent of instructor.

Electronics Management (Major, Courses)

The Electronics Management major is designed to provide advanced course work in the areas of electronics technology, subordinate supervision and technical area management. This major is suitable for students possessing Associate in Applied Science degrees in Electronics Technology as well as individuals with experience in industry or training in military-related electronics programs or schools. The Capstone Option is available to eligible students entering this program. More information about the Capstone Option can be found in Chapter 4.

Individuals in this major can build upon a variety of educational and/or practical experiences, including bio-medical instrumentation, opto-electronics, computer construction, and various categories of electronic communications.

Opportunities for employment exist in a variety of industries across the nation. Communication areas, such as radio, telephone, television, and technical communications are examples of employment for graduates of Electronics Management.

Bachelor of Science Degree, College of Technical Careers

General Education Requirements		46
Requirements for Major in Electronics Management		48
Core Requirements: Advanced Technical Studies 364, 416, and two of the following 332, 383, 421	12	
Fifteen hours selected from Electronics Technology 301, 302, 303, 304, 305, 311, 312, 313, 314, Electronics Management 340, 341, 342, 343, or Advanced Technical Studies 383, 412	15	
Twelve hours of internship, independent study, or approved equivalent	12	
Nine hours of electronics management electives approved by the adviser	9	
Approved Career Electives		26
Total		120

Courses (ELM)

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 preceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail.

340-3 Application of Solid State Devices. A technical management approach to the practical application of solid state devices in business and industry. Characteristics of these devices will be reviewed to promote understanding of the selection and application process. Special emphasis will be given to the application of linear integrated circuits as well as the operational amplifier and its application instrumentation. Prerequisite: consent of department.

341-3 Digital Circuit Applications. Applications of digital electronic devices and circuits in business and industry. Geared to the needs of the technical manager, this course builds upon the student's knowledge of basic electronics theory. Basic principles of subsystems are reviewed to assist the student in understanding their selection and application to business and industrial settings. Prerequisite: 340 or consent of department.

342-3 Microcomputer Applications. The microcomputer approached from the standpoint of the technical manager. The primary emphasis of this course is on the practical uses of microcomputer systems in business and industry. Basic characteristics and principles of microcomputers will be reviewed to provide an understanding of applications in specific business and industrial settings. Prerequisite: 341 or consent of department.

343-3 Microcomputer Application Laboratory. Laboratory experiences selected to reinforce microcomputer characteristics and practical applications in business and industry. Students sample applications of microcomputer systems on an operational microprocessor. Prerequisite: previous or concurrent enrollment in 342, may be independent study. Mandatory Pass/Fail.

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. This course may be classified as independent study. Prerequisite: consent of instructor.

Electronics Technology (Program, Major, Courses)

The Electronics Technology program is designed to educate electronics technologists who provide both direct and indirect support to electronics engineers. While theory is taught on an indepth level, emphasis is also placed on application of electronics theory. 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, but also give the student experience in the use of test equipment, troubleshooting techniques, and the use of data manuals to determine specifications of circuits and components. This is an important approach to studies for the technologist whether he or she enters the field as part of a research and development team, computer repair and servicing, communications servicing, industrial servicing or many other areas of the field. During the first year of the program, most instruction is directed toward basic principles of electricity and electronics. This instruction is followed by a semester that concentrates on instrumentation and control systems and a semester that concentrates on digital and microprocessor systems.

The purchase of a set of specified components and 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.

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 initiative.

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 College 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 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 at college.

Electronics Technology 301, 302, 303, 304, 305, 306, 307, 309, 311, 312, 313, 314, 317, 337, 404, and 414 are post-associate courses. Students must have an Associate in Applied Science degree in electronics technology or equivalent to enroll in these courses. Additional electronics parts and supplies are required for these courses. The approximate cost of these parts and supplies is $200 to $250.

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, College of Technical Careers

Requirements for Major in Electronics Technology

GED 101, 153	6
Technical Careers 105a,b, 107a,b, 102	10
Electronics Technology 101, 102, 111, 112, 121, 201, 202, 211, 212, 221, 224, each with a grade of *C* or better	53
Computer Science 202 or Computer Information Processing 323	3
Total	72

Courses (ELT)

100-3 Introduction to Electronics. A non-mathematical introduction to the world of electronics. The uses of electricity and control devices for its use. Laws and theories which govern electronics. Devices and circuits which make up today's electronic system. Current flow through the conductors and devices which make up electronic circuits. No mathematics prerequisite.

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 College of Technical Careers 105a,b and electronics technology major or consent of program supervisor.

102-5 Electronics Circuit Theory. The operation of active devices with their passive components are descriptively, verbally, and mathematically presented in circuits such as amplifiers, oscillators, op amps, and other IC systems. Prerequisite: 101 and electronics technology major or consent of program supervisor.

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.

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 of 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.

201-5 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. Prerequisite: 102 and consent of instructor.

202-5 Digital Circuits Theory. Concepts of the circuits used to make up such systems as numeric controls, computers, and communications networks. Lecture five hours. 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.

212-6 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. 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 general FCC radio-telephone license. Individualized instruction three hours. Prerequisite: 102 and electronics technology major or consent of program supervisor.

224-3 Computer Systems Applications. Analysis and working knowledge of numbering systems, Boolean algebra, logic gates, pulse shaping circuits, and various timing circuits used in computers, microprocessors, and other digital systems. Prerequisite: 101 and 111 or consent of program coordinator.

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 of 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.

301-5 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. Prerequisite: consent of instructor and a minimum grade of 70 percent on an entrance examination covering fundamentals, digital and industrial electronics.

302-3 to 4 Optical Electronics. The student will be required to identify the basic principles of light physics as they relate to laser and fiber optic theory. Integration of electronic control, measuring, and sensing devices will be accomplished within an industrial and communication framework. A systems approach will be utilized involving laser, fiber optic, and electronic discrete and integrated components. Lecture three or four hours. Prerequisite: departmental evaluation.

303-5 Microcomputer Construction and Troubleshooting. The student will be able to construct a microprocessor based system, make it operational, and develop techniques used in software/hardware troubleshooting. Lecture five hours. Prerequisite: consent of instructor and a minimum grade of 70 percent on an entrance examination covering fundamentals, digital and industrial electronics.

304-4 Communication Systems. The non-calculus based theory of circuits used in modern AF, Video, and RF communication systems; applicable to PA systems through satellite communications. Modulation, demodulation, multiplexing, and conversions of both digital and analog signals will be investigated. Receivers, transmitters, and interface devices will be studied. Lecture four hours. Prerequisite: minimum grade of 70 percent on an entrance examination covering fundamentals, digital and industrial electronics.

305-4 Microcomputer Maintenance. Designed to provide the theory and practice necessary for the student to be able to diagnose and repair and maintain some of the current mainstream personal computers and peripheral devices. Prerequisite: consent of instructor and a minimum grade of 70 percent on an entrance examination covering electronics fundamentals.

306-3 Computer Aided Drafting and Design for Electronics. This course is designed to provide the theory and practice necessary for the student to be able to utilize the PC for electronics drawing and drafting. Schematic capture, netlist generation, testing, simulation of programmable array logic, and multilayer printed circuit board design will also be stressed. Prerequisite: 202 and 212.

307-5 Advanced Industrial Electronics. The theory and application of circuitry involved in data acquisition and computer based process control. Primarily focused toward imbedded microcomputer control systems and commercial programmable controllers. This is a 5 hour lecture course and must be taken concurrently with 317. Prerequisite: 201 and 211 and consent of instructor.

309-3 Micro Programming. In this class the student will become familiar with several microprocessor architectures and instruction sets with emphasis on the Intel series of processors. Microprocessor tools for programming and debugging will also be presented. The student will program in both machine language and assembly language with emphasis on programming techniques. This class complements 303 and 313, Microcomputer Construction and Troubleshooting, lecture and lab. Prerequisite: 202 and 212.

311-6 Electronics Biomedical Instrumentation Laboratory. The laboratory provides hands-on experience with the equipment currently available for use in biomedical instrumentation. The equipment is selected from major supplies and is utilized to teach interfacing and applications. The equipment will encompass sensors, transducers, amplifiers, oscillators, display and recording devices. Laboratory ten hours. Prerequisite: concurrent enrollment in 301.

312-2 Optical Electronics Laboratory. The student will perform selected experiments in electronics, lasers, fiber optics, and light physics. Emphasis will be placed on the integration of laser and fiber optic principles with electronics. Laboratory three hours. Prerequisite: concurrent enrollment in 302.

313-6 Microcomputer Construction and Troubleshooting Laboratory. This laboratory is designed to reinforce the concepts of microcomputer operation, troubleshooting, programming, and interfacing through actual practice. Ten hours laboratory. Prerequisite: concurrent enrollment in 303.

314-4 Communication Systems Laboratory. Designed to reinforce the concepts of modern AF, video, and RF communication systems. AM, FM, SSB, PCM, and complex modulation AF and video investigation in laboratory projects. Prerequisite: concurrent enrollment in 304.

317-6 Advanced Industrial Electronics Lab. A laboratory course allowing "hands-on experience" with circuitry involved in data acquisition and computer based process control. Emphasis on the design and testing of signal conditioning circuitry, writing software, and programming imbedded microcomputer control systems and commercial programmable controllers. This is a 6 credit hour laboratory course to be taken concurrently with 307. Prerequisite: 201, 211 or consent of instructor.

319-1 to 15 Electronics Occupations Internship. Students will be assigned to a University approved program to engage in activities related to the electronics technology program and the student's career objectives. The student will perform duties as assigned by the work supervisor and internship coordinator. Reports and assignments are required. Prerequisite: consent of instructor. Mandatory Pass/Fail.

337-4 Power Distribution and Motor Control. The theory and application of electrical power distribution systems from substation through switchgear to branch circuits. With emphasis on safety in working with these systems. The theory and application of electronic circuitry controlling a variety of electric motors. This is a four hour lecture/lab course. Prerequisite: 201, 211 or equivalent and consent of instructor.

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. This course may be classified as independent study. Prerequisite: consent of instructor.

404-4 Communications Systems II. This course is a non-calculus based approach to the theory and application of circuits and systems used in industrial, commercial, and consumer communication; applicable to industrial audio and video systems, commercial 2-way radio, microwave and computer communications, telecommunications, satellite audio-video and data systems, and cable TV RF distribution systems. Control systems, signal processing and input-output systems will be studied. Not for graduate credit. Prerequisite: successful completion of 304.

414-4 Communications Systems II Laboratory. This course is designed to reinforce the concepts and operation of modern and latest *state-of-the-art* industrial, commercial and consumer communications systems. Laboratory evaluations of circuits and hardware applicable to and part of industrial audio and video systems, commercial 2-way radio, microwave and computer communications, telecommunications, satellite, and cable TV systems. Not for graduate credit. Prerequisite: concurrent enrollment in 404.

Elementary Education

(SEE CURRICULUM AND INSTRUCTION)

Engineering (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 College of Engineering offers four-year Bachelor of Science degrees in Civil Engineering, Electrical Engineering, Mechanical Engineering and Mining Engineering. All of the above programs are fully accredited by the Accreditation Board for Engineering and Technology (ABET). For detailed information on the programs see the listing under the appropriate heading in this chapter.

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. Introductory foreign language courses are not acceptable. Students 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 6 hours of English composition and speech, 8 hours of university physics, 7 hours of chemistry, 11 to 17 hours of mathematics (including calculus and differential equations), 5 hours of statics and dynamics, and 13 to 15 hours of social sciences and humanities. All students including transfer students holding the associate degree in a baccalaureate-oriented program must have 16 hours of social sciences and humanities including a junior-level course taken at a senior institution. This junior-level course must provide a sequence in social science or humanities discipline. 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 (ENGR)

Safety glasses, an electronic calculator or a slide rule with log-log scales, and textbooks are required for all engineering students.

102-2 Computer-Aided Engineering Drawing. Manual sketching and computer aided engineering drawings techniques. Lettering; orthographics projections, isometric projection, oblique projections, auxiliary views, dimensioning, sectioning, working drawings.
222-2 Computational Methods for Engineers and Technologists. Introduces the student to the use of digital computers in the solution of technical problems that are specifically designed for the engineering and technology student. Problem analysis, flowcharting, coding, diagnostics, execution, and solution verification are discussed. Prerequisite: Mathematics 111.
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: 102 and 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. 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: 260a, Chemistry 222a or equivalent and Physics 205a.
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 supply fee: $3. 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. Laboratory supply fee, $5. 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 supply fee, $3. Prerequisite: 260b.
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.
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. Laboratory fee of $10 to help defray cost of consumable items. Prerequisite: 335.
351-3 Numerical Methods in Engineering. Overview of numerical procedures such as root finding, curve fitting, integration, solutions of simultaneous equations, and solutions of ordinary differential equations. Emphasis will be on applications of these techniques to problems in engineering, mechanics, and civil and mechanical engineering. Prerequisite: 222 and concurrent enrollment or completion of MATH 305.
361-2 Engineering Economics in Design. Procedures for evaluating the relative economic merits of engineering projects and designs. Use of these procedures permits comparing alternate engineering estimates, evaluate engineering effectiveness, and proceed toward decision making based on economic and engineering optimization. Professional engineering examinations include these course materials. Prerequisite: Mathematics 111 or equivalent.
385-3 Electromechanical Energy Conversion. Principles of electromechanical energy-conversion and related circuitry. Magnetic circuits. Transformers. DC machines. Single-phase and polyphase machines. Polyphase circuits. Prerequisite: 335.
400-1 Engineering Professionalism and Ethics. The role of the engineer as a professional in society and in the corporate structure. Engineering registration. The basis and function of Engineering Codes of Ethics. Major ethical/philosophical value systems in our country. Ethics applied to specific engineering case studies. Not for graduate credit. Prerequisite: Senior standing in engineering.
455-3 Engineering Geology. (See Geology 455.)

Engineering Mechanics

(SEE GRADUATE CATALOG)

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 Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (formerly the Engineers' Council for Professional Development). These curricula are the electrical engineering technology and the mechanical engineering technology specializations. For each curriculum, a minimum of 30 hours in engineering technology courses must be taken in residence at Southern Illinois University at Carbondale.

Bachelor of Science Degree, College of Engineering

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, production, testing, and installation of electrical and electronic devices, circuits, and systems. 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 Education Requirements		34[1]
GEA: Biology and substitute basic sciences	3	
GEB:	9	
GEC:	9	
GED: GED 101, 102, and 152 or 153 and substitute mathematics	9	
GEE:	4	
Requirements for Major in Engineering Technology with Electrical Engineering Technology Specialization		94
Basic Sciences: Physics 203a,b, 253a,b; Chemistry 115	11	
Mathematics 108, 109, 150, 250	14	
Management 202	3	
Engineering 222	2	
Engineering Technology 238, 245a, 304a, 304b, 332a, 332b, 403a, 403b, 437a, 437b, 438a, 438b	48	
Approved technical electives	13	
Electives	3	
Total		128

[1]Courses required in the major will apply toward 12 hours in General Education, making a total of 46 in that area.

ENGINEERING TECHNOLOGY MAJOR — MECHANICAL ENGINEERING TECHNOLOGY SPECIALIZATION

The mechanical engineering technology specialization is designed to prepare graduates for a career in power and manufacturing industries; it provides a diverse background in general mechanical technology focusing in such areas as fluid power, computer-aided drawing, thermal science, mechanical design technology and mechanical aspects of manufacturing systems. Graduates are employed by electric utilities, manufacturing firms, architectural/engineering firms, and other industries which deal with mechanical products or equipment.

General Education Requirements		34[1]
GEA: Biology and substitute basic science	3	
GEB:	9	

GEC:	9	
GED: GED 101 , 102, and 152 or 153 and substitute mathematics	9	
GEE:	4	
Requirements for Major in Engineering Technology with Mechanical Engineering Technology Specialization		94
Basic Sciences: Physics 203a,b, 253a,b; Chemistry 115	11	
Mathematics 111, 150, 250	13	
Engineering 222	2	
Management 202	3	
Engineering Technology 103, 104, 209, 245a, 260a, 260b, 311, 312, 313a, 313b, 317, 318, 390, 401, 404, 424a, 445, 455	54	
Approved technical electives	11	
Total		128

[1]Courses required in the major will apply toward 12 hours in General Education, making a total of 46 in that area.

Courses (ET)

A suitable calculator 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; and revolution. Drawing supplies and problems workbook required, costing approximately $15.

104-3 Engineering Drawing II. Principles and practices of engineering drawing. Representation of mechanical components, dimensioning, tolerancing, and mechanical drawing symbols. Introduction to computer-aided drawing systems with applications to both micro-computer and mini-computer systems. Prerequisite: 103.

202-3 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. Prerequisite: 103.

209-3 Manufacturing Process Laboratory. (Same as Industrial Technology 209) Laboratory experiments to familiarize the student with the theory and operation of manufacturing processes. Laboratory. Prerequisite: IT 208 or consent of instructor.

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.

238-4 Digital Fundamentals. Introduction to fundamental concepts of digital systems, logic gates, simulation of logic gates, combinational logic design, Karnaugh maps, number systems, flip-flops, sequential circuits, digital circuit fault analysis, and comparison of logic families. Laboratory. Prerequisite: Mathematics 111.

245-8 (4, 4) Electrical Systems for Industry. (a) Electrical symbols and schematics, resistance, Ohm's Law, capacitance, inductance, Kirchhoff's Law, meters, A.C. fundamentals, transformers, power factor, and safety. 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.

260-6 (3, 3) Principles of Mechanics. (a) Statics. Concepts of force systems, moments, and equilibrium of rigid bodies, analysis of trusses and frames, determination of centroids, center of gravity, and moments of inertia, calculation of shear and moment diagrams in beams. Prerequisite: Mathematics 150 or concurrent enrollment. **(b)** Dynamics. Friction; particles and rigid bodies in translation, rotation, and plane motion; relative motion; impulse and momentum; work and energy. Prerequisite: 260a, Mathematics 150.

263-4 Basic Surveying. Use and care of surveying instruments; principles of surveying practice and computation. Laboratory. Prerequisite: 103, Mathematics 111.

304-8 (4, 4) Electrical Circuits. (a) Solutions to D.C. steady-state networks by branch, equivalent circuit, loop circuit, 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: 245a, 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, Engineering 222, Mathematics 250 or concurrent enrollment.

310-6 (3, 3) Heavy Construction. (a) The fundamental elements of heavy construction methods and equipment. Prerequisite: 260a or consent of instructor. **(b)** Construction planning, estimating, and management procedures and techniques. Civil engineer's scale required. Prerequisite: 310a.

311-3 Strength of Materials. Stress and strain; torsion, bending, and combined stresses; beam deflections; behavior of columns. Laboratory. Prerequisite: 260a, Engineering 222 or concurrent enrollment.
312-3 Materials Fundamentals for Design and Manufacturing. Applications and characteristics of metallic and nonmetallic materials used in design and manufacturing. Characteristics and properties of materials used in engineering applications. Prerequisite: Physics 203a,b; 253a,b.
313-6 (3, 3) Elementary Heat Power. (a) Fundamental laws of heat power, properties of systems, liquids, vapors, and liquid-vapor mixtures. Prerequisite: Mathematics 150. **(b)** Engine cycles and applications. Fuels, combustion, and nozzles. Laboratory. Prerequisite: 313a, ENGR 222 or concurrent enrollment.
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.
315-2 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, Engineering 222 or concurrent enrollment.
317-2 Fluid Mechanics. Fundamentals of fluid statics, basic fluid flow concepts for idealized fluids, flow networks, and introduction to viscous fluids. Prerequisite: Mathematics 111.
318-3 Hydraulics and Pneumatics. Viscous flow in closed conduits, basic hydraulic machinery, and fluid power systems. Laboratory. Prerequisite: 317.
319-3 Municipal Hydraulics. Flow measuring devices; collection, storage, and distribution of water; collection and transportation of sewage; pumps and pumping. Laboratory. Prerequisite: 317.
321-3 Instrumentation and Controls. Analog and digital signal conditioning; thermal, mechanical, and optical transducers; electrical pneumatic and hydraulic actuators; and control loop dynamics. Laboratory. Prerequisite: 245a.
332-8 (4, 4) Electromagnetic 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. Prerequisite: 332a, 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.
361-3 Project Surveying. Surveying process for civil engineering projects; easements; precise surveying; related computations. Laboratory. Prerequisite: 263.
362-3 Land Surveying. U.S. Public Land System and boundary surveys; survey laws; legal descriptions; title search; related computations; subdivision development. Laboratory. Prerequisite: 263.
363-3 Control Surveying. Topographic surveying; geodesy; route surveying; construction stakeout; related computations. Laboratory. Prerequisite: 263.
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: 263 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 facilities. Chemical coagulation, sedimentation, disinfection, and hardness removal of water. Sanitation measures and control of communicable diseases. Prerequisite: senior standing in civil engineering technology or consent of instructor.
390-3 Cost Estimating. (Same as Industrial Technology 390.) Study of the techniques of cost estimation for products, processes, equipment, projects, and systems. Prerequisite: Mathematics 111.
392-2 (1,1) Engineering Technology Co-op. Supervised work experience in Engineering Technology industry. Prerequisite: junior standing and consent of instructor. Mandatory Pass/Fail.
401-3 Refrigeration and Air Conditioning. Applications of thermodynamics and heat flow to air conditioning systems. Heating and cooling load analysis. Principles of human comfort. Discussion of various refrigeration and air conditioning cycles and their application to laboratory simulators. Prerequisite: 313b, 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: 304b.
404-3 Machine Design Technology. 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. Laboratory. Not for graduate credit. Prerequisite: 260a, 311.
408-3 Computer Assisted Drawing and Design. Theory and practice of computer graphics as applied to computer assisted design. Use of programming and commercial programs to assist in mechani-

cal engineering technology design projects. Not for graduate credit. Prerequisite: 104, 260a, 313a, 317, Engineering 222, and senior standing.

411-3 Legal Aspects of Surveying. Topics covered include common and statute law; unwritten rights in land and their relationship to land surveying; restoration of lost corners; principles controlling multiple corners; rules of evidence to include classification of evidence, burden of proof, and weight of classes of evidence; and rights, duties, and liability of the professional land surveyor. Not for graduate credit. Prerequisite: 362.

412-3 Survey Design and Land Development. Subdivision and land development principles, methods, and procedures, including laws relating to subdivision and land development. Scope will include rural and urban subdivisions, industrial parks, and major recreational developments. Laboratory. Not for graduate credit. Prerequisite: 263.

413-4 Field Survey Problems. Perform extensive field projects in the areas of engineering, hydographic, land and control surveying. To be held at Crab Orchard National Wildlife Refuge. Course must be taken concurrently with 414. Prerequisite: 263 and one of 361, 362, or 363.

414-2 Field Project Planning and Computations. Planning, organization, computations, and drafting of field survey projects including the needed mapping utilizing calculators, computers, and CAD. This course must be taken concurrently with 413. Prerequisite: 263 and one of 361, 362, or 363.

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: 202, 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, Engineering 222. **(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: 318, 424a.

426-5 (3, 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: 263 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.

437-8 (4, 4) Communications Systems Technology. (a) Theory and applications of radio frequency transmission lines, waveguides, optical fibers, wave propagation, and antennas. Laboratory. Prerequisite: 304b. **(b)** Theory and applications of analog and digital communications systems. Laboratory. Prerequisite: 403a, 437a.

438-8 (4, 4) Continuous and Digital Control Systems. (a) Fundamentals of continuous control systems; equation of electrical, hydraulic and thermal systems; application of LaPlace transforms, transfer functions, block diagrams, and flow graphs. Computer implemented graphical analysis and design methods: root locus, frequency response. Nyquist diagrams and compensator design. Continuous systems laboratory. Prerequisite: 304b. **(b)** Fundamentals of digital control systems, Stepper motors, digital data acquisition and interface components, Fourier transforms, Z transforms, and applications of fast Fourier transform. Digital control laboratory. Prerequisite: 438a.

439-4 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: 238.

445-3 Computer-Aided Manufacturing. (Same as Industrial Technology 445.) Introduction to the use of computers in the manufacturing of products. Includes the study of direct and computer numerical control of machine tools as well as interaction with process planning, inventory control, and quality control. Laboratory. Prerequisite: IT 208, computer programming or consent of instructor.

455-3 Industrial Robotics. (Same as Industrial Technology 455.) Study of industrial robots and their applications; pendant and numerical programming of robots. Robotics design including tactile and visual sensors. Technical and psychological problems of justification, installation, and management of robotic systems. Prerequisite: 445.

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 that 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 the director of undergraduate programs in English.

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 complementary 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 301, 302a, 302b, 309a, 309b, and 365, 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 major as follows:

General Education Requirements 46
Must include GEB 114, 202, 301; GEC 213, 330; GED 101, 102 and GED 152 or 153.

Requirements for Major in English 36

Professional Education Requirements ..... 28[1]
See Teacher Education Program, Chapter 3.

Electives 10
Students in the College of Liberal Arts must complete the college requirements as a part of the 13 hours. (See Chapter 3.)

Total 120

In addition to the core curriculum teacher training candidates will take the following courses:

English 300; 481; 485; a 400-level course in English literature before 1800; a 400-level course in continental literature; and one elective chosen from 300 and 400-level English courses.

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[1]In 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:

General Education Requirements 46
GEC 330 must be taken with a grade of *C* or better as a part of the GEC requirement.

Academic College Requirements 6-8
Refer to Chapter Three under College of Liberal Arts

Requirements for Major in English 36

Electives	30-32
Total	120

ENGLISH MAJOR — GENERAL/GRADUATE SCHOOL SPECIALIZATION

In addition to the core curriculum, students will take six electives from the 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, and one a course in continental literature. 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 — CREATIVE WRITING SPECIALIZATION

In addition to the core curriculum, students should take two courses selected from English 281, 282, 283; two courses from 381, 382, 383; English 351 or 352; and English 492.

ENGLISH MAJOR — PREPROFESSIONAL SPECIALIZATION

In addition to the core curriculum, majors interested in such fields as law and government will take the following courses:

English 290, 300, 390, 391, 445; one elective, which may concentrate on a special interest, and which, with the consent of the departmental adviser, may include a course in another department.

Minor

The minor in English is a minimum of 18 semester hours at least half of which must be taken at Southern Illinois University at Carbondale. Only English courses which are completed with at least a *C* fulfill a minor requirement. 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 (18 HOURS)

For students who wish to meet the minimum certification requirements for teaching English in the secondary schools, the following courses are required: English 300; 301; 471, 472 or 365; 485; and two of the following: English 302a, 302b, 309a, 309b or 445.

ENGLISH MINOR — PREPROFESSIONAL SPECIALIZATION (18 HOURS)

English 300; 290; 390; 391; 445; and 365, 471 or 472.

ENGLISH MINOR — CREATIVE WRITING SPECIALIZATION (18 HOURS)

Creative writing minors should take at least one course from English 281, 282 or 283; one course from English 381, 382, or 383; English 351 or 352; English 492; and two 300- or 400-level English courses.

ENGLISH MINOR — WORLD LITERATURE SPECIALIZATION (18 HOURS)

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 (18 HOURS)

Students wishing to arrange other specializations in English should consult the director of undergraduate programs in English or one of the departmental advisers.

Courses (ENGL)

119-3 Introduction to Creative Writing. Practice in writing poetry and fiction. Prerequisite: GED 102.
201-3 Introduction to Drama. Students will read and discuss plays of different types and periods. Prerequisite: GED 101 and GED 102; or GED 120; or equivalent.
202-3 Introduction to Poetry. Students will read and discuss poems of different types and periods. Prerequisite: GED 101 and GED 102; or GED 120; or equivalent.
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: GED 101 and GED 102; or GED 120; or equivalent.
210-3 Introduction to Fiction. Students will read and discuss a variety of American and European short stories and novels. Prerequisite: GED 101 and GED 102; or GED 120; or equivalent.
225-3 Women in Literature. (Same as Women's Studies 225.) Examines the ways in which women are portrayed in literature, especially in twentieth-century novels, drama, short fiction, and poetry written by women. Prerequisite: GED 102; or GED 120.
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: GED 102 or 120; or consent of instructor.
282-3 Creative Writing: Beginning Poetry. Introduction to basic theories and techniques of poetry writing with emphasis on metrics, forms, and poetic stanzas. Study and application of each of these general aspects of writing poetry. Exercises. Critiques. Prerequisite: GED 102 or 120; or consent of instructor.
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: GED 102 or 120; or consent of instructor.
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: GED 101 and GED 102; or GED 120; or equivalent.
291-3 Intermediate Technical Writing. An intermediate course in technical and professional writing for sophomores, juniors, and seniors. Intended for students preparing for careers in applied technology, science, agriculture, business, and other fields where practical writing is a part of the daily routine. Prerequisite: GED 101 and GED 102; or GED 120; or equivalent.
293-3 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.
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. Prerequisite: GED 102 or 120 or equivalent.
301-3 Introduction to Literary Analysis. Intensive reading and writing, designed to acquaint students with basic terms, concepts, and discourse of literary analysis. Satisfies CoLA Writing-Across-the-Curriculum requirement for English majors. Prerequisite: GED 102 or 120 or equivalent.
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. Prerequisite: GED 102 or 120 or equivalent.
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. Prerequisite: GED 102 or 120 or equivalent.
309A-3 American Literature Before 1865. A survey of American literature from the beginning to the Civil War. Prerequisite: GED 102 or 120 or equivalent.
309B-3 American Literature Since 1865. A survey of American literature from the Civil War to the present. Prerequisite: GED 102 or 120 or equivalent.
325-3 Black American Writers. Poetry, drama, and fiction by Black American writers. Prerequisite: GED 101 and GED 102; or GED 120; or equivalent.
332-3 Folktales and Mythology. A survey of non-classical mythology and folktales, emphasizing its medieval and modern aspects as well as the use of folklore in major literary works. Readings will cover Norse, Celtic, and Middle Eastern mythology, their use by English and American writers, such as Tennyson, Irving, and Hawthorne and the popular folk-ballad. Students are encouraged to explore other aspects of world folklore in their independent research papers. Prerequisite: GED 102 or 120 or equivalent.
333-3 The Bible as Literature. To introduce students to types of literature in the Bible while familiarizing them with Biblical texts. Prerequisite: GED 102 or 120 or equivalent.
335-3 The Short Story. Reading and discussion of short stories by American and European authors. Prerequisite: GED 101 and GED 102; or GED 120; or equivalent.
351-3 Forms of Fiction. A study of fictional forms with special concentration on the most significant contemporary fiction including selected readings from current periodicals. This course is taught by a

publishing fiction writer and designed for student fiction writers. Prerequisite: 281 or consent of instructor.

352-3 Forms of Poetry. A study of poetic forms with special concentration on the most significant contemporary poetry, including selected readings from current periodicals. This course is taught by a publishing poet and designed for student poets. Prerequisite: 282 or consent of instructor.

365-3 Shakespeare. Reading and discussion of the major plays. Prerequisite: GED 101 and GED 102; or GED 120; or equivalent.

381-3 Creative Writing: Intermediate 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.

382-3 Creative Writing: Intermediate 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.

383-3 Creative Writing: Intermediate 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.

390-3 Advanced Composition. Expository writing. Prerequisite: *C* average in GED 120; or *C* average in GED 101 and 102; 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 GED 102; or *C* in GED 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.

401-3 Modern English Grammars. A review of modern approaches to grammatical analysis in English language (only), this course is specifically designed to meet needs of in-service or prospective teachers of composition and language arts, particularly at the secondary and college levels.

402-3 Old English Language and Literature. Introduction to the language, literature and culture of Anglo-Saxon England, with special emphasis on Old English heroic and elegaic poetry, exclusive of *Beowolf.*

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.

404-3 Middle English Literature Excluding Chaucer.

405-3 Middle English Literature: Chaucer.

412-3 English Non-Dramatic Literature: The Renaissance.

413-3 English Non-Dramatic Literature: The Restoration and Earlier Eighteenth Century.

414-3 English Non-Dramatic Literature: The Later Eighteenth Century.

421-3 English Romantic Literature.

422-3 Victorian Poetry. Victorian poets: Tennyson, Browning, Arnold, and other poets in England.

423-3 Modern British Poetry.

425-3 Modern Continental Poetry. Representative poems by major 20th century poets of France, Italy, Germany, Spain, Russia, and Greece.

426-3 American Poetry to 1900. Trends in American poetry to 1900 with a critical analysis of the achievement of the more important poets.

427-3 American Poetry from 1900 to the Present. The more important poets since 1900.

433-3 Religion and Literature. Introduce students to the study of religious meaning as it is found in literature.

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.

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.

446-3 Caribbean Literature. Representative texts from drama, poetry, and fiction that have shaped black diaspora aesthetics in the Caribbean, with special reference to black literature of the North American continent.

451-3 Eighteenth Century English Fiction. Defoe through Jane Austen.

452-3 Nineteenth Century English Fiction. Victorian novel: 1830-1880.

453-3 Modern British Fiction.

455-3 Modern Continental Fiction. Selected major works of Europe and authors such as Mann, Silone, Camus, Kafka, Malraux, Hesse.

458-3 American Fiction to the Twentieth Century. The novel in America from its beginnings to the early 20th Century.

459-3 American Fiction of the 20th Century. Trends and techniques in the American novel and short story since 1914.

460-3 Elizabethan and Jacobean Drama. Elizabethan drama excluding Shakespeare: such Elizabethan playwrights as Greene, Peele, Marlowe, Heywood, Dekker; and Jacobean drama: such Jacobean

and Caroline playwrights as Jonson, Webster, Marston, Middleton, Beaumont and Fletcher, Massinger, Ford, Shirley.
462-3 English Restoration and 18th Century Drama. After 1660, representative types of plays from Dryden to Sheridan.
464-3 Modern British Drama.
465-3 Modern Continental Drama. The continental drama of Europe since 1870; representative plays of Scandinavia, Russia, Germany, France, Italy, Spain, and Portugal.
468-3 American Drama. The rise of the theater in America, with readings of plays, chiefly modern.
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.
481-3 Young Adult Literature in a Multicultural Society. Criteria for evaluation of literary materials for junior and senior high school, with emphasis on critical approaches and the multicultural aspects of schools and society.
485-3 Problems in Teaching Composition, Language, Literature and Reading in High School.
487-3 Old Age in Literature. An examination of how literature can contribute to our understanding of aging, using texts that will focus on such issues as physical and cognitive changes, work and retirement, intergenerational relationships, death and dying.
490-3 Expository Writing. An advanced expository writing course designed to improve the student's ability to write clear and effective prose. The main work of the course will consist of the writing and revising of a set of essays that reflect a variety of rhetorical strategies. Required readings will provide models and subject matter for some of the assignments. Prerequisite: 290 or 390 or equivalent.
491-3 Technical Writing. An all-University course designed to teach advanced academic and professional (non-fictional) writing skills. Prerequisite: GED 102 or equivalent.
492-3 to 9 Creative Writing Seminar. 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 seminar requirement. Prerequisite: consent of instructor.
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.
494-3 Literary Criticism Applied to Film. The course will deal with the history and theories of literary criticism. Students will have the opportunity to apply concepts of literary criticism to a series of films which they will view. A $10 screening fee is required.
495-3 A Survey of Literary Criticism. An introductory course to the history of criticism and major recent schools of literary criticism and theory. Required of M.A. students with a concentration in literature and all Ph.D. students.
496-3 to 6 (3, 3) Topics in Women's Literature. (Same as Women's Studies 454.) Syllabus, which may vary with instructor, identifies new areas of research on women authors and includes an examination of appropriate critical models that have emerged in feminist criticism.
498-3 to 9 Internships. For English majors only. Student may take up to nine semester hours to receive credit for internships with SIU Press, Special Collections, University Museum, Coal Center, and other academic units. Prerequisite: written approval from department and academic unit.
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.

Equine Studies

(SEE ANIMAL SCIENCE)

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. Certain courses may require the purchase of additional materials.

Finance majors must maintain a cumulative 2.00 grade point average in Finance prefix (FIN) courses taken at SIUC in addition to meeting all of the College of Business and Administration's retention and graduation requirements. Finance majors who fail for two consecutive semesters to maintain the 2.00 cumulative grade point average in Finance prefix courses will be required to drop Finance as their major.

Bachelor of Science Degree, College of Business and Administration

General Education Requirements 46
Professional Business Core (See Chapter 3.) 41
Requirements for Major in Finance 21
- Finance 331, 341, 361 9
- Specialization (choose one) 12
  - Financial Institutions
    - Finance 449
    - Select three: 320, 432, 433, 462
    - or
    - Finance 320
    - Finance 432 or 433
    - Select two: 321, 322, 323, 480
  - Financial Management
    - Finance 380 or upper division accounting course
    - Select three: 432, 433, 462, 463, 464, 469

Electives 12
Total 120

Courses (FIN)

270-3 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. Prerequisite: sophomore standing.

280-3 Business Law I. Legal problems arising from situations involving contracts and agency and business organizations. Not pass/fail for business majors.

300-3 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. Will not count toward a major in finance. Prerequisite: junior standing.

310-3 Insurance. Fundamentals of insurance and risk management including a study of selected insurance contracts and alternative methods of controlling risk exposures. Prerequisite: junior standing.

320-3 Real Estate. Problems of real estate ownership, management, financing, and development. Prerequisite: junior standing.

321-3 Real Estate Finance. A study of the instruments, techniques, and institutions of real estate finance; sources of and methods for obtaining funds for real estate investments; mortgage risk analyses. Prerequisite: 320 or consent of instructor and junior standing.

322-3 Real Estate Appraisal. The techniques and art of real estate valuation using market comparison, cost, and income approaches. Includes appraisal principles, procedures, and applications. Prerequisite: 320 or consent of instructor and junior standing.

323-3 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: 320 or consent of instructor and junior standing.

330-3 Introduction to Finance. Study of issuance, distribution, and purchase of financial claims including the topics of financial management, financial markets, and financial investments. Prerequisite: Accounting 230, Economics 215, and junior standing.

331-3 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: 330 with a grade of *C* or better and must be business (not prebusiness) major or consent of instructor.

341-3 Financial Markets. Operations of capital markets. Sources and uses of funds of financial institutions. Prerequisite: 330 or concurrent enrollment.

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 230, Economics 215 and junior standing.
361-3 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: 330 with a grade of *C* or better and Economics 208 and must be a business (not prebusiness) major or consent of instructor.
380-3 Business Law II. Legal problems arising from situations involving sales, commercial paper, secured transactions, suretyship, and bankruptcy. Prerequisite: junior standing.
432-3 Options and Futures Markets. Study of modern concepts and issues in financial options and futures markets. Emphasis on risk management in financial institutions, and applications in corporate finance and funds management. Not for graduate credit. Prerequisite: 331 with a grade of *C* or better and 361 (361 may be taken concurrently).
433-3 Portfolio Theory and Management. Examination of modern concepts relating to management of security portfolios. Topics include security analysis, Markowitz Portfolio Theory, efficient market hypothesis, portfolio performance measurement, risk, and portfolio construction. Prerequisite: 331 with a grade of *C* or better, 361 (361 may be taken concurrently).
449-3 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. Not for graduate credit. Prerequisite: 330 and 341 with a grade of *C* or better.
462-3 Working Capital Management. Short-term budgeting and forecasting techniques used in business; alternative approaches to working capital management including consideration of certainty, risk and uncertainty; theory and applications of management of cash, marketable securities, accounts receivables, inventory, banking relationships, and short-term sources of funds. Prerequisite: 361 or concurrent enrollment.
463-3 Forecasting and Capital Budgeting. Long-term forecasting techniques used in business; alternative approaches to capital structure decisions, cost of capital measurement; and performance measurement for investment decisions including mergers and leasing; explicit consideration of certainty, risk, and uncertainty in investment analysis; theory and applications in private and public sectors. Prerequisite: 361 or concurrent enrollment.
464-3 International Financial Management. Financial behavior of multinational firms. Emphasis on the modification of conventional financial models to incorporate uniquely foreign variables. Prerequisite: 361 or concurrent enrollment.
469-3 Managerial Financial Policy. Development of financial strategies and policies based on an evaluation of alternative approaches. Emphasis upon application of financial concepts and techniques to real-life situations. Not for graduate credit. Prerequisite: 361.
480-3 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.
491-1 to 6 Readings in Finance. Readings in classical and current writing on selected topics in various areas in the field of finance not available through regularly scheduled courses. Not for graduate credit. Prerequisite: consent of department chairperson and outstanding record in finance and must be a business (not prebusiness) major or consent of department. Mandatory Pass/Fail.
495-3 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 the faculty member. Not repeatable for credit. Not for graduate credit. Prerequisite: consent of department chairperson and outstanding record in finance and must be a business (not prebusiness) major or consent of department. Mandatory Pass/Fail.

Fire Science Management (Major, Courses)

This Bachelor of Science in Fire Science Management is designed to provide advanced practical course work in the areas of management and supervision. It is designed primarily for individuals who possess or are nearing completion of the Associate in Applied Science degree or its equivalent in a fire science-related field from a technical institute or community college.

The Capstone Option is available to eligible students who possess an Associates in Applied Science or its equivalent and have a gpa of 2.25 overall prior to the associates. Separate application must be made for entrance into the Capstone Option by no later than the end of the student's first semester in Fire Science Management. For more information on the Capstone Option see Chapter 4.

Graduates of this program may find employment in supervisory and management positions in the fire service, insurance industry, fire equipment manufacturing industry, and other related fields.

Currently this major is offered only at off-campus locations. For additional information about this major, contact the Office of Off-campus Academic Programs.

Bachelor of Science Degree, College of Technical Careers

General Education Requirements		46
Requirements for Major in Fire Science Management		48
Core Requirements: Advanced Technical Studies 332, 364, 416, 421	12	
Twenty-four hours from Fire Science Management 387, 402, 413, Advanced Technical Studies 321, 362, 383, 412, and Computer Information Processing 232	24	
Twelve hours of internship, independent study, or approved equivalent	12	
Approved Career Electives		26
Total		120

Courses (FSM)

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 preceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail.

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. This course may be classified as independent study. Prerequisite: consent of instructor.

387-3 Fiscal Aspects of Fire Service. An introduction to the fiscal problems encountered in the administration of fire service facilities.

402-3 Current Issues in Fire Science Services. A review of the current problems affecting the fire service with particular emphasis on resource allocation, planning, and constraints. 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.

413-3 NFPA Standards on Fire Department Safety and Health. This course provides an in-depth examination of the role of the National Fire Protection Association in establishing standards for the Fire Fighting field. Particular emphasis is placed on NFPA Standard 1500, Fire Department Occupation Safety and Health. Not for graduate credit.

Food and Nutrition (Major, Courses)

The food and nutrition program is a part of the Department of Animal Science, Food and Nutrition.

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 Agriculture

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, labo-

ratories, or public health and welfare organizations. They meet the American Dietetics Association Standards of Education for Plan V. Eligibility to write the registration examination to become a registered dietitian (RD) requires completion of academic and experiential requirements.

General Education Requirements	46[1]
Requirement for Major in Food and Nutrition with Specialization in Dietetics	74
GEB 104 or 108, 202, 211	(9)
GED 101, 102, 153	(9)
Mathematics 113	(3)
Food and Nutrition 100, 206, 215, 256, 320, 321, 360, 363, 373, 410, 425, 470, 472, 480, 490	42
Chemistry 140a,b	(3) +5
GEA 118, GEA 240	(6) +1
Physiology 301, 310	9
Computer Science 212 or Computer Information Processing 229	3
Microbiology 301	4
Psychology 323	3
Management 301 or 304	3
Educational Psychology 402	3
Electives	2
Total	120

[1]The numbers in parentheses are counted as part of the 46-hour General Education requirement.

FOOD AND NUTRITION MAJOR — HOTEL, RESTAURANT AND TRAVEL ADMINISTRATION SPECIALIZATION

This specialization prepares students for positions for challenging managerial positions in the Hotel, Restaurant, and Travel industries. The courses offered in the specialization concentrate on the nature and provision of hospitality. The program combines theoretical and practical application of management techniques and administrative practices with the skills, knowledge and analytical abilities to achieve managerial positions in both commercial operations such as hotels, restaurants and resorts, as well as in noncommercial operations such as hospitals and institutions. Through this program in the hospitality field, transfer students from community colleges can complete their baccalaureate degree.

General Education Requirements	46[1]
Requirements for Major in Food and Nutrition with Specialization in Hotel, Restaurant and Travel Administration	66
GEB 202	(3)
GEB 211	(3)
GEE 236	(2)
Mathematics 113	(3)
Accounting 220	3
Management 304	3
Marketing 304	3
Finance 270 or 280	3
Computer Information Processing 229 or Computer Science 212	3
Economics 208 or Educational Psychology 402 or Agribusiness Economics 318	3
Psychology 322 or 323	3

Food and Nutrition 156, 202, 206, 302, 335, 360, 361 or Marketing 305, 363, 371, 372, 373, 435, 460, 461, 473	45
Restricted Electives	8[2]
Total	120

[1]The numbers in parentheses are counted as part of the 46-hour General Education requirement.
[2]Students must complete 8 hours in one of the following areas: resort management, human resource management, food and nutrition management, foreign language or general management.

Courses (FN)

See also Animal Science for additional 400-level courses.

100-1 Introduction to the Profession of Dietetics. Reviews the history of the profession of dietetics; analyzes the impact of past as well as current societal influences on present and future development in the field of dietetics.

156-3 Fundamentals of Foods. An introduction to the basic principles and techniques of food preparation. A charge of $15 will be made for laboratory.

202-3 The Hospitality and Tourism Industries. Introduction to the diverse aspects of the hospitality and tourism industries and the interrelationships between them. Historical development of the industries, trends, current issues and career opportunities will be examined.

206-2 Food Service Sanitation. Basic sanitation principles and application in food service. Employee sanitation training, sanitation standards and safety regulations in the food service industry will be part of the course. Upon completion of the course, students will be eligible for the sanitation certificate national exam. Prerequisite: 156 or equivalent.

215-2 Introduction to Nutrition. (Same as Animal Sciences 215.) An up-to-date study of basic principles of nutrition including classification of nutrients (physical and chemical properties) and their uses in order to provide the student a working knowledge of nutrition in today's environment.

247-3 (1, 1, 1) The School Lunch Program. (a) Food purchasing; **(b)** quantity food production; and **(c)** nutrition practices in the school lunchroom.

256-5 Science of Food. Application of scientific principles including preparation, chemistry, functions, and interrelationships in ingredients and their effects on physical, chemical, and sensory characteristics of foods. Three lectures and two three-hour laboratories per week. A charge of $20 will be made for laboratory. Prerequisite: Chemistry 140a or 222a.

302-3 Dimensions of Tourism. In-depth examination of the components of the travel and tourism industry, motivators to travel, and the various market segments. Also covers analysis of the economic, social, cultural and environmental impacts to tourism. Prerequisite: 202 or consent of instructor.

320-3 Foundations of Human Nutrition. Principles of human nutrition in relation to intermediary metabolism and the role of vitamins and minerals. Prerequisite: 215, Chemistry 140a or equivalent.

321-2 Food and Nutrition Assessments. Demonstration and use of tools and practices in assessing food and nutrition behaviors of individuals and groups in clinical and community nutrition care settings. Includes merchandising food and nutrition services as part of marketing strategies. Prerequisites: 215, 256.

335-3 Beverage Management. Introduction to beers, wines and spirits. Legal responsibilities of alcohol service. Introduction to responsible beverage service and management. A charge of $10 will be made for laboratory. Prerequisite: 156 or equivalent.

356-3 Experimental Foods. Experimental approach to the study of factors influencing the behavior of foods. Individual problems. A charge of $10 will be made for laboratory. Prerequisite: 256.

360-4 Quantity Food Production. Selection and use of institutional foodservice equipment including specifications, cost and care; use of standardized formulas, techniques of quantity preparation, and service of food to large groups. Prerequisite: 156 or 256 or equivalent.

361-3 Hospitality Development. Development issues in the hospitality industry. Case studies on purchase/construction issues, inflation and recession, fiscal management and expansion of hospitality firms. Family-owned and operated businesses and entrepreneurships will be addressed.

363-3 Purchasing Management in the Hospitality Industry. Managerial principles of purchasing in the hospitality industry, with emphasis on functions of purchasing agents, types of markets, and methods of purchasing. Prerequisite: 156 or equivalent.

371-2 Field Experience. Opportunity for supervised learning experiences in the student's major. Prerequisite: consent of instructor or chairperson.

372-3 Front Office Management. Principles and concepts of effective front office management in the lodging industry.

373-3 Food and Beverage Cost Control. Examination of the managerial responsibilities of the food and beverage manager in the hospitality operation. Management methods in budgeting, forecasting, cost control, and establishing operational policies and systems. A charge of $15 will be made for laboratory.

390-1 to 4 Special Studies in Food and Nutrition. Enables students to pursue personal research interests in the food and nutrition area. Prerequisite: juniors and seniors only and consent of department.

410-3 Nutrition Education. Course provides principles, techniques and evaluation methods necessary to incorporate food and nutrition into the educational curriculum of schools, hospitals, out-patient clinics and health agencies. Principles of interviewing, counseling and education are discussed. Prerequisite: 321.
420-3 Recent Developments in Nutrition. Critical study of current scientific literature in nutrition. Prerequisite: 320 or equivalent.
421-2 Recent Trends in Food. Critical study of current scientific literature in food. Prerequisite: 320 or equivalent.
425-3 Energy and Nutrition Utilization. The interrelationship of cell physiology, metabolism and nutrition as related to energy and nutrient utilization, including host needs and biochemical disorders and diseases requiring specific nutrition therapy or consideration. Prerequisites: 320, Chemistry 140b, Physiology 310.
435-3 Hospitality Marketing Management. Marketing principles and practices from a hospitality management perspective. Develops the use of marketing tools as an integral part of any hospitality and tourism operation. Prerequisite: 202 and Marketing 304.
460-4 Foodservice Management. The course includes practical experience in the operational administration of a foodservice facility. Provides students an opportunity to exercise their ability and creativity to manage a noon luncheon service for the Student Center Old Main Room. The lab involves situations in which students fill the different roles involved with foodservice management. Prerequisite: 360.
461-3 Service Organization and Management in the Hospitality Industry. Managerial aspects of the hospitality industry as related to the provision of quality service. Organizational structures, management techniques, decision-making abilities, ethics, leadership, and human resource issues are examined. Prerequisite: 435 and Management 304.
470-3 Nutrition Therapy I. Physiological and biochemical changes associated with certain diseases and the appropriate nutrition therapy. Prerequisite: 320, Chemistry 140b and Physiology 310.
472-3 Applied Nutrition Therapy. Application of nutrition principles to the management of patients with altered physiological and biochemical states. Off-campus experiences may be required. Prerequisite: 470 or concurrent enrollment and consent of instructor.
473-3 Hotel Administration. An advanced hotel administration course covering contemporary management issues involving feasibility analyses, strategic planning, profitability and pricing, hotel law, labor relations and conference management. Prerequisite: 372 or consent of instructor.
474-3 Nutrition Therapy II. In depth study of the application of nutrition to the management of disease states with emphasis on current treatment and complex metabolic abnormalities. Prerequisite: 470.
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.

Foreign Language and International Trade

(Major)

The foreign language and international trade major, leading to the Bachelor of Arts degree in the College of Liberal Arts, will combine education in the liberal arts with preparation for careers in the international business community as well as in government service. It is designed to combine skill in a foreign language and a fundamental understanding of international commerce. This is accomplished by a curriculum of studies which has two cores—one in language and one in international trade and related subject matters. This cross-disciplinary program allows for choice of language as well as some options in electives so that different interests may be accommodated and individual goals may be realized. Prior to completion of the program, application and expansion of the knowledge and skills gained by the student through study is provided by an internship. Prior to the internship, both oral and written language competency examinations must be passed. No grade lower than *C* will be accepted for any course required by the major (including GEB 202 and GEB 250) taken at any institution at any time.

All students entering or re-entering (after at least one fall or spring semester not enrolled as a FLIT major or not enrolled at SIUC) the foreign language and international trade program begin in the pre-foreign language and international

trade classification (PFLT). Admission to the major may be requested only after completion of all qualifying courses. Approval is dependent upon the following: language skills course grade must be at least a *B*; remaining qualifying course grades must be at least a *C*; overall grade point average must be at least 2.75. Qualifying courses: SIUC language skills course 320 (Russian or Spanish), 320b (other languages), GEB 202 and 250, Mathematics 139 or 116, Economics 214, and Management 208 or Economics 308.

After admission a minimum overall grade point average of 2.75 must be maintained. Students falling below that level will be placed on probation. If after one semester on probation the grade point average is back to 2.75, students may request reinstatement to the major.

Bachelor of Arts Degree, College of Liberal Arts

General Education Requirements 46
Including GEB 202 and 250; Economics 214 or 215 to substitute for GEB 211; Mathematics 139 or 116 to substitute for GED 107; 4 hours of foreign language to substitute for GEC
College of Liberal Arts Academic Requirements (See Chapter 3.) ..... (7) + 7
Requirements for Major in Foreign Language and International Trade 59-65
Courses in a Language (Chinese, French, German, Japanese, Russian or Spanish) ..... (8) + 29-37
As prescribed by the program director; must include internship, Foreign Language 495
Business Related Courses 30
Accounting 220, 230 6
Computer Science 212 or Computer Information Processing 229 3
Economics 214, 215, 329 ..... (3) + 6
Finance 330 3
Management 208 or Economics 308; and either Management 304 or Political Science 441 6
Marketing 304, 435 6
Mathematics 139 or 116 ..... (3)
Electives 0-8
Recommended: Computer Science 202; East Asia 370; Economics 419; Finance 341, 464; Food and Nutrition 360, 372, 373; Geography 362, 364, 366; History 339, 370, 380a, 432, 433, 436, 437, 470, 471, 474, 480, 484; Management 202; Marketing 305, 336, 363, 390, 438; Philosophy 313, 317, 378; Political Science 371, 383, 458, 459, 463, 466, 485, 488; Religious Studies 334; Sociology 330;
Total 120

Foreign Languages and Literatures (Department, Majors, Courses)

Majors and minors are offered in classics (minor: classical civilization), French, German, Russian, and Spanish. Minors are also offered in Chinese, classical civilization, classical Greek, East Asian civilization, Japanese, and Latin. Transfer students planning to major in a foreign language must complete a minimum of 12 semester hours of courses including at least one 300 or 400 level language/grammar course 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. For modern foreign languages, both

oral and written language competency must be demonstrated in separate examinations. Students should plan to take these exams no later than two semesters prior to graduation so there is time to make up possible deficiencies before graduation. For students preparing to teach in the public schools, the oral and written competency examinations must be passed before student teaching is begun. 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. It is strongly recommended that students who are planning to study abroad consult with their departmental advisor before leaving if they expect to transfer credit to SIUC.

Bachelor of Arts Degree, College of Liberal Arts

(WITHOUT SECONDARY SCHOOL TEACHING CERTIFICATE)

General Education Requirements 46

College of Liberal Arts Academic Requirements (See Chapter 3.) ..... (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 office systems and specialties.

Requirements for Major in Foreign Language ..... 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.

Electives 24-30

Total 120

[1]See individual language listings for specific requirements.

Bachelor of Arts Degree, College of Liberal Arts

(WITH SECONDARY SCHOOL TEACHING CERTIFICATION)

General Education Requirements 46

College of Liberal Arts Academic Requirements (See Chapter 3.) ..... (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.

Requirements for Major in Foreign Language ..... 36[1]

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, and Spanish.

Professional Education Requirements 28

See Teacher Education Program, Chapter 3.

Electives 0-5

Total 123-124

[1]See individual language listings for specific requirements.

Bachelor of Science Degree, College of Education

For College of Education students majoring in a foreign language, the scheduling of those classes which apply to the major must be done with the appropriate adviser from the Department of Foreign Languages and Literatures.

General Education Requirements	46[2]
Must include GEB 114, 202, and 301; GEC 213; GED 101 and 102; GED 152 or 153	
Requirements for Major in Foreign Language	36[1]
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, and Spanish.	
Professional Education Requirements	28
See Teacher Education Program, Chapter 3.	
Electives	10
Total	120

[1]See individual language listings for specific requirements.
[2]See catalog section titled Curriculum and Instruction 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. 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. 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. No courses completed with a grade below *C* will be counted toward fulfillment of the requirements for a language minor.

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 (FL)

199-3 to 27 (3 per topic) Self Instructional Language. A passive skills (listening and reading) self-instructional program in **(a)** Italian, **(b)** Korean, **(c)** Portuguese, **(d)** Chinese, **(e)** French, **(f)** German, **(g)** Japanese, **(h)** Russian, and **(i)** Spanish. Unsupervised language study using language laboratory facilities and designated text materials. Completion of this course does not include speaking and writing skills and thus does not fulfill college language requirements. Credit granted upon successful completion of examination. Mandatory Pass/Fail.
258-1 to 4 Work Experience. Ungraded credit for work experience which has taken place subsequent to admission to SIUC. Such experience must be related to student's major in a foreign language or FLIT. Mandatory Pass/Fail. Prerequisite: sophomore standing and approval by chair if foreign language major or by director if FLIT major.
300-3 to 6 (3, 3) Masterpieces of World Literature. Readings from and discussions of both Western and Eastern literatures, taken from ancient to modern times. Occasional guest lectures by faculty of the department, who speak on their areas of special interest. All readings and lectures in English.
400-3 to 6 (3, 3) Variable Elementary Languages. Elementary conversational skills in a language not otherwise taught in this department. Since emphasis is on oral skills only, course does not fulfill any college or departmental language requirement. Language taught varies from year to year. Must be taken in a, b sequence.
436-3 Methods in Teaching 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 foreign languages in secondary schools. Prerequisite: concurrent or prior enrollment in 300-level course in French, German, Latin, Russian, or Spanish.
475B-1 to 40 Study Abroad in Bregenz, Austria. One or two semesters at SIUC's International Center in Bregenz, Austria. A combination of regular SIUC courses in history, political science, art history, business, etc., and program-specific courses in the area of European studies all taught in English as well as German language courses at all levels are offered in a European setting. No prior knowledge of German is required, but students are expected to take German language courses in Austria at their appropriate level. This course or 475V is highly recommended for German and or FLIT majors. Not for graduate credit. Students will be charged on the basis of 15 hours per semester regardless of the hours of credit actually earned. Prerequisite: 2.75 overall grade point average.
475V-1 to 40 Study Abroad in Vienna, Austria. One or two semesters at the University of Vienna and the Economics University, Vienna, Austria. All courses taught in German. Students may obtain 30 to 40 semester hours of credit in German language, literature and civilization, and with prior approval, in elective areas of study including music, art, architecture, history, anthropology, political science, physical education, business, economics, and sociology. This course or 475B is highly recommended for German and/or FLIT majors. Not for graduate credit. Students will be charged on the basis of 15 hours per semester regardless of the hours of credit actually earned. Prerequisite: 5 semesters of college German or equivalent with a 3.0 grade point average.
495-3 to 12 (3 to 6, 3 to 6) Internship. Provides structure for application and expansion of knowledge gained through extensive preparatory course work in the subject area for the internship, as well as in the foreign language which has been studied. Normally taken abroad, in a country where the foreign language acquired by the student is universally used. Not for graduate credit. Prerequisite: senior standing and written approval from the director of Foreign Language and International Trade. This approval is subject to satisfactory completion of both oral and written language competency exams before the internship begins.

CHINESE (Minor, Courses)

Minor

Chinese courses above 100 level	*18*
200 level: 201a,b	8
300 level or 400 level	10

Courses (CHIN)

120-8 (4, 4) Elementary Chinese. Standard (Mandarin) Chinese. The basic skills of listening, speaking, reading, and writing. No previous knowledge of Chinese required. Must be taken in a,b sequence.
201-8 (4, 4) Intermediate Chinese. Standard (Mandarin) Chinese. Development of listening, speaking, reading, and writing on the intermediate level. Must be taken in a,b sequence. Prerequisite: 120b or equivalent.
305-2 to 4 (2, 2) Individualized Language Study. Designed to improve language skills beyond the intermediate level. Tailored to the particular needs of students. Prerequisite: 201b or equivalent.

320-8 (4, 4) Advanced Chinese. Standard (Mandarin) Chinese. Further development of listening, speaking, reading, and writing skills on the advanced level. Emphasis on developing proficiency in reading modern Chinese through cultural readings. Must be taken in a,b sequence. Prerequisite: 201b or equivalent.
370-3 Contemporary China. A study of customs, habits, beliefs and traditions operating in China today. Taught in English. Prerequisite: GEC 213 or consent of instructor.
390-1 to 6 Independent Study in Chinese. Directed individual study of some question, author, or theme of significance in the field of Chinese literature, language, or culture. Prerequisite: consent of instructor.
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 Linguistics 401.
435-3 Business Chinese. An overview of China's business through reading in Chinese dealing with the major aspects of China's foreign trade ranging from broad principles and policies to concrete details of operation and procedure. Enhancement of conversational skills for business contexts. Prerequisite: 320 or equivalent.
490-1 to 6 Advanced Independent Study in Chinese. Directed individual study of some question, author, or theme of significance in the field of Chinese literature, language, or culture. Prerequisite: consent of instructor.

CLASSICS (Major, Minors [Greek, Latin, Classical Civilization], Courses)

Bachelor of Arts Degree, College of Liberal Arts

Classics courses and courses from related disciplines 36
Original Greek and Latin courses, two years of one language or one year of each 12-16
Electives approved by classics advisor from offerings in classics and related disciplines 20-24

Minor in Greek

Greek courses above 100-level 18

Minor in Latin

Latin courses above 100-level (388 and 488 may not be counted); 320 recommended 18

Minor in Classical Civilization

Courses to be selected in consultation with classics adviser from Greek, Latin, or classical civilization (101, 225, 270, 271, 310, 332, 405, 406, 496, GEC 230, GEC 330, and approved courses in related disciplines)[1] 15

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[1]Classical civilization includes all classics courses above the 100-level for which no knowledge of Greek or Latin is required.

Courses (CLAS)

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.
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.
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.

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: **(a)** 130b with a grade of *C* or better; **(b)** 201a.
202-6 (3, 3) Intermediate Latin. Reading from authors such as Livy, Caesar, and Cicero. Must be taken in a,b sequence. Prerequisite: 133b with a grade of *C* or better.
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.
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.
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.
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.
320-3 Latin Composition. The object of this course is to understand and appreciate the structure and style of Latin through composition. Prerequisite: 202a and b, each with a grade of *C* or better.
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. This course satisfies the COLA Writing Across the Curriculum requirement.
380-2 to 4 Greek Prose Authors in Greek. Reading of Greek prose. Selections from the historians (Herodotus, Thucydides), orators (Lysias, Demosthenes, et al.) philosophers (Plato, Aristotle), or epistles of the New Testament. This course satisfies the COLA Writing Across the Curriculum requirement. Prerequisite: 201a and b, each with a grade of *C* or better.
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. This course satisfies the COLA Writing Across the Curriculum requirement. Prerequisite: 201a and b, each with a grade of *C* or better.
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. This course satisfies the COLA Writing Across the Curriculum requirement. Prerequisite: 201a and b, each with a grade of *C* or better.
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: 201a and b, each with a grade of *C* or better.
384-3 Roman Philosophy in Latin. Selections from Cicero, Lucretius, and Seneca the Younger. Recommended for students with double majors in philosophy and classics. This course satisfies the COLA Writing Across the Curriculum requirement. Prerequisite: 202a and b, each with a grade of *C* or better.
385-3 Medieval Latin. Selected readings from Latin authors of the Middle Ages. Prerequisite: 202a and b, each with a grade of *C* or better.
386-3 Roman Historians in Latin. Selections from Caesar, Sallust, Livy, Tacitus, and Suetonius. Recommended for students with double majors in history and classics. This course satisfies the COLA Writing Across the Curriculum requirement. Prerequisite: 202a and b, each with a grade of *C* or better.
387-3 Vergil in Latin. Selections from Vergil's major works, the *Aeneid, Eclogues, and Georgics.* This course satisfies the COLA Writing Across the Curriculum requirement. Prerequisite: 202a and b, each with a grade of *C* or better.
388-3 Latin as a Research Tool. Intensive study of Latin as basis for development of reading knowledge. Covers grammar and vocabulary portion of first-year sequence in basic skills. Intended for graduate students. Undergraduates who wish to enroll are encouraged to consult with course instructor.
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. This course satisfies the COLA Writing Across the Curriculum requirement. Prerequisite: 202a and b, each with a grade of *C* or better.
390-3 Roman Comedy in Latin. Reading and interpretation of selections from play(s) by Plautus and Terence. Prerequisite: 202a and b, each with a grade of *C* or better.
391-3 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. This course satisfies the COLA Writing Across the Curriculum requirement. Prerequisite: 202a and b, each with a grade of *C* or better.
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. This course satisfies the COLA Writing Across the Curriculum requirement. Prerequisite: 3.75 grade average in classics courses and consent of classics faculty.
405-2 Greek Literature in Translation. (Same as Women's Studies 463.) Reading and analysis of selected classical Greek author(s), genre(s), theme(s), such as the role of woman, the social life of the an-

cient 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.

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.

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. Students taking the course for graduate credit will do a critical study of one aspect. This course satisfies the COLA Writing Across the Curriculum requirement. 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. Students taking the course for graduate credit will do a critical study of one aspect. This course satisfies the COLA Writing Across the Curriculum requirement. Prerequisite: two semesters of 300-level Latin or consent of instructor.

488-3 Advanced Latin as a Research Tool. Concentrated and individualized training in the recognition and interpretation of basic and complex grammatical structures and in the systematic acquisition of the principles of word formation for vocabulary expansion. Techniques for intensive and extensive readings and for translation of unedited texts in the student's own field of study. Intended for graduate students. Undergraduates who wish to enroll are encouraged to consult with course instructor. With consent of student's own department, and with a grade of *B* or *A*, satisfies graduate program requirements for foreign languages as a research tool. Prerequisite: 388 or one year of Latin or equivalent.

496-2 to 8 Independent Study in Classics. Guided research on problems in classics. The academic work may be done on campus or in conjunction with approved off-campus activities. Not for graduate credit. This course satisfies the COLA Writing Across the Curriculum requirement. Prerequisite: consent of instructor.

EAST ASIA (Courses) (EA)

300-3 Masterpieces of Oriental Literatures. Lectures and collateral readings of representative oriental literary works in English translation with special attention to literary forms and thought from ancient to contemporary China and Japan. No knowledge of an oriental language required.

370-1 to 6 (1 to 3 per topic) Topics in East Asian Cultural Traditions. Selected topics in East Asian cultural traditions. May be repeated to a total of six hours with the consent of the department. No prerequisite. Taught in English.

EAST ASIAN CIVILIZATION (Minor)

Minor

Courses in Chinese and Japanese selected in consultation with adviser ..... 15[1]

[1]18 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[1]
- 300 level: 320a,b plus any other combination of 300 level courses 14
- 400 level: any combination of 400 level courses 14
  (At least one literature course must be taken at either the 300 or the 400 level.)

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: 201 a,b (220 recommended; does not usually count toward major or minor) ..... 8[1]
- 300 level: 320a,b plus any other combination of 300 level courses 14

400 level: Foreign Languages 436, plus any combination of 400 level courses 14
(At least one literature course must be taken at either the 300 or the 400 level.)

Minor

French courses above 100 level 18
200 level: 201a,b ..... 8[1]
300 level: 320a,b plus any other combination of 300 level courses 10

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[1]With the approval of the French section, one semester of 220 may be counted toward the major or minor, in which case the 300 or 400-level requirements would be reduced by 2 hours for a major or minor.

Courses (FR)

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.
124-2 Elementary French Conversation. Conversation skills for beginners. Special emphasis on tourist vocabulary. Prerequisite: concurrent enrollment in 123B or consent of instructor.
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.
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: 123b, 190, or two years of high school French, or equivalent.
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.
300-3 Image of Women in French Literature. (Same as Womens Studies 352.) 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. Counted toward major only with consent of adviser.
310-4 Development of French Literature from the Middle Ages Through the Eighteenth Century. Major literary movements and authors as exemplified in representative works.
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.
320-6 (3,3) 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. Must be taken in a,b sequence. This course satisfies the COLA Writing Across the Curriculum requirement. Prerequisite: 201b or equivalent equivalent.
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.
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.
335-3 Business French. An overview of cultural, economic, and commercial France. Study through readings and discussions of the following topics: government, agriculture, industry, and commerce; Common Market and foreign trade, financial institutions and taxation, social classes, and the world of work. France as a society of consumption. Translations and some commercial correspondence. Prerequisite: 320a or equivalent.
350-2 French Phonetics. Introduction to French phonemics and phonetics involving production of French sounds and English interference. Emphasis on corrective pronunciation.
375-1 to 6 Travel-Study in France. Travel-Study project, planned under supervision of French faculty and carried out in France. Prerequisite: 201b, and consent of faculty.
388-3 French as a Research Tool. Intensive study of French as basis for development of reading knowledge. Covers grammar and vocabulary portion of first-year sequence in basic skills. Intended for graduate students. Undergraduates who wish to enroll are encouraged to consult with course instructor.
390-1 to 6 Independent Study in French. Individual exploration of some question, author, or theme of significance within the field of French literature, language, or culture. Prerequisite: consent of instructor.
410-3 Advanced Language Study. Designed to improve language skills beyond the level of 320. Selected grammar review and intensive practice in effective use of the written and spoken language through translations and free compositions. This course satisfies the COLA Writing Across the Curriculum requirement. Prerequisite 320a.

411-3 Linguistic Structure of French. (Same as Linguistics 413.) Study of the phonology, morphology, and syntax of modern spoken and written French, stressing interference areas for English speakers in learning French. Prerequisite: 320a and 321 or equivalent.
412-4 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.
414-3 Translation Techniques. Practice in oral translation — simultaneous and subsequent; written translation practice, from and into French, of materials from sources varying from technical, commercial, political, to general interest. Advanced grammar and syntax review as they relate to translation, with practice through exercises and translation. Prerequisite: 320a or equivalent.
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.
419-3 Romance Philology. (Same as Spanish 419.) Historical and comparative study of the major Romance languages: their phonology, morphology, and syntax.
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.
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.
435-3 Business French II. Detailed treatment of postal facilities and services, types of banks and their operations, transport of goods, import-export, bills of exchange, billing and shipping, insurance, accounting, and the stock market. These topics will be the subject of translations and of commercial correspondence. Prerequisite: 320b or equivalent, may be taken independently of 335.
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.
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.
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.
470-4 French Culture and Civilization. Study of contemporary France: values, attitudes, beliefs, and instructions. French civilization (history, literature, and the arts) will be treated mainly as a means of better understanding present day France. Offered in French. Prerequisite: 320a or permission of instructor.
475-3 to 6 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. Prerequisite: 320a or equivalent.
476-3 to 6 (3, 3) French Civilization Outside of France. Encompasses a number of individual courses, each of which focuses on one of the many areas of the world in which France has played a significant role. Manifestations of French culture and civilization, past and present, are studied and evaluated within the framework of an evolving local and global historic context.
488-3 Advanced French as a Research Tool. Concentrated and individualized training in the recognition and interpretation of basic and complex grammatical structures and in the systematic acquisition of the principles of word formation for vocabulary expansion. Techniques for intensive and extensive readings and for translation of unedited texts in the student's own field of study. Intended for graduate students. With consent of student's department, and with a grade of *B* or *A*, satisfies graduate program requirement for foreign languages as research tool. Prerequisite: 388 or one year of French, or equivalent.
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: 320a, 321 and consent of instructor.

GERMAN (Major, Minor, Courses)

At least one course in the history of Germany or Central Europe is recommended for all students majoring in German. Credit must be earned in at least one regularly scheduled 400-level course taken on the Southern Illinois University at Carbondale campus.

Bachelor of Arts Degree, College of Liberal Arts

Courses above 100 level 36
- 200 level: 201a,b (201c recommended) 8-11
- 300 level: 320, plus any combination of 300-level courses 10-13
- 400 level: Any combination of 400 level courses 12
- German electives (300 or 400 level) 3
  - (At least one literature course must be taken at either the 300 or the 400 level.)

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: 201 a,b (201c recommended) 8-11
- 300 level: 320, plus any combination of 300-level courses 10-13
- 400 level: Foreign Languages 436, plus any combination of 400 level courses 12
- German electives (300 or 400 level) 3
  - (At least one literature course must be taken at either the 300 or the 400 level.)

Minor

Courses above 100 level 18
- 200 level: 201a,b (201c recommended) 8-11
- 300 level: 320a,b 7
- German electives (300 or 400 level including at least one regularly scheduled course) 0-3

Courses (GER)

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.

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.

201C-6 (3, 3) German Language Workshop. This intensive (15 days), total-immersion (exclusively in German) program combines formal classwork with informal seminars, group activities (folk singing, skits, play readings, films, talent shows, etc.) and individual assignments (daily compositions, diaries). May be repeated once but only three hours will count toward major or minor. Prerequisite: 201b or consent of instructor.

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.

320-7 (4, 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. This course satisfies the COLA Writing Across the Curriculum requirement. Prerequisite: 201b or consent of instructor.

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.

335-3 Survey of German Literature. A survey of German literature from its beginning in the early Middle Ages to the present. Focusing on the major periods, authors, and works of German literature, this course will provide the students with an initial encounter with literature in an historical context and help train them to read both extensively and intensively. Prerequisite: 201b or equivalent.

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 include literary and journalistic materials as well as written and filmed documentaries. Taught primarily in German. Prerequisite: 201b or equivalent and/or consent of instructor.

371-3 Cultural History of Germany. An overview of geographic facts and the intertwining economic, political, social, and cultural developments in the German-speaking countries from the time of the Germanic tribes to the present. Taught primarily in German. Prerequisite: 201b or equivalent.
380-3 Modern German Prose. Introduction to outstanding German prose literature of the 19th and 20th centuries. Attention to historical and social backgrounds. Extensive readings supplemented by lectures and discussions. Conducted in German. Prerequisite: 201b or equivalent.
390-1 to 6 (1 to 3, 1 to 3) Directed Language Learning Activity. Special projects such as translation practicum, German play production, German newsletter, instructional assistance, special presentations, or internship in a business firm in Germany. May count as the fifth semester required for Foreign Languages 475a. Prerequisite: consent of instructor.
410-3 Advanced Language Study. Designed to improve language skills beyond the level of 320. Selected grammar review and intensive practice in effective use of written and spoken language through translations and free compositions. This course satisfies the COLA Writing Across the Curriculum requirement. Prerequisite: 320b or equivalent.
411-3 Linguistic Structure of Modern German. (Same as Linguistics 409.) 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.
412-3 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. Readings in German. Conducted in English.
435-3 Business German. An overview of German business, presented through lectures, readings, and discussions. Coursework with textbook and supplementary materials will focus on the major aspects of German business. Exercises will include vocabulary building, listening and reading comprehension, oral and written summarization, role playing in typical situations, mock telephone conversations, and business correspondence. Prerequisite: 320b or consent of instructor.
440-3 Studies in Early German Literature. The literature of the German-speaking countries from the early Middle Ages through the seventeenth century, with varying emphasis on authors, themes, genres, periods. Prerequisite: 330 or 335, consent of instructor, or graduate standing.
450-3 Studies in 18th Century Literature. Examination of the major writers and movements with their social, historical, and intellectual background during the 18th century in Germany and Austria. Prerequisite: 330 or 335, consent of instructor, or graduate standing.
455-3 Studies in 19th Century Literature. Detailed focus on specific aspects rather than a general survey of 19th century literature, e.g., major periods and movements, or major genres and sub-genres, or major and representative authors. Prerequisite: 330 or 335, consent of instructor, or graduate standing.
480-3 Studies in 20th Century Literature. Detailed focus on specific aspects rather than a general survey of 20th century literature, e.g., major periods, movements, and tendencies, or major genres and sub-genres, or major and representative authors. Prerequisite: 330 or 335, consent of instructor, or graduate standing.
488-3 Advanced German as a Research Tool. Concentrated and individualized training in the recognition and interpretation of basic and complex grammatical structures and in the systematic acquisition of the principles of word formation for vocabulary expansion. Techniques for reading and for translation of unedited texts in the student's own field of study. Intended for graduate students. With consent of student's department, and with a grade of *B* or *A*, satisfies graduate program requirement for foreign languages as a research tool. Prerequisite: Passing of CLEP test in German; or one year of college-level German; or consent of instructor (as determined by examination).
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.

GREEK (Minor, Courses)

(SEE CLASSICS)

JAPANESE (Minor, Courses)

Minor

Japanese courses above 100 level	18
200 level: 201a,b	8
300 level or 400 level	10

Courses (JPN)

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.
201-8 (4, 4) Intermediate Japanese. Development of listening, speaking, reading, and writing skills on the intermediate level. Must be taken in a,b sequence. Prerequisite: 131b or equivalent.
305-2 to 4 (2, 2) Individualized Language Study. Designed to improve language skill beyond the intermediate level. Tailored to the particular needs of students. Prerequisite: 201b or equivalent.
320-8 (4, 4) Advanced Japanese. Further development of listening, speaking, reading, and writing skills on the advanced level. Emphasis on developing proficiency in reading modern Japanese through cultural readings. Must be taken in a,b sequence. Prerequisite: 201b or equivalent.
370-3 Contemporary Japan. A study of customs, habits, beliefs, values and etiquette in Japanese culture. Instruction in English. Prerequisite: GEC 213 or consent of instructor.
375-1 to 6 Travel Study in Japan. Supervised travel-study in Japan. Prerequisite: consent of faculty.
390-1 to 6 Independent Study in Japanese. Directed individual study of some question, author, or theme of significance in the field of Japanese literature, language, or culture. Prerequisite: consent of instructor.
410-3 The Linguistic Structure of Japanese. (Same as Linguistics 412.) Phonology and syntax of 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 Linguistics 401.
435-3 Business Japanese. An introduction to the language and culture of the Japanese business world and to the structure of the Japanese business economy. The emphasis will be on learning appropriate levels of formality and politeness in oral communication and on achieving competency in the specialized language of business. Prerequisite: 320 or equivalent.
490-1 to 6 Advanced Independent Study in Japanese. Directed individual study of some questions, author, or theme of significance in the field of Japanese literature, language, or culture. Prerequisite: consent of instructor.

LATIN (Minor, Courses)

(SEE CLASSICS)

PORTUGUESE (Courses) (PORT)

175-5 First-Year Portuguese. First year Portuguese in one semester. The basic skills of listening, speaking, reading, and writing. Not open to native Portuguese speakers without permission of Spanish section.

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: Any combination of 300 level courses	12	
400 level: Any combination of 400 level courses including at least one literature course	12	
Russian electives (300 or 400 level)	4	

Minor

Russian courses above 100 level		18
200 level: 201a,b	8	
300 level: Any combination of 300 or some 400 level courses	10	

Courses (RUSS)

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.
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.

220-4 (2, 2) Intermediate Russian Conversation. Practice of oral skills on the intermediate level. May be taken as companion course to 201a,b or with consent of instructor. Prerequisite: 136b or equivalent.
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. This course satisfies the COLA Writing Across the Curriculum requirement. Prerequisite: 201 or equivalent.
306-3 Intermediate Readings in Russian. Designed to improve skills in reading selections from Russian prose. Prerequisite: 201 or equivalent.
320-3 Advanced Language Skills. A review of fine points of grammar and polishing of student's syntax. Prerequisite: 201 or equivalent.
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.
375-3 to 6 Travel Study in USSR. Supervised travel-study program in the USSR. Prerequisite: 201 or equivalent.
388-3 Russian as a Research Tool. Intensive study of Russian as basis for development of reading knowledge. Covers grammar and vocabulary portion of first-year sequence in basic skills. Intended for graduate students. Undergraduates who wish to enroll are encouraged to consult with course instructor.
390-1 to 6 (1 to 3, 1 to 3) Independent Study in Russian. Directed independent study in a selected area of Russian studies. Prerequisite: consent of instructor.
411-3 Russian Stylistics. Writing styles in Russian and its application to the development of skills in written expression. This course satisfies the COLA Writing Across the Curriculum requirement.
415-3 Russian Linguistic Structure. Structural analysis of present-day Russian with special attention to morphology and syntax.
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 equivalent.
465-3 Soviet Russian Literature. Major fiction writers and literary trends since 1917. Lectures, readings, and reports.
470-3 Soviet Civilization. Soviet culture and civilization is studied primarily through literary works, journalistic materials, and excerpts from non-literary works as general background reading. Lectures are illustrated with maps, slides, films and art works. Taught in English. Readings are in English and in bilingual edition. No prerequisite: May count toward Russian major with consent of graduate adviser.
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.
480-4 Russian Realism. Authors in 19th century Russian literature. Special attention to stylistic devices. Lectures, readings, and individual class reports.
485-3 Russian Poetry. A study of literary trends and representative works of Russian poets.
488-3 Advanced Russian as a Research Tool. Concentrated and individualized training in the recognition and interpretation of basic and complex grammatical structures and in the systematic acquisition of the principles of word formation for vocabulary expansion. Techniques for intensive and extensive readings and for translation of unedited texts in the student's own field of study. Intended for graduate students. With consent of student's department, and with a grade of *B* or *A*, satisfies graduate program requirement for foreign languages as a research tool. Prerequisite: 388 or one year of Russian or equivalent.
490-1 to 6 Advanced Independent Study in Russian. Directed independent study in a selected area of Russian studies. Prerequisite: consent of 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. Students taking the course for graduate credit will do a critical study of one aspect. May be repeated as the topic varies. Prerequisite: consent of instructor.

SPANISH (Major, Minor, Courses)

Bachelor of Arts Degree, College of Liberal Arts

Spanish courses above 100 level 36
200 level: 201a,b 8
300 and 400 levels: one semester of 305, 306, 320, and 411, plus any combination of 300 or 400 level courses which includes a literature course and at least nine additional 400 level hours 21-24

Spanish electives (only one semester of 220 may be counted toward the major) 4-7

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 8
300 and 400 levels: one semester of 305, 306, 320, and 410, plus any combination of 300 or 400 level courses which includes at least nine additional 400 level hours 21-24
Spanish electives (only one semester of 220 may be counted toward the major) 4-7
See office systems and 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 listed above 100 level 36
200 level: 201a,b 8
300 and 400 levels: one semester of 305, 306, 320, 411, Foreign Languages 436, plus any combination of 300 or 400 level courses which includes a literature course and at least six additional 400 level hours 21-24
Spanish electives (only one semester of 220 may be counted toward the major) 4-7

Minor

Spanish courses above 100 level 18
200 level: 201a,b 8
300 level: 306 and 320 7
Spanish electives (only one semester of 220 may be counted toward the minor) 3

Courses (SPAN)

140-8 (4, 4) Elementary Spanish. The basic skills of listening, speaking, reading, and writing. No previous knowledge required. Must be taken in a,b sequence.
141-2 Elementary Spanish Conversation. Conversation skills for beginners. Emphasis on everyday situations. Cannot be taken to satisfy language requirement. Is not a companion course for 140a,b or 175. Prerequisite: 140a or equivalent.
175-5 Accelerated Elementary Spanish. Elementary Spanish covered in one semester. The basic skills of listening, speaking, reading, and writing. Prerequisite: one year of high school Spanish or equivalent or permission of instructor.
201-8 (4, 4) Intermediate Spanish. Continued development of the four basic language skills. Must be taken in a,b sequence. Prerequisite: 140b or 175 or two years of high-school Spanish.
220-4 (2, 2) Intermediate 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.
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.
305-4 (2, 2) Advanced Conversation. Improvement of self-expression and aural comprehension. Expansion of vocabulary and idioms in Spanish. Prerequisite: 201b or equivalent or consent of instructor.
306-3 Intermediate Readings in Spanish. Designed to improve reading skills in Spanish. Prerequisite: 201b or equivalent.
310-3 Spanish Literature 1700-1900. The literature of Spain in the periods of Neoclassicism, Romanticism, and Realism. Prerequisite: 306.
315-3 Spanish American Literature. Literature in Spanish America during the 19th and 20th centuries. Prerequisite: 306.
320-4 Third-Year Grammar and Composition. Extensive practice in translation and composition; special attention to grammar problems, idiomatic expressions, and syntactical features. This course satisfies the COLA Writing Across the Curriculum requirement. Prerequisite: 201b or equivalent.
335-3 Introduction to Business Spanish. The language of the Hispanic business community in readings, correspondence, and documents. Prerequisite: 320.

370-3 Spanish Culture and 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 equivalent.
371-3 Spanish-American Culture and Civilization. A survey of the cultural heritage of the Spanish-American peoples. Class discussion in Spanish will be emphasized in order to improve conversational skills. Prerequisite: 201b or equivalent.
388-3 Spanish as a Research Tool. Intensive study of Spanish as a basis for development of reading knowledge. Covers grammar and vocabulary portion of first-year sequence in basic skills. Intended for graduate students. Undergraduates who wish to enroll are encouraged to consult with course instructor.
390-1 to 4 (1 to 2, 1 to 2) Independent Study in Spanish. Individual exploration of some question, author, or theme of significance within the field of Spanish literature, language, or culture. Prerequisite: consent of instructor.
410-3 Advanced Language Study. Intensive writing practice with emphasis on style, organization, and problematic aspects of grammar. This course satisfies the COLA Writing Across the Curriculum requirement. Prerequisite: 320.
411-3 Linguistic Structure of Spanish. (Same as Linguistics 414.) Theory and practice in Spanish pronunciation and study of Spanish grammatical structure, in contrast to English, with application to teaching.
412-3 History of the Spanish Language. Survey of internal and external history, from Vulgar Latin to Modern Spanish.
419-3 Romance Philology. (Same as French 419.) Historical and comparative study of the major Romance languages: their phonology, morphology, and syntax.
425-3 Spanish Literature Before 1700. The literature of Spain from its beginnings in the Middle Ages through the Golden Age.
430-3 The Golden Age: Drama. Plays of Lope de Vega, Calderon, Tirso de Molina, and others.
431-3 Cervantes. *Don Quixote.*
434-3 Colonial Literature in Spanish America. Study of the literature of Spanish America before 1825.
435-3 Business Spanish. Discussion and practice of the vocabulary, styles, and forms used in Spanish business correspondence, as well as report writing and documents dealing with trade, transportation, payment, banking, and advertising. Prerequisite: 320.
460-3 Spanish Literature of the 20th Century. The main currents and outstanding works in the literature of Spain since 1900.
463-3 Chicano Literature. An introduction to the literature written in the United States by Chicanos and other Hispanics.
485-3 The Spanish American Short Story. Survey of the genre in Spanish America.
486-3 Spanish American Drama. A survey of the development of the genre from the earliest times to the present.
487-3 The Spanish American Novel. Survey of the genre in Spanish America.
488-3 Advanced Spanish as a Research Tool. Concentrated and individualized training in the recognition and interpretation of basic and complex grammatical structures and in the systematic acquisition of the principles of word formation for vocabulary expansion. Techniques for intensive and extensive readings and for translation of unedited texts in the student's own field of study. Intended for graduate students. With consent of student's department, and with a grade of *B* or *A*, satisfies graduate program requirements for foreign languages as research tool. Prerequisite: 388 or one year of Spanish or equivalent.
490-1 to 3 Advanced Independent Study. Individual exploration of some topic in Hispanic literature, language, or culture. Prior consent of instructor required.

Forestry (Department, Major, Courses)

Two specializations are offered within the major in forestry: forest resources management and outdoor recreation resources management. General Education 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 forest resources management and outdoor recreation resources management specializations are 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 state forests; conservation areas and federal reservoirs. Collectively, 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. Scientists with the U.S. Forest Service are affiliated with the Department of Forestry, and participate in the educational activities of the department.

The curricula of the Department of Forestry prepare graduates for employment with local, state and federal natural resource agencies, as well as private industry. In addition, many graduates continue their education in advanced masters and doctoral programs. Federal agencies employing our graduates include the Forest Service, Soil Conservation Service, Fish and Wildlife Service, National Park Service, Bureau of Reclamation, Bureau of Land Management, Environmental Protection Agency, Tennessee Valley Authority, and the Army Corps of Engineers. There are also employment opportunities in state government with agencies such as fish and game commissions, departments of natural resources and conservation, and forest services. At the local level, there are opportunities with urban forest and park systems. Private agencies have included Ducks Unlimited, the Nature Conservancy, the National Audubon Society and the American Forestry Association. Forestry graduates often are employed by private forestry consulting firms and by private industries such as Scott Paper Co., Weyerhaeuser Co., International Paper Co., Georgia Pacific Corporation and Westvaco.

Bachelor of Science Degree, College of Agriculture

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 goal of the Forest Resources Management specialization is to develop individuals with sufficient understanding of the physical, biological and economic considerations required to make sound management decisions for the multiple uses of forest resources. The specialization includes areas of study recommended and accredited 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 off-campus living expenses and transportation are approximately $150 per student and must be borne by the student. Other costs for equipment and supplies which are required for field study and certain other courses are specified in course descriptions.

General Education Requirements 46
Requirements for Major in Forestry with Forest Resources Management Specialization 84
- Forestry Core 200, 201, 202a, 202b, 310, 311, 315, 331, 351, 381, 409, 410, 411, 314 or Plant Biology 356 35
- Biology 307; Plant Biology 200; Chemistry 140a,b; GEA 118 ..... (12)[1] + 7
- Agribusiness Economics 204 or Economics 215, Agricultural Education and Mechanization 371, 374 ..... (3)[1] + 4
- GED 101, 102, 153; Mathematics 110 or 140 and 282 or 283 or Plant Biology 360 or Agribusiness Economics 318 ..... (12)[1] + 4
- Five-week early summer field studies: Forestry 310C, 314C, 320C, 351C 6
- Forestry 412, 416 5
- Plant and Soil Science 240 4
- Two courses selected from Forestry 320, 350, 405, 460 4-5

Two courses selected from Forestry 313, 402, 420, 430, 431	6
Restricted electives	8-9[2]
Total	130

[1]Hours included in total for General Education requirements.
[2]Select one of the following plans: (1) complete at least one course (a total of 10 hours) in each of the following areas: forest and biological sciences, physical sciences, computer science and statistics, business and economics; or (2) complete a total of 10 hours within a single area selected from the above four with approval of a faculty adviser.

FORESTRY MAJOR — OUTDOOR RECREATION RESOURCES MANAGEMENT SPECIALIZATION

The program in outdoor recreation resources 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 and the Society of American Foresters. The goal of the Outdoor Recreation Resources Management option is to prepare students for entry into professional careers in managing and administering wildlands for outdoor recreation and park uses in a variety of agencies operating programs in diverse geographic and natural settings. The outdoor recreation resource management student travels through selected sections of the United States on a park and recreation field studies session of outdoor recreation and park facilities. The summer camp requires the student pay transportation and living expenses. Other courses in this program may also require additional fees.

General Education Requirements	46
Requirements for Major in Forestry with Outdoor Recreation Resources Management Specialization	84
Forestry Core 200, 201, 202a, 202b, 310, 311, 315, 331, 351, 381, 409, 410, 411, 314 or Plant Biology 356	35
Plant Biology 200, Chemistry 140a,b	(6)[1] + 6
Agribusiness Economics 204 or Economics 215	(3)[1]
GED 101, 102, 153, Mathematics 110 or 140 and 282 or 283 or Plant Biology 360 or Agribusiness Economics 318	(12)[1] + 4
Plant and Soil Science 240, 328a,b, Geography 310	11
Forestry 422C Park and Wildlands Management Camp	4
Forestry 320, 420, 421, 423, 470	13
Select at least 5 hours from Forestry 405, 416, 430, Zoology 468a,b	5-6
Restricted Electives	5-6[2]
Total	130

[1]Hours included in total for General Education requirements.
[2]To be elected from forest sciences, business or administration, law or law enforcement, or recreation.

Courses (FOR)

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.

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 of selected major North American forest ecosystems will be studied. Saturday field trip may be required at a cost not to exceed $10. Prerequisite: Plant Biology 200, Plant and Soil Science 240, Biology 307, or consent of instructor.

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 unless paid in 201. Must be taken in a,b sequence, unless otherwise arranged with consent of instructor. Prerequisite: Plant Biology 200.

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 silviculture 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 planning, 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.

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.

314-3 Insect, Abiotic, and Other Stresses Within the Forest. The impact, recognition, and control of destructive forces within the forest environment. Emphasis placed upon stresses due to climatic factors, macro-parasitic plants, chemical injury, pollution, animal damage, and forest insect pests. Prerequisite: 331, Plant Biology 200, and GE-A 118 or consent of instructor.

314C-2 Forest 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 per student. Prerequisite: 331 and two of the following: 314, 315, Plant Biology 357.

315-3 Fire in Wildland Management. Fire as a phenomenon in wildland management. Topics covered are fire prevention, detection, suppression, behavior, effects, use, and economics. Major emphasis is on fire control and fire ecology. Prerequisite: 331.

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, Biology 307, Plant and Soil Science 240.

341-3 Forestry Practices. The fundamentals of integrated resource management of timberlands. Management systems, tree 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.

350-3 Woods as a Raw Material. Structure, identification, and properties of wood. Important species, significance of properties to end-use and significance of wood to the environment.

351-3 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.

351C-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: 351.

360C-1 Forest Industries Field Studies. A study of primary and secondary forest product processing in the central hardwood region. Course requires field trips. Estimated trip costs $50.

381-1 Forestry Seminar. Presentation of topics pertinent to multiple-use management and utilization of forest resources. Prerequisite: senior standing.

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. Offered spring semester odd years.

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.

408-4 Introduction to Remote Sensing. The course is an introduction to the theoretical and practical considerations of remote sensing for an interdisciplinary audience. Coverage will stress background information about the electromagnetic spectrum, reflectance characteristics of various objects, sensors, filters, platforms and energy flow between object and sensor. Prerequisite: advanced standing or graduate status.

409-3 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.

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: Economics 215 or Agribusiness Economics 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 for 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 per student. Prerequisite: 320C.

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.

422C-4 Park and Wildlands Management Camp. A study of park conditions, visitors, and management practices at selected county, state, and federal park systems in the United States, including the federal wilderness preservation system. Course requires a field trip and supplemental purchases. Prerequisite: 320 and 320C and consent of instructor.

423-3 Environmental Interpretation. (See Agriculture 423.)

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.

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: 351 or consent of instructor.

452-2 Forest Soils. Characterization and fundamental concepts of forest soils and their relationships 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: Plant and Soil Science 240 and concurrent enrollment in Forestry 452L. Spring semester even years.

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: Plant and Soil Science 240 and concurrent registration in Forestry 452. Spring semester even years.

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 trips 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.
470-2 Wilderness Management, Policy, and Ethics. Study of current management philosophy and practice in America's wilderness. Analysis of current wilderness policy and its historical evolution. Discussion of the evolution of the wilderness idea and the individuals that have influenced it. Weekend field trip required. Prerequisite: 320 or consent of instructor.
490A-2 Resources Management Consortium. Intensive field course in resources management decision making. Student serves as team member in solving resource problems in forestry, wildlife management, recreation, and interpretation at Land Between the Lakes. Enrollment is limited to six. Course taught at Land Between the Lakes. Cost of room and board not to exceed $100. Not for graduate credit. Prerequisite: consent of instructor.
492-1 to 4 Special Studies for Honor Students. Research and individual problems in forestry. Not for graduate credit. Prerequisite: consent of the department chairperson and a 3.0 minimum grade point average.
494-1 to 6 Practicum. Supervised practicum 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.

Geography (Department, Major, Courses)

Geography is the discipline that deals with the relationship between human beings and their environment. The Department of Geography emphasizes the applied aspects of this theme, environmental planning and management, and geographic techniques such as cartography and spatial analysis. Students may earn a Bachelor of Arts or Bachelor of Science degree through the College of Liberal Arts, or a Bachelor of Science degree through the College of Education. All geography majors develop a minor in consultation with the Department of Geography undergraduate program director, which can be fulfilled by taking courses in another department or by an interdisciplinary group of courses based on a topical specialty, for example, in water resources.

Community college and 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 for departmental consent to initiate an honors program.

Students with a minor in geography must take Geography 300 or GEB 103, three 300-level courses and one 400-level course. Geography 300 has been approved as a substitute for GEB 103 for the General Education requirement. Social studies majors in the College of Education with a 9-hour concentration in geography must take Geography 300 or GEB 103 and complete their concentration with electives from geography.

The core program provides a common background for all geography majors. The major then selects a series of 400-level courses to satisfy career goals. Three special interest sequences are as follows.

Cartography and Geographic Information Management. This concentration stresses cartography, quantitative techniques, and geographic data management, and is designed for those who wish to go into careers in which geographic techniques are necessary skills.

Environmental Planning. This concentration is for those interested in careers in environmental management and planning. The courses deal with the economic, social, and political aspects of environmental planning, techniques of evaluation and principles of the environmental systems under consideration.

Geography General. This concentration gives maximum flexibility for those seeking a broad understanding of the field of geography, or those wishing to combine several areas of interest.

Bachelor of Arts or Bachelor of Science Degree, College of Liberal Arts

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.

General Education Requirements		46
College of Liberal Arts Academic Requirements (See Chapter 3.)		(4) + 8-14
Requirements for Major in Geography		30-34
Geography Core Courses: 300, 302, 304 or 326, 410	(3) + 13	
Mathematics 108, 116, or 139	(3) + 0-2	
Special Interest Sequence	17-19	
Cartography and Geographic Information Management: 310, 404, 416, 418 and selection from other 400-level courses	17-19	
Environmental Planning: 320, 422, 424, 426, and selection from 400, 425, 427, 430, 432, 434, 436, 470, 471	18-19	
Geography General: Any 400-level courses	17-19	
Minor (or interdisciplinary selection to complement major)		15
Electives		11-21
Total		120

Bachelor of Science Degree, College of Education

General Education Requirements		46
Must include GEB 114, 202, and 301; GEC 213; GED 101 and 102; GED 152 or 153		
Requirements for Major in Geography		30
Geography 300 or GEB 103 and 443	(3) + 3	
Any three: 302, 304, 310, 326, or one regional course	9	
Additional courses in geography	18	
Must include 12 hours of 400-level courses.		
Professional Education Requirements		28
Curriculum and Instruction 469 is required.		
See Teacher Education Program, Chapter 3.		
Minor (or interdisciplinary selection to complement major)		15[1]
Electives		1
Total		120

[1]Students 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 GEB 103	3
Any three: 302, 304, 306, 310	9
400 level courses	3-4

College of Education

A minor in geography requires	19-20
Geography 300 or GEB 103	3
Any two: 302, 304, 306, 310	6
400 level courses	7-8
Geography 443	3

Courses (GEOG)

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, 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.
257-1 to 5 Concurrent Work Experience in Geography. Concurrent work experience in tasks specifically related to the field of geography and such as are found in cartography and map work, climatology, and resource management. Prerequisite: geography major and consent of department. Mandatory Pass/Fail.
258-1 to 5 Past Work Experience in Geography. Past 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 trip.
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.
304-3 Economic Geography. Natural resources in the world economy. This course first introduces the structure of the world economy emphasizing interaction between the developed and underdeveloped nations. World production and trade in the agriculture and energy industries is analyzed from a world system perspective. Prerequisite: 300 or consent.
306-3 Cultural Geography. An overview of the geographic viewpoint in the study of the human occupance 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.
310-3 Introductory Cartography. Properties of maps and air photos, their use and source; map symbols, map projections, and map construction. Introduction to the use of quantitative techniques as applied in geographic study. Laboratory. Charges not to exceed $5 for supplies. Prerequisite: 300 or consent.
320-3 Introduction to Environmental Planning. Analysis of social responses to environmental challenges requiring policy action (air and water pollution, land use and ecosystem degradation, etc.). Particular focus is on the current legal framework for environmental regulation.
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.
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.
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.
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 lifespace. Specific geographic issues and problems are selected by the students for group discussion and analysis. Charges not to exceed $5 for field trips.
361-3 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. Analysis of population trends, assessment of economic activities, and analysis of transportation networks from a geographic perspective are introduced. Some attention is given to the United States in the world economy.
362-2 Regional Geography of Europe. Introduces present-day Europe. Survey of the area and an investigation of problems and issues affecting the region.
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.
364-2 Regional Geography: Soviet World. Introduction to and survey of the Soviet world and investigation of problems and issues affecting the region.
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.

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.
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 agricultural systems, and ethnic and settlement patterns.
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.
369-2 Regional Geography of Oceania. Introduces present day Oceania. Survey of the area and investigation of specific problems and issues affecting the region.
400-3 Geography of Outdoor Recreation. Analysis of patterns of outdoor recreation with an emphasis on metropolitan areas. Selected topics include demand forecasting methods, cost-benefit analysis and the valuation of recreation resources, and an analysis of the socioeconomic and spatial impacts of recreation facility provision.
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.
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.
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.
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.
418-3 Introduction to Geographic Information Systems. Introduces students to geographic information systems (GIS) for the collection, storage, analysis, and mapping of spatial data. A simplified GIS methodology makes the techniques available to students with no previous computer experience. Prerequisite: 304 and 310, or consent of instructor.
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.
422-4 Economics in Geography and Planning. 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: 304 or consent of instructor.
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.
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.
426-4 Administration of Environmental Quality and Natural Resources. (Same as Political Science 445.) An examination of institutional arrangements and administrative practices in the protection and use of land, water, air, and mineral resources. The course includes analysis of responsibility and decision-making at all levels of government (federal, state, and local) as well as corporate, interest group, and individual responses to public programs. Particular attention will be given to administration of federal environmental quality legislation including the National Environmental Policy Act, the Clean Air Act, the Water Pollution Control Act, and the Surface Mining Reclamation Act. Prerequisite: 300 or 326, or consent of instructor.
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: 300 or consent.
430-3 Environmental Systems Analysis. Exploration of the major environmental systems relevant to environmental planning. Topics include concepts of systems and system behavior; basics of systems analysis and modeling environmental systems; environmental fluxes of energy and materials (e.g., hydrologic cycle, carbon cycle, energy budgets, erosion and sediment transport, role of biosphere in organizing fluxes); environmental variability. Prerequisite: 302 or consent.

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.
433-3 Advanced Physical Geography. Topics may include landforms, climate, soil or water. Varies with the interest of the instructor. Prerequisite: 302 or consent.
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 microclimatic 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.
435-3 Solar and Alternate Energy Planning. Regional and national strategies for energy supply and demand are reviewed followed by a study of current energy resources, reservoirs, and the range of demands and environmental impacts. Community and national planning strategies for increasing the use of solar and alternate energies are explored, simulated by analog computer, and assessed for present and future implementation probability. Field trip expenses not to exceed $10. Prerequisite: 300.
436-3 Environmental Disaster Planning. Develops the skills and perspectives needed to plan effectively for natural and man-made disasters. The concepts of risk analysis, hazard mitigation and preparedness, response and recovery of the economic and social infrastructure in areas impacted by earthquakes, floods, droughts, radioactive and toxic material releases, and other catastrophic events.
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. Prerequisite: GE-A 330 or consent of instructor.
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. Prerequisite: 331, GEA 330, or consent of instructor.
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.
470-1 to 5 (3, 1 or 2) Urban Planning. (a) Planning concepts and methods. (Same as Political Science 447a.) Charges not to exceed $8 for field trips. **(b)** Field problems. (Same as Political Science 447b.) Concurrent enrollment in 470a is optional. Prerequisite: 326 or 421 or consent of instructor.
471-3 Environmental Impact Analysis. Techniques of assessing the impact of human activities on the environment, including weighting schemes, cost-benefit analysis, linear programming, ecological impact assessment. Emphasis is on placing NEPA and EIS writing in legal, economic, and environmental perspective. Prerequisite: 302 or 304 or consent.
480-3 to 6 Internship in Geography. Supervised field work in private or public organization dealing with planning, environmental management, or cartography and geographic information management. A written proposal about the planned internship must be submitted to a faculty supervisor prior to beginning of internship. A faculty supervised report on the work is required after the internship. Courses may be repeated, but no more than 3 credit hours may be applied to an undergraduate major. A graduate student may enroll for 3 credit hours. Prerequisite: geography major and consent of department.
481-6 to 12 Cooperative Work Experience in Geography. Placement of advanced undergraduate or graduate student in private or public organization for one or more semesters in paid career-related position. Student gains professional experience, under faculty and on-site supervision. A written proposal about the planned cooperative work experience must be submitted to a faculty supervisor before it begins. A report summarizing the work experience is required after the work experience ends. Course may be repeated. Three credit hours may apply toward requirements for a Geography major; three additional credit hours may apply toward degree requirements as elective. Prerequisite: geography major and consent of department.
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.
490-2 to 4 Readings in Geography. Supervised readings in selected subjects. Prerequisite: geography major, advanced standing.

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 education in geology with courses in other areas, such as other environmental 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

General Education Requirements	46[1]
Supplementary College of Science Requirements	9-10
Mathematics 108 and 109 or 111	(3) + 2-3
Foreign Languages	(4) + 4
Biological Sciences (Not General Education)	(3) + 3[3]
Requirements for Major in Geology	37-41
Geology 220, 221, 302, 310, 315, 325, 425, 474, and 450 or 454[4]	(3) + 28-32
Chemistry 222	(3) + 5[2]
Physics 203a, 253a or 205a, 255a	4[2]
Electives	23-28
Total	120

[1]The 46 hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Education courses.
[2]Courses will also meet the physical science requirement for the College of Science.
[3]If courses which have been approved as General Education substitutes are taken, they will count as a part of the 46 hours in General Education.
[4]The summer field geology course, Geology 454, should be taken between the junior and senior years.

Bachelor of Science Degree, College of Science

General Education Requirements	46[1]
Supplementary College of Science Requirements	9-10
Mathematics 108 and 109 or 111	(3) + 2-3
Foreign Languages	(4) + 4
Biological Sciences (Not General Education)	(3) + 3[4]
Requirements for Major in Geology	60-61
Geology 220, 221, 302, 310, 315, 325, 415, 425, 454[3], 474, and 435 or 436	(3) + 38-39
Geology electives	5
Mathematics 150	4
Chemistry 222	(3) + 5[2]
Physics 203a,b, 253a,b or 205a,b 255a,b	(3) + 5[2]
Electives in supporting sciences or technology (to be approved by geology undergraduate adviser)	3
Electives	3-5
Total	120

[1]The 46 hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Education courses.
[2]Courses will also meet the physical science requirement for the College of Science.
[3]The summer field geology course, Geology 454, should be taken between the junior and senior years.
[4]If courses which have been approved as General Education substitutes are taken, they will count as a part of the 46 hours in General Education.

Minor

A minor consists of 16 hours, determined by consultation with the geology adviser.

Courses (GEOL)

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.

221-3 Historical Geology. Principles and methods of interpreting Earth's history. General review and selected examples of Earth's physical, biological, and chemical history. Laboratory and field trips required. Prerequisite: 220; a biology course is recommended.

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 111. Recommended: Physics 203, or 205 or concurrent enrollment.

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.

315-4 Igneous and Metamorphic Petrology. An introduction to the processes involved in forming igneous and metamorphic rocks, to the geological environments in which these rocks are located, and to their characteristics and classifications. Laboratory. Field trip required. Prerequisite: 310.

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.

390-3 Introduction to Mining Geology. Structure and composition of the earth as these impact specifically on mining engineering problems; geologic time, sequence of events, major geologic provinces, types of ore deposits, use of core data, preparation and interpretation of geologic cross-sections. Two lectures and one three-hour laboratory. Two Saturday field trips required. Prerequisite: 220.

412-3 Topics in Igneous Petrology and Geology. In-depth studies of selected topics in igneous petrology and igneous geology. The selected topics will emphasize theoretical considerations, experimental considerations, and field associations of a variety of igneous rock types. Lecture, discussion sessions, and laboratory. Prerequisite: 315, 415.

413-3 Quantitative Methods of Geology. An introduction to quantitative methods in a geological and earth sciences context. Topics introduced include sampling plans for geologic studies, non-parametric test 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.

414-3 Paleobotany. (See Plant Biology 414.)

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 or 205b.

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.

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.

420-3 Petroleum Geology. The geological occurrences 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.

421-3 Organic Geochemistry. The nature, origin and fate of natural and artificial organic materials in rocks and sediments. Topics include characterization of fossil fuels using biological marker compounds, petroleum source rock evaluation, and organic pollutants in the environment. Prerequisite: 325 or consent of instructor.

425-4 Invertebrate Paleontology. Principles of paleontology and a survey of the important invertebrate phyla and their fossil representatives. Laboratory. Field trips required. Prerequisite: 221, a biology course.

428-3 Paleoecology and Environments of Deposition. Characteristics, distribution, and classification of recent and ancient environments. Criteria for recognizing ancient environments. Sedimentological and paleoecological approaches. Recognition of ancient environments and environmental associations. Laboratory. Field trips required. Prerequisite: 425, 325, or concurrent enrollment.

435-3 Solid-Earth Geophysics. Earth's size, shape, mass, age, composition, and internal structure are reviewed in detail as understood from its volcanism, gravity and magnetic fields, seismicity, and motion of continents and ocean basins; plate tectonics. Prerequisite: 302, Mathematics 150, or consent of instructor.

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.

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.

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.

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.

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 $150, supplies $6. Prerequisite: 302, 315; 450 recommended.

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.

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.

466-3 Tectonics. Fundamentals of geodynamics applied to plate tectonics: mantle composition and rheology, deformation of the lithosphere, structural characteristics of plate margins, stability of triple junctions, diachronous tectonics, and orogenesis will be examined in detail. Prerequisite: 302, Mathematics 150, or consent of instructor.

470-3 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.

474-3 Geomorphology. Study of erosional and depositional processes operating at the earth's surface and landforms resulting from these processes. Relationship of processes and landforms to the geologic framework is examined. Laboratory. Prerequisite: 220.

476-3 Quaternary Geology. Methods used to identify, map, date and correlate Quaternary deposits and interpret Quaternary history. Covers glacial, fluvial, coastal, lacustrine and eolian chronologies, oxygen-isotope records from ocean sediments and continental ice cores, volcanic activity, and Quaternary climate change. Field trips required. Prerequisite: 220, 221 or consent of instructor; 474 recommended.

478-4 Environmental Geology. Application of principles of geomorphology and Quaternary to environmental problems and geologic hazards. Lectures and case studies emphasize neotectonics, volcanic hazards, landslides and other mass movements, floods river channel changes, and coastal erosion. Laboratory exercises focus on techniques for identification, mapping, and analysis of geologic hazards. Prerequisite: 474. 476 recommended.

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 half-day field trips.

481-3 Sedimentary Basin Analysis. The use of stratigraphy, structure, sedimentology and geophysics to determine the paleogeographic evolution of sedimentary basins. Topics include the study of the relationships between host strata and both primary and post-depositional non-renewable resources, plate tectonics and basin evolution and subsurface geologic methods. Prerequisite: consent of instructor.

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.

Health Care Management (Major, Courses)

The Health Care Management major is designed to provide course work and experience in the areas of management and supervision for individuals who have training in health-oriented fields from colleges and universities, technical institutes, community colleges, proprietary institutions, or military technical schools. Graduates from diploma programs also may be eligible for admission.

This major builds upon many career specialties including dental hygiene, dental technology, laboratory technology, medical assisting, medical corps, medical records, medical service corps, mortuary science, nursing, physical therapist assistant, radiologic technology, and respiratory therapy.

The Capstone Option is available to eligible students who have obtained an Associate in Applied Science, or its equivalent, and maintained a gpa of at least 2.25 in all accredited work prior to obtaining the associates. Application to the Capstone Option must be made no later than the end of the student's first semester. More information about the Capstone Option can be found in Chapter 4.

Graduates may obtain management and supervisory positions in various health and medical care facilities such as hospitals, nursing homes, public health departments, voluntary health agencies, and health care training institutions.

Bachelor of Science Degree, College of Technical Careers

General Education Requirements		46
Requirements for Major in Health Care Management		48
Core Requirements: Advanced Technical Studies 364, 383, 416, and one of the following 332, 421	12	
Fifteen hours selected from Health Care Management 380, 381, 382, 384, 385, 388, and Advanced Technical Studies 412	15	
Twelve hours of internship, independent study or approved equivalent	12	
Nine hours of health care management electives approved by the adviser	9	
Approved Career Electives		26
Total		120

Courses (HCM)

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 preceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail.

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. This course may be classified as independent study. Prerequisite: consent of instructor.

380-3 Seminar in Health Care Services. Seminar on the various existing and emerging issues which affect control and implementation of health care services to consumers. Topics include but are not limited to ethics, professionalism, credentialling, marketing, and future trends. Senior status or consent of instructor is required for registration.

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 Equipment and Materials Management in Health Facilities. A focus on the preparation of 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.
388-3 Legal Aspects of Health Care. A study 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.
398-3 Risk Management in Health Care Organizations. A study of the process and principles of risk management in health facilities. This course demonstrates methods used in controlling, reducing, or eliminating financial loss in health care facilities due to employee negligence, medical mal-practice, workman's compensation and property loss. It examines pertinent legal principles, occupational health and safety, insurance, and related case studies. Prerequisite: junior standing and permission of instructor. Restricted to Health Care Management majors.
399-3 The U.S. Health Care System. A study of the major components which comprise the U.S. health care system. This course will focus primarily on basic terminology, history, settings, personnel and utilization of services.
413-3 Nursing Home Management. A study of the principles of nursing home management which examines administrative and staffing functions relating to clients, community, public policy, programming, and financing. Not for graduate credit. Prerequisite: junior standing or consent of department.

Health Education and Recreation (Department)

(SEE INDIVIDUAL MAJORS LISTED UNDER HEALTH EDUCATION AND RECREATION.)

Health Education (Major, Courses)

Health Education offers two specializations within the health education major and two programs of minimal professional preparation. The two specializations are:

1. Community Health Education. For those planning to conduct health education and health promotion activities in non-classroom settings.
2. School Health Education. For those planning to teach health education in the secondary schools.

The two minimal professional preparations are:

1. School Health Education. For those planning to teach or supervise health education in the secondary schools.
2. 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.

A 2.25 grade point average is required for admission into the undergraduate health education program.

Psychomotor and verbal skills are required for students enrolled in Health Education 334 and 434. If questions arise concerning an individual student's ability in these areas, an assessment will be made prior to the end of the first week of the semester to determine whether the individual student possesses the necessary skills to remain in the course. The final decision will be made by the first aid coordinator in Health Education.

A student in the community health education specialization must have a 2.5 grade point average in the major before clearance to do an internship. A student in the school health education specialization must have a 2.5 grade point average in the major before clearance to do student teaching.

GEE 201, under General Education Area E, is required for all undergraduate health education majors. In addition, Allied Health Careers 141, or its equivalent, is a prerequisite to admission to the undergraduate program.

A *C* or better grade is required for all major courses in the undergraduate health education program.

Bachelor of Science Degree, College of Education

HEALTH EDUCATION MAJOR — COMMUNITY HEALTH EDUCATION SPECIALIZATION

General Education Requirements 47
GEE 201 must be included in general education
Requirements for Major in Health Education 39
Health Education 301, 305, 311, 312, 326, 330, 355, 401, 405, 407, 490-6, 491
Recommended Health Education Electives 9
Electives 25
Total 120

HEALTH EDUCATION MAJOR — SCHOOL HEALTH EDUCATION SPECIALIZATION

General Education Requirements 47
Must include GEB 114, 202, and 301; GEC 213; GED 101 and 102; GED 152 or 153; GEE 201.
Requirements for Major in Health Education 33
Health Education 301, 305, 312, 326, 355, 405, 407, 491 and 9 hours from 313, 330, 334 or 401
Professional Education Requirements 28
(See Teacher Education Program, Chapter 3.)
Electives 12
Total 120

The two minimal professional preparation requirements for Illinois teachers are:

School Health Education: Health Education 301, 305, 355, 491 and three courses from the following: 311, 312, 330, 334, 401, 405 or 410, 407, 461, 488

Driver Education: Health Education 302S, 313S, 442S, 443S, plus three hours of electives from the following: 334, 445, 470S, 480S

Courses (HED)

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.

310-6 Emergency Medical Technician. Upon successful completion of a national examination, meets the formal requirements and certification for those who want to become an Emergency Medical Technician. The course is concerned with cognitive and practical experiences. Triage, vehicle extrication, emergency room observation, and driving an ambulance experiences conducted outside the normal class meeting times are required. Students will be required to pay a laboratory fee of approximately $25. Prerequisite: restricted to written consent of course coordinator.

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.
326-3 Evaluation in Health Education. Principles and methods for monitoring the implementation of health education and for assessing its impact. Development and selection of valid and reliable measures. Use of standardized scores and other appropriate statistics. Applications in classroom and community settings.
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 advertising in health and medicine; cultists' and faddists' effect on consumer health.
334-3 First Aid and CPR. Provides students with first aid and cardiopulmonary resuscitation knowledge and skill competencies necessary to care for injuries and provide assistance in emergencies. The course can lead to certification in American Red Cross Standard First Aid Responding to Emergencies (RTE) and Cardiopulmonary Resuscitation. American Red Cross services and materials fee payable to local Red Cross chapter collected in class. Students will be required to pay a laboratory fee of $5.
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.
400E-2 to 3 Health Appraisal of School Children - Special Topics. Includes the screening, testing, and evaluation for numerous health conditions related to hearing, vision, the cardiovascular system, skin, spine, and such diseases as diabetes, tuberculosis, herpes, and other such ailments. Included will be classroom lectures and presentations, a supervised practicum, and all students will develop a viable program in a particular problem area in a public school program.
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.
403-3 Health Advocate Training. Provides students with knowledge and skills in the areas of peer health education, health advocacy, and referral. Instruction includes health care information from a wellness point of view. Prepares students for practicum in health advocate program. Credit will not count toward a master's degree in health education. Prerequisite: consent of instructor.
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.
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.
411-6 Emergency Medical Technician in the Wilderness. Placement of trained emergency medical technicians into a wilderness situation and having them adopt previously learned skills and newly developed skills. Prerequisite: 310 or 434.
430-3 Health and Injury Control in a Work Setting. (Same as Industrial Technology 430.) Assesses the health and injury control programs present in a work setting. Emphasis given to employee programs in health, wellness, and injury control that are effective. Field trips to work sites are included.
434-4 Advanced First Aid and Emergency Care. Meets the needs of those in positions where a complexity of first aid emergency care procedures are needed. American Red Cross and American Heart Association certification may be obtained. Materials purchased from the American Red Cross and/or the American Heart Association are required in this course. Consent of instructor required.
440-3 Health Issues in Aging. Students enrolled in the course will be involved in a wide variety of learning activities focusing on health needs of the elderly. The course is designed for students who have a special interest in health implications of aging.
441-3 Women's Health. The course deals with a wide variety of health concerns of American women as consumer in the current health marketplace. Major categories of topics include health products, health services, and sources of health information of particular interest to women. Emphasis is also placed on current health related issues of women. The major purpose of the course is to provide a basis for informed decision-making by the female consumer.
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. Prerequisite: 442S or consent of instructor.
444-3 Modern Gerontology. (Same as Rehabilitation 405.) This multidisciplinary course in Gerontology is a survey of various disciplines which contribute to a body of knowledge vital to working, performing research, and teaching in an aging society.
445-3 Advanced Driver Education Instructor Training. Prepares prospective instructors of advanced driving techniques. Emphasis is placed upon safe driving practices, vehicle dynamics, emergency vehicle operation, in-car response to simulated driving emergencies, and instructional techniques. Prerequisite: consent of instructor.
446-4 Motorcycle Rider Education Instructor Training. Provides prospective teachers with on-cycle teaching experience with beginner riders. Addresses program administration, scheduling, public information techniques, equipment procurement, evaluation and instructional technology. Certification as Motorcycle Rider Course Instructor can be obtained. Materials purchased from the Motorcycle Safety Foundation are required in this course. Prerequisite: consent of instructor.
450-3 Health Programs in Elementary Schools. Orientation of teachers to health programs and learning strategies. Designed for elementary education majors.
455-3 Computer Applications in Health Education. Designed for students with little or no previous experience with computers. The course will be applications oriented, with an introduction to the potential uses of computers in the field of health education.
461-1 to 12 Health Education Workshop. 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.
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 Strategies. This course is designed for graduate students who are teaching assistants in the Department of Health Education. The purpose of the course is to enhance professional skills of those who are responsible for teaching health education, general education, and first aid.
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.
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.
488-3 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.
496-4 Industrial Hygiene. Provides a background in the recognition, evaluation, and control of toxic materials and hazardous physical agents in the work environment. Prerequisite: 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, dieticians, therapists, pharmacists, social workers, and related professionals.

History (Department, Major, Courses)

A major in history consists of thirty-three semester hours of history courses in addition to general education requirements. Students who plan advanced study

in preparation for college teaching or other professional work are advised to take added work.

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. In every case, transfer students must have taken at least 18 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) and should be distributed chronologically as well as geographically. Students must also complete a minimum of four courses at the 400 level and they must write a research paper in history. The latter usually is done in History 492, which also meets the College of Liberal Arts Writing-Across-the-Curriculum (WAC) requirement.

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 2.5 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

General Education Requirements 46
College of Liberal Arts Academic Requirements (See Chapter 3.) ..... (4) + 8-14
Requirements for Major in History ..... (3) + 36[1]
History 205a,b or equivalent 6
History 300 and GEB 301 or equivalent ..... (3) + 3
History 492 or 495 or equivalent 3-4
History electives, distributed in two fields of history 20-23
Electives 27-31
These may include 31 hours in professional education for teacher certification.[2]
Total 121

Bachelor of Science Degree, College of Education

General Education Requirements ..... 46[2]
Must include GEB 114, 202; GEC 213; GED 101 and 102; GED 152 or 153.
Requirements for Major in History ..... (3) + 36[1]
History 205a,b and two additional world history courses[3] 12-14
History 300, GEB 301 and three additional U.S. history courses ..... (3) + 11-13
History 492 or 495 or equivalent 3-4
History electives 2-9
Professional Education Requirements 31
(See Teacher Education Program, Chapter 3.)

Curriculum and Instruction 469 is required.

Electives	7
Total	120

[1]At least twelve hours must be taken at the 400 level.
[2]Students in the College of Liberal Arts seeking teacher certification should select courses in the major as described under the College of Education.
[3]World history study should include at least three hours other than European and U.S. history.

Minor

A minor in history consists of 18 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 nine semester hours in history at Southern Illinois University at Carbondale.

Courses (HIST)

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.
300-3 The Origins of Modern America, 1492-1877. A general survey of political, social, and economic development of the United States from 1492 to 1877.
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.
311-3 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.
315-3 Medieval 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.
320-3 Early Modern Europe. The development of Europe from the Renaissance through the Age of the French Revolution.
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.
324-3 Women in European Society: 1600 to Present. (Same as Women's Studies 348.) The legal, social, economic, and political position of women in European society during the past 350 years are examined against the backdrop of industrialization, political democratization, world wars, and totalitarianism. How women participated in, reacted to, and were affected by this transformation are the major themes of the course. Contemporary writings as well as historical works will be utilized.
325-3 Europe Since 1815. The development of Europe from the Age of the French Revolution to the present day.
330-6 (3, 3) English History. (a) England to 1688; **(b)** England since 1688. Political, social, economic, and cultural history of England.
336-3 Twentieth-Century Dictatorships and Global Conflict 1919-1945. The emergence of the Axis dictatorships in Europe and the Far East, their ideology, expansion, aggression and their defeat in World War II.
338-3 Eastern Europe. An historical survey of the East European area from the Baltic to the Balkans, with emphasis on the modern era.
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 in American History. An introduction to the causes and consequences of the American Revolution with special focus on the political principles contained in the Declaration of Independence and the Constitution and the effects these documents have had on American history.
354-3 The Contemporary United States. 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.
355-2 to 3 The Radical View in American History. A study of American radicalism from the revolution to the present.
361-3 Race and History in the United States. (Same as Black American Studies 360.) This account of racial attitudes and race relations begins with the 16th century European racial experience and covers subsequent developments in the U.S. to the present time. The problem of race is treated in its several dimensions, but principal emphasis falls upon the historical consequences of Caucasian confrontations with blacks, Hispanics, and native Americans.

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.
366-3 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.
369-3 History of the American Family. (Same as Women's Studies 346.) 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.
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.
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.
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 problems 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.
395-3 Honors. Great ideas and works of history, with discussion of conflicting interpretation of major historical problems. Prerequisite: junior standing and consent of department.
411-3 Ancient Greece. The history and culture of ancient Greece. The approach is interdisciplinary, with readings drawn from ancient historians, documents, and inscriptions. The lectures will make use of the visual evidence, including architectural remains and archaeological artifacts.
412-3 Ancient Rome. The history and culture of ancient Rome. The approach is interdisciplinary, with readings drawn from ancient historians, documents, and inscriptions. The lectures will make much use of the visual evidence, including architectural remains and archaeological artifacts.
413-6 (3,3) Medieval Society. (a) The Early Middle Ages. A.D. 400-1000; **(b)** The Late Middle Ages, A.D. 1000-1400. An examination of the distinctive elements of medieval European civilization. The first semester will consider the transition from ancient to medieval society and the gradual development of a new social and economic regime. The second semester will be devoted to a study of the full development of that new regime, its flowering in the 13th century and the crisis of the 14th century.
418-3 Renaissance. The focus 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.
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.
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.
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.
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.
425-6 (3, 3) Twentieth Century Europe. (a) Era of the World Wars; **(b)** Since 1945. Political, social, cultural and economic development of the major European states during the present century.
432-3 History of France. Social, economic, political, and intellectual evolution from medieval origins to the present day. French contributions to western culture.
433-3 History of Germany. German state and society from the Middle Ages to the present day.
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.
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.

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.
442-6 (3, 3) English History and Culture. **(a)** from 1660 to 1780; **(b)**1780 to 1914. An examination of English society and values in novels, essays, memoirs and paintings. The first semester analyzes social and political stability, secularization, economic transformations, and foundations of empire. The second semester investigates industrialization, urbanization, the democratization of politics, the growth of empire and changing roles for women and the family. Prerequisite: 330b or consent of instructor.
443-3 Twentieth Century England. The social, economic and political development of England in the twentieth century.
450-6 (3, 3) Early America. The evolution of American society from European settlement through the Age of Jefferson, with special emphasis on social and political institutions and thoughts.
451-3 United States History, 1815-1850. The struggle for democratic institutions and the emergence of sectional conflict in the Jacksonian Era.
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) United States History, 1896-1945. **(a)** 1896-1921; **(b)** 1921-1945. The history of the United States since the 1890's with emphasis upon politics, political ideas and diplomacy.
454-(3,3) Topics in United States History, 1945 to the Present. **(a)** 1945-1963; **(b)** 1963-present. An in-depth examination of the social, economic, political, and cultural changes in the United States since 1945, focusing on such topics as the Cold War, changes in the lives of women and minorities, the Vietnam war, the social movements of the 1960s, the "imperial" presidency, and the "Reagan Revolution".
460-6 (3, 3) Social History of the United States. **(a)** to 1860; **(b)** since 1860. The historical development of relationships among America's various ethnic, religious, racial, economic, and sexual groups.
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.
462-3 History of American Health and Medicine. Readings and discussion about the development of modern medicine as it affected patients and doctors in the United States. Health care will be traced historically, with discussions of the development of medical science as well as medical organizations and institutions.
463-6 (3, 3) History of American Diplomacy. **(a)** To 1900; **(b)** Since 1900. General consideration of American foreign policy and the emergence of the United States as world power.
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)** Trans-Appalachian Frontier; **(b)** Trans-Mississippi Frontier. The American frontier and its impact on American society from the colonial period to the 20th century.
467-3 History of American Thought to 1860. The principal intellectual currents in American thought and culture from the 17th Century through the mid-19th Century. Major themes include the intellectual origins and manifestations of Puritanism, the Enlightenment, and Romanticism.
469-3 Darwin and the Darwinian World. Readings and discussion on the impact of Charles Darwin on American thought and culture. Focus areas include religion, social ethics, political criticism, social critics, economics, the genteel tradition, utopian writers, race, and imperialism.
470-6 (3, 3) Continuity and Change in Latin America. **(a)** To 1825; **(b)** Since 1825. The interaction of economic forces and intellectual currents with Latin American social structures and political institutions, from pre-Columbian times to the present.
474-3 Andean South America. The political, economic, social, and cultural development of the Andean nations from pre-Columbian times to the present.
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.
484-3 History of Central Asia. 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.
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 the present.
492-3 Historical Research and Writing. Methods of historical investigation, criticism, and composition. Restricted to undergraduate majors in history. Not for graduate credit. Fulfills the CoLA WAC requirement.
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.
496-1 to 9 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, historic sites, and museums. Only three hours may be applied to the major and six hours toward the M.A. degree. Prerequisite: consent of 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 accompanying 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.

Industrial Technology (Major, Courses)

The industrial technology major has as its objective the training of qualified personnel who can develop and direct the production and distribution of products and services. There are two specializations: manufacturing technology and mining technology; however, the mining technology specialization is presently inactive.

The major is designed to to prepare management-oriented technical professionals in the economic-enterprise system. Industrial technology professionals will be involved with:

1. The application of significant knowledge of theories, concepts, and principles found in the humanities and the social and behavioral sciences, including a thorough grounding in communication skills.
2. The understanding and ability to apply principles and concepts of mathematical and physical sciences.
3. The application of concepts derived from, and current skills developed in, a variety of technical disciplines including, but not limited to, robotics, processes, computer-aided manufacturing, quality control, motion and time study, plant layout, facilities planning, industrial safety, production and inventory control, human relations, and computer-aided drafting.

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. A graduate of a two-year industrially-oriented occupational program, such as aviation, construction, drafting, data processing, electronics, machine tool, mechanical, and mining may have an appropriate 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 possible through cooperative work experience provided meaningful employment is available.

A Capstone option may be available in the industrial technology major and is explained in Chapter 4 of this bulletin. 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 are qualified. 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.

The industrial technology program is accredited by the National Association of Industrial Technology. For each curriculum, a minimum of 30 hours in industrial technology courses must be taken in residence at Southern Illinois University at Carbondale.

Bachelor of Science Degree, College of Engineering

INDUSTRIAL TECHNOLOGY MAJOR — MANUFACTURING TECHNOLOGY SPECIALIZATION

The manufacturing technology specialization is designed to prepare graduates for supervisory and technical management positions in manufacturing. Curriculum requirements are broad based to enable the graduate to obtain employment in manufacturing areas such as quality control, processes, safety, methods analysis, and computer-aided manufacturing/robotics. The Capstone option feature is available for students and is described in Chapter 4 of this bulletin.

General Education Requirements	46
Requirements for Major in Industrial Technology	74
Core Requirements	25-26
Physics 203a,b, 253a,b	(6) + 2
Mathematics 111	(3) + 2
Mathematics 140 or Industrial Technology 307	3-4
Psychology 323 or Industrial Technology 240	3
Computer Science 212 or Industrial Technology 270	3
Industrial Technology 105, 305, 382, 475	12
Specialization in Manufacturing Technology	48-49
Industrial Technology 208, 375, 390, 392, 440, 445	18
Technical Electives	30-31
Total	120

INDUSTRIAL TECHNOLOGY MAJOR — MINING TECHNOLOGY SPECIALIZATION

The mining technology specialization is presently inactive. It is designed to prepare graduates for supervisory and technical positions in the mining industry. Course requirements are specifically planned to complement the mining technology background of the community college or technical institute associate degree graduate. The Capstone option feature is available for students and is described in Chapter 4 of this bulletin.

General Education Requirements	46
Requirements for Major in Industrial Technology	74
Core Requirements	26
Geology 220	(3)
Physics 203a,b, 253a,b	(6) + 2
Mathematics 111	(3) + 2
Mathematics 140	4
Psychology 323	3
Computer Science 212	3
Industrial Technology 105, 305, 382, 475	12
Specialization in Mining Technology	48
Industrial Technology 320, 321, 360, 410, 420, 460	18
Engineering Technology 263	3
Technical Electives	27
Total	120

Courses (IT)

Safety glasses, a suitable scientific calculator, and textbooks are required for most of the following courses.

105-3 Computer-Aided Drafting. Basic principles of technical sketching including freehand sketching techniques, lettering, orthographic projection, pictoral sketching, auxiliary views, sectional views, dimensioning, tolerancing, fasteners, working drawing interpretation, and computer-aided drafting.
208-3 Fundamentals of Manufacturing Processes. Introduction to the basic processes, equipment, and material used in manufacturing. Includes plastics, metal removal, materials joining, casting, and some of the newer processes.
209-3 Manufacturing Process Laboratory. (Same as Engineering Technology 209.) Laboratory experiments to familiarize the student with the theory and operation of manufacturing processes. Laboratory. Prerequisite: 208 or consent of instructor.
240-3 First-Line Supervision. Analysis of problems of first-line supervisors. Topics include leadership, motivation, communication, grievances, training, discipline, and group and individual effectiveness, and labor relations.
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 60 Occupational Credit. For occupational credit earned at junior colleges and technical institutes. Credit is established by departmental evaluation.
270-3 Computational Methods for Industrial Technologists. Introduces the student to a problem-oriented computer language that is used to solve relevant problems that occur in industry.
305-3 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.
307-3 Applied Calculus for Technology. Applying mathematical techniques to technology problems, including the analysis, formulation, and problem solutions. Techniques of differentiation, max-min problems, and elementary techniques of integration. Prerequisite: Mathematics 111 or equivalent.
319-2 to 16 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. Mandatory Pass/Fail.
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.
321-3 Underground Mining. Study of terminology, mining methods, equipment selection, ventilation, haulage, coal handling, and safety parameters associated with underground coal extraction technology.
330-1 Current Mining Problems. Guest lecturers provide timely information on current mining technology problems. Special investigations of mining techniques. Emphasis on state and federal regulations.
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 powerplants.
342-1 to 12 Industrial Technology Cooperative Education. Supervised work experience in industry with an emphasis on manufacturing. Students will gain first-hand knowledge of the various aspects of Industrial Technology. Work experience is supervised by a faculty. Reports will be required from the student and employer. Hours may count toward technical electives. Mandatory Pass/Fail. Prerequisite: junior standing.
351-3 Industrial Metrology. Methods and equipment of industrial measurement and inspection. Includes 3-D measuring machines, lasers, and non-destructive testing.
360-3 Mine Production and Inventory Control. Study of mine production and inventory control through the exploration, development, and production phases. Includes topics in planning, process control equipment, scheduling, inventory control, and cost analysis.
362-3 Industrial Packaging. Analysis of packing principles, equipment, and processes such as paper, glass, metal containers, and plastics.
375-3 Production and Inventory Control. Production and inventory control systems. Includes topics in forecasting, master production scheduling, material requirements planning, capacity requirements planning, inventory management, production activity control, and applicable operations research techniques.
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.
390-3 Cost Estimating. (Same as Engineering Technology 390.) Study of the techniques of cost estimation for products, processes, equipment, projects, and systems. Prerequisite: Mathematics 111.
392-3 Facilities Planning. The analysis of data to produce a complex facilities plan which maximizes the efficiency of the operation. Methods and equipment of material handling are an important part of the course. Students are assigned an extensive facilities planning project. Prerequisite: 208 and 382 or consent of instructor.
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. Prerequisite: consent of instructor.

410-3 Mining Reclamation. Study of reclamation techniques associated with underground and surface coal mining. Emphasis is placed on the integration and cost trade-offs associated with coal extraction and reclamation as well as federal, state, and local regulations. Prerequisite: consent of instructor.
420-3 Coal Preparation and Analysis. Study of coal preparation and blending in association with coal analysis. Design and operation of preparation plants including water management, waste management, coal storage, loading, and transportation.
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: 208, 209.
430-3 Health and Injury Control in a Work Setting. (Same as Health Education 430.) Assesses the health and injury control programs present in a work setting. Emphasis given to employee programs in health, wellness, and injury control that are effective. Field trips to work sites are included.
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 which simulate existing conditions in industry. Students present their solutions to the class and to the instructor in a formal manner. Prerequisite: 375, 382, 392 and 475.
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.
445-3 Computer-Aided Manufacturing. (Same as Engineering Technology 445.) Introduction to the use of computers in the manufacture of products. Includes the study of direct and computer numerical control of machine tools as well as interaction with process planning, inventory control, and quality control. Laboratory. Prerequisite: 208, computer programming, or consent of instructor.
455-3 Industrial Robotics. (Same as Engineering Technology 455.) Study of industrial robots and their applications; pendant and numerical programming of robots. Robotics design including tactile and visual sensors. Technical and psychological problems of justification, installation, and management of robotic systems. Prerequisite: 445.
460-3 Mining Technology. A capstone course to include all aspects of coal mining. Group projects are assigned on the design and development of a mine with emphasis on cost, productivity, yield, equipment, and staffing. Prerequisite: 320, 321, 420, or consent of instructor.
475-3 Quality Control. Use of statistical quality control to improve work product quality. Topics include histogram, Pareto diagrams, control charts, acceptance sampling, process capability, cause and effect diagrams, and reliability. Prerequisite: senior standing.
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.
494-1 to 9 (A-K-1 hour each) Applied Project. Selected applied project. Requires the students to apply knowledge learned in various courses to the solution of industrial problems. **(a)** Motion and time study, **(b)** cost estimating, **(c)** materials handling and plant layout, **(d)** production and inventory control, **(e)** quality control, **(f)** manufacturing policy, **(h)** fundamentals of industrials processes, **(i)** industrial safety, **(k)** computer-aided manufacturing. Not for graduate credit. Prerequisite: consent of instructor.

Interior Design (Major, Courses)

The Interior Design program is continually responsive to the demands and standards of qualification of the profession and its related fields. A four-year curriculum is offered resulting in a Bachelor of Science degree in Interior Design. The program holds first professional degree accreditation from the Foundation of Interior Design Education Research.

Students receive a comprehensive, interdisciplinary education in preparation for design and administrative positions in the fields of residential, commercial, and contract design. The successful candidate is qualified to practice professionally in a wide range of positions with interior and architecture firms, corporations, government agencies, or independently.

The approach toward interior design education at SIUC provides a comprehensive technical emphasis as the basis for problem solving. At the core of the required course work are classes and studios which provide knowledge of design and the design process including programming, schematic design, design development, and construction documents. Support courses to complement and enhance the core consist of drawing, presentation, furniture, materials, interior de-

sign history, lighting, plumbing, acoustics, mechanical systems, and professional practice and current topics.

To support students in their educational endeavors, program facilities include a resource library complete with sample room, current manufacturers' catalogs, professional periodicals, and a computer laboratory for investigations in computer-aided drafting and design.

While facilities are provided for use, costs for supplies, individual equipment, and required field trips necessary to the successful completion of the program are borne by the student. Due to the variation in individual materials use, it is impossible to predict the exact costs for each student. A reasonable estimate of additional expenses is in the range of $600 per academic year.

Bachelor of Science Degree, College of Technical Careers

General Education requirements 46
As per university requirements for baccalaureate degrees, but must include GED 153-3, GEC 204-3 and GEC 205-3
Requirements for Major in Interior Design 83
Art 110, 120 6
Workforce Education and Development 335 2
Interior Design 111, 112, 121, 122, 211, 231, 232, 251, 252, 271, 272, 274, 351, 371, 372, 391, 392, 432, 451, 471, 491, 492, and 3 hours professional elective at the 300- or 400-level as approved by the advisor ..... 75[1]
Total 129

[1]All major courses require a minimum grade of **C**.

Courses (ID)

111-4 Basic Design Studio I. Introduction to the elements and principles of design: point, line, balance, form, rhythm, and texture through the application of purposeful experiments in 2D/3D models, both traditionally created and computer generated. Lecture and studio.

112-4 Basic Design Studio II. Introduction to the elements and principles of design: scale, proportion, emphasis, light, color, and unity. Elements and principles previously learned will be used extensively. Experimentation using 2D and 3D models, both traditionally created and computer generated, will be applied to course work. Lecture and Studio. Prerequisite: 111, 121.

121-3 Basic Interior Design Drawing I. The development of drawing skills for interior spaces to include lettering, linework, geometric construction, orthographic projections, sections, axonometric drawings, shades and shadows, systems graphics, interior elevations and computer-aided design. Lecture and studio.

122-3 Basic Interior Design Drawing II. Three dimensional visualization drawing methods, both interior and exterior, with an emphasis on spacial quality. Various methods of visualization will be studied, to include both manual and computer assisted. Lecture and studio. Prerequisite: 111 and 121.

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 of 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.

211-3 Color Theory in Design Applications. The study of color theory and application relative to the interior environment. Emphasis will be placed on human response to color, science of color/light and color/pigment, principles of color design, and implementation through design projects. Prerequisite: 111, 112, 252.

231-3 History of Interior Design and Architecture I. Summary of interiors, their furnishings, and buildings from antiquity to 19th Century including the socio-economic, psychological and philosophical rationales. Lecture. Prerequisite: GEC 204.

232-3 History of Interior Design and Architecture II. Summary of interiors, their furnishings, and buildings from the 19th Century to the present from the point-of-view of socio-economic, psychological and philosophical rationales. Lecture. Prerequisite: 231.

251-3 Presentation, Media and Technique. The use of drawing as a means to communicate concepts and ideas and the methods, materials and media used to present interior design projects. Lecture and studio. Prerequisite: 112, 122, AD 120.

252-3 Interior Design Programming I. Introduction to the design process used in interior design with an emphasis on the study of the methods for gathering data and analysis of project information for design synthesis. Lecture and studio. Prerequisite: 112 and 122 or concurrent enrollment.
271-3 Interior Construction I. Introduction and development of the construction knowledge and drafting skills needed to produce a set of architectural drawings for a single-story structure. Emphasis will be placed upon materials and methods of interior construction in addition to the preparation of working drawings. Lecture and studio. Prerequisite: 112 and 122.
272-3 Interior Construction II. The development of interior construction knowledge and drafting skills to solve interior architectural problems in new construction with an emphasis upon highrise structures. Special concern in the adherence to building, fire and handicapped accessibility codes are to be observed in the preparation of the working drawings. The use of computer-aided drafting and systems drafting will be utilized. Lecture and studio. Prerequisite: 271 and concurrent enrollment in 274.
274-3 Materials and Specifications. A study of materials and finishes applicable to the interior environment including production methods, limitations, quality control, application, and uses. Emphasis is on specification for commercial interiors and liability issues for interior designers. Lecture. Prerequisite: concurrent enrollment in 272.
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 of 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.
300-1 to 3 Resources in Practice. Participation in the operation of the division resource library provides students the opportunity to become familiar with resources used in the profession. Emphasis is placed on gaining knowledge of practices necessary to competently organize and maintain a professional working resource facility. Prerequisite: consent of instructor.
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 preceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail.
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. This course may be classified as independent study. Prerequisite: consent of instructor.
351-3 Furniture Design. Study of furniture through evaluation of historic furnishings as well as contemporary furnishings. Issues include ergonomics, anthropometrics, quality of materials, and methods of construction. Lecture. Prerequisite: 232, 272, 274, and VES 335.
370-1 to 3 Special Topics in Lighting Design. A seminar course which explores current issues in the area of lighting design. Emphasis is placed upon supervised readings, discussion and creative projects directed toward individual research. Prerequisite: 371 and consent of instructor.
371-3 Lighting and Acoustical Systems. The study of lighting and acoustics as major tools in designing interior spaces through actual problem solving. Emphasis is on task, ambient, and specialty lighting as well as noise reduction within and between spaces. Lecture. Prerequisite: GED 107, ID 272 or concurrent enrollment.
372-3 Mechanical and Plumbing Systems. Study of interior architectural mechanical equipment as it relates to the proximate environment. Emphasis is on heating, cooling, ventilation, and plumbing systems with attendant building codes. Lecture. Prerequisite: GED 107, ID 272 or concurrent enrollment.
390-1 to 4 Special Project in Interior Design. Investigation of a project-type specialization. Includes application of design process principles with emphasis on programming and preliminary design. Studio. Prerequisite: 391 and consent of instructor.
391-4 Interior Design Studio I. Interior design of the personal environment at the individual level. Emphasis is on residential design. Lecture and studio. Prerequisite: 251, 252, 272, 274 or consent of coordinator.
392-4 Interior Design Studio II. Interior design of the environment at the multi-user level when client/owner and client/user are different. Emphasis is on public access spaces, e.g., restaurants, stores, museums, professional offices, and future facilities. Lecture and studio. Prerequisite: 391.
432-3 Interior Design Seminar. Study of the current trends and topics in interior design. Not for graduate credit. Prerequisite: 351, 371, 491.
451-3 Interior Design Programming II. Preliminary stage of senior design project includes project research, data gathering, and analysis. Lecture and studio. Not for graduate credit. Prerequisite: 392.
471-3 Professional Practice. Introduction to the organization, management, and practice of Architecture and Interior Design as a business and profession. Emphasis is placed on the range of services provided, professional ethics, business management, marketing, contracts and negotiations, design cost analysis/control, and other aspects of professional practice. Lecture. Not for graduate credit. Prerequisite: 392 or consent of coordinator.
491-4 Interior Design Studio III. Interior design of the environment at the corporate or institutional level where client/owner and client/user are significantly different. Emphasis is on design. Furniture systems, particularly in the area of office planning, are to be included. Facility types include financial

institutions and institutional facilities. Lecture and studio. Not for graduate credit. Prerequisite: 351, 371 and 392 or concurrent enrollment.

492-4 Interior Design Studio IV. Completion of an interior design project of approximately 5,000 square feet as initiated in ID 451. Emphasis is on design process from schematic design through completion of annotated construction document with estimate of cost. Facility types include Health Care or Recreation/Hospitality. Lecture and studio. Not for graduate credit. Prerequisite: 451 and 491.

Journalism (School, Major, Courses)

The School of Journalism prepares academically sound, technically proficient, and professionally responsible graduates for a wide range of mass communication careers. Depending on level and direction of studies, career tracks include: news-editorial and advertising work with newspapers, magazines, and other print and electronic news media; a variety of positions in the advertising industry; and research. The journalism major also provides well-balanced preparation for graduate studies in mass communication, the social sciences, and law.

The School of Journalism is accredited by the Accrediting Council on Education in Journalism and Mass Communication, the agency formally recognized by the Council on Postsecondary Accreditation and the U.S. Office of Education.

Prospective students should be aware that excellent written and oral language skills are essential for successful careers in the journalism field. With this in mind, the School of Journalism has adopted admission and retention standards that emphasize language facility and academic proficiency.

Admission Standards

To be admitted to the School of Journalism, applicants must meet the following requirements:

Beginning freshmen must meet the University's regular admission requirements, as described in Chapter 2.

Transfer students who have completed fewer than 26 semester hours must meet the requirements for beginning freshmen and have earned an overall collegiate grade point average of at least 2.25 (4.0 scale).

Transfer students who have completed more than 26 semester hours must have earned an overall collegiate grade point average of at least 2.25.

Students currently enrolled or who were previously enrolled at SIUC in another major must meet the same requirements as transfer students. If they have completed more than 26 semester hours they must have an overall grade point average of at least 2.25. Students with fewer than 26 semester hours must meet beginning freshman requirements as well as have a grade point of at least 2.25.

Grade point average is calculated for purposes of admission to the School of Journalism by using all grades earned at SIUC and other collegiate institutions. This includes repeated courses.

Retention Policies

Students majoring in journalism must meet these retention requirements to continue their enrollment in the major:

Students who have completed 26 semester hours or more must have an accumulative SIU grade point average of 2.25 or higher.

A grade of *C* or better is required in all journalism courses taken in order to be counted toward the major and to satisfy prerequisite requirements.

Students must complete successfully a Language Skills Examination as a prerequisite to a number of required courses in the journalism major.

Continuing, re-entering, or transfer students who have earned more than 45 semester hours of credit must complete the Language Skills Examination successfully during their first semester of enrollment in the School of Journalism. Beginning freshmen are encouraged to take this examination as soon as possible

and no later than their third semester of attendance. No student will be permitted more than four attempts to complete this requirement. Each student is responsible for any fee that is required for taking this examination.

Students who are unable to meet these retention requirements will be placed in probationary status within the School of Journalism. These students will be given one semester to correct their deficiency prior to dismissal. Those who are dismissed from the School of Journalism but are eligible to continue in the University will be placed in the Undergraduate Academic Services or they may request permission to enter another collegiate unit.

Other Requirements

Journalism students must demonstrate typing ability of 30 words per minute by receiving a passing grade in a typing course or on a typing examination specified by the School of Journalism before registering for Journalism 309 or 310. Those who cannot meet this requirement must enroll in a typing course and receive a grade of *C* or better.

Fees will be assessed for supplies and materials in some courses. Students should inquire about amounts before registering.

Subject to the approval of the School's director, undergraduate students may receive as many as 9 hours of journalism credit toward their degrees for courses not taken in residence.

Prior to the junior year the student must decide upon a specialization described below or obtain approval of a faculty sponsor and the school's director for another coherent combination of courses tailored to individual interest from the general requirements of the School of Journalism.

Bachelor of Science Degree, College of Mass Communication and Media Arts

The academic requirements for the Bachelor of Science degree in journalism include 30 to 36 hours in journalism as approved by the School of Journalism and 26 to 29 hours in junior-senior level course 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. Students who select a minor within the College of Liberal Arts or another approved area may include those hours in their 26 to 29 junior-senior level hours.

While most students are best served by one of the following specializations, other programs of study in the major may be designed to meet special needs. Individualized programs might address such student interests as agricultural journalism, international communication, mass media institutions, and communication research. Such a specialized program of study must be sponsored by a journalism faculty member and approved by the director. Further information on specialized programs of study is available from the academic adviser.

ADVERTISING SPECIALIZATION

Students in the advertising specialization develop abilities to analyze problems and identify the roles advertising and other communications can play in solving them; develop tools for planning and executing advertising campaigns; and develop applied skills in verbal and visual communication. This program helps prepare students to enter a wide variety of positions with advertising agencies, in the communications media, and with retail or manufacturing firms.

NEWS-EDITORIAL SPECIALIZATION

Students in the news-editorial specialization receive realistic training in the theory and practice of identifying, gathering, processing, and interpreting information for the mass media. Areas of study include:

Newspaper: reporting, writing, and editing for daily, weekly, and suburban newspapers and news agencies; and news-related fields.

Magazines: writing, editing, and managing general and specialized magazines and similar publications.

Public affairs: news skills and values applied to relationships between mass media and information sources in government, business, and other institutions. Techniques, problems, and responsibilities of public information are studied.

General Education Requirements		46
Requirements for a Major in Journalism		30
Journalism 300	3	
Specialization Requirements	27-33	
Advertising Specialization: 309, 370, 372, 374, 405, 476, 479, plus journalism electives to bring total to 27-33.		
News-Editorial Specialization: 310, 311, 312, 442; two of 390, 411, and a choice of 391 or 462; one of 400, 401, 405, 452, 479, plus journalism electives to bring total to 27-33.		
Minor		15
Approved Non-Journalism Electives		29
Must include Marketing 304 for Advertising Specialization		
Total		120

Minor

A total of 15 hours of journalism courses approved by the journalism academic advisor constitutes a minor for nonjournalism majors.

Courses (JRNL)

160-3 Mass Communication in Society. Acquaints non-journalism students with the history and development of the American mass media. Examines media roles in society, potential for development, weak points, and the roles consumers can and should play regarding the media. This course may not be applied toward major or minor credit in Journalism.

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.

309-3 Advertising Copywriting. Study and application of the principles of writing the verbal elements of advertising messages. Types of advertising include the following: retail, fashion, mail-order, catalog, direct-mail, trade and industrial, and outdoor. Students learn to write for both print and broadcast media. Prerequisite: successful completion of language skills examination and typing speed of at least thirty words per minute.

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 and successful completion of the language skills examination.

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 and satisfactory score on language skills examination.

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. 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. Laboratory fee.

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.

360-3 Magazine Management and Production. The day-to-day operations of a magazine and the techniques involved in producing a magazine. A combination of lectures and workshops in which the

professor will deal individually with student projects. Each student will produce an original magazine idea and bring it to, at least, the semi-comprehensive stage of development.

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 and successful completion of the language skills examination.

374-3 Creating Advertising Messages. 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. Prerequisite: 309, 370, and satisfactory score on language skills examination.

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.

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.

405-3 Introduction to Mass Communication Research. Overview of communication research methods including practical training in interpretation and presentation of social science data. Introduction to survey research methods, experimental design, and use of computers for analysis of data. Presentation of data in journalistic forms and social science reports. Not for graduate credit. Prerequisite: 309 or 310 or consent of instructor.

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. Prerequisite: 311.

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.

452-3 Ethics and News Media. An exploration of ethical problems confronting journalists and an evaluation of how these problems are handled by the media through a focus on current examples. The implications to the media and to society of successes and failures in meeting ethical concerns are discussed. Prerequisite: senior standing.

461-3 Specialized Publications. Functions, operations, and problems of industrial, trade, business, professional, literary, and other specialized publications. Management, personnel, and production practices. Use of research in solving problems and setting policies.

462-3 Magazine Article Writing. Principles, problems, and techniques involved in producing freelance and staff-written magazine articles with an emphasis on determining the relationship between article content and audience market. Prerequisite: 311.

476-3 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. Prerequisite: 372 and 374.

479-3 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 3, 1 to 3, 1 to 3) Readings. Supervised readings on subject matter not covered in regularly scheduled courses. Undergraduates limited to maximum 2 credits per semester. Graduates limited to maximum 3 credits per semester. Prerequisite: written consent of instructor and area head.

494-1 to 3 Practicum. Study, observation, and participation in publication or broadcast activities. Prerequisite: consent of instructor and area head. Mandatory Pass/Fail for undergraduates.

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.

Law Enforcement (Program, Major)

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.

Full transfer of credit is guaranteed to students who have completed certificate programs in law enforcement at cooperating community colleges.

This program is served by an advisory committee of professionals representing law enforcement, corrections, law, and private security. The program benefits from the expertise of each member as they may advise the program on courses of study relevant to the ever changing criminal justice field.

This associate degree program can be completed in two academic years plus a summer semester at Southern Illinois University at Carbondale or in a combination with community college or other acceptable transcripted extra-institutional educational experience.

Associate in Applied Science Degree, College of Technical Careers

Requirements for Major in Law Enforcement

GEB 108, 114, 202	9	
GED 101, 102, 153	9	
Law Enforcement 103, 105, 108, 115, 205, 209, 210, 220, 221, 395	36	
Electives	9	
Total		63

Courses (LE)

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 correctional services and law enforcement programs. 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. Participation is required in many group exercises that may be scheduled at times other than regularly scheduled class time. These group exercises should help the student gain a working knowledge of treatment methods and group processes. 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. Participation in group exercises at times other than regularly scheduled class time is required. Lecture three hours.

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 of 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.

203-3 Introduction to Security. An introduction to private security and loss prevention issues with directed emphasis on identification and protection of private assets. Topics and subjects that will be examined include historical development of the private security industry; civil law; industrial, institutional and retail security; physical security applications; environmental design (barriers, lighting, intrusion detection systems); and access control.

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.

218-3 Introduction to Corrections. Will enable the student to develop an understanding of current problems (drugs, racial tension, subcultures) in correctional institutions; foundation of corrections in America; effect of recent court decisions and inmate population on correctional institutions; relationship of correctional services to the criminal justice system. Lecture three hours.

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 108.

271-3 The Security Survey: Loss Prevention Applications. The emphasis of this course is to identify various operations within the private sector that could be enhanced when appropriate internal and/or external security, loss prevention and risk control measures are introduced. The function and role of the contemporary loss prevention manager will be examined relative to their contribution to margins. Prerequisite: 203 or consent of instructor.

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 of 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.

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 preceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail.

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. This course may be classified as independent study. Prerequisite: consent of instructor.

395-9 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 for eight weeks.) Prerequisite: sophomore standing and fifteen hours of credit in correctional services/law enforcement courses.

Liberal Arts (College, Courses)

Courses (LAC)

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 presentation. Recommended for students who want to explore how the law works in society, and who want to consider possible careers in law.

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.

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.

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.

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.

388-1 to 36 Study Abroad. Provides credit toward the undergraduate degree for study at accredited foreign institutions or approved overseas programs. Final determination of credit is made on the student's completion of the work. One to eighteen hours may be earned per semester, one to nine hours may be earned for summer session. Prerequisite: one year of residence at Southern Illinois University at Carbondale, good academic standing, and prior approval of the major department and the College of Liberal Arts.

Linguistics (Department, Major, Course)

Language is both a means of social communication and a unique property of the human mind. As such, linguistics -- the scientific study of language -- has a broad appeal to students who are interested in the social sciences, the humanities, computer science, or the life sciences. The undergraduate program in linguistics helps students understand the diversity of human modes of communication, the social and psychological origins of language, and the processes by which languages are learned and lost. A major in linguistics thus provides students with a focused but broad-based education in the liberal arts. In addition, the way linguists think about their subject has greatly influenced the development of other disciplines such as anthropology, computer science, language teaching, philosophy, psychology, and sociology. A degree in linguistics will thus be of great value to students intending to pursue careers in those fields.

Graduates of the linguistics program who enter the work force immediately after graduating find employment in a wide variety of settings: as teachers, writers, translators, editors, civil servants, community developers, etc. Graduates who go on to advanced study find themselves well prepared for professional careers in fields such as linguistics, language teaching, educational administration, language planning, language research, speech pathology, lexicography, publishing, and the foreign service.

The major in linguistics consists of a minimum of 34 semester hours comprising a core of basic courses in general linguistics plus a variety of electives. The core of the linguistic major consists of 22 semester hours in Linguistics 104, 200,

300, 402a, 405, 406, and 408. Majors are required to obtain a grade of *C* or better in each of these core courses. In addition, 12 semester hours of electives must be selected from other linguistic courses offered at the 400 level. Students who have received credit for 200 and 300 will not receive additional credit for 401.

Since the study of linguistics involves familiarity with languages other than one's native language, knowledge of a foreign language is a requirement for a degree in linguistics. This requirement, which also satisfies the foreign language requirement of the College of Liberal Arts, involves either one year of an uncommon or non-Western language or two years of any foreign language. International students whose native language is not English and who have successfully satisfied the requirement of the Office of Admissions and Records for English language proficiency will also have satisfied the Linguistics Department foreign language requirement by offering English as their foreign language.

Bachelor of Arts Degree, College of Liberal Arts

General Education Requirements	46
College of Liberal Arts Academic Requirements (See Chapter 3.)	(4) + 8-14
Requirements for Major in Linguistics	34
Core courses: Linguistics 104, 200, 300, 402a, 405, 406, and 408 each with a grade of *C* or better	22
Electives: Courses selected from 400-level linguistics courses	12
Foreign Language Requirements (satisfies the College foreign language requirement)	10-16
Electives	10-24
Total	120

Minor

The minor in linguistics (a minimum of 17 hours) draws upon the core courses of the Department of Linguistics. Students are introduced 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 communication disorders and sciences.

Course requirements for the minor in linguistics are 104, 200, and 300, plus at least three courses (9 semester hours) from among the following: 402a, 402b, 404, 405, 406, 408, 415, 440, 450, 453, and 497.

Courses (LING)

100-3 Speaking and Listening in English as a Second Language. Oral conversational and academic English. An elective for students who do not speak English as their first language. Classes are offered at beginning, intermediate and advanced levels. May be repeated at three different levels for a maximum of 9 credit hours. Mandatory Pass/Fail.

101-3 Basic English Composition for Foreign Students. Instruction in the basic methods of English composition, focusing on the particular problems of non-native speakers of English. Basic English grammar, and techniques of analyzing, summarizing, outlining, documenting, synthesizing, and revising. Equivalent to GED 101. Credit may be given on passing a proficiency exam. A service charge of not more than $5 may be made.

104-2 Grammar in Language. Description and explanation of the major grammatical categories and structures found in a wide variety of languages, including English. Consideration of the role of language structures in such topics as the nature, origin, acquisition, and variation of language. Course is designed to give students insight into the basic concepts of grammar and show their interrelationship, importance, and functioning in human language.

105-3 Intermediate English Composition for Foreign Students. Instruction in academic and technical writing for students whose native language is not English. Includes practice in library research, analyzing, summarizing, business and technical writing, and writing of reports, research papers, and projects. A service charge of not more than $5 may be made. Prerequisite: 101 or equivalent with a minimum grade of *C*, or pass the Linguistics 101 proficiency exam.

200-3 Introduction to the Nature of Language. An exploration of social and psychological dimensions of language. Topics include first and second language learning, change in language, the interaction of language and culture, and the importance of language for human development and communication. A variety of the world's languages is examined with particular emphasis on English and its role in international science, trade, technology, and government.

290-3 Advanced English Composition for Foreign Students. Designed for students whose native language is not English who need further work in English composition. Includes practice in library research, and focuses on writing research papers. A service charge of not more than $5 may be made. Prerequisite: 105 or equivalent with a minimum grade of *C*; graduate students by placement test.

300-3 Introduction to Descriptive Linguistics. An introductory survey of descriptive linguistics: assumptions, methods, goals, terminology, and data manipulation. Prerequisite: 200 or consent of instructor.

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.

341-3 Introduction to Intercultural Communication. (See Speech Communication 341.)

402-6 (3, 3) Phonetics. (a) Theory and practice of articulatory phonetics. Prerequisite: 200 or consent of instructor. **(b)** Theory and practice of instrumental phonetics. Prerequisite: 402a.

403-3 English Phonology. Study of English phonology, both American and British, including phonetics, phonemics, and prosodics. Prerequisite: 401 and 402a, or consent of instructor.

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.

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: 401 and 402a or consent of instructor.

406-3 Introduction to Historical Linguistics. An introductory survey of historical and comparative linguistics, including terminology, assumptions, and methods of investigation. Prerequisite: 405 or consent of instructor; 408 recommended.

408-4 Syntactic Theory. This course is an introduction to the major concepts and issues in generative grammar. Data from English and other languages will be examined and students will be provided with numerous opportunities to solve problems in syntax. Students will also be given an opportunity to carry out an individual project in syntax. Prerequisite: 300 or 401 or consent of instructor.

409-3 Linguistic Structure of Modern German. (Same as German 411.) 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.

411-3 The Linguistic Structure of Chinese. (Same as Chinese 410.) 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 Linguistics 401.

412-3 The Linguistic Structure of Japanese. (Same as Japanese 410.) Phonology and syntax of standard Japanese. Special emphasis on contrastive analysis between Japanese and English. Typological similarities and lexical borrowings between Chinese and Japanese. Prerequisite: one year of Japanese or Linguistics 401.

413-3 Linguistic Structure of French. (Same as French 411.) Study of the phonology, morphology, and syntax of modern spoken and written French, stressing interference areas for English speakers in learning French. Prerequisite: French 320a and 321 or equivalent.

414-3 Linguistic Structure of Spanish. (Same as Spanish 411.) Theory and practice in Spanish pronunciation and study of Spanish grammatical structure, in contrast to English, with application to teaching.

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 instructor.

425-3 Philosophy of Language. (Same as Philosophy 425.) An investigation into the way language is based on the nature of human cognitive structures, including metaphor, prototypes, frames, and various kinds of imaginative structures. Central topics include the grounding of meaning and conceptual structure in bodily experience, the role of imagination in reasoning, and the metaphorical nature of thought.

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 instructor.

431-3 Structure of the English Verb. An analysis of the English verb system. Special study of the modals and non-finites.

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 instructor.

442-3 Language Planning. Survey of the field of language planning: definitions and typologies, language problems, language treatment, attitudes and beliefs about language, relations between language planning processes and other kinds of social and economic planning, linguistic innovations and other processes of language change, implementation of language policies. Prerequisite: 300 and 402a, or consent of instructor.

445-4 Psycholinguistics. (Same as Psychology 445.) A broad spectrum introduction to psycholinguistics. Topics to be covered include general methodology for the study of psycholinguistics, the nature of language, theories of human communication, language comprehension and production, first and second language acquisition, meaning and thought, natural animal communication systems, and language and the brain.

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 instructor.

453-4 Methods in Teaching English to Speakers of Other Languages. Introduces the basic methods of TESOL in teaching/learning situations both in the US and abroad. Presents theoretical premises and background from the fields of general linguistics, second language acquisition, psycholinguistics, sociolinguistics, and education. Not for graduate credit. Prerequisite: 200 or consent of instructor and undergraduate status.

454-3 Observation and Practice in Teaching English to Speakers of Other Languages. Focused observations of a wide variety of classes in English as a second language and in foreign languages. Some supervised teaching or tutoring. Analysis of textbooks for TESOL. Not for graduate credit. Prerequisite: 453 or consent of instructor, and undergraduate status.

455-3 Materials in Teaching English to Speakers of Other Languages. A review of principles underlying the use and development of materials for TESOL. Class activities and individual projects deal with evaluation, adaptation, and design of materials. Not for graduate credit. Prerequisite: 453 or consent of instructor and undergraduate status.

456-3 Contrastive and Error Analysis. Examination of the interference of other languages 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. Enrollment limited to undergraduates. Prerequisite: 453 or consent of instructor.

489-1 Seminar in Developmental Psycho-Neurolinguistics. Explores current issues in the area of developmental psycholinguistics and neurolinguistics. Included will be normal language use and development, as well as disordered language use and development; foreign/second as well as first language will be included. Development will be interpreted to mean life span. Prerequisite: consent of instructor.

497-1 to 8 Readings in Linguistics. Directed readings in selected topics. Prerequisite: consent of instructor and undergraduate status.

Management (Department, Major, Courses)

The Department of Management prepares students for careers in both profit and non-profit organizations in such fields as business and industry, government, education, and health. The curriculum places emphasis on the development of knowledge and skills necessary for effective problem solving and decision making to achieve the goals of the organization and manage resources effectively.

The curriculum prepares students through a variety of disciplines and offers valuable knowledge, tools, and techniques that provide a broad exposure to the key function of management. The courses, designed to impact technical, technological, and human resources management skills, prepare students to manage modern organizations successfully. A choice of two specializations within the management major is available to students. They are management and entrepreneurship.

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 carefully selecting courses, students can satisfy the general requirements of a management major, and orient their programs of study toward career tracks in general management, production-operations, management information systems, or personnel management. In each case, opportunities exist to pursue interests in administrative

applications to a wider variety of organizational settings including government, health, and education, as well as small and large business.

Entrepreneurship. Entrepreneurship is the acceptance of risk in the management and direction of a venture. This specialization explores the special problems associated with the operation of an independent and often small business venture. Students may select courses relating to the special problems and techniques appropriate to the task of venture management in preparation for ownership and management roles in their own or a family business venture. By careful selection of courses from different areas of management, students can select the appropriate courses that will prepare them for their future positions in manufacturing, service, or retailing organizations. Research and consulting positions are also alternatives available to students with this specialization as well as the direction of new ventures for larger organizations.

Students majoring in other areas such as accounting, finance, or marketing can obtain a double major in management which will facilitate upward mobility in their careers.

Bachelor of Science Degree, College of Business and Administration

General Education Requirements	46
Professional Business Core (See Chapter 3.)	41
Requirements for Major in Management	21
Specializations (Choose one)	
Management.	
Required: Management 341, 345, 352, 361, 431	
Elective: Select two from Management 385, 453, 456, 474, 483, 485	
Entrepreneurship.	
Required: Management 350, 471, Finance 350, Marketing 350	
Electives: Select three from 341, 345, 361, 485, or an approved sequence such as insurance or real estate	
Electives	12
Total	120

Courses (MGMT)

170-3 Introduction to Business. 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.

202-3 Business Communications. Creating and managing administrative communications including the analysis, planning, and practice of composing different types of internal and external communications in various administrative and business contexts. Prerequisite: GED 101 and 102, or equivalent.

208-3 Business Data Analysis. 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 139 or equivalent.

301-3 Supervisory Management. 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 are necessary. Does not satisfy a College of Business and Administration requirement. Prerequisite: junior standing or consent of department.

304-3 Introduction to Management. 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: junior standing.

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, production, inventory, quality, labor, and cost

control. Prerequisite: 208, Mathematics 140, Computer Science 212 or Computer Information Processing 229 or equivalent and junior standing or consent of department.

341-3 Organizational Behavior. 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, 304, and junior standing or consent of department.

345-3 Computer Information 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: 208, Mathematics 140, Computer Science 212 or Computer Information Processing 229, junior standing and consent of department and must be a business (not pre-business) major.

350-3 Small Business Management. 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: junior standing or consent of department.

352-3 Quantitative Models for Systems Analysis. 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, queuing models and simulation. Prerequisite: 208, 318, Mathematics 140 or equivalent and Computer Science 212 or Computer Information Processing 229 or equivalent, junior standing or consent of department.

361-3 Applied Managerial Research. Design of research to assist managerial decision making. Concepts, tools, sources, and methods of research. Planning, collecting, organizing, evaluating, and presenting research data. Prerequisite: 202, 208, 304, and junior standing or consent of department.

385-3 Personnel and Human Resources 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.

420-3 Database Management. Database planning; entity-relationship diagrams; relationed, network, and hierarchical data models; normalization theory; query languages; distributed databases; applications development.

421-3 Automated Information System Applications Development. Principles of information engineering; information strategy planning; business area analysis and design; construction; quality assurance; use of CASE technology.

431-3 Organizational Design and Structures. 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.

453-3 Advanced Quantitative Models for Systems Analysis. 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 Building Decision Support and Expert Systems. Investigation of selected systems and computer based methods for aiding management decision-making. Topics include systems analysis applications, simulation, and decision models. Prerequisite: 345.

471-3 Seminar in Entrepreneurship. Investigation of selected special or advanced topics in seminar format. Topics may include but are not limited to entrepreneurship, small business analysis, or topics related to the ownership and management of a business. Activities will include library and field research, data analysis, report writing, and active participation in seminar presentations and discussions. Designed particularly for the student who has completed the three small business courses numbered 350 and has discussed personal small business or entrepreneurial objectives with the instructor prior to registration. Prerequisite: consent of department.

474-3 Management's 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.

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 330, Marketing 304, or equivalent and must be a business (not prebusiness) major.

483-3 Advanced Production-Operations Management. In-depth study of analytical planning, scheduling, and control theory and techniques in the context of production/operations systems. Case exercises will be utilized to illustrate production management problems and methods. Prerequisite: 318, 352, junior standing or consent of department and must be a business (not prebusiness) major.

485-3 Organizational Change and 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 organizations' human resources to best ad-

vantage. Prerequisite: 341, junior standing or consent of department and must be a business (not prebusiness) major.

489-3 Seminar. Investigation of selected special or advanced topics in seminar format. Topics may include, but are not limited to: management responsibility in society, wage and salary administration, health services administration, data processing management, current issues in management, etc. Prerequisite: consent of department and must be a business (not prebusiness) major.

491-1 to 6 Independent Study. 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 and must be a business (not prebusiness) major.

495-3 Internship in Management. 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 and must be a business (not prebusiness) major. Mandatory Pass/Fail.

Marketing (Department, Major, Courses)

Marketing involves a system of interrelated activities used to develop, price, promote and distribute goods and services to customers, creating exchanges that satisfy individual and organizational goals. It is the marketing function that links the production of goods and services with their use. Effective marketing is essential to organizations in their efforts to achieve a competitive advantage that can be sustained. Without this, growth and survival of the organization are threatened.

The bachelor's degree program in marketing encompasses all of the key marketing functions. Graduates are fully equipped to take advantage of challenging and dynamic career opportunities in large and small businesses, in government, and in non-profit organizations. Careers in the field of marketing cut across many industries and involve a variety of organizations. Some of the career options open to the marketing major include industrial selling and sales management, retailing, advertising, marketing research, distribution, international marketing and marketing management.

A *C* or better grade is required for all marketing majors in all marketing courses taken to satisfy major requirements.

Bachelor of Science Degree, College of Business and Administration

General Education Requirements		46
Professional Business Core (See Chapter 3.)		41
Requirements for Major in Marketing		24
Marketing 305, 329, 363, 390, 493	15	
Marketing Electives	9	
Electives		9
Total		120

Courses (MKTG)

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. A *C* or better grade required in 304 before enrolling in any course for which 304 is a prerequisite. Prerequisite: junior standing or higher.

305-3 Consumer Behavior. 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.

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 the 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.

336-3 International Business. Business activities of firms and social organizations are examined in an international environment. The course will examine the fundamental concepts, and principles of international business. It will focus on the international environment as the international dimension of marketing, financial, accounting, managerial, and production functions. Prerequisite: 304, junior standing or higher.

350-3 Small Business Marketing. 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. Not approved as elective for marketing majors. Prerequisite: junior standing or higher.
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.
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 Economics 208 or equivalent and junior standing or higher and must be a business (not prebusiness) major or consent of 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.
435-3 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 and junior standing or higher.
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 Management 304 or 301 and junior standing or higher.
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.
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.
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 363 and junior standing or higher.
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) and junior standing or higher and must be a business (not prebusiness) major or consent of department.
495-3 Internship in Marketing. Provides the student an opportunity to participate in an internship program coinciding with areas of interest. Not for graduate credit. Mandatory Pass/Fail. Prerequisite: 304, 305, 363 and consent of department.
499-1 to 6 (1 to 3, 1 to 3) Marketing Insights. Provides the student an opportunity to participate in an independent study, or seminar coinciding with areas of interest. May be repeated for credit only when topics vary. Not for graduate credit. Prerequisite: junior standing or higher, and approval of the instructor and the department chair in the semester prior to enrollment and must be a business (not prebusiness) major or consent of department.

Mass Communication and Media Arts (College, Courses)

Courses (MCMA)

197-3 Learning to Learn. A college-level freshman-sophomore seminar to stress the necessity of communication skills and the development of professional attitudes and work habits.
397-1 to 6 Special Interdisciplinary Study. Designed to offer and test new and experimental courses and series of courses within the College of Mass Communication and Media Arts. Prerequisite: consent of instructor.
497-1 to 6 Special Interdisciplinary Study. Designed to offer and test new and experimental courses and series of courses within the College of Mass Communication and Media Arts. Prerequisite: consent of instructor.

Mathematics (Department, Major, Courses)

Opportunities for mathematics majors have expanded greatly in recent years. Mathematics majors become actuaries, statisticians, mathematical computer scientists, applied mathematicians, operations research analysts and mathemat

ical researchers. Mathematics is growing and changing and holds fascinating challenges for inquiring minds.

As an undergraduate mathematics major at Southern Illinois University at Carbondale, you may work toward a Bachelor of Science degree in the College of Science or the College of Education, or a Bachelor of Arts degree in the College of Liberal Arts. The classes in the mathematics major curriculum are small and are taught by senior faculty members. A strong support system of college and departmental advisement is available to you at SIUC throughout the year.

A student planning for employment with a bachelor's degree should consider a minor or a second major in some field in which mathematics is applied. Many students earn a double major in mathematics and computer science. All of the bachelor's degree programs in mathematics, including the Bachelor of Science degree in the College of Education, have sufficient flexibility to allow you to prepare for alternate career possibilities.

To prepare to major in mathematics at SIUC, you should have a solid high school preparation in algebra, geometry in two and three dimensions, and trigonometry, including a substantial study of functions and graphing. Students transferring to SIUC after two years at a community college should have completed the calculus sequence and, if possible, linear algebra and a course in Pascal or Fortran programming.

As a mathematics major at SIUC, you will meet with a Department of Mathematics advisor at least once each semester for planning and departmental approval of courses appropriate to your goals and interests.

A grade of C or better is required in every mathematics course used to satisfy departmental requirements.

Double majors in mathematics and related fields.

Special provisions are made for students to earn a double major in mathematics and a field in which mathematics is extensively applied. The courses Math 361, 447, 449, 471, 472, and 475 carry credit in both mathematics and computer science. See Bachelor of Arts Degree, College of Liberal Arts for specific requirements in mathematics for students who also earn a major or minor in computer science.

For students who also have a major in engineering, physics, or chemistry, the requirements for a major in mathematics are Math 150, 221, 250, 251, 305 and five additional mathematics courses numbered above 300, including at least three courses above 400, and including two of the three areas of algebra, analysis, probability and statistics. The courses must be approved by a mathematics department adviser.

Students majoring in business and administration with a secondary concentration in mathematics may obtain a second major in mathematics. The requirements are Mathematics 150, 250, 251, 221, and five approved mathematics courses at the 300-400 level, of which at least four are at the 400-level. Recommended courses for this program are Mathematics 361, 471, 472, 483, 484, Management 352, 453, 456; Economics 315, 465; Finance 310, 331, and 341.

Option in Statistics

A student majoring in mathematics in the College of Science or the College of Liberal Arts may choose to concentrate in statistics. For this option, the 300- and 400-level course requirements are: 417; 305 or 472; one of 352, 450, 452, or 455; 380 or 480; 483; and at least two of 473, 481, 484, 485.

Bachelor of Science Degree, College of Science

General Education Requirements		46[1]
Academic College Requirements		16
Physical Sciences (not GEA)	6[1]	
Biological Sciences (not GEA)	6[1]	
Foreign Language (French, German, or Russian recommended)	(4)[2] + 4	
Requirements for Major in Mathematics		41
Mathematics 150, 221, 250, 251	(3)[1] + 11	
Computer Science 202 or approved substitute	3	
At least one course from each of the following groups: (One area may be waived for students who have a minor in computer science)	12	
Group A: Algebra/Discrete Mathematics/Linear Algebra: 319, 419, 421, 447, 449		
Group B: Analysis: 352, 450, 452, 455		
Group C: Applied Mathematics/Numerical Analysis: 305, 361, 471, 472, 475a		
Group D: Probability/Statistics: 380, 480, 483		
Five additional courses in mathematics numbered above 299 (excluding 311, 314, 319e, 352e, 400, 411, 412, 457, 458)	15	
Each student's program must include at least 5 mathematics courses at the 400 level.		
Courses taken Pass/Fail will not count toward the major.		
Electives		17
Total		120

[1]The 46 hour requirement is reduced by taking science and mathematics courses which are approved substitutes for General Education requirements.
[2]Four hours of foreign language may be applied toward General Education requirements.

Bachelor of Arts Degree, College of Liberal Arts

General Education Requirements		46
Academic College Requirements		7
English Composition	3	
Foreign Language	(4) + 4	
Requirements for Major in Mathematics		41
Mathematics 150, 250, 251, 221	(3) + 11	
Computer Science 202 or approved substitute	3	
At least one course from each of the following groups: (One area may be waived for students who have a major or minor in computer science)	12	
Group A: Algebra/Discrete Mathematics/Linear Algebra: 319, 419, 421, 447, 449		
Group B: Analysis: 352, 450, 452, 455		
Group C: Applied Mathematics/Numerical Analysis: 305, 361, 471, 472, 475a		
Group D: Probability/Statistics: 380, 480, 483		
Five additional courses in mathematics numbered above 299 (excluding 311, 314, 319e, 352e, 400, 411, 412, 457, 458)	15	
Each student's program must include at least 5 mathematics courses at the 400 level		
Courses taken Pass/Fail will not count toward the major.		

Secondary Concentration Requirements 6-9

Six to nine hours approved by the Department of Mathematics in one of the following areas: engineering, computer science, physics, economics, business and administration. A minor in any department of the College of Liberal Arts or the College of Science may be substituted for this requirement.

Electives 17-20

Total 120

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 *C* in mathematics courses used to satisfy these requirements.

General Education Requirements ..... 46[1]

Must include GEB 114, 202, and 301; GEC 213; GED 101 and 102; GED 152 or 153; GEE 201

Requirements for Major in Mathematics 39

Mathematics 150, 250, 251 or 305 ..... (3) + 8

Mathematics 221 3

A student may take some of the above courses by proficiency examination.

Computer Science 202 or approved substitute 3

Mathematics 311, 319, (or 419), 335, and 352 (or 452) 13

Mathematics 319E and 352E; or Mathematics 302 2-3

At least 3 additional mathematics courses numbered above 399 9

Professional Education Requirement 28

See Teacher Education Program, Chapter 3.

Electives 7

Total 120

[1]See Catalog section titled Curriculum and Instruction 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, 314, 400, 411, or 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 314, 400, 411 or 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 311, 314, 400, 411, 412, 457, and 458). 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 395 and 495 are used for individual honors work for upper level undergraduates in mathematics.

Courses (MATH)

A hand-held calculator with function keys appropriate to the course is required of each student in 108, 109, 111, 114, 139, 140, 141, 150, 250, 251, 282, and 283. The student should consult the instructor of the course about appropriate calculators.

107-3 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. This course does not satisfy the general education mathematics requirement and it does not count toward the 120 hours needed for graduation. Mandatory Pass/Fail.

108-3 College Algebra. The algebra of functions (polynomials, rational, exponential, logarithmic), graphing, conic sections, solving equations including systems. Credit is not given for both 108 and 111. Prerequisite: GED 107 or two years of college preparatory mathematics including the content of algebra I and II.

109-3 Trigonometry and Analytic Geometry. Trigonometric and inverse trigonometric functions, complex numbers, conic sections, polar coordinates. Credit is not given for both 109 and 111. Prerequisite: 108 or equivalent.

110-3 Non-Technical Calculus. The elements of differentiation and integration. The emphasis is on the concepts and the power of the calculus rather than on technique. It is intended to provide an introduction to calculus for non-technical students. Prerequisite: 3 years of college preparatory mathematics, including the second year of high school algebra.

111-5 Precalculus. An intensive course in college algebra and trigonometry for students who plan to take Calculus I. The algebra of functions (polynomial, rational, exponential, logarithmic, trigonometric, inverse trigonometric), graphing, conic sections, solving equations including systems, complex numbers, polar coordinates. Not open to students with credit in 108 or 109. Prerequisite: three years of college preparatory mathematics, including algebra I, algebra II, and geometry.

113-3 Introduction to Contemporary Mathematics. Elementary mathematical principles as they relate to a variety of applications in contemporary society. Exponential growth, probability, geometrical ideas and other topics. Prerequisite: Mathematics 107 or 3 years of college preparatory high school mathematics, including geometry and intermediate algebra.

114-4 Algebraic and Arithmetic Systems. Whole numbers, integers, rational numbers, real numbers, numeration systems, algorithms, number theory, metric system, elementary algebra, probability. Successful completion of this course requires a passing grade on a basic skills test of minimal mathematical proficiency. This course can not be used to satisfy the mathematic requirement in General Education. Prerequisite: one year of high school algebra or equivalent.

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. Prerequisite: Mathematics 107 or two 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 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: Mathematics 107 or two 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 problems in the biological sciences into mathematical problems. Credit hours 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. If there is prior credit in 140 or 141 only 2 hours credit for 150 may be applied to graduation requirements. Prerequisite: 111 or equivalent with a grade of *C* or better.

215-3 Discrete Structures I. (Same as Computer Science 215.) Number systems and computer arithmetic. Sets, relations, and functions. Boolean algebra with applications to computer logic design. Elementary matrix operations. Combinations, permutations, and counting techniques. Prerequisite: 108 or equivalent.

221-3 Introduction to Linear Algebra. Vector spaces, linear functions, systems of equations, dimensions, determinants, eigenvalues, quadratic forms. Prerequisite: 150 with a grade of *C* or better.

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 infinite series. Prerequisite: 150 with a grade of *C* or better.

251-3 Calculus III. Further topics in calculus. Definite integrals over solid regions, applications of partial derivatives, vectors and vector operations, derivatives of vector functions, line integrals. Green's theorem. Prerequisite: 250 with a grade of *C* or better.

257-1 to 12 Concurrent 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.

282-3 Introduction to Statistics. Designed to introduce beginning students to basic concepts, techniques, and applications of statistics. Topics include the following: organization and display of data, measures of location and dispersion, elementary probability, statistical estimation, and parametric and nonparametric tests of hypotheses. Prerequisite: 108 or equivalent.

283-3 Introduction to Applied Statistics. This course is experiment motivated, uses real-work data, and computer analysis of data. Statistical concepts discussed are descriptive statistics, elementary probability, expectation, sampling distributions, statistical estimation and testing, confidence intervals, correlation and regression, and contingency tables. The student is given experience in writing reports of experiments. Prerequisite: 140.

302-3 Mathematical Communication and the Transition to Higher Mathematics. A course in communicating mathematical ideas with a special emphasis on reading, writing, and critiquing mathematical proofs. Topics covered include logic, proofs, set theory, relations, functions. Additional illustratory topics will be drawn from linear algebra, number theory, complex variables, and geometry. Prerequisite: Mathematics 221 and 250.

305-3 Introduction to Ordinary Differential Equations I. Solution techniques for differential equations with emphasis on second order equations, applications to physical sciences, series solutions. Prerequisite: 250 with a grade of *C* or better.

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.

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 in the College of Liberal Arts or in the College of the Science. Prerequisite: 319, 319E, and 335.

314-3 Geometry for Elementary Teachers. Congruence, similarity; parallelism, perpendicularity; measurement; area, volume; ratio and proportion; constructions; proof. 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, isomorphisms, Cayley's theorem, direct products, cosets, normal subgroups, factor groups, homomorphisms, rings, integral domains. Prerequisite: 221; plus for secondary education majors, 302 or concurrent enrollment in 319E.

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. Mandatory Pass/Fail.

335-3 Concepts of Geometry. Introduction to the foundations of Euclidean and non-Euclidean geometry with an emphasis on axiom systems, models, and counterexamples. Topics include metric geometry, betweenness, plane separation, congruence, absolute plane geometry, the critical function, and parallelism. Prerequisite: 221 or 250; for secondary education majors concurrent enrollment in Mathematics 302 is highly recommended.

349-3 Introduction to Discrete Mathematics. Numbers, sets, relations, and functions; elementary enumeration; introduction to graph theory; logic, partially ordered sets and Boolean algebra; mathematical induction; recurrence relations. Prerequisite: 221 or consent of department.

352-3 Theory of Calculus. An introduction to understanding and writing proofs in mathematical analysis, through a careful study of limits, continuity, the derivative, and the integral. Prerequisite: 221, 250; plus for secondary education majors, 302 or concurrent enrollment in 352e.

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. Mandatory Pass/Fail.

361-3 Numerical Calculus. (Same as Computer Science 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: 221 and 250 and a working knowledge of FORTRAN.

380-3 Elements of Probability. Probability as a mathematical system. Axioms, permutations and combinations, random variables, generating functions, limit theorems, and Monte Carlo procedure. Prerequisite: 250 and Computer Science 202.

390-3 to 6 Topics in Contemporary Mathematics. Content will vary according to the instructor. The seminar will introduce students to new and developing areas of mathematics, such as Chaos,

Fractals, Algorithms, Fourier Analysis, Difference Equations, etc. Prerequisite: intended for students who have completed Mathematics 150, 221, 250 and either 251 or 305. Other prerequisites may apply. May be repeated as topics vary.

395-1 to 6 Readings in Mathematics. Supervised reading in selected subjects. Prerequisite: 3.00 grade point average in mathematics and consent of chairperson.

400-3 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. Does not count toward a mathematics major in the College of Liberal Arts or in the College of Science. Prerequisite: 319 and 352 or consent of instructor.

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.

406-3 Eigenfunction Analysis. Discrete and continuous models for the vibrating string; separation of variables and eigenfunction analysis; inner product spaces; operators on inner product spaces; the spectral theorem for Hermitian operators on finite dimensional spaces with applications; the Courant-Fisher max-min characterization of eigenvalues; the spectral theorem for compact Hermitian operators with applications to Sturm-Liouville boundary value problems and Fredholm integral equations. Prerequisite: 221 and 305.

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 equation. Prerequisite: 251, 305.

409-3 Introduction to Fourier Analysis. The Fourier synthesis and analysis equations for functions on the real line, the circle, the integers, and the regular N-gon; convolution; techniques for finding Fourier transforms; operators associated with Fourier analysis; the FFT and FHT algorithms and fast convolution; generalized functions; applications to probability, partial differential equations, linear systems, and numerical analysis. Prerequisite: 221 and 305.

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.

412-3 Problem Solving Approaches to Basic Mathematical Skills. Content of basic skills at all levels of education and the development of these skills from elementary school through college; emphasis on problem solving and problem solving techniques; determination of student skills and proficiency level. Credit may not be applied toward degree requirements in mathematics. Prerequisite: 314 or equivalent.

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.

419-3 Introduction to Abstract Algebra II. Solvable groups, maximal ideals, basis and dimension, elementary field extension theory, splitting fields, geometric constructions, elementary Galois theory, Galois group of a polynomial, solution of equations in radicals. Prerequisite: 319 or consent of instructor.

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.

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.

433-3 Introduction to Topology. Study of continuity, convergence, compactness, and completeness in the context of metric spaces. Prerequisite: 352 or consent of department.

435-3 Elementary Differential Geometry. An introduction to modern differential geometry through the study of curves and surfaces in 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: 221 and 251.

447-3 Introduction to Graph Theory. (Same as Computer Science 447.) Introduction to theory of graphs, digraphs, and networks and applications to electrical systems and computer science. Topics include blocks and cut-points, Eulerian graphs, trees, cycle and cocycle spaces, planarity and Kuratowski's Theorem, connectivity and Menger's Theorem, Hamiltonian graphs, colorability and Heawood's Theorem, flows in networks and Ford-Fulkerson Theorem, critical path analysis. Prerequisite: 349 or consent of instructor.

449-3 Introduction to Combinatorics. (Same as Computer Science 449.) An introduction to combinatorial mathematics with computing applications. Topics include selections and arrangements, generating functions, recursion, inclusion and exclusion, coding theory, block designs. Prerequisite: 349 or consent of instructor.

450-3 Methods of Advanced Calculus. Sequences and series of functions; partial differentiation; Jacobians; the implicit function theorem; the classical differential operators in general curvilinear coordinates; line, surface, and volume integrals, the divergence and Stokes' theorems; transformation of variables in multiple integrals; integrals containing a parameter. Prerequisite: 251.

452-3 Introduction to Analysis. A rigorous development of one-variable calculus concepts including the real numbers, sets, limits of sequences, continuity of functions, differentiation, Riemann-Stieltjes integration, series of functions at a more advanced level than 352. Prerequisite: 251.

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, residue theorem, conformal mapping. Prerequisite: 251.

457-3 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 department; Math 108 or equivalent.

458-3 Statistical Methods in Business and Industry. Basic probability concepts; random variables; univariate and joint distributions; Bernoulli, binomial, Poisson, normal, exponential, gamma, chi-square, t and F distributions; sampling distributions; estimation by the method of moments and the method of maximum likelihood; confidence intervals; hypothesis tests for normal, Bernoulli and Poisson distributions; simple regressions and analysis of variance problems. Prerequisite: 140 or equivalent and graduate standing in College of Business and Administration or the College of Engineering and Technology.

460-3 Transformation Geometry. Geometry as the study of properties invariant under congruences, similarities, affine transformations, and projectivities. Prerequisite: 221 and 319.

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 linear programming model. Development of the simplex method. Application of the model to various problems. Duality theory. Transportation. Assignment problems. Postoptimality analysis. Prerequisite: 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, optimal replacement policies for classes of failure distributions. Prerequisite: 480 or 483, or consent of department.

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. Prerequisite: (a) 221 and 250 and a working knowledge of FORTRAN; (b) 305 and 475a.

480-4 Introduction to Probability. A comprehensive introduction to probability theory at a level suited to 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 formulas, sums of independent random variables, the multivariate normal distributions, the central limit theorem, the weak and strong laws of large numbers. Prerequisite: 251.

481-3 Elements of Stochastic Processes. An introduction, including normal, Poisson, and Markov processes. Prerequisite: 380 or 480.

483-4 Mathematical Statistics in Engineering and Physical Sciences I. Introduction to statistical theory with applications in engineering and the physical sciences. Probability: axioms, distributions including noncentral distributions, moments and moment generating functions, order statistics. Statistical inference: point and interval estimation, testing hypotheses, likelihood ratio tests. Prerequisite: 250.

484-4 Mathematical Statistics in Engineering and Physical Sciences II. An introduction to linear models and the design of experiments with applications in engineering and the physical sciences. Analysis of the general linear model, basic designs and criteria, response surface analysis and factor analysis. Statistical computation. Prerequisite: 483 and 221, or consent of instructor.

485-3 Applied Statistical Analysis. Elements of survey sampling including simple random and stratified sampling, ratio and regression estimates; elements of nonparametric methods including the sign, Wilcoxon and Kruskal-Wallis tests; analysis of categorical data including loglinear models. Prerequisite: 480 or 483 or consent of instructor.

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.

Mechanical Engineering and Energy Processes (Department)

The Department of Mechanical Engineering and Energy Processes offers the Mechanical Engineering major which is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.

MECHANICAL ENGINEERING (Major, Courses)

Mechanical engineering is one of the most broadly based of the traditional engineering disciplines. Mechanical engineers design and develop a wide variety of systems for conversion, transmission, and utilization of energy; for material processing and handling and packaging; for transportation; for environmental control; and for many other purposes for the benefit of humanity. Therefore, the curriculum contains a broad foundation in mathematics and the basic and engineering sciences, followed by more concentrated study in energy and machine systems.

Mechanical engineers may be found in a variety of assignments including planning and design, research and development, supervision of installation and operation of complex systems, and management.

Bachelor of Science Degree, College of Engineering

General Education Requirements			31[1]
GEA: Substitute basic science			
GEB: GEB 105, 301, and one of 108, 114, 202 or 211		9[2,3]	
GEC: Select one of GEC 101, 102, or 208; plus 345 and either 122 or 330		9[2,3]	
GED: GED 101, 102, 153 and substitute mathematics		9	
GEE: two hours of health and two hours of physical education activity		4	
Requirements for Major in Mechanical Engineering			102
Basic Sciences		18	
Physics 205a,b; 255a,b	8		
Chemistry 222a and 222c	7		
GEA 115	3		
Mathematics Analysis		17	
Mathematics 150, 250, 251, 305	14		
Engineering 351	3		
Mechanical Engineering		67	
General: Engineering 102, 222, 361, 400	7		
Required Engineering Sciences[4]	29		
Engineering 260a,b, 300, 311, 312, 313 and 335; Mechanical Engineering 302, 310, and either 301 or 400			
Required Mixed Engineering Science/Design[5]	6		
Mechanical Engineering 470 and 475			
Required Engineering Design[4]	7		
Mechanical Engineering 402 and 443[6]			
Required Engineering Laboratory	3		
Mechanical Engineering 303 and either 401 or 403			
Elective Engineering Design Credit[4]	7		
Engineering Science Credit	5		
For Engineering Design and Engineering Science credit above, elect at least 12 hours of the following courses, such that the sum of *design* credit hours (shown in paren-			

theses) is not less than seven hours: Mechanical Engineering 404 (2 hours), 406 (2 hours), 408 (1 hour), 416 (1 hour), 430 (1 hour), 435 (2 hours), 436 (1 hour) 440 (2 hours), 442 (2.5 hours), 446 (2 hours), 472 (2 hours), 476 (2 hours)

Approved Technical Electives 3

Total 133

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[1]Courses required for the major will apply toward 15 hours of General Education, making a total of 46 in that area.
[2]Engineering requirements for GEB and GEC are more restrictive than those of the University as a whole.
[3]Transfer students holding an associate degree in a baccalaureate-oriented program must have a sequence of courses in social science or humanities terminated by a junior level course. See departmental adviser for an approved course. Students transferring from other programs or institutions will be required to (a) complete a course sequence in the humanities or social sciences which includes a junior level course or (b) meet the General Education requirements for engineering students.
[4]Engineering sciences have their roots in mathematics and basic sciences, but carry that knowledge toward creative design. Engineering design is the process of devising a system, component, or process using basic and engineering sciences, mathematics and creative thinking along with economic, safety, and environmental considerations.
[5]Mechanical Engineering 475 represents 2 hours of engineering design and 1 hour of engineering science credit. Mechanical Engineering 470 represents 2 hours of engineering science and 1 hour of engineering design credit.
[6]Mechanical Engineering 443 represents 3 hours of design credit and 1 hour of general engineering technical credit.

Courses (ME)

Safety glasses, an electronic calculator, and textbooks are required of all mechanical engineering students.

301-3 Engineering Thermodynamics II. Combined first and second law analysis; availability and reversability. Third Law. General thermodynamic relations. Reactive systems. Thermodynamic equilibrium. Phase Rule. Applications. Thermodynamics of one dimensional fluid flow. Prerequisite: Engineering 300.

302-3 Heat Transfer Fundamentals. Fundamentals of heat transfer by conduction, convection and radiation. Applications of theory to engineering systems. Prerequisite: Engineering 260b, 313 or concurrent enrollment.

303-2 Introductory Measurement, Instrumentation, and Device Control Laboratory. Experiments applicable to the use of modern microprocessor based electronic equipment for data acquisition, interpretation, and control in mechanical devices. Discussion of basic electronics applications. Prerequisite: Engineering 335.

310-3 Mechanisms/Kinematics. Introduction to the kinematics of machines. Topics include absolute and relative displacement, velocity, and acceleration and calculation methods. Applications include linkages, gears, gear train, cams, rotary to/from linear motion transformation mechanisms, steady-to-intermittent motion mechanisms. Introduction of general purpose program for modeling of mechanical systems. Prerequisite: Engineering 222 and 260b.

392-1 to 6 Mechanical Engineering Cooperative Education. Supervised work experience in industry, government or professional organization. Students work with on-site supervisor and faculty advisor. Reports are required from the student and the employer. Hours do not count toward degree requirements. Mandatory Pass/Fail. Prerequisite: sophomore standing.

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 and pressure sensors. Thermal measurements under transient and steady-state conditions. Applications include conduction, convection, and radiation experiments. Uncertainty analysis. The handling and reduction of data. Prerequisite: 302 and Engineering 222.

402-3 Heat Exchange Equipment Design. Engineering design of heat exchange equipment such as boilers, evaporators, cooling towers, furnaces and systems involving combinations of conduction, convection and radiation mechanisms. Emphasis is placed on application of basic principles of heat transfer and fluid mechanics to the design of heat exchange equipment. Students are encouraged to work "open-ended" problems with multiple possible solutions. Prerequisite: 302, Engineering 222 and 313.

403-1 Mechanical Engineering Measurements Laboratory. Laboratory to familiarize students with the use of instruments to measure time, distance, velocity, acceleration, strain, fluid flow, and turbulence. Instruments include micrometers, laser distance meters, stroboscopes, oscilloscopes, incremental rotary encoder, LVDT, load cells, accelerometers, analog/digital convertors, pressure transducers, and related equipment. Prerequisite: 303, Engineering 311.

404-4 Optimization of Process Systems. Simulation and optimization of process systems based upon engineering science and economic fundamentals. Analysis and correlation of experimental engineering data and use of correlated data in simulation, design and decision making. Design of systems using economics and continuous and discrete optimization methods encountered in engineering practice. Use of

the computer is required. 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: Engineering 300.

406-3 Thermal Systems Design. Applications of the principles of engineering analysis to the design of thermal systems. Consideration of such systems as refrigeration, air conditioning, spacecraft thermal control, and cogeneration. Numerical analysis and solution of an open-ended design problem. Prerequisite: 302, Engineering 222 and 300.

408-3 Energy Conversion Systems. Principles of advanced energy conversion systems; nuclear power plants, combined cycles, magnetohydromagnetics, cogeneration (electricity and process steam), and heat pumps. Constraints on design and use of energy conversion systems; energy resources, environmental effects, and economics. Prerequisite: 301 or 400.

410-3 Applied Chemical Thermodynamics and Kinetics. Designed for students interested in chemical and environmental processes and materials science. Topics covered include applications of the Second and Third Laws of Thermodynamics, solution theory, phase equilibria, sources and uses of thermodynamic data, classical reaction rate theory, kinetic mechanisms, and the determination of rate-determining steps in chemical reactions. Prerequisite: Chemistry 222, Engineering 300 or consent of instructor.

414-3 Noise and Vibration Control. Principles of engineering acoustics and vibration and their application to noise and vibration control techniques. Laboratory experience demonstrates techniques for control and reduction of vibration and noise. Prerequisite: 470 or consent of instructor.

416-3 Air Pollution Control. Engineering control theory, procedure, equipment, and economics related to control of particulate, gaseous, and toxic air emissions. The environmental impacts due both to controlling and not controlling emissions are considered. Understanding of the basics is evaluated as students design control equipment, specify and troubleshoot control systems and predict the impacts for each major type of control system. Prerequisite: Senior standing.

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 Hazardous Waste Incineration. Incineration techniques, procedures and systems are presented for solid waste disposal and for remedial site clean-up activities. This includes regulations, waste handling, emission controls and residue disposal. Thermodynamics, chemistry and equipment are discussed, including heat recovery. Prerequisite: 416 or consent of instructor.

422-3 Applied Fluid Mechanics for Mechanical Engineers. Applications of fluid mechanics in internal and external flows. The mathematical basis for inviscid and viscous flows calculations is developed with application to pipe and duct flows; external flow about bodies; drag determination; turbomachinery; and reaction propulsion systems. Semester design project of a fluid mechanical system. Prerequisite: Engineering 300, 313 and Mathematics 305.

423-3 Compressible Flows. Foundation of high speed fluid mechanics and thermodynamics. One-dimensional flow, isentropic flow, shock waves and nozzle and diffuser flows. Flow in ducts with friction and heat transfer. Prandtl-Meyer flow. Compressibility effects in reaction propulsion systems. Semester design project. Prerequisite: Engineering 300, 313.

430-3 Kinematic Synthesis. Kinematic synthesis of linkages, single loop and multiple loop mechanisms, and geared linkages. Vector synthesis of spatial mechanism and its computer simulation. Prerequisite: 310.

435-3 Design of Mass Transfer Processes. Design principles of mass transfer processes. The rate mechanism of molecular, convective, and interphase mass diffusion. The design of selected industrial mass transport process operations such as absorption, humidification, water-cooling, drying, and distillation. Prerequisite: 302.

436-3 Mechanical Systems Control. Mathematical modelling of controls for mechanical systems. Dynamic behavior of controlled machines. Design of controlled mechanical systems. Prerequisite: 303 and 470 or consent of instructor.

440-3 Heating, Ventilating, and Air Conditioning Systems Design. Principles of human thermal comfort. Heating and cooling load analysis. HVAC system design. Air conditioning processes. Prerequisite: 302, Engineering 300.

442-3 Passive Solar Design. Design of solar heating systems for residence with emphasis on passive systems. Heat flow and heat loss. Estimating heat loss and heating requirements of buildings. Energy conserving building design. Predicting performance and economics of a system. Prerequisite: 302, Engineering 300.

443-4 Engineering Design. Mechanical design of process systems including costing and scheduling. Project design definition may include layouts, instrumentation, electrical systems, fluid flow, piping, heat exchange equipment, motors, pressure vessels, pumps, compressors, and concrete and steel structure design and/or specification. Cost factors leading to an optimal system design will be considered. Not for graduate credit. Prerequisite: senior standing in mechanical engineering.

446-3 Energy Management. Fundamentals and various levels of analysis for energy management of commercial buildings and industrial processes and buildings. Use of energy management systems and economic evaluations are required in course projects. Prerequisite: 302, Engineering 300 and 313.
462-3 Physical Metallurgy. Structure of metals. Dislocation theory and plasticity. Solid state diffusion. Thermodynamics of solutions and phase diagrams. Phase transformations. Fracture mechanics. Creep and fatigue. Prerequisite: Engineering 222 and 312.
463-3 Introduction to Ceramics. Structure and physical properties, mechanical properties, processing and design of ceramics. Prerequisite: Engineering 312 or equivalent.
470-3 Simulation and Control of Machines. Dynamic simulation and control of machines. Vibration analysis of mechanical systems, applications of La Place transform to modeling mechanical systems, transfer functions, and open/closed loops. Response of basis control systems. Prerequisite: Engineering 260b and Mathematics 305.
472-3 Materials Selection for Design. Interaction of material design process with material selection criteria. Comparison of materials properties, processes, and fabrication. Project work includes design models, material selection rationale, oral presentation of projects, construction of mock-up models, and theoretical design problems in the area of the student's specialization. Prerequisite: Engineering 222, 312.
475-3 Machine Design I. Design of machines using bearings, belts, clutches, chains, and brakes. Develops application of the theory of fatigue, power transmission, and lubrication to the analysis and design of machine elements. Prerequisite: 310, Engineering 222 and 311.
476-3 Machine Design II. Design of machines using gears, springs, screws and fasteners, and adhesives. Matching power sources to driven machines. Prerequisite: 475.
477-3 Fundamentals of Computer-Aided Design and Manufacturing. Introduction to the concepts of computer-aided design and manufacturing (CAD/CAM). Subjects include computer graphics, geometric modelling, engineering analysis with FEM, design optimization, computer numerical controls, project planning, and computer integrated manufacturing. (CIM). Students are required to use computer packages for projects. Prerequisite: 475 or consent of instructor.
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.

Medical Education Preparation (Courses)

Courses (MEDP)

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. Prerequisite: restricted to MEDPREP students. Must be taken in a,b sequence. Mandatory Pass/Fail.
401-1 to 20 (1 to 3 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 b, c, 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 Review. Content may be remedial, supplemental to concurrent biology courses, additional permitting acceleration or preparational for the MCAT. Not for graduate credit. Prerequisite: restricted to MEDPREP students.
404-1 to 18 (1 to 3 per section) MEDPREP Chemistry Review. Content may be remedial, supplemental to concurrent preprofessional chemistry courses (Chemistry 222a,b; 344 and 346; or 380a,b), additional permitting acceleration, or preparational for the MCAT. Sections will be **(a,b)** inorganic; **(c,d)** organic; **(e)** biochemistry; **(f)** other. Not for graduate credit. Prerequisite: restricted to MEDPREP students.
405-1 to 6 (1 to 3 per section) MEDPREP Physics Review. Content may be remedial, supplemental to concurrent preprofessional physics courses, additional permitting acceleration, or preparational for the MCAT. Sections are **a** and **b** corresponding to the two semester physics sequence. May not be taken for graduate credit. Prerequisite: restricted to MEDPREP students.

Microbiology (Department, Major, Courses)

Microbiology is the study of microorganisms, a large and diverse group of organisms that exist as single cells or cell clusters. The science of microbiology includes the study of microbial growth, biochemistry, genetics, and ecology, and the relationship of microorganisms to other organisms including humans. As a basic biological science, microbiology provides some of the most accessible research tools for probing the nature of life processes. Our sophisticated understanding of the chemical and physical principles governing life has risen from studies of microorganisms. As an applied biological science, microbiology deals with many important practical problems in medicine, agriculture and industry, and is at the heart of the modern revolution in biotechnology. Chemistry is an integral part of modern microbiology and thus chemistry through organic is required for the microbiology major. However, just one additional chemistry course beyond that required for the microbiology major earns the student a chemistry minor, which is strongly recommended for students who aspire to careers in industrial microbiology or who seek graduate training in microbiology or related disciplines. The following program of study prepares one for research or teaching positions after the bachelor's degree or for advanced study in graduate programs in microbiology, molecular biology or cell biology.

Opportunities for specialized training in microbial biochemistry, genetics, and diversity, as well as as in immunology, molecular biology and biotechnology are available.

Bachelor of Arts Degree, College of Science

General Education Requirements		46[1]
Supplementary College of Science Requirements		5
Mathematics 140 or 150	(3) + 1	
Foreign Languages	(4) + 4	
Requirements for Major in Microbiology		61
Microbiology 301, 302 and 495	8	
Microbiology electives: senior level work consisting of a minimum of 15 semester hours of lecture courses with at least six credits from each of the following two groups, Group 1: 403, 421, 441, and 451; Group 2: 421 (421 can be used for either Group 1 or Group 2, but not for both), 425, 460, 470; and a minimum of eight semester hours of laboratory courses to include 480 and 481.	23	
Biology 305 and one from Biology 306, 307, 308, or 309	6[2]	
Chemistry 222a,b, 344, 345, 346,	16[2]	
Physics 203a,b, and 253a,b	8[2]	
Electives		8
Total		120

[1]The 46 hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Education courses.

[2]These 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 Education.

Minor

A minor in microbiology consists of 16 semester hours, to include 301, 302, and other courses determined by the student in consultation with the microbiology adviser.

Courses (MICR)

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 Allied Health Careers, Dental Hygiene and Respiratory Therapy.
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 semester. Prerequisite: one year of college chemistry and GEA 115, or equivalent.
302-3 Molecular Biology. Molecular structure, dynamics, and genetics of living cells and viruses, with particular attention to the transfer of biological information. Spring semester. Prerequisite: 301 or Biology 305.
403-3 Medical Microbiology Lecture. A survey of the more common bacterial, mycotic and viral infections of humans with particular emphasis on the distinctive properties, pathogenic mechanisms, epidemiology, immunology, diagnosis and control of disease-causing microorganisms. Three hours lecture. Fall semester. Prerequisite: 301.
405-3 Clinical Microbiology. This course will be offered in Springfield only. A comprehensive course for health science professionals covering the biology, virulence mechanisms, and identification of infectious agents important in human disease and host-defense mechanisms. Clinical applications are emphasized. Three hours lecture. Prerequisite: 301 or equivalent.
421-3 Biotechnology. Topics covered will include the genetic basis of the revolution in biotechnology, medical applications including genetic screening and therapeutic agents, industrial biotechnology and fermentation, and agricultural applications. Three hours lecture. Prerequisite: 302.
425-3 Biochemistry and Physiology of Microorganisms Lecture. Chemical composition, cellular structure, and metabolism of microorganisms. Prerequisite: organic chemistry.
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.
444-2 Risk Assessment for Genetics and Medicine. A lecture-discussion course on the use of Bayesian probability to assess risks in human genetics and medicine. Includes basic laws of probability, pedigree analysis, the interpretation of laboratory tests and basic clinical decision theory, including decision trees. Active problem solving will be emphasized. Prerequisite: Biology 305.
451-3 Immunology Lecture. Natural and acquired immunity. Antigens, antibodies, and antigen-antibody reactions in vitro and in vivo. Three hours lecture. Prerequisite: 403.
454-4 Soil Microbiology. (Same as Plant and Soil Science 454.) A study of microbial numbers, characteristics, and biochemical activities of soil microorganisms with emphasis on transformation of organic matter, minerals, and nitrogen in soil. Lab fee $15.00. Prerequisite: 301 or PLSS 240.
455-2 Medical Immunology. This course will be offered in Springfield only. A survey of the components of the immune system and how they interact with each other to produce responses that are important in the control or mediation of human disease. Two hours lecture. Prerequisite: 301 or equivalent.
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.
470-3 Procaryotic Diversity. A consideration of the major groups of procaryotes with special emphasis on their comparative physiology and biochemistry. Prerequisite: 301 or equivalent.
480-4 Molecular Biology of Microorganisms Laboratory. Genetic and biochemical analyses of microorganisms using a variety of techniques in molecular biology, molecular genetics and biotechnology. Six hours laboratory per week plus two hours of supervised unstructured laboratory work in most weeks. Prerequisite: 302 and one (or concurrent enrollment in one) of the following: 421, 425 or 460.
481-4 Diagnostic and Applied Microbiology Laboratory. Enrichment and isolation of medically relevant prokaryotes from natural samples, diagnostic methods for the identification of pathogenic bacteria and infection and the nature of the immune response. Six hours laboratory per week plus two hours unstructured, supervised laboratory work in most weeks. Prerequisite: 301 and 302 and two (or concurrent enrollment in two) of the following: 403, 451 or 470.
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. Not for graduate credit. Prerequisite: 3.0 grade point average in microbiology and consent of instructor.
495-1 Senior Seminar. Readings, discussions, and presentations of current research topics on microbiology. Offered in spring semester. Prerequisite: senior standing in Microbiology.

Mining Engineering (Department, Major, Courses)

Mining engineers engage in planning, design, development, and management of surface and underground mining operations for exploitation of the earth's min-

eral deposits. The mining engineering program prepares graduates to meet the challenges of the mining industry with emphasis on coal and aggregate industries. Coursework in the program includes such areas as surface and underground mining systems, mine ventilation, ground control and rock mechanics, mineral and coal processing, material handling systems, mineral economics, mine environment, health and safety engineering, probability and statistics applications, mine equipment maintenance, and computer-aided mine design. Facilities include modern, well-equipped rock mechanics, mine ventilation, mineral processing, materials handling and mine environment laboratories.

After completing the program, the graduate may work in an engineering or management position for mining industries, equipment manufacturing concerns, research organizations, or government agencies. The coursework also provides strong preparation for further study at the graduate level. The mining engineering major is accredited by the Accreditation Board for Engineering and Technology (ABET).

Bachelor of Science Degree, College of Engineering

General Education Requirements		31[1]
GEA: Substitute basic science		
GEB: GEB 105, 301, and one of 108, 114, 202 or 211	9[2,3]	
GEC: Select one of GEC 101, 102, or 208; plus 122 and 345 or 330 and 345	9[2,3]	
GED: GED 101, 102, 153 and substitute mathematics	9	
GEE: two hours of health and two hours of physical education activity	4	
Requirements for Major in Mining Engineering		104
Basic Sciences		24
Physics 205a,b; 255a,b	8	
Chemistry 222a,c	7	
Geology 220, 390	6	
GEA: 115	3	
Mathematics 150, 250, 251, 305, and Mining Engineering 417-3		17
Engineering		63
General: Engineering 102, 222, 361, 400	7	
Engineering Science	38	
Engineering 260a,b, 300, 311, 313, 335, 385; Mining Engineering 400		
A maximum of 1 hour in each of these courses will count toward the requirement: Mining Engineering 421, 455.		
A maximum of one and one half hours in each of these courses will count toward the requirement: Mining Engineering 410, 425.		
A maximum of 2 hours in each of these courses will count toward the requirement: Mining Engineering 320, 415, 420, 431, 445 or 475.		
Engineering Design[4]	18	
Mining Engineering 440, 460.		
A maximum of 1 hour in each of these courses will count toward the requirement: Mining Engineering 320, 420, 431, 445 or 475, 455.		
A maximum of one and one half hours in each of these courses will count toward the requirement: Mining Engineering 410, 425.		

A maximum of 2 hours in each of these courses will count toward the requirement: Mining Engineering 415, 421.

Total 135

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[1]Courses required for the major will apply toward 15 hours of General Education, making a total of 46 in that area.
[2]Engineering requirements for GEB and GEC are more restrictive than those of the University as a whole.
[3]Transfer students holding an associate degree in a baccalaureate-oriented program must have a sequence of courses in social science or humanities terminated by a junior level course. See departmental adviser for an approved course. Students transferring from other programs or institutions will be required to (a) complete a course sequence in humanities or social sciences which includes a junior level course or (b) meet the General Education requirements for engineering students.
[4]Engineering sciences have their roots in mathematics and basic sciences, but carry that knowledge toward creative design. Engineering design is the process of devising a system, component, or process using basic and engineering sciences, mathematics, and creative thinking along with economic, safety, and environmental considerations.

Courses (MNGE)

Safety glasses, an electronic calculator, and textbooks are required of all mining engineering students.

270-3 Introduction to Mining Engineering. Introduction to Mining Engineering (Non-Mining majors only). Importance of mining in a country's economy; stages of mining: prospecting and exploration, development and exploitation; unit operations of mining, surface mining systems, underground mining methods, novel mining methods, mineral processing, marketing of minerals. Prerequisites: sophomore standing or consent of instructor.

320-3 Surveying for Engineers. Land Surveying. Tacheometry and correlation. Aerial Surveying. Production measurement. Analysis of survey data for engineering design. Geophysical and borehole surveying. Laboratory. Prerequisite: Mathematics 150, Engineering 102 or consent of instructor.

392- 1 to 6 Mining Engineering Cooperative Education. Supervised work experience in industry, government or professional organizations. Students work with on-site supervisor and faculty advisor. Reports are required from the student and the employer. Hours do not count toward degree requirements. Mandatory Pass/Fail. Prerequisite: sophomore standing.

400-3 Principles of Mining Engineering. Principles of mining engineering. Introduction to role of mining in the economics of the minerals industry. Mining methods and equipment. Explosives and blasting. The role of mineral properties and location in exploration. Geostatistics and interpolation of data between samples in accessing mineral reserves. Land acquisition and control. Public relations and environmental quality. Field trips. Not for graduate credit. Prerequisite: Geology 220, 390 or concurrent enrollment or consent of instructor.

401-1 Mining Environmental Impacts and Permits. Socio-economic impacts of mining industry. Analyzing the markets for coal and its products. Mining operations and related environmental impacts. Mining permits. Prerequisite: 400 or consent of instructor.

405-1 Field Trip. Visit several mining operations and prepare a report. Not for graduate credit. Prerequisite: 400 and Geology 390.

410-3 Underground Mining Systems Design. Study of coal property evaluation. Underground mining methods. Design of mine production and its ancillary systems and subsystems. Prerequisite: 320, 400, Mathematics 251, Engineering 361. Consent of instructor for graduate students and non-majors.

411-2 Mine Machinery. Analysis and design of underground and surface mining machinery. Equipment and parts selection. System development. Preventive maintenance. Prerequisite: 410.

413-3 Mine Power Systems. Study of electrical, hydraulic and pneumatic mine power systems. Selection and design of power systems and their components for surface and underground mines.Related economics and decision making criteria. Design of power systems for surface mines, protection of mine power systems. Prerequisite: 410, and Engineering 385, or equivalent, or consent of instructor.

415-4 Surface Mining, Quarrying and the Environment. Surface mining systems and quarrying methods for coal, aggregate, and hardrock minerals. Surface mining and quarrying economics. Product specifications and transportation. Equipment sizing and selection. Drainage control. Blasting design for control of fragmentation, air blast, and vibration. Prerequisite: 320, 400, Mathematics 251, Engineering 361. Consent of instructor for graduate students and non-majors.

417-3 Applied Probability and Statistics for Engineers. Probability and statistics concepts, analysis of engineering experimental data. Fitting experimental data to distribution functions. Regression analysis. Quality control in production systems. Reliability in engineering processes. Stochastic simulation of engineering systems. Prerequisite: Mathematics 251 or consent of instructor.

418-3 Mining of Ore Deposits. Analysis, planning, and design of surface hardrock mines and underground mining systems. Analysis of mining and equipment costs. Prerequisite: 320, 400, and Geology 390.

420-3 Mineral and Coal Processing. Principles of processing minerals, aggregates, and coal, including unit operations of comminution, classification, solid-solid separation, dewatering, and tailings dis

posal. Laboratory investigations of the fundamental principles governing unit operations including size reduction, mineral liberation, classification, mineral recovery, and dewatering. Laboratory. Prerequisite: 400, Chemistry 222c, Physics 205b, Mathematics 305, Engineering 313 or concurrent enrollment. Consent of the instructor for graduate students and non-majors.

421-3 Mineral Processing Plant Design. Engineering design of unit operations used for mineral, aggregate, coal processing, flowsheet design, simulation of processing plants, evaluation of plant performance, and process control. Laboratory investigations on the design of unit operations including size reduction, classification, gravity separation, flotation, and dewatering. Laboratory. Prerequisite: 417 or concurrent enrollment and 420. Consent of instructor for graduate students and non-majors.

425-3 Mine Ventilation Systems Design. Study of the theories and practice of natural and forced mine ventilation. Fan and mine characteristics. Ventilation network analysis. Mine ventilation design and problem analysis. Laboratory. Prerequisite: 410, Engineering 300 and 313. Consent of instructor for graduate students and non-majors.

430-3 Economics of Mineral Resources. Economics of mineral resources. Investment decision making criteria; economic viability of mining projects, financing mining projects; sensitivity and risk analyses. Prerequisites: 400, Engineering 361, or consent of instructor.

431-3 Rock Mechanics: Principles and Design. Analysis of stress and strain, elementary elasticity, stress distribution around openings, engineering properties of rocks, artificial support and reinforcement, slope stability. Laboratory. Prerequisite: Engineering 311 and Mathematics 305.

435-3 Operations Research and Computers in Mine Design. Mine systems analysis, operations research and statistics in decision making, production engineering, mine planning, optimization, linear programming, computer simulation. Prerequisite: either 410 and 415 or 418 alone; Engineering 222 and 361.

440-3 Design of Material Handling Systems. Study of material handling systems selection. Systems design and development. Material handling economics. Prerequisite: 410, 415, 417, or concurrent enrollment; Engineering 385 or concurrent enrollment. Consent of instructor for graduate students and non-majors.

445-3 Mine Equipment Maintenance Programs. Mechanical, hydraulic, and electrical systems in mining equipment. Equipment maintenance problems in mines and minerals processing facilities. Cost of lost production. Cost centers and identification of high cost problem areas in mining operations. Principles, design, and development of maintenance systems. Maintenance organization, responsibility, and scheduling. Prerequisite: 410, 415, 417, Engineering 385 or concurrent enrollment. Consent of instructor for graduate students and non-majors.

455-2 Mine Environment, Health and Safety Engineering. Analysis of mine environmental impacts and their mitigation, safety problems and rules and regulations, hazards and accidents, sealing and recovery of mines, design of mine emergency plans, safety methods, and health hazard control plans. Laboratory. Prerequisite: 410, 415, 417, or concurrent enrollment. Consent of instructor for graduate students and non-majors.

460-3 Computer-Aided Underground Mine Design Projects. Projects in planning and design of surface and underground mining systems. Evaluate and design mining subsystems; integrate subsystems and procedures into a preliminary mine design; and optimize operations from exploration to closure. One lecture and two two-hour laboratories per week. Prerequisite: 421, 425, 431, 440. Consent of instructor for graduate students and non-majors.

465-3 Computer-Aided Surface Mine Design Projects. Projects in planning and design of surface mining systems. Evaluate a potential mine site; select appropriate mining methods; define and design mining and reclamation subsystems; integrate subsystems and procedures into a preliminary mine design; and optimize operations from exploration to bond release. One lecture and two two-hour laboratories per week. Prerequisite: 415 or 418, 420, 431, 440, or consent of instructor.

470-3 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. Laboratory. Prerequisite: 431.

475-3 Designs of Mine Excavations. Rock classification; design of shafts, slopes, tunnels, and underground chambers; support requirements; design of slopes; design of underground mining systems from ground control point of view; design of impoundments. Prerequisite: 410, 415 and 431. Consent of instructor for graduate students and non-majors.

480-3 Design of Rock Fragmentation Systems. Principles of rock fragmentation. Drilling and mechanics of rock penetration, drillability indices. Chemistry of explosives. Design of blast patterns in surface and underground mines and quarries, prevention of airblast, vibration, and noise. Prerequisite: 415. Consent of instructor for graduate students and non-majors.

492-1 to 5 Special Problems in Mining Engineering. Topics and problems selected either by the instructor or the student with the approval of the instructor. Five hours maximum course credit. Prerequisite: senior standing and consent of instructor.

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 Professional Regulations, as well as other state licensure boards.

All students entering this program must meet University baccalaureate entry requirements. This program also is designed to accommodate students transferring from other accredited post-secondary institutions. Enrollment of beginning students is limited by the size of the faculty and physical facilities. New students are admitted only in the fall semester. Additional application information is required other than that required for admission to the University.

In addition to professional course work, the student will take both general education courses and a number of courses which will lead to an understanding of the psychological, sociological, and theological implications of death. Charges for personal protective material will be approximately $100. Hepatitis B vaccination will be required for licensure in Illinois and possibly in other states. This vaccination may be acquired at the SIUC Health Service or through your private physician. The cost will be the responsibility of the student.

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 apprentice and will be eligible to write the State and National Board examinations and to begin serving their apprenticeship. 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.

This associate degree program can be completed at Southern Illinois University at Carbondale or in combination with an institution of higher education or other acceptable extra-institutional education experience. The minimum length of time needed for completion of the program is two academic years of study and one summer internship in a funeral home.

Associate in Applied Science Degree, College of Technical Careers

Requirements for Major in Mortuary Science and Funeral Service

GEA 106, 115	6
GEB 202	3
GED 101, 102, 153	9
Technical Careers 120	3
Office Systems and Specialties 208	3
Elective (in Health Education)	2
Mortuary Science 101, 102, 108, 225a,b, 230, 250a,b, 256, 257, 375a,b, 380	48
Total	74

Courses (MSFS)

101-3 Orientation to Funeral Service. Students will trace the history of funeral services from ancient times through 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 three 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.

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 of 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.

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. Prerequisite: restricted to mortuary science and funeral service majors.

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, genitourinary 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 director's 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.

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 of 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.

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 preceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail.

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. This course may be classified as independent study. Prerequisite: consent of instructor.

375-8 (4, 4) 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 including a grade point average of 2.0 in mortuary science courses. 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.
415-3 On Dying and Death. Students will study the processes of death, grief, and bereavement. Emphasis on the practical aspects of coping with the many problems concerning death. Not for graduate credit.

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.

Core Courses: 12 hours selected from Anthropology 450a; Art 207 and 447; Geology 445; History 497 and/or 498; Political Science 446.
Electives: 6 hours selected from Anthropology 400c, 402, 404 or 460; Art 499; Political Science 441; Geology 440; History 490, 493 or 496; or courses listed above which are not used for the core.

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 or as 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. Students who are unable to meet the major ensemble entrance requirements for one semester will be placed on probation by the School of Music. Students who are denied entrance into a major ensemble a second time will be reviewed by the undergraduate committee for possible continued probation or suspension from all music degree programs. The choice of major ensembles 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 Music 341 in the case of students enrolled in the piano performance or piano pedagogy specializations. Students are exempt from this re-

quirement 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 and Convocations (Mondays, at 10:00 a.m.); and recorded attendance each semester at seven campus recitals or concerts, approved for that purpose by the School of Music faculty. The student may not be 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: 1) they can exhibit sufficient ability; 2) they are participating simultaneously in one of the University performing groups; and 3) 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 and Instruction in this chapter.

Upper Division Examination

All Bachelor of Music degree students must pass an upper division examination in order to be admitted to the 340 level of applied music. It is normally taken before finishing 60 hours of academic study and in the second semester of Music 240. The upper division examination for transfer students is normally taken at the end of the first semester at Southern Illinois University at Carbondale. The upper division examination consists of an applied music jury performance before the entire music faculty. Students will provide a complete repertoire list at the time of the jury.

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 not 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 $50 to $100 per semester.

Bachelor of Music Degree, College of Liberal Arts

General Education Requirements	46
Including Music 102 and ensemble as GEC substitutes	
Requirements for Major in Music	76
Theory: Music 104a,b; 105a,b; 204; 205; 207; 321; 322[1]	19
History-Literature: Music 102; 357a,b[3]	(2)[2] + 6
Major performing ensembles	(1)[2] + 5
Partial Recital: Music 398	1
Conducting: Music 316	1
Beginning Piano: Music 030 (or waiver by examination)	4[3]
Specialization (see below)	40
Total	122

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
Total	40

MUSIC MAJOR — JAZZ PERFORMANCE SPECIALIZATION

Music 140-440, principal field, 8 semesters	28
Music 498	2
Music 331, 372, 430	8
Music 016	2
Total	40

MUSIC MAJOR — PERFORMANCE SPECIALIZATION, KEYBOARD (PIANO, ORGAN, AND HARPSICHORD)

Music 030 not required	
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	3
Total	40

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)[2] + 4
Music 363	2
Total	40

MUSIC MAJOR — PIANO PEDAGOGY SPECIALIZATION

Music 140-440, principal field, 8 semesters	16-22
Music 398-1 or 2 and 498-2	2-3
Music 110-4, 210, 211, 310, 311, 410	16
Approved music electives	0-6
Total	40

MUSIC MAJOR — MUSIC THEORY-COMPOSITION SPECIALIZATION

Music 140-340, principal field, 6 semesters	12
Music 407, 421	4
Music 280	4
Music 380	4
Music 480 or 481	4
Music 470 series	5
Approved music electives, 300 level or above	7
Total	40

Bachelor of Music Degree, College of Liberal Arts or Bachelor of Science Degree, College of Education

MUSIC MAJOR — MUSIC EDUCATION SPECIALIZATION

General Education Requirements		46
Including GEB 202, GEB 114 and 301, GEC 213, and Music 102 and ensemble as GEC substitutes		
Requirements for Major in Music		55
Theory: Music 104a,b; 105a,b; 204, 205; 207; 321, 322	19	
History-Literature: Music 102, 357a,b	(2)[2] + 6	
Major performing ensembles	(1)[2] + 4	
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, 316, 318, 324	6	
Or		
Music 030	4	
Music 316, 317, 325	4	
Music 306 or 032-036 series	2	
Music 363	2	
Professional Education Requirements		28
See Teacher Education Program, Chapter 3.		
Total		129

[1]In the jazz performance specialization, Music 335a and b are required as substitutes for Music 321 and 322 and one hour of ensemble.
[2]GEC substitutes.
[3]Exceptions for Music 030 and consequent credit hour adjustment in keyboard performance and instrumental music education specialization.

Bachelor of Arts Degree, College of Liberal Arts

The Bachelor of Arts degree is individually tailored to meet the educational goals of each student pursuing it. Two areas of specialization are available: Liberal Arts and Music Business. Both specializations have a common core of 18 to 19 hours of music literature and music theory courses.

Of the 56 to 57 hours required to complete the Liberal Arts Specialization, the required courses are Music 357a,b, 499 and 10-18 hours of approved music electives. In addition, at least one year of foreign language is required. This 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*. The 27 to 34 core of elective hours necessary to complete the

degree program are selected by the student with the approval of the student's faculty sponsor and the undergraduate committee. At least 40 hours toward the B.A. Liberal Arts Specialization must be at the 300-400 level. This planning should be done during the first semester of the student's admittance to the School of Music with undergraduate committee approval secured no later than the end of the second semester. Changes may be made if agreed upon by the student, the undergraduate committee and the student's faculty sponsor.

Of the 56 to 57 hours required to complete the Music Business Specialization, 18 to 19 hours are in specific music courses, 14 to 16 hours in music electives, and 27 hours of accounting, economics, finance and marketing courses.

Students must comply with the studio hour and recital attendance requirements listed under general requirements in music.

Bachelor of Arts Degree, College of Liberal Arts

General Education Requirements	46
Including 102 and ensemble as GEC substitutes	
Requirements for Major in Music	75
Theory: Music 104a,b; 105a,b	8
Literature: Music 102	(2)[1]
Major performing ensembles	3[1] + (1)
Applied Music (4 semesters)	7-8
Specialization (see below)	56-57
Total	121

MUSIC MAJOR — LIBERAL ARTS SPECIALIZATION

Music 357a,b,	6
Music 499	2
Approved Music Electives	10-18
Foreign Language	4 + (4)[1]
Core of Electives	27-34
Total	56-57

MUSIC MAJOR — MUSIC BUSINESS SPECIALIZATION

Music 030, 2 semesters	2
Music 031	1
Music 032-1, 033-1, 034-1, 035-1, 036-1	5
Music 305	2
Music 174, 499	6
Music 420	1-2
Approved Music Electives	14-16
Accounting 220, 230	6
Management 304	3
Economics 215	(3)[2]
Finance 280	3
Marketing 304, 363, 401, 438	12
Total	56-57

[1]GEC substitute.
[2]GEB substitute.

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. Students who wish to pursue the minor

curriculum must make a declaration of their intent at the Music Advisement Office before registering for classes.

Courses (MUS)

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) Pep Band. A select group which performs at all home basketball games. Prerequisite: audition prior to first registration.
013-1 to 16 (1 or 2 per semester) Symphonic Band. Open to all students with experience in bands. Performs standard 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) Jazz Combos. 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.
020-1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) Choral Union. Open to qualified students who desire to perform 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. Audition required.
021-1 to 16 (1 or 2 per semester) Chamber Choir. Open to all experienced singers. Emphasis on advanced contemporary literature. Three or four concerts per year and tours as feasible. Audition required.
022-1 to 16 (1 or 2 per semester) Concert 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) Vocal Jazz Ensemble. Open to all experienced singers. Emphasis on light, popular literature. 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.
031a-1 Voice Class. Designed to develop functional command of basic vocal skills needed in teaching music. Prerequisite: consent of instructor.
032-2 (1, 1) String Techniques Class. (a) Upper strings; **(b)** lower strings. Designed to develop essential techniques and principles which can be used in teaching young string pupils. Prerequisite: music major or minor.
033-4 (1, 1, 1, 1) Woodwind Techniques Class. Flute, clarinet, oboe, bassoon. Designed to develop essential techniques and principles which can be used in teaching young woodwind pupils. Students may begin on one instrument and shift to another at midterm, or they may continue with the same instrument with the consent of the instructor. Prerequisite: music major or minor or consent of instructor.
034-2 (1, 1) Brass Techniques Class. Trumpet, french horn, trombone, tuba. Designed to develop essential techniques and principles which can be employed in teaching beginning brass pupils. Students may begin with one instrument and shift to another at midterm or they may continue with the same instrument with the consent of the instructor. 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. Students must attend the weekly studio class and 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: two semesters of *C* or better at previous level, or consent of applied jury. Prerequisite: for 440, 540: two semesters of *B* 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 pri-

vate 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 student 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
b. Oboe
c. Clarinet
d. Bassoon
e. Saxophone
f. Horn
g. Trumpet
h. Trombone
i. Baritone
j. Tuba
k. Percussion
l. Violin
m. Viola
n. Cello
o. String bass
p. Voice
q. Piano
r. Organ
s. Harpsichord
t. Guitar
u. Recorder
v. Coaching

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 Curriculum and Instruction 325, 326.

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 or equivalent aural 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.

110-4 (2, 2) Introduction to Piano Pedagogy. Introduction to a broad range of studies that influence the development of effective piano teaching. Seminar discussions, lectures, observation of piano teaching, piano studies, readings, listening projects and written essays deal with the history of piano pedagogy and performance, studies of teaching and learning concepts of music education and educational psychology, piano literature, keyboard musicianship and practical aspects of teaching.

140-1, 2, or 4 Applied Music. (See 040.)

174-3 Commercial Music. Introductory course for students interested in the commercial aspects of the music industry. Lectures given by outstanding executives and performers in the various segments of the industry such as management, cash show, contracts, the recording of music and video, and publishing. Students go to Nashville, Tennessee, where various activities take place, including tours of recording studios, publishing houses, performance rights societies, and video and television studios. Designed to clarify the qualifications the student must have, or develop, in order to be successful in the commercial music world. Prerequisite: major in music.

204-1 Advanced Aural Skills. Continuation of 104. Designed to complement 205. Prerequisite: 104b with a grade of *C* or better.

205-3 Advanced Harmony. Study of chromatic tonal materials, including keyboard skills. Prerequisite: 104b and 105b with a grade of *C* or better, and concurrent registration in 204.

206-3 Music as A Creative Experience. Students experiment with various ways of creative 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.

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: 204 and 205 with a grade of *C* or better, or take 204 concurrently.

210-2 Analytic Techniques for the Pianist. Studies the process by which piano teachers analyze piano music and performance. Extensive projects in piano music analysis, sightreading, interpreting and memorizing piano compositions, lecture/discussions, reading and listening assignments and observation of studio and piano class teaching provide increasing readiness for piano teaching as it relies on analytic and problem-solving techniques.

211-2 Piano Literature Seminar. A survey course that acquaints students with piano music for teaching at all levels of advancement from baroque, classical, romantic and contemporary music style periods. Piano literature, sightreading, recorded music listening assignments, score study, writing assignments and lecture/performance presentations in class include studies of piano methods, piano music editions, collections and publishers highlighting the keyboard literature of sixteen major composers.

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.

257-1 to 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 Arts 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.
304-2 The General Music Program. Survey of problems and methods in teaching music in the schools, with scheduled observations of school music programs in operation. Special attention given to the teaching of comprehensive musicianship through the general music program in the junior and senior high school. Also includes undergraduate history and philosophy of music education. Prerequisite: admission to the 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.
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.
310-2 Piano Technique Seminar. An exhaustive study of three classics on the subject of piano technique by authors Reginald Gerig, Paul Roes and Abby Whiteside. This historical perspective is practically applied in a weekly routine of technical and theoretical studies at the piano. The course provides a foundation from which to deal with all aspects of piano technique development in teaching.
311-2 Advanced Piano Literature Seminar. In-depth study of an extensive catalogue of piano works for specific selection and design of a sequential curriculum of piano literature for teaching. Piano literature sightreading, recorded music listening assignments and score study culminate in a final course project that details specific piano works for teaching baroque, classical, romantic and contemporary literature to students of elementary, intermediate and advanced abilities. Prerequisite: 211.
316-1 Introduction to Conducting. An introductory conducting course designed to teaching beginning rehearsal techniques. Prerequisite: music major or minor and junior standing.
317-2 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.
318-2 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: consent of instructor.
335-6 (3, 3) Jazz Theory. Understanding of complex harmonies, harmonic substitution, polyrhythm, and melodic writing. Writing in the various jazz period styles. Writing and arranging for large and small ensembles. Take in a,b sequence. Prerequisite: 207 and two semesters of 331 or consent of instructor.
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 junior and senior music majors specializing in keyboard performance and piano pedagogy only.
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.
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 with a grade of *C* or better 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.
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 64 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. Section (g) counts as a "major ensemble" for music majors specializing in guitar and for juniors and seniors with non-performance specializations whose principal instrument is the guitar.

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-Keyboard.
g. 1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) Chamber Music-Classical Guitar.
h. 1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) Chamber Music-20th Century. Instrumentalists and singers experiment with new musical techniques and styles. Small ensembles and/or one large ensemble will rehearse weekly.

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.

372-3 Jazz Literature. In-depth study of the history of jazz through analysis of important stylistic characteristics and recorded improvisations. Biographical backgrounds of major composers and performers will be considered as they contribute to the evolution of musical styles.

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.

375-3 Recording Engineering. Specializes in recording and engineering. Intended to be a general introduction to the world of multi-track recording. Seventy percent of the course involved with basic information about sound, test equipment, microphones, recorders, signal processing equipment, consoles, noise reduction devices, and the most recent developments in the perception of sound. Thirty percent consists of actual live recording sessions and mix-down sessions. Each student given hands-on experience in recording and mixing and will receive a copy of the master tape. Enrollment limited. Preference given to music majors. Prerequisite: junior music major.

376-3 Advanced Recording Engineering. Continues the skills developed in 375. Student familiarized with duties of the professional engineer through practical experience.

380-2 to 4 (2, 2) Composition. Original composition in a contemporary language, intermediate in scope and form. Individual instruction and weekly seminar. Prerequisite: 280 or consent of instructor.

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.

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.

410-2 Piano Pedagogy Practicum. Provides undergraduate and graduate piano pedagogy majors with the opportunity for supervised practice piano teaching. Course activities include lesson-planning, conducting and evaluating studio piano and class piano lessons, and a survey of important educational issues that impact on effective piano teaching. Prerequisite: consent of instructor.

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.

420-1 to 2 (1, 1) Instrument Repair. A shop-laboratory course dealing with the selection, tuning, adjustment, maintenance, and repair of musical instruments. Prerequisite: two semesters of instrumental techniques courses or consent of instructor.

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: 335a and b or consent of instructor.

440-1, 2, or 4 Applied Music. (See 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 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. 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. For experienced teachers and advanced students.

456-4 (2, 2) Music for Exceptional Children. **(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.
461-3 Applied Music Pedagogy. Specialized problems and techniques employed in studio teaching of any particular field of music 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: 357a with a grade of *C* or better, or graduate standing.
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: 357b with a grade of *C* or better, or graduate standing.
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: 357b with a grade of *C* or better, or graduate standing.
479-2 to 4 (2 per topic) Solo Performance Literature. Topics presented will depend upon the needs of students and upon instructors scheduled. **(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: two semesters of 380 with a grade of *C* or better and approval of composition jury.
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 hours' 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). Prerequisite: consent of instructor.
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). Not more than three hours toward 30 required for graduate degree. Prerequisite: prior consent of selected instructor.

Nursing (Preprofessional Program)

The School of Nursing of Southern Illinois University at Edwardsville offers a program of study leading to a Bachelor of Science degree in nursing. The program is accredited by the National League of 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. Professional nursing practice is broad in scope and serves individuals in a multiplicity of settings; thus the professional nurse functions in both traditional and non-traditional situations which may require conventional or innovative patterns of practice.

The first three semesters of the program may be completed at Southern Illinois University at Carbondale. During this time, the student must successfully complete all courses prerequisite to the nursing major. The student should then transfer to Southern Illinois University at Edwardsville. Admission to the university does not guarantee acceptance into the School of Nursing. Admission criteria for the School of Nursing at SIUE include: (1) successful completion of prerequisite courses with grades of *C* or above; (2) minimum overall grade point av-

erage of 2.50; and (3) completed application on file in the School of Nursing within the time deadline. Students are admitted to the School of Nursing each fall or spring semester during the academic year. Information concerning required courses is available at the Premajor Advisement Center in Woody Hall, C117.

Office Systems and Specialties (Program, Specialized Major, Minor, Courses)

Recent developments in office systems and related technologies have resulted in many new career opportunities for administrative personnel with enhanced general office skills or specific training in the medical, legal, or court reporting fields. Both men and women have opportunities for rewarding business careers in office support positions in these areas. A major in Office Systems and Specialties may lead to an Associate in Applied Science Degree and prepares a student for an exciting career by offering a combination of courses designed to improve keyboarding skills, computer literacy, English language usage, office procedures competency, and document production techniques.

Each student selects one of four areas of specialization: Administrative Assistant, Legal Office Assistant, Medical Office Assistant, or Court and Conference Reporting. In each of these four areas, specialized courses are required which enhance the student's office skills and introduce the student to specialized vocabulary and procedures.

A student selecting the Administrative Assistant specialization will take advanced courses in word processing concepts and applications, transcription, office management, and administrative procedures. For a student more interested in an office support position as a legal office assistant, advanced courses in applied law, legal document preparation, legal terminology, shorthand, and legal office support procedures are offered. Basic anatomy and physiology, medical terminology, medical transcription, medical administrative procedures, and health insurance form preparation are some of the courses required of students in the Medical Office Assistant Specialization. Students choosing the Court and Conference Reporting Specialization follow a five-semester regime which includes legal and medical terminology, machine shorthand, two-voice and four-voice dictation and transcription, and applied law.

All students in Office Systems and Specialties are required to complete either a one-semester cooperative office internship (at least four credit hours) or a court reporting internship which involves the verification of at least forty clock-hours of actual writing time on the stenographic machine. Students in both of these learning situations are closely supervised by faculty.

A student majoring in Office Systems and Specialties may, in addition to taking regularly scheduled courses, transfer credits from an accredited post secondary school (such as a community college); pass a proficiency examination; or receive credit for significant office-related experience.

Students entering the Court Reporting specialization must be able to type thirty words per minute. In addition, good language skills are important. Court and Conference Reporting may be pursued within the associate degree program, or as a post-associate offering for those who have completed an associate degree in a related field at a community college or other post-secondary institution.

Many courses will require students to purchase consumable supplies for use in those courses. In addition to these materials, students enrolled in court reporting are required to supply their own shorthand machine.

Associate in Applied Science Degree, College of Technical Careers

Requirements for Specialized Major in Office Systems and Specialties

GED 101, 102	6
Office Systems and Specialties 101, 111, 112, 113, 114, 208, 209	21
Specialization Requirements	37-46
Administrative Assistant	37-38
Legal Office Assistant	38
Medical Office Assistant	37
Court and Conference Reporting	46
Total	64-70

Administrative Assistant Specialization Requirements

GED 152 or 153	3
College of Technical Careers 120	3
Office Systems and Specialties courses	27-28
(a). Shorthand option: 107, 109, 118, 131, 132, 140, 205, 232, 233	27
(b). Non-shorthand option: 107, 109, 118, 140, 205, 233, 240, 241, Computer Information Processing 109 and elective approved by adviser	28
Office Systems and Specialties 290, Cooperative Office Experience	4
Total	37-38

Legal Office Assistant Specialization Requirements

GED 152 or 153	3
College of Technical Careers 120	3
Office Systems and Specialties 131, 132, 20 credit hours chosen from 107, 109, 118, 182, 220, 221, 223, 233	28
Office Systems and Specialities 290, Cooperative Office Experience	4
Total	38

Medical Office Assistant Specialization Requirements

GED 152 or 153	3
College of Technical Careers 120	3
Allied Health 141	4
Office Systems and Specialities 107, 109, 118, 261, 262, 263, 264 and an elective approved by adviser	23
Office Systems and Specialties 290, Cooperative Office Experience	4
Total	37

Court and Conference Reporting Specialization Requirements[1]

Allied Health 141	4
Office Systems and Specialities 180, 182, 186, 187, 188, 261, 281, 282, 283, 284, 385[2], 386[3], 388, 389[4]	42
Total	46

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[1]Includes requirement of 60 net words per minute typing speed (OSS 113 will fulfill this requirement).
[2]Includes requirement of passing two five-minute dictation tests with 95% accuracy at 225 wpm using a two-voice question and answer format (OSS 385 will fulfill this requirement).
[3]Includes requirement of passing two five-minute jury charge/legal dictation tests with 95% accuracy at 200 wpm and two five-minute literary dictation tests with 95% accuracy at 200 wpm (OSS 386 will fulfill this requirement).
[4]Internship includes requirement of 40 hours of verified writing time on a shorthand machine (OSS 389 will fulfill this requirement).

Minor in Office Systems and Specialties (for students with a major in Spanish)

The minor in Office Systems and Specialties is intended for students with a major in Spanish who wish to train as bilingual office assistants. For those skilled in the office support areas of shorthand, keyboarding, and transcription, the minor requirements are Office Systems and Specialties 101, 107, 109, 205, 208, 232, 233, 290, and six to ten credit hours of approved electives in Office Systems and Specialties courses. For those unskilled in the office support areas of shorthand, keyboarding, and transcription, the minor requirements include the courses above and Office Systems and Specialties 111, 112, 113, 114, 118, 131 and 132.

Courses (OSS)

100-2 Typewriting. Upon successful completion of this course, the student will demonstrate proficiency in keyboarding using correct touch-typing techniques. Students will be able to type personal and business letters, tables, outlines, reports and bibliographies. Speed and accuracy development are emphasized; audio-visual-tutorial approach to instruction is utilized. Lecture two hours and additional Learning Center hours required. Intended for non-majors.

101-3 Business Correspondence. Principles and practice in written and oral communication. Includes development of ability to use words; application of correct grammatical construction in oral and written communiques; analysis, planning, and practice of composing different types of internal and external communications in various administrative and business contexts; refinement of listing skills; mechanics and basic procedures for dictation; and ability to conduct a business meeting. Course will help form good habits that will facilitate adaptability in the world of work. Lecture and individualized instruction three hours.

107-2 Filing and Records Systems. Upon successful completion of this course, the student will apply filing rules to alphabetic, subject, numeric, and geographic methods; determine supplies for various filing systems; demonstrate an understanding of proper filing techniques; and demonstrate an understanding of concepts related to electronic filing and micrographics and the concepts necessary for the establishment, maintenance, and revision of a filing system. Lecture two hours and additional Learning Center hours required. Enrollment restricted to OSS and VES majors or consent of department.

109-3 Calculating Numerical Information. Upon successful completion of this course, the student will be able to calculate numerical information with and without the use of machines such as the electronic calculators; will have a basic understanding of calculating on the microcomputer; and will be able to perform necessary operations required to work with decimals, fractions, percentages, basic statistics, metrics, and graphic displays of numerical information as these tasks relate to routine office situations. Lecture two hours and additional Learning Center hours required.

111-3 Beginning Keyboarding. Upon successful completion of this course, the student will demonstrate correct touch-typing techniques, be able to operate machine parts correctly and make machine adjustments, determine layout and type correctly basic communications for personal and career purposes, and use correction devices and carbon copy techniques appropriately. Keyboarding speed and accuracy are emphasized; audio-visual-tutorial approach to instruction is utilized. Lecture two hours and additional Learning Center hours required.

112-3 Intermediate Keyboarding. Upon successful completion of this course, the student will be able to correctly format and type various communication documents and forms. Keyboarding speed and accuracy are emphasized; audio-visual-tutorial approach to instruction is utilized. Lecture two hours and additional Learning Center hours required. Prerequisite: 111 with a grade of *C* or better.

113-3 Advanced Keyboarding. Upon successful completion of this course, the student will be able to correctly format, type, and edit various advanced communication documents and forms. Keyboarding speed and accuracy are emphasized; audio-visual-tutorial approach to instruction is utilized. Lecture two hours and additional Learning Center hours required. Prerequisite: 112 or equivalent with a grade of *C* or better.

114-3 Office Software Applications. Upon successful completion of this course, the student will be able to identify concepts and terminology used with various office application software programs such as word processing, data bases, spreadsheets, graphics, and computer-aided transcription. The student will be able to create, format, edit, store, retrieve, and print different types of documents as well as apply advanced features of the software to expand basic documents. Lecture two hours and additional Learning Center hours required. Prerequisite: 111 or equivalent.

118-3 Introduction to Machine Transcription. Upon successful completion of this course, the student will be able to operate properly various transcribing units and to produce a variety of business communications in mailable format. The student will review language skills including grammar, punctuation, capitalization and number usage, word division, spelling, and vocabulary. Lecture three hours and additional Learning Center hours required. Prerequisite: 111 or equivalent.

131-3 Beginning Shorthand. Upon successful completion of this course, the student will demonstrate proficiency in Superwrite theory by reading and writing outlines accurately and rapidly, by taking practice dictation on familiar and related materials, and by transcribing material using proper format for mailable copy. Lecture three hours. Prerequisite: 111 or concurrent enrollment.

132-4 Intermediate Shorthand. Upon successful completion of this course, the student will demonstrate shorthand skill by taking dictation at faster speeds and by transcribing dictated material accurately and rapidly with emphasis on mailability and office style material. Any shorthand system may be used. Lecture three hours; Learning Center three hours. Prerequisite: 131.

140-3 Word Processing Concepts. Upon successful completion of this course, the student will be able to identify the parts of a word/information processing system, types of software, hardware components, electronic methods of storage, and electronic distribution and communication devices. The student will be able to discuss current office technological trends, the creation of an effective workplace, and careers available to information processing professionals. Prerequisite: 111 or equivalent or concurrent enrollment.

180-1 Introduction to Court Reporting. Upon successful completion of this course, the student will understand the classifications of court reporters and their duties; be aware of job availability and career opportunities; understand the court reporters' code of ethics; understand the role of the reporter in the courtroom; be aware of technological innovations; and be familiar with local, state and national professional associations. Prerequisite: 111 or equivalent.

182-3 Legal Terminology and Documents. Upon successful completion of this course, the student will be able to recognize, define, spell, pronounce and use legal terminology, including Latin words and phrases. An overview of several fields of law will enable the student to understand terminology commonly associated with the law.

186-4 Basic Machine Shorthand. Upon successful completion of this course, the student will be able to utilize computer-compatible machine shorthand theory; write shorthand abbreviations, derivatives and punctuation symbols; read printed shorthand text notes and student shorthand notes; take dictation of new material for five minutes at 100 wpm; and transcribe with 95 percent accuracy or better. Lecture five hours; Learning Center five hours. Prerequisite: 111 or equivalent.

187-4 Advanced Machine Shorthand. Upon successful completion of this course, the student will be able to write computer-compatible machine shorthand arbitraries, derivatives, phrases and punctuation symbols; read student-made machine shorthand notes; take dictation of literary at 100 wpm, jury charge at 120 wpm and two-voice testimony at 120 wpm for five minutes and transcribe with 95 percent accuracy or better. Lecture five hours; Learning Center five hours. Prerequisite: 186.

188-3 Court Transcript Preparation. Upon successful completion of this course, the student will be able to prepare court transcripts using the appropriate principles of punctuation, capitalization, numbers and abbreviations. The students will also apply knowledge of transcript components and methods of transcript preparation. Lecture three hours and additional Learning Center hours required. Prerequisite: 111 or equivalent and 186.

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 of 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.

205-2 Office Management and Supervision. Upon successful completion of this course students will demonstrate competency in the planning, organizing, implementing, evaluating, and controlling of business office functions. Topics covered include: proper managerial skills; managerial roles; office services; physical facilities; employee training techniques; performance appraisal methods; office costs and productivity; methods for planning, scheduling, and controlling work flows; feasibility studies; and vendor relations and equipment decisions. Prerequisite: 112 or equivalent.

206-1 to 6 Career Enhancement. This course is designed as a professional development activity to enhance the skills of persons seeking to improve their overall office efficiency and work environment and also to provide additional training for those seeking to enter the field. Topics include, but are not limited to, proofreading, word usage, punctuation, grammar, shorthand, dictation/transcription, typing format, math, spelling, and vocabulary.

208-3 Applied Law for Technical Careers I. Upon successful completion of this course, the student will be familiar with fundamental legal practices and procedures. The student will be able to identify, define, and describe private and public agencies for the enforcement of legal rights, contracts, agency, and employment. Additional topics are selected to meet the needs of specific technical programs and offered in a restricted section.

209-3 Applied Law for Technical Careers II. Upon successful completion of this course, the student will be more familiar with fundamental legal practices and procedures common to the various technical specializations. The student will be able to identify, define, and describe government regulations, administrative agencies, consumer protection regulations, environmental planning, security devices and insurance, partnerships, corporations, real property and environment, personal property and bailments, and commercial paper.

220-3 Legal Document Production. Upon successful completion of this course, the student will be able to produce a variety of legal documents and papers using transcription equipment. Emphasis will be on use of modern word processing equipment and procedures. Lecture three hours and additional Learning Center required. Prerequisite: 111 or equivalent, and 118.

221-3 Legal Terminology/Dictation and Transcription. Upon successful completion of this course, the student will take dictation of legal materials at speeds of 100-120 words a minute at 95 percent accuracy, using specialized shorthand shortcuts related to the legal field. The student will transcribe from notes with emphasis on mailability and be able to handle office-style situations effectively. Lecture three hours and additional Learning Center hours required. Prerequisite: 132 or equivalent, 113 or equivalent or concurrent enrollment, and 182.

223-3 Legal Administrative Support Procedures. Upon successful completion of this course, the student will have a basic understanding of career opportunities available in the legal support field and be able to perform necessary duties required of information support personnel in a law office or other law related organization. Prerequisites: 112 or equivalent, and 221 or concurrent enrollment.

230-4 Administrative Document Production. Upon successful completion of this course, the student will produce various communications using electronic keyboards, dictation/transcription equipment, and various modern procedures with speed and accuracy. Lecture two hours and additional Learning Center hours required. Prerequisite: 114 and 118.

232-3 Administrative Shorthand. Upon successful completion of this course, the student will be able to take administrative dictation at a speed of 90-110 words a minute at 95 percent accuracy, transcribe general and specialty office communications with emphasis on mailability, and build transcription decision-making skills related to executive correspondence. Prerequisite: 112 and 132; GED 102 also recommended.

233-3 Administrative Support Procedures. Upon successful completion of this course, the student will be able to perform efficiently administrative support tasks including handling mail and telephone situations, composing communications, editing and proofreading documents, using reprographics and micrographics, arranging for travel and conferences, performing basic information processing operations and carrying out supervisory responsibilities. Emphasis will be on human relations, time management, and organization and planning of work. Prerequisite: 112 or equivalent.

240-3 Word Processing Applications. Upon successful completion of this course, the student will be able to define terms relating to the components of word/information processing systems and equipment functions. The student will input, format, edit, store, retrieve and print documents using different types of hardware and software. The student will also use transcription equipment to produce a variety of documents. Lecture three hours and additional Learning Center hours required. Prerequisite: 112, 118 and 140.

241-3 Advanced Office Software Applications. Upon successful completion of this course, the student will be able to produce a variety of documents on different types of microcomputers and information processors using advanced word/information processing functions and desktop publishing capabilities. The student will be able to create data bases, spreadsheets, and graphs and integrate the different applications in producing office documents. The student will also develop an understanding of principles, practices and technologies involved in office automation especially in regard to selection and evaluation of hardware and software. Lecture three hours and additional Learning Center hours required. Prerequisite: 114 and 240.

242-3 Office Telecommunications. Upon successful completion of this course, the student will understand the importance of contemporary office telecommunications and why their importance is growing; review applications and basic technical detail; and be able to define necessary terms and concepts related to telecommunications and the telecommunication's environment involved in both voice and data communications. Prerequisite: 140.

243-3 Insurance Office Procedures. Upon successful completion of this course, the student will perform office duties particular to an insurance office as well as 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 types of insurance office communications at a rate of speed approaching the student's straight copy speed. Students will be required to make decisions in a variety of instances. Lecture one hour and additional Learning Center hours required.

260-3 Introduction to Text Processing. 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 and additional Learning Center hours required. Prerequisite: typing skill.

261-3 Medical Terminology, Dictation, and Transcription I. Upon successful completion of this course, the student will have a basic understanding and an ability to use appropriate medical terminology, including prefixes, suffixes, and root words. The student will be able to spell and define medical terms and other special terminology in producing basic medical communications/documents. Lecture three hours and additional Learning Center hours required. Prerequisite: 111 or equivalent.

262-3 Medical Terminology, Dictation, and Transcription II. Upon successful completion of this course, the student will be able to utilize appropriate medical terminology, including special terms and abbreviations in the production of complex communications/documents. The student will be able to transcribe medical-related material from shorthand notes or recorded dictation with increased speed and accuracy. Lecture three hours and additional Learning Center hours required. Prerequisite: 111 or equivalent.

263-3 Medical Administrative Support Procedures. Upon successful completion of this course, the student will have a basic understanding of career opportunities available in the medical support field and be able to perform necessary duties required of information support personnel in a hospital, clinic,

doctor's office, or other health-related organization. Lecture three hours and additional Learning Center hours required. Prerequisite: 111 or equivalent.

264-3 Health Insurance Processing. Upon successful completion of this course, the student will be able to prepare and to process various common health insurance forms by abstracting information from patient records. The student will have an understanding of common insurance, medical and diagnostic terminology, and coding principles relative to ICD-9-CM. Lecture three hours and additional Learning Center hours required. Prerequisite: 111 and 261.

281-3 Legal Testimony I. Upon successful completion of this course, the student will be able to write jury charge/legal opinion and testimony materials on the shorthand machine using computer-compatible theory. The student will be able to take dictation for five minutes at 140-160 wpm and transcribe with 95 percent accuracy or better. Lecture five hours. Prerequisite: 187.

282-3 Literary/Medical. Upon successful completion of this course, the student will be able to take medical testimony and literary material on the shorthand machine using computer-compatible theory. The student will be able to take dictation for five minutes at 140 wpm and transcribe with 95 percent accuracy or better. Students will know medical terminology including prefixes, suffixes, and roots of medical words commonly found in depositions and court transcripts. Lecture five hours. Prerequisite: 187.

283-3 Legal Testimony II. Upon successful completion of this course, the student will be able to take two-voice testimony material on the shorthand machine using computer-compatible theory. The student will be able to take dictation for five minutes at 200 wpm and transcribe with 95 percent accuracy or better. Lecture five hours. Prerequisite: 281.

284-3 Literary/Legal I. Upon completion of this course, the student will be able to write literary and legal material on the shorthand machine using computer-compatible theory. The student will be able to take dictation for five minutes at 180 wpm and transcribe with 95 percent accuracy or better. Lecture five hours. Prerequisite: 281 and 282.

290-2 to 8 Cooperative Office Experience. Upon successful completion of this course, the student will be able to apply knowledge and skills learned in classroom situations to on-the-job situations in an office. Students will acquire knowledge related to securing a position, keeping a position, and advancing and growing in a career. Two hours per week are spent on related classroom instruction, and 15 or more hours per week (depending upon semester hours credit) are spent working on the job. Student must secure appropriate position which meets the cooperative education experience requirements. Prerequisite: sophomore status within Office Systems and Specialties and in good standing.

299-1 to 16 Individual Study. Provides 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 of 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.

307-3 Office Records and Principles of Information Management. Upon successful completion of this course, the student will have a comprehensive understanding of the field of records and information management with emphasis on the application of scientific and systematic management techniques needed to control recorded information in an organization. The student will understand all of the elements of records management from creation through maintenance and protection to final disposition. Basic courses in management, office systems and computer software applications are recommended. Prerequisite: 107.

308-3 Office Forms Design, Analysis and Control. Upon successful completion of the course, the student will understand the concepts of form management as applied to: (1) the procedures to follow in order to implement a program within an organization; (2) analyzing and designing and/or redesigning business forms; and (3) forms construction, printing technology, paper types, forms procurement, forms specifications and inventory control. Prerequisite: 140 and 307.

309-3 Office Systems/Micrographics. Upon successful completion of this course, the student will understand the fundamental principles involved in micrographic technology including the technical aspects of the micrographic process, fundamental principles involved in systems design and development, and practical uses of micrographic systems particularly as they relate to the information management field. Prerequisite: 307. Recommended prerequisite: Computer Information Processing 109 or 229.

310-3 Office Systems and Modern Archives. Upon successful completion of this course, the student will understand the archival profession as a segment of the broader field of records/information management, its institutions and collections; the methodologies and issues in the field; and the archival field's relationship to records management under the life cycle concept of comprehensive records management. Prerequisite: 307.

313-1 to 5 Advanced Machine Shorthand. Upon completion of this course, the student should have developed a take speed of 200 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. Prerequisite: 283, 284, and ability to take two-voice shorthand at 200 words per minute.

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's *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 duty 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.

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 preceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credit to be individually arranged. Mandatory Pass/Fail.

341-3 Office Systems and Technologies. This course provides an overview of office systems with emphasis on people, procedures, technologies, and environmental factors. It focuses on the technologies used to improve productivity in the creation, storage, retrieval, manipulation, and distribution of information. Prerequisite: 113, 114, 240 or equivalnets.

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. This course may be classified as independent study. Prerequisite: consent of instructor.

385-3 Legal Testimony III. Upon successful completion of this course, the student will be able to take two-voice testimony material on the shorthand machine using computer-compatible theory. The student will be able to take dictation for five minutes at 225 wpm and transcribe with 95 percent accuracy or better. The student must pass two two-voice testimony takes with 95 percent accuracy or better. Lecture five hours. Prerequisite: 283.

386-3 Literary/Legal II. Upon successful completion of this course, the student will be able to write literary and legal material on the shorthand machine using computer-compatible theory. The student will be able to take dictation for five minutes at 200 wpm and transcribe with 95 percent accuracy or better. The student must pass two literary takes at 180 wpm and 2 legal opinion/jury charge takes at 200 wpm with 95 percent accuracy or better. Lecture five hours. Prerequisite: 284.

388-3 Court Reporting Procedures. Upon successful completion of this course, the student will be able to report the spoken word, transcribe shorthand notes, mark exhibits, administer the oath, and understand the judicial procedures and professionalism in the field of court reporting. Prerequisite: 114 or concurrent enrollment.

389-3 Court Practicum. Upon successful completion of this course, the student will have spent a minimum of 40 hours of machine writing in an approved freelance reporting office and/or an official reporting office and produced a usable transcript of the proceedings. The student will observe courtroom and freelance procedures, will write on the shorthand machine, will receive on-the-job training under the guidance of experienced reporters, and will participate in classroom activities related to the practicum experience. Lecture two hours. Prerequisite: ability to take testimony material at 200 wpm.

412-3 Office Systems Planning and Implementation Strategies. (Same as VES 412.) This course examines planning for office systems development through investigation of procedures and systems used in various types of offices, including a study of work flow, the processing of information, and employee and work group interactions. Topics detail office information systems from the perspective of the end users by studying development and implementation processes, tactics, and strategies based upon systems planning results through a field based project. Not for graduate credit. Prerequisite: 341.

414-3 Office Systems Applications. This course examines the applications of office automation technologies from the end user perspective to enhance the productivity of all levels of office employees. The course focuses on the relationship of automated technologies and corporate goals. Comparative and evaluative techniques are stressed for appropriate selection of hardware and software, as are basics of telecommunication. Not for graduate credit. Prerequisite: 341.

415-3 Integrated Office Systems. This course is the capstone course in the study of office systems and involves the synthesis, application, and evaluation of advanced concepts related to current office systems, principally through case analysis. Topics covered include technological, human, organizational, and procedural issues related to office systems management. Not for graduate credit. Prerequisite: 412 and 414.

416-3 Telecommunications. This course examines telecommunications in office systems including the computer technology and equipment components required in information interchange via voice, text, data, and image. Topics include telephony, data codes, protocols, network architectures, local area networks, communications media, hardware, and software. Telecommunication concepts, management issues, and practical applications are integral parts of this course with emphasis on the use of telecommunications to facilitate information interchange. Not for graduate credit. Prerequisite: 414.

481-3 Real Time Closed Captioning Technologies. Upon successful completion of this course the student will build a conflict-free dictionary using computer-aided transcription. By using stenotype input, the student will develop his/her knowledge, skill, and ability to produce accurate simultaneous translation and display of live proceedings utilizing a computer-aided translation system. Not for graduate credit. Prerequisite: 114.

485-3 Legal Testimony IV. Upon successful completion of this course, the student will be able to write two-voice and four-voice testimony material on the shorthand machine using computer-compatible theory. The student will be able to take dictation for five minutes at 225 wpm to 240 wpm and transcribe with 95 percent accuracy to complete this course. Not for graduate credit. Prerequisite: 385.

486-3 Literary/Legal III. Upon successful completion of this course, the student will be able to write literary and legal opinion/jury charge dictation at speeds of 200 to 220 wpm on a shorthand machine using computer-compatible theory. The student must pass two literary takes at 200 wpm with a minimum of 95 percent accuracy. Not for graduate credit. Prerequisite: 386.

Paralegal Studies for Legal Assistants (Major)

The program leads to the Bachelor of Science degree in paralegal studies for legal assistants. It prepares the graduate to function as a paraprofessional in the legal profession and as a legal assistant in private practice, legal aid offices, or the law-related operations of business, industry, education, or government.

In overall philosophy as well as in curriculum content and format, the paralegal studies for legal assistants program is based on the proposed *Curriculum for the Training of Law Office Personnel* as stated by the American Bar Association Special Committee on Legal Assistants. The program has two components: a core of legal specialty, administration, and communication skills courses to provide professional competency and a range of social science and humanities courses to provide the intellectual background for the student's future professional life including an understanding of law and its function in society. Students must meet a minimum 2.25 grade point average requirement for admission.

Qualified students may be admitted to the Capstone option with a major in paralegal studies for legal assistants. The Capstone option is explained in Chapter 4.

Bachelor of Science Degree, College of Liberal Arts

General Education Requirements 46
College of Liberal Arts Academic Requirements (See Chapter 3.) ..... (7) + 7
Requirements for Major in Paralegal Studies for Legal Assistants 54
- Paralegal Courses 27
  - Paralegal Studies for Legal Assistants 300a,b, 310, 320, 330, 350 18
  - Political Science 330 (general law) 3
  - Six hours selected from those listed below 6
    - Political science 334 (criminal law) or approved substitute
    - Accounting 240 or 341 (income taxation)
    - Accounting 441 (advanced taxation)
    - Finance 270 (legal and social environment of business)
    - Finance 320 (real estate)
    - Finance 323 (real estate law)
    - Finance 280 and 380 or approved substitute (business law)
    - Paralegal Studies for Legal Assistants 340, internship. Students who take the internship will be required to work ten hours a week for one semester for each three hours of credit. A student may earn 12 hours of internship credit but not more than three will count toward the major.
- Administration Related Courses 9
  - Office Systems and Specialties 220 3
  - Accounting 210 or approved substitute 3
  - Computer Science 102, Computer Information Processing 109, Office Systems and Specialties 114 or 223 3

Liberal Arts Courses 18
Two upper-division courses in one social science department and one humanities department. The remaining hours may be taken in either field. General education courses numbered 300 or above may be counted.

Electives 13

Total 120

At least fifteen hours in paralegal courses must be taken at Southern Illinois University at Carbondale.

Minor

A minor in paralegal studies for legal assistants requires 15 hours. Paralegal Studies for Legal Assistants 300a,b and Political Science 330 are required. The remaining six hours should be chosen from Paralegal Studies for Legal Assistants 310, 320, 330, 340 or 350.

Courses (PARL)

300a-3 Legal Analysis, Research and Writing I. After examining the litigation process and the structure of federal and state court systems, students will be introduced to case and statutory analysis and to an understanding of the role of paralegals in the litigation process. They will learn how to analyze and synthesize written opinions and will complete several writing projects.
300b-3 Legal Analysis, Research and Writing II. Students will continue to develop their analytical skills and will learn how to conduct effective legal research. Students will use the results of their research in connection with several additional writing projects, including memoranda of law and appellate briefs. Employment opportunities for paralegals and their professional responsibilities will be stressed throughout the course. Prerequisite: passed 300a with a grade of *C* or better.
310-3 Civil Procedure. Students will examine the lawyers' and paralegals' roles in handling civil cases, and the means by which the objectives of litigation may be achieved. Strategy and mechanics of civil procedure will be explored in depth, and students will be required to prepare a complaint, discovery requests, and initial appellate documents.
320-3 Estates and Trusts. Students will study the more common forms of wills and trusts and the fundamental principles of law applicable to each; the course will analyze the administration of estates under the Illinois Probate Act.
330-3 Legal Forms of Business Organizations. Includes a review of the lawyer's role in the formation of business entities, including sole proprietorship, partnerships, and corporations, with a survey of the fundamental principles of law applicable to each and the preparation of documents necessary to the organization and operation of each. The student will be prepared to draft articles of incorporation and other legal documents relevant to the role of a paralegal in a modern law office.
340-1 to 12 Internship in Paralegal Studies. Supervised on-the-job training and experience in public or private offices typically employing paralegals. Student must work ten hours per week for fifteen weeks for each three hours of credit. Only three hours of internship credit applicable to major requirements. Prerequisite: formal application from student, accompanied by letter or support from supervisor, and consent of coordinator of paralegal studies program.
350-3 Family Law. This course is a review of the law as it relates to the various aspects of domestic relations including marriage, divorce and separation, alimony, child custody and support, taxes, and illegitimacy and adoption.

Pharmacology (Department, Major [Graduate Only])

(SEE GRADUATE CATALOG)

Philosophy (Department, Major, Courses)

Philosophy is a critical, speculative, and reflective discipline concerned with the exploration of ideas. The questions with which it deals can be found in every human pursuit and subject matter. Among the subjects it embraces are the nature of truth reality, the possibility of knowledge, the quest for moral values and political justice, and the nature of mind, language, art, and reason. The field

of logic is a formal study of the art of exact thinking. Given this breadth, philosophy can be related to almost any subject or profession.

Recent studies have shown that strong liberal arts majors are in much demand in the world outside the University. While preprofessionals may enter the job market with higher salaries, those with liberal arts majors tend to rise higher in their professions. This is because a liberal arts degree indicates a capacity for thinking, learning, writing, and breadth of understanding. Philosophy is a strong liberal arts major, and majors in philosophy rank in the highest percentages for GRE, LSAT, and GMAT scores. In addition to further academic work, philosophy contributes toward careers in law, medicine, business, government, journalism, religion, computers, and education.

The Department of Philosophy at SIUC is a pluralistic department, representing a variety of traditions, such as analytic philosophy, phenomenology, American philosophy, Asian philosophy, and feminism. It has faculty who specialize in the history of philosophy, logic, ethics, metaphysics, political and legal philosophy, the philosophy of science, the philosophy of religion, and Buddhism. The undergraduate program is chartered by the national honor society in philosophy, *Phi Sigma Tau*.

The student electing to major in philosophy should consult the department's director of undergraduate studies. Early in the senior year, majors should contact a faculty member to direct the writing of the senior thesis. A minor is not required for a major in philosophy, though it is recommended that the student take foreign languages such as Greek, Latin, French or German.

Bachelor of Arts Degree, College of Liberal Arts

General Education Requirements	46
College of Liberal Arts Academic Requirements (See Chapter 3.)	(4) + 8-14
Requirements for Major in Philosophy	30
Philosophy 204, 205 and 399	9
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 30 hours, 6 of which may be selected from the 100 and 200 level	7-10
Electives	32-38
Total	120

Minor

A minor in philosophy requires 15 hours, a maximum of 6 of which may be selected from philosophy courses offered at the 100 or 200 level and 6 of which must be selected from the courses listed above for the major. Philosophy 204 and 205 are recommended.

Honors

Honors in philosophy will be granted to eligible majors who maintain a 3.50 average in philosophy and a 3.00 overall average. To be eligible for Honors, the student's senior thesis must be read by two faculty members and the student must receive at least an *A* and a *B*.

Courses (PHIL)

204-3 Ancient Philosophy. The birth of Western philosophy in the Greek world, examining such Presocratics as Anaximander, Heraclitus, Pythagoras, and Parmenides; focusing upon the flowering of the Athenian period with Socrates, Plato, and Aristotle. The course will conclude with a discussion of the Hellenistic systems of Stoicism, Epicureanism, and the Neo-Platonic mysticism of Plotinus of the Roman period.

205-3 Modern Philosophy. A survey course covering the major figures and themes in the development of modern philosophy up to Kant. Concentration on the Rationalist and Empiricist traditions and the simultaneous development of modern science.
214-3 Oriental Philosophies. Examination of world outlooks and life outlooks of major Oriental philosophic traditions: Hinduism, Buddhism, Confucianism, and Taoism.
260-3 Philosophy Through Literature. An examination of literary works which address philosophic issues and philosophic writings on the relationship between philosophy and literature. Possible topics include: sources of and contemporary challenges to the traditional Western idea that literature cannot be or contribute to philosophy; the role of emotion and imagination in philosophic argument; the role of literature in moral philosophy; philosophic issues of interpretation.
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.
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.
306-3 Nineteenth Century Philosophy. Survey of 19th century European philosophy, focusing on the development of idealism and romanticism. Readings include selections from Fichte, Schelling, Hegel, and others.
313-3 Chinese Philosophy. Historical and comparative study of Confucianism, Taoism, Mohism, Legalism, and Buddhism.
315-3 Indian Philosophy. A survey of Hinduism, Buddhism and Jainism in their historical and cultural context. Emphasis on *Upanishads*, *Bhagavad Gita* and Buddhist scriptures.
317-3 Philosophy of Buddhism. Survey of ancient and modern Buddhist thought in India, China and Japan.
320-3 Deductive Logic. Main forms of deductive inference. Emphasis on the use of the symbolism of modern logic to evaluate inferences.
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.
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 Mill, Rawls, and Kant).
344-3 The Biomedical Revolution and Ethics. Changes in biology and medicine have brought into sharp focus such problems as allocation of scarce medical resources, use of human subjects in experiments, abortion, euthanasia, genetic screening, truth-telling in medical practice, moral rights of patients and other matters. This course brings ethical principles to bear on these issues.
355-3 Philosophy of Education.
362-3 Science and Technology in Western Societies. A study of the development and significance of science and technology in the shaping of western societies since the scientific revolution. Historical, philosophical, and sociological perspectives will be used to understand the relationships between science and technology and between these and other cultural and religious values.
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.
375-3 Ecology and Ethics. An exploration of several views of the relationship between human beings and the natural world. This course will examine the changing paradigms of environmental studies for insights on our epistemological and moral approaches to nature. Both classical and contemporary literature on nature will be used. Such topics as the Gaia hypothesis, ecofeminism, deep ecology, and the use of nature for human purposes will be addressed.
389-3 Existential Philosophy. Surveys the two main sources of existentialism, the philosophies of Kierkegaard and Nietzsche, with occasional reference to thinkers such as Sartre, Heidegger, Buber, Marcel, and others.
397-6 (3, 3) Undergraduate Philosophy Seminar. Small group discussion of topics in philosophy.
399-3 Senior Thesis. A paper on a topic agreed to by the student and a faculty thesis director. The paper should be of sufficient length to manifest the student's mastery of a philosophical area and logical and critical skills. Prerequisite: consent of instructor and department.
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.
415-3 Logic of Social Sciences. (Same as Sociology 415.) An examination of the theoretical structure and nature of the social sciences and their epistemological foundations. The relationship of social theory to social criticism; theory and praxis. Historical experience and social objectivity. Social theory as practical knowledge.
420-3 Symbolic Logic. Survey of basic concepts, decision procedures, and proof techniques of modern symbolic logic.

422-3 Semiotic. (Same as Speech 447.) Introduction to Semiotic as the general theory of signs, including natural signs, signals and linguistic expressions. Concentration on contrasts and comparisons between language and more primitive types of signs.

425-3 Philosophy of Language. (Same as Speech Communication 465 and Linguistics 425.) An investigation into the way in which language is based on the nature of human cognitive structures, including metaphor, prototypes, frames, and various kinds of imaginative structure. Central topics include the grounding of meaning and conceptual structure in bodily experience, the role of imagination in reasoning, and the metaphorical nature of thought.

435-9 (3,3,3) Philosophy of Science. (a) Critical survey of influential description of scientific method and theory construction. Topics include the relationship between observation and theory confirmation, explanation, prediction, theory of change and discovery, and view of scientific rationality. Historical cases will serve to focus the discussions. **(b)** Philosophy of the Special Sciences. This course will focus on philosophical issues within a specific science such as Biology, Physics, or Psychology. Theory, method, and historical development of the specific science will be examined. **(c)** Special Topics in the Philosophy of Science. This course will provide a detailed focus on specific orientation or topic relevant to philosophy of science. Topics would include naturalized epistemology, evolutionary epistemology, history and philosophy of science, feminist epistemology, modern science, and philosophy of nature.

441-3 Philosophy of Politics. (Same as Political Science 403.) The theory of political and social foundations; the theory of the state, justice, and revolution. Classical and contemporary readings such as: Plato, Aristotle, Hobbes, Locke, Rousseau, Marx. Dewey, Adorno and others. Prerequisite: 340 or GEC 102 or consent of instructor.

443-3 Philosophy of History. The rise of historical objectivity and the science of history. Classical and modern theories of history. History as the foundation of social knowledge. The critique of history as universal perspective. Prerequisite: consent of instructor.

446-3 Philosophical Perspectives on Women. (Same as Women's Studies 456.) Discussion of contemporary views of women and social issues from a feminist perspective.

460-3 Philosophy of Art. We will examine several important theories that define art by focusing in on only one aspect, for example, imitation, expression, form, institutional setting, or even indefinability. What role does imagination play in each of these accounts, and does this tell us something important about how people experience their world?

468-9 (3,3,3) Kant (a) First Critique; **(b)** Theory of Morality; **(c)** Aesthetic Theory.

469-3 Hellenistic and Roman Philosophy to Augustine. The career of philosophy during the Hellenistic, Roman and Early Medieval period, especially as a means of personal salvation exploring such figures and movements as: Epicurus, Stoicism, the Middle Academy, Skepticism, Gnosticism, Plotinus, Early Christianity, Augustine, and Boethius. Prerequisite: 304 or consent of instructor.

470-6 (3, 3) Greek Philosophy. (a) Plato. A general survey of the Platonic dialogues from the Socratic period through the middle, with some selections from the Late period. Such Dialogues will be emphasized as: Protagoras, Gorgias, Euthydemus, Charmides, Meno, Phaedo, Symposium, Republic, Phaedrus, Sophist and Timaeus. **(b)** Aristotle. A general survey of the Aristotelian philosophy including the theory of nature, metaphysics, ethics, and political philosophy. Readings will consist of selections from the corpus. Prerequisite: 304 or consent of instructor.

471-3 Medieval Philosophy. An examination of the synthesis of Greek philosophy with the Judeo-Christian and Islamic religions, exploring such figures as Augustine, Boethius, Avicenna, Averroes, Abelard, Maimonides, Thomas Aquinas, Duns Scotus, Ockham, and Cusanus. Prerequisite: 304 or consent of instructor.

472-3 The Rationalists. Study of one or more of the following: Descartes, Malebranche, Spinoza, Leibniz, Wolff. Prerequisite: 305 or consent of instructor.

473-6 (3, 3) The Empiricists. (a) Locke; **(b)** Hume. Study of the principles of British empiricism as represented by either Locke or Hume. May also include study of Berkeley. Prerequisite: 305 or consent of instructor.

474-12 (3, 3, 3, 3) 19th Century Philosophers. (a) Hegel; **(b)** Kierkegaard; **(c)** Marx; **(d)** Nietzsche. Prerequisite: 306 or consent of instructor.

475-3 Asian Philosophy. Topics in Confucianism, Taoism, or Buddhism.

480-3 History of Analytic Philosophy. An introduction to the works of several major 20th Century philosophers in the analytic tradition, including several of the following: Frege, Russell, Moore, Wittgenstein (early and later), members of the Vienna Circle, Ayer, Ryle, Quine, Putnam, Davidson. Includes discussion of challenges to the tradition that have developed within it.

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.

486-3 Early American Philosophy. From the Colonial period to the Eve of World War I. This course will trace the transplantation of European philosophy to the New World. Will cover Puritanism, the theory of the American Revolution, the philosophical basis of the Constitution, transcendentalism, idealism, Darwinism and pragmatism and such figures as: Jonathan Edwards, Thomas Jefferson, James Madison, Ralph Waldo Emerson, Josiah Royce, Charles Sanders Peirce, and William James.

487-3 Recent American Philosophy. From World War I to the Present. The major American philosophers of the 20th Century, covering such issues as naturalism, emergentism, process philosophy, and neopragmatism. Figures include: John Dewey, George Herbert Mead, George Santayana, Alfred N. Whitehead, C.I. Lewis, W.O.Quine, and Richard Rorty.

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.

Photographic Production Technology (Program, Major)

The Photographic Production Technology program in the College of Technical Careers is a two-year program recognized by Photo Marketing Association International, Society of Photofinishing Engineers, and International Minilab Association. Through active involvement with these professional organizations, the techniques and processes included in the instructional program are current and consistent with industrial needs.

In the two years of study, students should expect to spend approximately $750 for materials and supplies, and each student is to provide their own fully-adjustable camera. Students receive instruction via lecture and laboratory sessions, touring industrial and commercial installations, and visiting professional photography studios.

Representatives of the profession serve on an advisory committee which keeps the program responsive to the needs of the photo industry. Current advisors are: Donald Beyer, Director, Photographic Services, AMOCO, Chicago, Illinois; Ron Fleckal, Vice-President, H & H Color Lab, Raytown, Missouri; David Goldstein, President, D.O. Industries, East Rochester, New York; Wayne Haub, President, H & H Color Lab, Raytown, Missouri; Fred Hinegardner, President, Gallery Studio, St. Charles, Missouri; Kenneth Lassiter, Director, Photographic Trades Relations, Eastman Kodak Co., Rochester, New York; Rodger T. McManus Jr., Executive Director, International Minilab Association, Greensboro, North Carolina; Dale Plank, President, Plank Photography, St. Charles, Missouri; Tom McCarthy, President, McCarthy Photography, St. Louis, Missouri; Robin Whitburn, Regional Sales Manager, Photo Quip USA, Inc., Burbank, California.

Students will find job opportunities throughout the industry for quality technicians. Graduates are limited only by their own talent, motivation, and willingness to relocate. Pay is directly commensurate with the technician's resourcefulness and drive. Eligible students may wish to continue work toward the Advanced Technical Studies' bachelor of science degree in the College of Technical Careers.

A minimum of 63 credit hours is required for the major, and the program can be completed in two academic years at the University or in combination with community college or other acceptable extra-institutional experience.

Associate in Applied Science Degree, College of Technical Careers

Requirements for Major in Photographic Production Technology

GEA 106	3
GED 101, 153	6
GEB 211	3
Computer Information Processing 109	3
Office Systems and Specialties 100	2
Technical Careers 105a	2
Photographic Production Technology 111, 113, 115, 209, 211, 215, 221, 251a,b	44
Total	63

Courses (PPT)

109-2 Illustration and Product Photography. An introductory photography course specifically designed for non-photo majors. Instruction which will emphasize product photography will include a study of camera controls, films, and lighting techniques. 35 millimeter and 4 by 5 film will be the primary photographic material used in this course. Lecture one hour, lab four hours.
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. An introduction to sensitized materials, processing techniques and quality control procedures in common use within the photofinishing industry. Students will perform basic sensitometric and quality control procedures to a variety of black and white and color material.
115-4 Photo Equipment Operation. An introduction to the equipment and operation of commercial photofinishing labs. Students will gain experience in operation, maintenance and troubleshooting on various types of processing and printing equipment. Lecture two hours, lab four hours.
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 of 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.
209-4 Graphics for Photography. Students will develop basic skills in print finishing, retouching and restoration for black and white and color materials. The course is designed to acquaint students with current techniques and processes used by commercial processing labs. Lecture two hours, lab four hours.
211-6 Photo Processing III. Color reversal material. An advanced course dealing with reversal materials. Students will be involved with processing and finishing techniques common to the photofinishing industry. Lecture two hours, lab six hours. Prerequisite: 113 and 115.
215-6 Photo Processing IV. 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.
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: 111.
251-1 to 12 (1 to 3, 2 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 nine hours. Prerequisite: program adviser's committee consent.
299-1 to 16 Individual Study. Provides 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 of 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.
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 preceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credit to be individually arranged. Mandatory Pass/Fail.
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. This course may be classified as independent study. Prerequisite: consent of instructor.

Physical Education (Department, Major, Courses)

The Department of Physical Education offers programs which qualify graduates for positions as teachers in elementary and secondary schools or for alternative careers in private, industrial, and public settings. Whatever the student's career aims may be, the programs provide a full range of intriguing and challenging professional opportunities in diversified curricula. The student can choose a discipline best suited to individual interests, talents, temperament, and future plans. While studying new concepts, the student will observe the work of

outstanding teachers, athletic coaches, and clinicians. Whichever direction is selected, the student will study and practice in modern facilities, with the latest equipment and will learn the most recent techniques.

Teacher Education Specialization. The teacher education specialization consists of courses which are designed to meet the requirements of the Illinois State Department of Education and are, in most cases, transferable to meet requirements of other states. The laboratory and classroom experiences consist of basic and applied sciences, methods of teaching, and acquisition of physical skills which include a variety of team and individual sports, exercise, and dance.

Students selecting the Teacher Education Specialization may also elect additional courses to become certified by the Illinois Athletic Coaching Certification Board (IACCB) or complete a minor in either aquatics or athletic training. These additions to the preparation for teaching will enhance a graduate's employment opportunities.

Athletic Training Specialization. The athletic training specialization is designed to train students to provide exemplary first-aid care for student-athletes, and administer rehabilitation, therapeutic treatment, and preventive conditioning programs under the supervision of a physician. This program prepares graduates for careers as athletic trainers in public schools, colleges, and private and industrial settings.

Exercise Science and Physical Fitness. This program is designed for students who wish to direct physical fitness programs in private, industrial and public settings. Preparation in this program enables the graduate to assess components of adult fitness, design individual exercise programs for the development and maintenance of physical fitness, and manage a physical fitness program. Graduates will have the foundation for continued study at the graduate level.

Bachelor of Science Degree, College of Education

PHYSICAL EDUCATION MAJOR — TEACHER EDUCATION SPECIALIZATION

General Education Requirements 49
See Teacher Education Degree Requirements, Chapter 3.

Requirements for Major in Physical Education ..... (5) + 39
Physical Education 100, 113, 114, 116a,b, 117, 118a,b, 120, 121, 122, 301, 305, 314, 317, 318, 319, 321, 322, 323, 324, 345, 370, Physiology 209, 220.

Professional Education Requirements 28
See Teacher Education Program, Chapter 3.

Electives 8
Selected from departmental approved courses.

Total 124

PHYSICAL EDUCATION MAJOR — ATHLETIC TRAINING SPECIALIZATION

Students majoring in physical education with a specialization in athletic training must maintain the following standards to remain in the program:

1. A minimum grade point average of 2.25 at the University.
2. A minimum grade point average of 2.5 for all required course work in the athletic training specialization;
3. Obtain a grade of *B* or better in Physical Education 225;
4. Obtain a grade of *C* or better in Physiology 301;
5. Complete 1200 hours of clinical experience;
6. Be proficient in basic skills according to class level.

The prospective student should make an early application to this program because enrollment is limited due to the size of the faculty.

General Education Requirements 48
GEA 101, 106, 118; GEB 202; GED 101, 102, 153; GEE 201, 236 and two hours of one departmental physical education activity to substitute for GEE
Requirements for Major in Physical Education 69
Core Requirements ..... (3) + 14
Physical Education 115, 303, 304, 326, 320; Physiology 209, 220
Additional Physical Education Requirements 24
Physical Education 225, 226, 305, 317, 325, 327, 328a,b, 341, 355d, 381, 382, 407 or 426
Additional Requirements 31
Physical Therapist Assistant 203, 208, Allied Health Careers Specialties 105; Health Education 334, 407, 434; Psychology 302, 303, 323; Physiology 208, 301
Electives 4
Total 121

PHYSICAL EDUCATION MAJOR — EXERCISE SCIENCE AND PHYSICAL FITNESS SPECIALIZATION

General Education Requirements 46
GEA 118; GEB 202; GED 101, 102, 107, 153
Requirements for Major in Physical Education 64
Core Requirements ..... (5) + 14
Physical Education 113, 115, 303, 304, 320, 324; Physiology 209, 220
Additional Physical Education Requirements 14
Physical Education 355f, 380, 381, 382, 408, 420
Additional Requirements ..... (4) + 36
Accounting 210; Management 170, 202, 301 or 304, 350 or 385; Biology 306 or 308 or 309; Chemistry 140a,b; Computer Science 202 or 212 or Computer Information Processing 229; Food and Nutrition 215, 320; Physiology 208; Educational Psychology 402; GEE 101m.
Electives 10
Total 120

Students wishing to gain experience in physical education and areas related to physical education may pursue work in aquatics, coaching, and athletic training.

Minor in Physical Education

A student with a minor in physical education in secondary education must complete the following courses:

Required Activity Courses 10
Physical Education 113, 114, 116a,b, 117, 118a,b, 120 10
Required Methods Course 1
Physical Education 322 1
Required Theory Courses 17
Physical Education 301, 305, 317, 319, 321, 324, 370 14

Physiology 220 3
Total 28

Minor in Aquatics

A student must have advanced swimming skill, a current American Red Cross Lifeguarding certificate, and a current American Red Cross Water Safety Instructor or Lifeguarding Instructor certificate to enter the program. If not, the student must take the appropriate course(s).

Required Courses: 9
Physical Education 307 or 311, 208, 310, 418
Electives: 8
Physical Education 330c or 355a; First Aid Instructor and CPR Instructor certification[1] (PE 494a,b or HED 310, or HED 334 and 434); four hours from PE 308a,b,c,d, or e.
Total 17

[1]Current First Aid and CPR certification completed independent of coursework is acceptable. Certification may be satisfied through the coursework indicated.

Minor in Athletic Training

The Prospective student should make an early application for admission to this program because enrollment is limited due to the size of the faculty.

Students in physical education with a minor in athletic training must complete the following requirements for retention in the minor: (1) 2.25 SIUC grade point average; (2) 2.5 grade point average in required courses; (3) *B* in Physiology 220; (4) *B* in Physical Education 225; (5) complete 800 hours of clinical experience supervised by a certified trainer at the University; and (6) must be proficient in the basic athletic training skill according to class level.

Requirements for the minor are listed below.

General Education Requirements 10
GEB 202, GED 153, and GEE 201, 236
Physical Education Requirements 32
Physical Education 115, 225, 226, 303, 304, 305, 317, 320, 325, 326, 327, 328a,b, 341, 355d, 370
Other Requirements ..... (3) + 17
Psychology 303, Health Education 334 and 434, Physical Therapist Assistant 208, Physiology 208, 209, 220
Total 59

Minor in Coaching

The standards for certification of public school athletic coaches as determined by the Illinois Athletic Coaching Certification Board (IACCB) are as follows:

1. Medical & Legal Aspects of Coaching;
2. Kinesiological & Physiological Foundations of Physical Activity and Sport;
3. Psycho-Social Foundations of Physical Activity and Sport;
4. Coaching Techniques and Principles.

Suggested courses to satisfy the above are:

1. Physical Education 226 and 324 or Health Education 334 and Physical Education 226;
2. Physiology 220 and Physical Education 321, or Physiology 220 and Physical Education 303 and 304, or Physiology 209 and Physical Education 319, or Physiology 209 and Physical Education 320;

3. Physical Education 345 or 409 or 410;
4. Physical Education skill course or appropriate experience, Physical Education 329 and 330 or Physical Education 355.

Courses (PE)

100-2 Foundations of Physical Education. An orientation to physical education including relationship of physical education to education and current trends and philosophies which underlie the practice of physical education and sport.
113-1 Aquatics. This course provides the opportunity for the student to improve one's ability in basic swimming skills and strokes. It is designed to prepare the student to react in emergency situations and to know and use elementary rescue techniques. Prerequisite: GEE 101A or equivalent skill level.
114-2 Concepts of Physical Fitness. A course designed to provide physical education students with the best scientific evidence to promote health related physical fitness.
115-3 Exercise, Conditioning, and Weight Training. Designed to improve personal fitness, introduce students to different training programs, their benefits and means of evaluation.
116A-1.5 Team Sports I. This course is designed to expose the student to the basic skills, rules and strategies in the team sports of soccer, flag football, and volleyball.
116B-1.5 Team Sports II. This course is designed to expose the student to the basic skills, rules and strategies in the team sports of basketball, floor hockey, and softball.
117-1 Racquet Sports. This course is designed to teach the basic skills, techniques, strategies and rules in tennis, badminton, and racquetball.
118A-1 Dance I. This course is designed to introduce the student to the fundamentals of square, folk, and social dance.
118B-1 Dance II. This course is designed to introduce the student to the fundamentals of rhythm and rhythmic analysis of basic dance steps, the fundamentals of modern dance, and the basics of aerobic dance.
120-1 Individual Sports. This course is designed to help students develop the basic skills and knowledge in archery, bowling, and golf. A fee of $15 or less and equipment purchase.
121-1 Basic Gymnastics and Combatives. This course is designed to provide an introduction to the basic skills in stunts, tumbling, gymnastics, and combatives.
122-2 Track and Field. This course is designed to provide an introduction to the basic skills and knowledge in track and field activities.
140-2 Beginning Modern Dance. Emphasis placed on proper body alignment and mechanics of breathing and phrasing, vocabulary and terminology, improvisation, and creative movement. Prerequisite: GEE 103D or consent of instructor.
150-2 Beginning Classical Ballet. An introduction to the traditional techniques of the classical dance as an academic craft and style that serves as a basis for logical physical training of the dancer, choreographer, and the 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. Prerequisite: GEE 103F or consent of instructor.
160-2 to 8 (2, 2, 2, 2) Dance Concert Production Ensemble. A select group which performs, choreographs, and produces one dance concert per semester and tours as feasible. Prerequisite: audition prior to first registration and consent of instructor each succeeding semester. Participation as an apprentice of Southern Illinois Repertory Dance Theatre for one semester.
170-2 to 4 (2 per section) Varsity Sports. (a) Football. **(b)** Basketball. **(c)** Track. **(d)** Tennis. **(f)** Baseball. **(g)** Golf. **(h)** Swimming and diving. **(i)** Cross country. **(l)** Softball. **(m)** Volleyball. Prerequisite: participation as member of a varsity team. Mandatory Pass/Fail.
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.
205-2 Mental Skills for Sport and Performance. This course is designed for individuals involved in sport, exercise, and/or performance with an interest in learning about and developing a repertoire of psychological skills for use in sport, performance, and daily life.
208-2 Instructor of Swimming. Designed to prepare the student to teach beginning swimming through lifesaving to pre-school through adult groups. Prerequisite: consent of instructor.
225-2 Introduction to Athletic Training. This course is designed for students pursuing a career in athletic training. The course provides knowledge about the NATA, job opportunities, incidence of injury, basic injury prevention, recognition and treatment. It also provides the student with information concerning the recognition and treatment of illnesses and conditions common to athletes.
226-1 Taping Techniques. To familiarize the student with all aspects of taping including practice taping experience for athletic injuries.
245-3 Sport and Modern Society. (Same as Sociology 233.) Viewing sport as an integral aspect of society and culture, this introductory course examines the various ways in which sport reflects the broader society and how sport constitutes an important cultural product. In particular, the course explores (1) how sport shares many of the same characteristics as other social institutions (e.g., family, education, politics, economy, mass media), (2) how sport reinforces social inequalities, and (3) how sport serves as an arena for social change and resistance.

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. Mandatory Pass/Fail. Prerequisite: at least *C* average in physical education courses after 12 hours.
301-2 Organization and Administration of Physical Education. Consideration of the special problems related to the organization, administration and curriculum in physical education.
302-2 Kinesiology of Normal and Pathological Conditions. Force system, its relation to the mechanics of muscle action. Analysis of muscular-skeletal forces involved in physical activities. Prerequisite: Physiology 220.
303-2 Kinesiology. Force system, its relation to the mechanics of muscle action. Analysis of muscular-skeletal forces involved in physical education activities. Prerequisite: Physiology 220.
304-2 Mechanical Basis of Human Movement. Applies body mechanics with application of mechanical laws and principles to performance in physical activities. Prerequisite: 303 or consent of instructor.
305-2 Methods of Teaching Physical Education for Special Populations. An introductory course designed to provide the physical education generalist with the minimal competencies needed to teach the mildly handicapped students in the mainstreamed or special education setting. The course will also aid the special education classroom teacher in providing appropriate physical education. Prerequisite: 317 and junior standing.
306-1 Advanced Swimming, Skill and Analysis. Prerequisite: GEE 101b or equivalent.
307-2 Water Safety Instructor. Methods of teaching swimming and basic emergency water safety. American Red Cross Water Safety Instructor certificate may be earned. Fee and National Test are required for certification. Prerequisite: GEE 101m or equivalent certification and concurrent enrollment in PE 306.
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.
309-3 Creative Movement for Children. Curriculum planning practicum experience using movement as a means of self-expression for the child to enhance mental, emotional, and physical development. During the first eight weeks, students will study various aspects of dance as can be applied to creative movement for children; the second eight weeks, students will work directly with children on a weekly basis. Prerequisite: sophomore standing.
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 Instructor. The skills, techniques and methods of preparing qualified individuals to prepare persons to becomes lifeguards at pools and open-water, non-surf beaches, American Red Cross Lifeguard Instructor Certification may be earned. Fee and National Test required for certification. Prerequisite: GEE 101f or equivalent certification. Lifeguarding experience.
314-2 Methods of Teaching Elementary Physical Education. The purpose of this course is for physical education students to develop knowledge and skills for planning, implementing, and evaluating appropriate and effective physical education programs at the elementary school level. The course will consist of lectures, class participation in demonstrations of teaching movement for children, observation of children participating in activity and also peer teaching by class members. Prerequisite: 318 and 317.
315-2 Methods of Teaching Dance. Curriculum planning for the dance student, covering analysis of dance fundamentals, identifying dance terminology, movement phrasing, accompaniment for class, and lesson planning. Focus will be on the structuring of modern dance and ballet classes at the beginning level. Dance attire required. Prerequisite: two semesters of modern technique and two semesters of ballet, both above the general education level.
316-3 Advanced Level Sports Skills: Scuba. Prerequisite: consent of instructor.
317-2 Motor Development. The purpose of this course is to provide an introduction to the normal development of motor behavior in children and adolescents, biological and environmental variables which affect motor skill acquisition; and the assessment of motor development in children and youth, with particular emphasis on the application of the knowledge to teaching and learning situations.
318-2 Motor Learning. Study of theory and research emphasizing the psychological and neural basis of underlying the learning of motor skills; application to physical education teaching and athletic coaching environments. Prerequisite: GEB 202.
319-2 Physiological Foundation of Exercise and Sport. This course is designed to provide basic physiologic information regarding exercise and sport performance. This course is open to Teacher Education majors only. Prerequisite: PHSL 209 or equivalent.
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: Physiology 209 or equivalent.
321-2 Biomechanical Analysis of Sport. The science of human motion; study of anatomical and mechanical principles as they relate to an understanding of skillful and efficient motion. This course is open only to undergraduate Teacher Education students. Prerequisite: Physiology 220.

322-1 Teaching Practicum. Laboratory experience assisting with a GEE course, or in a school setting. Mandatory Pass/Fail.

323-2 Methods of Teaching Secondary Physical Education. The purpose of this course is for physical education students to develop knowledge and skills for planning, implementing, and evaluating appropriate and effective physical education programs at the secondary school level. The course will focus on knowledge and skills related to effective instructional strategies, efficient management and organizational principles, and effective class control and motivational techniques specific to teaching physical education for secondary school students. Prerequisite: 317, 318.

324-2 Essentials of Athletic Training. This course provides basic information regarding prevention, recognition, first aid, taping and wrapping of athletic injuries. The student will be required to successfully demonstrate basic strapping techniques, bandaging, splinting and CPR. The course leads to certification in first aid and CPR. Certification fees payable to the local organization will be collected in class.

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 of training room operational functions. Prerequisite: Physiology 220 or 301.

326-3 Emergency Care and Prevention of Athletic Injuries. The theoretical and practical methods of preventing and treating athletic injuries; techniques of taping and bandaging; emergency first aid; massage; use of physical therapy modalities. Lecture and laboratory sessions. Prerequisite: Physiology 220 or 301.

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.

328-2 (1, 1) Field Experience in Athletic Training. The student will be responsible for prevention of injuries, taping, rehabilitation, evaluation, and coverage of practices and games for an intercollegiate athletic sport. Prerequisite: 327 and permission by athletic training program coordinator.

329-3 Principles and Procedures for the Conduct of Interscholastic Athletics. An examination of the history, values, and trends in extracurricular sports programs. A review of regulations and standards as determined by the governing bodies for men's and women's sports and an in-depth study of coaching and administrative procedures. Prerequisite: competitive experience recommended and consent of instructor.

330-2-26 (2 per part) 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. Prerequisite: consent of instructor.

341-2 Assessment of Musculoskeletal Injuries. The student will be introduced to the techniques in evaluating injuries to muscles and joints. Prerequisite: basic athletic training course and consent of instructor.

345-2 Psycho-Social Aspects of Sport and Physical Activity. This course exposes students to psychological and sociological concepts that influence or are influenced by involvement in sport and physical activity. Primarily designed for future physical education teachers and coaches, the course examines how psycho-social principles relate to teaching and coaching contexts.

355-2 to 14 (2, 2, 2, 2, 2, 2, 2) Practicum. **(a)** Aquatics. **(b)** Special Populations. **(c)** Coaching. Mandatory Pass/Fail. **(d)** Athletic Training. **(e)** Dance. **(f)** Exercise Science. **(g)** Teaching of Sport. Prerequisite: restricted to written consent of instructor.

360-1 to 2 Theory of Officiating. This course provides information on officiating sports. The course will cover the basic theory of officiating and provide the student with the opportunity to gain practical experience from the officials perspective in selected sport activities. Prerequisite: consent of instructor.

370-2 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. Prerequisite: Education 317 or concurrent enrollment.

375-2 Introduction to Professional Literature in Physical Education. An introduction to the professional literature in physical education with emphasis on the reading of research-oriented journals. Prerequisite: senior standing and grade point average of 3.25.

380-2 Aerobics. A study of theoretical and practical framework within which the concepts of aerobic fitness exist. Both an evaluation and a hands-on experience with the direct and indirect procedures commonly used to determine oxygen uptake capacity and aerobic power. A thorough discussion of the meaning of aerobic fitness as it applies to general fitness of the adult and aging person. Prerequisite: 320, junior standing, and approval of the instructor in the semester prior to enrollment.

381-2 Exercise and Weight Control. A theory practicum course dealing with the interrelationships of exercise and diet as factors influencing weight control. Emphasis on the practical delivery of programs of weight control in the context of adult programs of physical fitness. Prerequisite: 320, junior standing, and approval of the instructor in the semester prior to enrollment.

382-3 Graded Cardiovascular Testing and Exercise Prescription. A study of the controlled use of exercise to evaluate the cardiovascular function of an adult population and in specific persons of middle and older aged groups. The scientific basis of recommending exercise programs as a preventive rather than a treatment of heart disease will be stressed. Prerequisite: 320, junior standing, and approval of the instructor in the semester prior to enrollment.

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.

403-3 Individualizing Physical Education Instruction for Students with Special Needs. Designed as an introductory survey of handicapping conditions found most often in the regular class setting with implications for physical education instruction. Emphasis is placed on a diagnostic-prescriptive teaching model. Students will learn to plan, implement, and evaluate quality physical education services to handicapped students. Prerequisite: graduate standing or consent of instructor.

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. Prerequisite: Basic Athletic Training Course.

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 the theoretical and empirical foundations of sport sociology. A research-based approach is used to explore the relationship of sport to various social institutions, as well as the role of social processes (e.g., socialization, discrimination, stratification, conflict) in sport and physical activity contexts.

410-3 Psychological Aspects of Sport and Physical Activity. This course presents the theoretical and empirical foundations of sport psychology. Operating from a conceptual rather than an applied framework, this class develops an understanding of social psychological phenomenon and processes related to participation in sport and physical activity (e.g., personality, anxiety, arousal, achievement motivation, social facilitation, aggression, pro-social behavior, group dynamics).

412-3 Research and Practice in Applied Sport Psychology. This course examines current research and practice in applied sport psychology. Emphasis will be placed on moving from theory into practice on sport-specific individual differences, motivational approaches, and interventions.

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. **(k)** Tennis. **(l)** Athletic training.

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. Prerequisite: Physiology 209 or equivalent.

425-2 Current Topics in Athletic Training. This course is designed to study and discuss current issues in athletic training and the health care of the athlete.

426-2 Advanced Techniques and Research in Therapeutic Modalities. Specifically designed for the student who wishes to become an athletic trainer and gain knowledge in the application and current research in therapeutic modalities.

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. **(g)** Motor learning. **(h)** Psycho-social aspects. Written report required. Prerequisite: consent of adviser and department chairperson.

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.

Physical Therapist Assistant (Program, Major, Courses)

The physical therapist assistant program, which has been accredited by the Commission on Accreditation in Physical Therapy Education/APTA, 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. Physical therapy helps the patient to develop strength, mobility, coordination, and skills needed to manage pain.

Students will learn massage, exercise, physical agents, and other therapeutic techniques in actual practice in the University's Clinical Center. They will work

with physical therapists and physical therapist assistants performing therapeutic techniques and assessments.

Before graduation the student will serve a twelve-week internship in two separate facilities away from the University campus.

The program is served by an advisory committee made up of practicing physical therapists, physical therapist assistants, students, and educators who provide expertise to assure a curriculum which will prepare students to meet the physical therapy needs of the public.

The student should expect to spend approximately $150 for uniforms and professional dues during their course of study. Students are expected to provide documentation of immunization or waiver for HBV.

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 physical therapy personnel. Employment opportunities are available in hospitals, rehabilitation centers, extended care facilities, out patient clinics and schools.

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 and a positive attitude, and 5) the ability to problem solve.

There is a limited enrollment to this program, students must meet baccalaureate entrance requirements, and admission is selective. Prospective applicants should make early application to the University. Once admitted in the pre-Physical Therapist Assistant category, the student will receive a second application specific to the program. Selection into the program is based upon evaluation on both applications in relationship to other applicants.

This associate degree program may be completed entirely at Southern Illinois University at Carbondale or in combination with community colleges or other extra-institutional educational experiences. This associate degree can be completed in one calendar year if the applicant has successfully completed the appropriate college level courses before program entry.

The credits from the physical therapist assistant major will not necessarily transfer to a professional physical therapy program.

Associate in Applied Science Degree, College of Technical Careers

Requirements for Major in Physical Therapist Assistant

GEA 118 and a physiology course and one other science course approved by the coordinator	10-11
GEB 202	3
GED 101, 152	6
Allied Health Careers Specialties 105	2
Health Education 334	3
Physiology 300 (with a minimum grade of *C*)	3
Physical Education 302, 320, and 325 or 326	7-8
Psychology 301, or 303, or 304, or 305	3
Physical Therapist Assistant 107, 113, 202, 203, 204, 205, 208, 209, 213, 214, 321, 322 (each with a minimum grade of *C*)	36
Total	73-75

Courses (PTH)

107-3 Introduction to Physical Therapy Practice and Procedures. Students will be able to describe the historical background, professional, ethical, and legal aspects of physical therapy practice. They will be able to describe the relationship of physical therapy to total health care. They will explain and demonstrate basic skills such as sterile techniques, wound care, and vital signs monitoring. They

will be able to perform massage techniques to selected patients. Lecture: two hours. Laboratory: two hours. Prerequisite: program major or consent of instructor.

113-2 Physical Agents I. The students will be able to demonstrate procedures used in the safe application of superficial and deep heat, cryotherapy, ultraviolet, paraffin, and hydrotherapy. Lecture one hour. Laboratory two hours. Prerequisite: program major or consent of instructor.

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 of 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.

202-2 Physical Rehabilitative Techniques. The student will be able to demonstrate rehabilitative procedures such as bed positioning, range of motion exercises, transfer activities, gait training, chest physical therapy, goniometry, and will understand the concepts of total rehabilitation. Lecture one hour. Laboratory two hours. Prerequisite: program major or consent of instructor.

203-2 Pathology. The student will be able to understand the fundamental basis of disease including inflammation, cardiovascular diseases, vascular diseases, arthritic conditions and repair of bone and soft tissue injuries. Emphasis will be placed on those conditions treated through physical therapy procedures. Lecture two hours. Prerequisite: Physiology 208 and 209; program major or consent of instructor.

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 skills in massage, hydrotherapy, range of motion exercises, activities of daily living, and application of heat, cold, and ultraviolet. They will also be able to assist in maintaining records and equipment. Lecture one hour. Clinic four hours. Prerequisite: program major or consent of instructor.

205-2 Physical Therapy Science. The students 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: program major or consent of instructor; Physiology 208, 209, and 220.

208-3 Therapeutic Exercise I. Designed to teach basic exercises for individual muscles or muscle groups, including breathing, postural exercises, manual muscle testing, and gait analysis, training and balance. Successful students will learn to select exercises for specific results; ie., increasing strength, coordination, endurance, flexibility, and proper body mechanics. Lecture two hours. Laboratory two hours. Prerequisite: Physiology 220 with a minimum grade of *C*; program major or consent of instructor.

209-4 (2, 2) Therapeutic Exercise II. Successful students will be able to administer therapeutic exercise techniques for specific clinical orthopedic and neurological conditions through demonstrations and supervised application of exercise for selected patients. The student will understand and safely apply the principles of advanced therapeutic exercise techniques such as **(a)** motor reflexes, sensory integration, normal motor development, and utilization of synergies. Lecture one hour. Laboratory two hours. **(b)** PNF, joint mobilization, and muscle balancing. Lecture one hour. Laboratory two hours. Prerequisite: 208 with a minimum grade of *C*; program major or consent of instructor.

213-3 Physical Agents II. The student will be able to demonstrate procedures used in the safe application of electrical currents, including shortwave diathermy, electrical muscle stimulation and electrotherapy for pain and healing functions; and other modalities including pelvic traction, cervical traction and intermittent compression. The student will understand and be able to describe the physiological effects, indication and contraindications for each physical agent covered. Lecture two hours. Laboratory two hours. Prerequisite: program major or consent of instructor.

214-3 Physical Therapist Assistant, Practicum II. Students will be able to perform the skills acquired in Practicum I as well as more complex physical therapy assisting procedures with selected patients. They will be able to demonstrate skills in therapeutic exercise and safe application of physical agents. They will be able to assist in maintaining records and developing cooperative spirit with other members of the department. Lecture one hour. Clinic five hours. Prerequisite: minimum grade of *C* in 107, 113, 202, 203, 204, 208, and 213.

299-1 to 16 Individual Study. Provides 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 of 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.

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 preceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail.

321-8 (4, 4) 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 separate physical therapy facilities. **(a)** First six week internship. **(b)** Second six week internship. Must be taken in a,b sequence. Prerequisite: must be taken concurrently with 322; completion of 107, 113, 202, 203, 204, 205, 208, 209, 213, and 214 with a grade of *C* or better.

322-2 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 edu-

cational experience at Southern Illinois University at Carbondale and their clinical internship experience. Prerequisite: concurrent enrollment in 321. Mandatory Pass/Fail.

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. This course may be classified as individual study. Prerequisite: consent of instructor.

Physics (Department, Major, Courses)

The undergraduate major in physics leading to the Bachelor of Science degree provides for a mastery of basic principles and methods of classical and modern physics and prepares the student for a wide variety of career opportunities. A degree in physics can lead to a challenging and interesting career. Physics as a profession has always been at the center of exciting discoveries, and much of modern science is originally based on the research done by physicists. The outlook for the future appears even more challenging.

The Physics Department at SIUC offers a first-rate undergraduate program in physics. Individual attention is provided to physics majors. We offer advanced laboratory courses in modern physics, digital and analog electronics, acoustics, and lasers and modern optics. Most importantly, the Department of Physics is research-oriented with all of its faculty active in research. Participation by advanced undergraduates in the research program of a faculty member is encouraged and can be very useful to students, providing them with technical skills not available through formal coursework and giving them a taste of *real* physics. The physics faculty at Southern Illinois University at Carbondale is engaged in a wide range of research activities in both experimental and theoretical physics. Our undergraduates can participate in experimental projects in such areas as nuclear magnetic resonance, low-temperature physics, laser-induced reactions, photo-acoustic microscopy, infrared spectroscopy and electron paramagnetic resonance. For those students who have an interest in theoretical physics, research projects are available in high-interest areas such as quantum physics, solid state physics, atomic and molecular physics, statistical mechanics and nuclear physics.

Employment opportunities in physics are varied and abundant, from industrial research and development to teaching. Physicists are employed in all sectors of society, including corporations, government research agencies and universities. Physicists are presently enjoying unusual opportunities in the development of new concepts that are expected to have far-reaching consequences in the high technology of the future. Totally new applications are arising from understanding basic physics principles. Some of these emerging concepts include laser communications, holography, synchroton radiation light sources, opto-electronics, high-temperature superconductors and physics applications in medicine. At a time when technological developments and discoveries are creating a heavy demand for physicists, projections indicate the possibility of a critical shortage of trained physicists.

In summary, physics is an exciting field, its graduates are in demand and enjoy high salaries. At SIUC, you have the opportunity to achieve a well-rounded education in becoming a physicist. 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

General Education Requirements ..... 46[1]
Supplementary College of Science Requirements 12
Foreign Languages (French, German, or Russian recommended) ..... (4) + 4
Biological Science (Not General Education) ..... 6[3]
Mathematics 111 ..... (3) + 2
Requirements for Major in Physics 72-73
Chemistry 115[2] or 222a or 222a,b 7-8
Mathematics 150, 250, 251, 305, and one of 306, 406, 407 or 409 17
Physics 48
Physics 205a,b,c and 255a,b,c 12
Physics 301, 310, 320, 345, 410, 420, 430 20
Physics 324*, 328*, 351*, 424*, 425, 428*, 431, 432, 445, 450*, 460a*, 460b*, 470* 16
Total 130-131

[1]The 46 hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Education courses.
[2]For students who do not pass a proficiency examination in chemistry.
[3]If courses are selected which are approved General Education substitutes the hours earned will reduce the 46 hour requirement in General Education.
*Applied/experimental option, concentrating on laboratory courses.

Bachelor of Science Degree, College of Education

General Education Requirements ..... 48[1]
Must include GEB 114, 202 and 301; GED 101 and 102 and 152 or 153; GEE 201 and two hours of physical education activity; Mathematics 111 as a substitute for GED 107
Requirements for Major in Physics 58-59
Chemistry 115[2] or 222a or 222a,b 7-8
Mathematics 150; 250; 251; 305; and one of 306, 406, 407 or 409 ..... 17[3]
Physics 205a,b,c and 255a,b,c 12
22 hours of physics courses numbered 300 or above including 310, 320, 324, 430, and either 425 or 431 and any three of the following courses: 328 and 351, 345, 424, 432, 450, and 460a 22
Professional Education Requirements 28
See Teacher Education Program, Chapter 3. Curriculum and Instruction 468 is required.
Total 134-135

[1]The General Education requirement may be reduced by taking major requirements which are approved substitutes for General Education courses.
[2]For students who do not pass a proficiency examination in chemistry.
[3]Students wishing to qualify to teach mathematics in the secondary schools should take, in addition, Mathematics 311 or 319 and 319e or 352 and 352e.

Minor

A minor in physics requires 17 hours and must include Physics 203a,b and 253a,b, or 205a,b and 255a,b as well as 205c and 255c and 5 hours from any 300- or 400-level physics course except Physics 470.

Courses (PHYS)

102-1 Everybody's Einstein. A non-mathematical presentation of Einstein's relativity theories on a popular level. No prerequisite.

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. Prerequisite: Mathematics 108 and 109 or 111. **(b)** Electricity, magnetism, light, and some aspects of modern physics. Prerequisite: 203a.

205-9 (3, 3, 3) University Physics. Designed to meet requirements of physics, engineering, and chemistry majors. **(a)** Mechanics, heat, and thermodynamics. Prerequisite: Mathematics 150 or concurrent enrollment. **(b)** Electricity, magnetism, and optics. Prerequisite: 205a. **(c)** Concepts in modern atomic, molecular, nuclear physics, quantum physics, and relativity. Prerequisite: 205a,b or consent of instructor.

253-2 (1, 1) College Physics Laboratory. One two-hour laboratory per week. Prerequisite: completion of or concurrent enrollment in 203a,b respectively; if the corresponding lecture course is dropped, the laboratory course must also be dropped.

255-3 (1, 1, 1) University Physics Laboratory. One two-hour laboratory per week. Prerequisite: completion of or concurrent enrollment in 205a,b,c respectively; if the corresponding lecture course is dropped, the laboratory course must also be dropped.

301-2 Theoretical Methods in Physics. Introduction to theoretical methods of general usefulness in intermediate and advanced undergraduate physics, with particular emphasis on applications to selected topics. Required of all physics majors prior to or concurrently taking 310 or 320. Prerequisite: 203a or 205a, Mathematics 250 or consent of instructor.

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.

310-3 Mechanics I. Motions of systems of particles and rigid bodies. Prerequisite: 301 or Mathematics 305 or concurrent enrollment.

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 electrostatics 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.

324-3 Analog Electronics for the Scientist. Coordinated two-hour lecture and two-hour laboratory study in analog electronics. Emphasis is on overall modern electronics and its applications in the experimental research laboratory setting. Topics include DC and AC circuit theory, transducers and measurement techniques, semiconductor active devices, operational amplifiers and feedback, signal recovery and processing techniques, and noise reduction. Prerequisite: 203b or 205b and Mathematics 111.

328-2 Light. Light propagation, reflection, refraction, interference, diffraction, polarization, and optical instruments. Prerequisite: 203 or 205.

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.

410-3 Mechanics II. Gravitation, continuous media, transformation properties, Lagrangian and Hamiltonian formalisms. Prerequisite: 310 or consent of instructor.

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.

424-3 Digital Electronics for the Scientist. Coordinated two-hour lecture and two-hour laboratory study of digital electronics, microprocessors and minicomputers with emphasis on their application to the experimental research laboratory setting. Topics include Boolean algebra, basic digital techniques, large scale integration devices, analog to/from digital conversion, microprocessors and minicomputers, and data acquisition. Prerequisite: 324 or consent of instructor.

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; opto-electronic phenomena in solids; dielectric and magnetic properties; superconductivity. Prerequisite: 310, 320, 345, and 430 or consent of instructor.

428-3 Modern Optics and Lasers. Properties of electromagnetic waves in space and media, polarization and interference phenomena and devices, electro- and magneto-optic effects, optical gain, and lasers. Prerequisite: 420 or consent of instructor.

430-3 Quantum Mechanics I. An introduction to quantum mechanics including its experimental basis and application in atomic physics. Prerequisite: 205c, 310 and 320. Prior or concurrent enrollment in 410 and 420 is desirable.

431-3 Atomic and Molecular Physics I. Atomic spectra and structure; molecular spectra and structure. Prerequisite: 430 or consent of instructor.

432-3 Nuclear Physics I. Basic nuclear properties and structure; radioactivity, nuclear excitation, and reactions, nuclear forces; fission and fusion. Prerequisite: 430 or consent of instructor.
445-3 Statistical Mechanics I. An introductory course in the principles and applications of classical and quantum statistical mechanics, and the elementary kinetic theory of matter. Prerequisite: 345.
450-1 Modern Physics Laboratory. Introduces students to experimental research and encourages them to develop and carry out experiments. Prerequisite: 205c or consent of instructor.
458-2 Laser and Optical Physics Laboratory. Properties of laser beams and resonators, fluorescence and two photon spectroscopy, diffraction, Fourier transformation and frequency filtering, electro- and magneto-optic modulation, fiber propagation and related experiments. Prerequisite: 428 or consent of instructor.
470-1 to 3 Special Projects. Each student chooses or is assigned a definite investigative project or topic. Prerequisite: 310, 320 or consent of instructor.

Physiology (Department, Major, Courses)

The Department of Physiology offers training in mammalian, 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 Education Requirements		46
College of Science Requirements		4
Foreign Languages	(4) + 4	
Requirements for Major in Physiology		58
Physiology Courses	24	
Physiology 410a,b	10	
Physiology electives	14	
To be chosen from 300 or 400-level courses offered in the Department of Physiology		
Physical Sciences	24	
Chemistry 222a,b; 380a,b[1]	16	
Physics 203a,b; 253a,b	8	
Biological Sciences	6	
Two from Biology 305, 307, 308, 309		
Mathematics 150 and 250[2]	8	
Electives		8
Total		120

[1]Chemistry 344, 345, 346 and 347 can be substituted for 380a. The additional credit hours accumulated can then count toward Electives.
[2]Mathematics 150 and 250 will fulfill the College of Science mathematics requirement.

Minor

A minor in physiology requires a minimum of 16 hours of course work, 10 hours of which must be selected from 300 or 400-level courses offered in the Department of Physiology. 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 (PHSL)

208-1 Laboratory Experiences in Physiology. Laboratory course to be taken concurrently with 209. Provides experiences with small animal experimentation and measurements made on the human subject. One two-hour laboratory per week. Prerequisite: concurrent enrollment in 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 310. Prerequisite: a background in biological science recommended.
220-3 Human Musculoskeletal 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.
257-1 to 6 Concurrent Work Experience. Under exceptional circumstances, and with prior approval of the departmental chair, credit may be granted for practical experience or other work directly related to physiology. Mandatory Pass/Fail.
258-1 to 6 Previous Work Experience. Under exceptional circumstances, and after petition to the departmental chair, credit may be granted for practical experience or other work directly related to physiology. Mandatory Pass/Fail.
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.
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 220.
310-5 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 biological sciences and health professions. Four lectures per week, one hour discussion and one two-hour laboratory. Prerequisite: one year of biological science and a reasonable knowledge of chemistry.
400-6 (3, 3) Concepts in Anatomy. A detailed survey of human anatomy for preprofessional students with an interest in the biomedical disciplines, including radiographic, cross-sectional, and developmental anatomy. Three lectures per week. Should be taken in a,b sequence. Prerequisite: 301 and senior standing or consent of instructor.
401-6 (3, 3) Advanced Human Anatomy Laboratory. Laboratory dissection of the human body (six hours per week). Primarily for students majoring in physiology or other biological sciences, anthropology, etc. Prerequisite: 400 taken concurrently or prior enrollment in 401.
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 and reproduction. Primary course for all students majoring in physiology or related sciences. Four lectures and one three-hour laboratory session 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.
420-6 (3, 3) Principles of Pharmacology. (a) Covers absorption, distribution, and metabolism of drugs and the action of certain drug classes on the living organism. Classes of drugs to be discussed include drugs affecting the autonomic nervous system, drugs used to treat neurological and psychiatric disorders, local anesthetics, neuromuscular blocking agents, and analgesics. Two lectures per week and one two-hour laboratory. Prerequisite: 310 or 410; 410 may be taken concurrently; organic chemistry. Some knowledge of biochemistry is needed. **(b)** Involves a discussion of the physiological and biochemical action of various classes of drugs. Classes of drugs to be discussed include general anesthetics, antihistaminics, diuretics, antibiotics, drugs used to treat cardiovascular disorders, and drugs affecting the endocrine system. Prerequisite: 420a; 310 or 410; organic chemistry.
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.
433-6 (3, 3) Comparative Physiology. Variations of physiological processes in animal phyla, and comparison of these with human physiology. **(a)** Osmotic and ionic regulation; digestion, nutrition, and metabolism; excretion; respiration; defense and resistance. **(b)** Muscles and movement; circulation; ner-

vous systems and sensory information; coverings and support; endocrine regulation; reproduction. Three lectures per week. Prerequisite: one year of biological science.

440-6 (3, 3) Biophysics. (a) Biomathematics, biomechanics and biotransport. **(b)** Bioelectrics and bio-optics applied to physiological problems. Three lectures per week. Prerequisite: Mathematics 141 or equivalent; one year of college biological science including Physiology 310 or its equivalent; one year of college physics. May be taken in b,a sequence with consent of instructor.

450-3 Vertebrate Endocrinology. A survey of the major endocrine control systems of vertebrates. Emphasis will be on those mechanisms which trigger endocrine responses to maintain homeostasis. Prerequisite: 310; concurrent enrollment in 410 or demonstrated equivalency; or consent.

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.

462-3 Biomedical Instrumentation. (Same as Electrical Engineering 462.) Diagnostic and therapeutic modalities related to engineering. Cardiovascular, neural, sensory and respiratory instrumentation. Prerequisite: consent of instructor.

470-3 Biological Clocks. Study of the temporal aspects of diverse physiological and behavioral functions which possess diurnal and sectional periodicity. Species covered will include many eukaryotic organisms including plants, but will mainly stress mammals. Oscillations in sleep-wake cycle, locomotion, reproduction, hormonal secretion and numerous other processes will be explored. In addition, the effects of biological clocks in humans and the effect of jet lag and depression will be examined. Prerequisite: 310.

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 8 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. No more than 3 hours may be counted as electives towards the major in physiology.

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 department and select most of their upper division credits from a wide choice of electives throughout the College 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. These courses are Plant and Soil Science 200, 220, 240, one hour of 381, and Agricultural Education and Mechanization 318 or 418 or an acceptable substitute.

There may be extra expenses for field trips, manuals, or supplies in some courses.

Bachelor of Science Degree, College of Agriculture

	SPECIALIZATIONS		
	General	Science	Business
General Education Requirements	48	48	48
Physics 203a or physics substitute[1]	—	3	—
Chemistry 140a substituted for GEA 106-3	4	—	4
Chemistry 222a	—	4	—
Plant Biology 200 substituted for GEA 117-3	4	4	4
Agribusiness Economics 204 substituted for GEB 211	3	3	3
GEB 202	—	—	3
GED 101, GED 102	6	6	6
GE Mathematics	3	—	3
GED 153	3	3	3
Mathematics 108[3]	—	3	—
Requirements for Major in Plant and Soil Science	53	68	64
Courses in two other departments in agriculture (include Agricultural Education and Mechanization 318)	6	6	6
Plant Biology 320	4	4	4
Chemistry 140b	4	—	4
Chemistry 222b, 380a,b	—	12	—
Mathematics 109,141	—	7	—
Physics 203b	—	3	—
Plant and Soil Science 200, 220, 240, 381-1, Agricultural Education and Mechanization 418	11	11	11
Other Plant and Soil Science courses[2]	17	17	17
Other Agriculture electives	11	6	6
Mathematics, physical sciences, or biological sciences	—	2	—
Accounting 210, Management 301 or 304, Marketing 304 or Agribusiness Economics 333 or 360 or Agriculture 323	—	—	11-12
Business electives and supporting courses	—	—	4-5
Electives	19	4	8
Total	120	120	120

[1]Physics 205a may be substituted.
[2]Plant 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.
[3]Mathematics 111 may be substituted.

PLANT AND SOIL SCIENCE MAJOR — LANDSCAPE HORTICULTURE SPECIALIZATION

General Education Requirements	48
Chemistry 140a substituted for GEA 106-3	4
Plant Biology 200 substituted for GEA 117-3	4
Biology 307 substituted for GEA 240	3

Agribusiness Economics 204 substituted for GEB 211 3
GED 101 3
GE Mathematics 3
GED 102 3
GED 153 3

Requirements for Major in Plant and Soil Science with a Specialization in Landscape Horticulture 61-63

Agricultural Education and Mechanization 371, 374, 318 or 418 7
Plant Biology 320 and 356 or 357 7-8
Chemistry 140b 4
Plant and Soil Science 200, 220, 240, 322, 327, 328a,b, 381-1, 428a,b, 432 or 434 30-31
Agriculture electives 9
Zoology 316 3

Electives 9-11

Total 120

PLANT AND SOIL SCIENCE MAJOR — ENVIRONMENTAL STUDIES SPECIALIZATION

General Education Requirement 46

Chemistry 222a 4
Plant Biology 200 substituted for GEA 117-3 4
Biology 307 substituted for GEA 240 3
GEA 330 3
Agribusiness Economics 204 substituted for GEB 211 3
GEC 221 3
GED 101, 102, 153 9
Mathematics 108 substituted for GE Math 3

Requirements for Major in Plant and Soil Science with a Specialization in Environmental Studies 74

Agriculture 333 2
Agricultural Education and Mechanization 318 or 418 3
Agribusiness Economics 401 3
Plant and Soil Science 200, 220, 240, 381, 420, 447, 468 21
Chemistry 222b 4
Civil Engineering 314 or Geography 434 3-4
Geography 471 3
Political Science 325 or 445 3-4
Mathematics 109[1] and 141 7
Plant Biology 320 and 357 7
Zoology 316 3

Electives 14

The fourteen hours must be selected from the following list of courses, of which, at least 7 hours must be Plant and Soil Science courses:

Plant and Soil Science 305, 322, 419, 430, 432, 436, 437, 441, 445, 446, 448, 454; GEA 118; Agribusiness Economics 440, 444; Animal Science 455; Chemistry 344 or 380a and 380b; Forestry 453; Plant Biology 337, 440, 443

Total 120

[1]Mathematics 111 may be substituted.

Minor

A minor in plant and soil science is also available to those interested in field crop production, horticulture, or soils. A total of 16 hours of credit is required with at least 12 hours taken at the University. One course may be selected from 200, 220, or 240; and at least eight hours from 300 or 400 level structured courses. The chairperson should be consulted for assistance in selecting this field as a minor.

Certification

Students may be certified as agronomist, crop scientist (specialist), or soil scientist, (specialist, classifier) by completing a program approved by the American Registry of Certified Professionals in Agronomy, Crops and Soils. Students with any of the above specializations may complete the certification academic requirements, although those with a science specialization will find they can complete the program with a few hours beyond the number required for a bachelor's degree. Most of the certification requirements can be completed with proper selection of courses as General Education substitutes and by using elective courses to fulfill certification requirements. Students are encouraged to discuss their interests with a departmental representative to obtain additional information.

	AREA OF CERTIFICATION[4]		
	Agronomist	Crop Scientist	Soil Scientist
General Education Requirements	48	48	48
Physics 203a substituted for GEA 101[1]	3	3	3
Chemistry 222a substituted for GEA 106	4	4	4
Plant Biology 200 substituted for GEA 117	4	4	4
Agribusiness Economics 204 substituted for GEB 211	3	3	3
GED 101	3	3	3
GED 102	3	3	3
GED 153	3	3	3
Mathematics 108[3] substitutes for GE Mathematics	3	3	3
Other General Education requirements	22	22	22
Requirements for Major in Plant and Soil Science	73	73	73
Courses in two other departments in agriculture (All options must take Agricultural Education and Mechanization 318 or 418. It fulfills additional mathematics requirement for Agronomist and Soil Scientist options)	6	6	6
Biological science elective	2	4	—
Plant Biology 320	4	4	4
Chemistry 222b, 380a,b	12	12	12
Economics elective	3	3	—
Engineering elective	—	—	3
Geology 220	—	—	3

Pest management/plant protection (weed science, plant pathology, entomology)	6	6	—
Mathematics (including statistics requirement) 140 and 283	7	7	7
Plant and Soil Science 200, 220, 240, and 381-1	11	11	11
Other Plant and Soil Science courses:[2]			
Crop sciences	3	12	3
Soil sciences	3	3	11
Agronomy electives	9	3	3
Agriculture electives	7	2	10
Total	121	121	121

[1]Physics 205a may be substituted.
[2]Plant 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.
[3]Mathematics 111 may be substituted.
[4]Meets academic requirements for certification by the American Registry of Certified Professionals in Agronomy, Crops, and Soils (ARCPACS).

Courses (PLSS)

200-3 Introduction to Crop Science. 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. Seniors cannot enroll without consent of instructor. Prerequisite: Plant Biology 200 or equivalent.
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. Laboratory fee approximately $25.
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. 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: Chemistry 140b or equivalent; 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.
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.
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 plant biology.
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.
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. Laboratory fee $10. Prerequisite: an introductory botany course or consent of instructor.
328A-2 Appreciation of Landscape Design. Introduction to theory and principles of landscape design as applied to the modern home. Property selection and climate control. Prerequisite: 327 and Agriculture Education and Mechanization 371 and 374 or equivalent.
328B-2 Appreciation of Landscape Design - Laboratory. Practical application in modern methods of property planning including the individual components of the completed landscape plan and selection

of plants. Laboratory fee: $20. Prerequisite: 327 and Agriculture Education and Mechanization 371 and 374 or equivalent.

356-4 Plant Pathology. (Same as Plant Biology 356.) A study of the nature and control of plant diseases. Fungal and bacterial diseases are stressed. Field crop diseases are emphasized. Two lectures and two laboratories per week. Prerequisite: Plant Biology 200 or equivalent; Plant Biology 320 recommended.

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.

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: GED 153 and 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.

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.

409-3 Crop Physiology and Ecology. The effects and significance of physiological and ecological parameters on crop yields. Prerequisite: Plant Biology 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: Plant Biology 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.

424-4 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.

428-3 Advanced Landscape Design I. Development of the design process, graphics and verbal communication of landscape projects. Emphasis on large scale projects and residential design. Laboratory fee: $25. Prerequisite: 328-4 or consent of instructor.

429-3 Advanced Landscape Design II. Development of the design process, graphics and verbal communication of landscape projects. Emphasis on construction details, color rendering and portfolio development. Laboratory fee: $25. 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. Laboratory fee: $40.00. 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.

433-4 Introduction to Agricultural Biotechnology. (Same as Animal Science 433.) This course will cover the basic principles of plant and animal biotechnology using current examples; gene mapping in breeding, transgenic approaches to improve crop plants and transgenic approaches to improve animals will be considered. Technology transfer from laboratory to marketplace will be considered. An understanding of gene mapping, cloning, transfer and expression will be derived. Prerequisite: senior standing 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 202 or consent of instructor.
435-1 to 4 Agricultural Molecular Biotechnology Seminar. Molecular biology is rapidly making important contributions to agricultural science through biotechnology. An appreciation of the techniques of molecular biology and their application to plant improvement is important to all in agriculture and biology. The relationships between plant molecular biology and the biotechnology industry will be discussed. Presentations on particular research problems will be made. Graded S/U.
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.
445-3 Irrigation Principles and Practices. This course will cover basic principles of irrigation sciences; water requirements of crops; soil water relationship; water application methods including flooding, sprinkler, and drip (or trickle) systems; water conveyance, distribution and measurement; evaluation of irrigation efficiency; and irrigation scheduling. Considerations will also include crop production effects and economic aspects of irrigation. Prerequisite: 240; or consent of instructor.
446-3 Soil and Water Conservation. Covers the principles of hydrologic processes and soil erosion. Consideration will be given to the occurrence of soil erosion as it affects humans, food production, and the environment. The methods and technologies for protecting against and controlling of erosion will also be discussed. Prerequisite: 240 and GED 107 or consent of instructor.
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.
448-2 Soil Fertility Evaluation. A laboratory course designed 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.
454-4 Soil Microbiology. (Same as Microbiology 454.) A study of microbial numbers, characteristics and biochemical activities of soil microorganisms with emphasis on transformations of organic compounds, nitrogen phosphorus, sulfur, iron, and other plant essential nutrients. Laboratory fee: $15.00. Prerequisite: 240 or Microbiology 301.
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.
470-2 Post Harvest Handling of Horticultural Commodities. Fundamental principles of post harvest physiology, handling, and evaluation of horticultural commodities will be covered. Specific details will be given on vegetable, fruit, ornamental, and floricultural commodities. Field trip costing approximately $30. Prerequisite: 220 and Plant Biology 320.

Plant Biology (Department, Major, Courses)

Plant Biology is the science of plant life, which ranges from the microscopic to giant Sequoia trees. You should consider a major in plant biology if you are curious about any of these: the kinds of plants that inhabit the earth; how they grow; why they are found where they are; and how or what products they contribute to the lives of humans.

A career in plant biology offers a number of specialties from which one may choose. This diversity allows people with different backgrounds, aptitudes and interests to find careers to their liking. A person with mathematical background might find systems ecology or genetics exciting fields. Persons with an appetite

for the out-of-doors might be happy as an ecologist, forester, plant explorer, or preservationist of rare and endangered species. Those who appreciate detail and beauty found in plant structure would find happiness in cell study, anatomy and morphology. Someone with an interest in chemistry could become a plant physiologist, plant biochemist or molecular plant biologist. Those who find an interest in aquatic microscopic forms will study algae. Those with an interest in fungi become mycologists. Those who enjoy mosses will study bryology. All of these fields offer great opportunities to interact with people and have a wide range of employment opportunity in teaching, research, and government service.

Students planning to major in plant biology 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 plant biology should include the following in their undergraduate program: inorganic and organic chemistry, mathematics through calculus, a modern European language, and as many plant biology and biology courses as time and scheduling will permit.

An honors program is available to those juniors and seniors in plant biology who have an overall grade point average of 3.00 or better and an average in plant biology courses of 3.25 or better. Honors students should enroll in Plant Biology 492 during some semester in both junior and senior years.

Bachelor of Arts Degree, College of Science

General Education Requirements	46[1]
Supplementary College of Science Requirements	7-9
Foreign Language	(4) + 4
Mathematics 108 and 109 or 111 (or its equivalent), or 140	(3) + 1-3
Physical Sciences (Not General Education)	(4) + 2
Requirements for Major in Plant Biology	43[2]
Biology 305, 306, 307	9
Plant Biology 200, 204, 304, 320	16
Plant Biology Electives	16
Sixteen hours selected from the following with at least one course from each group:	
A. 356, 400, 404, 405, 406, 414, 415, 421	
B. 409, 410, 430, 439, 449, 450, 451, 485	
C. 337, 440, 443, 444, 445, 447, 448	
D. 360, 425a, 425b, 475, 476	
Chemistry 222a,b	(6) + 2[3]
Electives	22-24
Electives planned to include courses in computer science, microbiology, physics, statistics, and zoology	
Total	120

[1]The 46-hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Education courses.

[2]Plant Biology 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 Education.

[3]Organic chemistry is recommended for those interested in plant physiology or graduate study.

Minor

A minor in plant biology consists of a minimum of 16 semester hours, selected from any plant biology offerings except 390, 391, 490, 491, or 492.

Courses (PLB)

For all field courses in plant biology, 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.

200-4 General Plant Biology. An introduction to Plant Biology. 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. Three lectures and one 2-hour laboratory per week.

204-4 Plant Diversity. An evolutionary approach to the study of major plant groups — algae to flowering plants. Emphasis will be placed on cytology, anatomy, and development. Economic and ecological aspects of various groups as they relate to humans will also be considered. Laboratory will stress principles via hands-on study of selected representatives. Three lectures and one 2-hour laboratory per week. Prerequisite: 200 or consent of instructor.

304-4 Elements of Plant Systematics. The principles of plant classification including history, nomenclature, specimen collection and preservation, current systematic methodologies, and a survey of major plant families. Two lectures and four laboratory hours per week. Prerequisite: 200 or equivalent.

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 principles. 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.

356-4 Plant Pathology. (Same as Plant and Soil Science 356.) A study of the nature and control of plant diseases. Fungal and bacterial diseases are stressed. Field crop diseases are emphasized. Two lectures and two laboratories per week. Prerequisite: 200 or equivalent; 320 recommended.

360-3 Introductory Biostatistics. Introduction to basic statistical concepts and methods as applied to biological data. Includes descriptive techniques such as measures of central tendency, variability, hypothesis testing, analysis of variance, and simple linear regression. Computer analysis and report writing will be required.

390-1 to 3 Readings in Plant Biology. Individually assigned readings in botanical literature. Every semester. Prerequisite: consent of departmental chairperson.

391-1 to 4 Special Problems in Plant Biology. Individual laboratory or field work under supervised direction: **(a)** anatomy, **(b)** bryology, **(c)** ecology, **(d)** morphology, **(e)** mycology, **(f)** paleobotany, **(g)** pathology, **(h)** photography, **(i)** phycology, **(j)** physiology, **(k)** systematics. 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 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.

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.

415-5 Morphology of Vascular Plants. The study of external form, internal structure, and relationships of vascular plants. Three lectures and two laboratories per week. Prerequisite: 204. Recommended: 400.

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.

430-3 Economic Botany. Classification, evolution, domestication, and botanical characteristics of plants useful to people. Every year. Prerequisite: 200 or equivalent.

439-2 Natural Areas and Rare and Endangered Species. Evaluation of the natural area preservation concept with emphasis on how to detect natural areas and methods to preserve them. Emphasis on the rare and endangered species program, its significance, and its methodology. Prerequisite: 304, Biology 307.

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 equivalent.

443-4 Forest Ecology and Reclamation. Soil, climatic, and genetic factors affecting tree distribution and growth in disturbed and natural habitats. Saturday field trips. Prerequisite: 307 or equivalent.

444-4 Quantitative Plant Ecology. Includes concepts and methods pertaining to the analysis of ecological data. Approaches will include quantitative methods for classifying, ordinating, and describing structure of communities. Laboratory will include the computer application of these concepts and methods to field situations. Prerequisite: 360, Biology 307 or consent of instructor.

445-4 Wetland Plant Ecology. Provides students with experience in wetland plant ecology with an emphasis on wetland functioning, field sampling, and identification of common wetland plants. Travel fee for field trips is $10. Prerequisite: 200, 304, Biology 307, or consent of instructor.

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. 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.

449-4 Plant Systematics and Evolution. The principles of modern plant systematics including classification methods at different taxonomic levels, data analysis, speciation and isolating mechanisms, basic population genetics and the use of morphological, anatomical and molecular characters in assessing plant evolutionary relationships. 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.

451-4 Flora of Southern Illinois. Exposure to the major upland and lowland communities of southern Illinois with an emphasis on the identification, distribution and ecology of the natural and introduced floristic components. Prerequisite: 304 or consent of instructor.

456-2 Advanced Plant Pathology. A study of the changes occurring in host and pathogen at the host-parasite interface before, during, and after penetration. Control measures will be discussed and emphasis will be on midwest field crops. Two lectures per week. Prerequisite: 356 or consent of instructor.

475-3 Advanced Cell Biology. (Same as Zoology 475.) Cell structure at molecular and cytological levels. Includes discussions of research methods, plasma membrane, cell exterior and recognition, the endomembrane system and related organelles, self-replicating organelles, the cytoskeleton, nuclear structure and function in cell replication, cell differentiation and response, and eukaryotic cell evolution. Prerequisite: BIOL 306 or equivalent.

476-2 Advanced Cell Biology Laboratory. (Same as Zoology 476.) Laboratory course to accompany Plant Biology 475. Light and electron microscopy, cell culturing, biochemical methods, and experimental protocols are used to study the structure of cell membranes, intracellular organelles, including the Golgi apparatus, ER, mitochondria, plastids, lysosomes, the cytoskeleton, and nucleus. Prerequisite: 475 or concurrent enrollment.

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 Plant Biology. Individual research problems available to qualified juniors and seniors. Prerequisite: consent of department chairperson.

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 GEB 114 and must fulfill the College of Liberal Arts mathematics or computer science requirement. Computer Science 102 does not meet this requirement. Political Science 200, 213, 270, 378, and GEB 250 are background courses for many advanced courses in the department. In fulfilling General Education 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 emphasis on 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 science. Such courses are particularly important for the student who is planning to enter graduate school.

Students in political science must fulfill College of Liberal Arts Writing-Across-the Curriculum (WAC) requirements. Political Science majors must receive a *C* or better in two of the three following courses containing writing across the discipline components: Political Science 200 (Introduction to the Discipline of Political Science: Scope); Political Science 300 (Introduction to the Discipline of Political Science: Methods; or Political Science 330 (Introduction to Legal Process). Students must also receive a *C* or better in a 400-level course that requires each student to write a research design and to complete a research project involving original investigative research. The research paper from the 400-level course must be submitted to the department's Curriculum Committee by April 15 or November 15 of the student's graduating semester as a final graduation requirement for the major in Political Science.

Qualified students are encouraged to inquire about individualized courses of study such as Political Science 390, 395, and 494. The interested student should contact the academic adviser of the department or a member of the faculty.

At least fifteen of the required thirty-three credit hours for political science must be earned at Southern Illinois University at Carbondale. Majors are lim-

ited to a maximum of nine credit hours in Political Science 390, 395, and the Individualized Learning Program-ILP (a maximum of six hours in ILP). On-campus Political Science majors may not register for political science courses offered in ILP.

Bachelor of Arts, College of Liberal Arts

General Education Requirements 46
College of Liberal Arts Academic Requirements (See Chapter 3.) ..... (4) + 8-14
Requirements for Major in Political Science 33

GEB 114, or equivalent; Political science majors must fulfill the College of Liberal Arts mathematics or computer science requirement. Computer Science 102 does not meet this requirement. Additional political science courses, including the 200 level GEB course offered by the department, must total 33 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. GEB 114 does not satisfy an area requirement. A minimum of three courses must be taken at the 400 level.

Electives 27-33
Total 120

Bachelor of Science Degree, College of Education

A major in political science for education requires 33 credit hours of work in the department. This work must be distributed among the subfields of the discipline in the same manner as the 33-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 ensure 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, Chapter 3. Professional education and other certification requirements may be found in the section of this catalog titled Curriculum and Instruction. 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 and Instruction 469 is a required course for all students in this program. The course should be completed before student teaching. 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. In fulfilling general education requirements or in choosing electives, a student must complete at least nine semester hours in United States history or one of the following social science disciplines: geography, economics, sociology, or anthropology.

Minor

A minor in political science consists of 15 hours to be approved by the department adviser. At least nine of the required fifteen credit hours must be earned at Southern Illinois University at Carbondale.[1]

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[1]Students 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.

Individualized Learning Program (ILP)

Students on-campus registered at the University will not receive credit toward their major requirements for Political Science courses completed in ILP. Off-campus students not registered for courses on campus may enroll in a maximum of two Political Science courses offered in ILP. Only one of these courses can be utilized to meet the department's 400-level requirement.

Research and Teaching

The faculty in the department come from a variety of academic institutions located in different parts of the country. Faculty research has received national recognition and quality of teaching is accorded a high priority. Virtually all political science courses are taught by full-time faculty. The department emphasizes small sections and a close student/faculty relationship.

Advisement

Students in political science have access both to the excellent advisement services in the College of Liberal Arts and to a faculty adviser in the department. Each student is assigned a political science professor to whom he or she can turn for academic counseling. Help is offered in course selection and registration, in long-range planning for the degree program and career information.

Awards

The department administers six endowed annual awards. Two are awarded competitively, one to the highest ranking junior in political science and one to the highest ranking senior in the major. Students may also qualify for membership in the national political science honor society. See the awards brochure and your adviser for additional information on eligibility requirements.

Honors Program

Students interested in the Political Science honors program should discuss this option with their departmental advisor at the beginning of the junior year. Opportunities available for this program are described in detail in the Political Science Handbook available in the department.

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 (POLS)

200-3 Introduction to the Discipline of Political Science: Scope. Examination of the philosophy, methodology, theories, approaches and relevant generalizations of the study of politics and of the scope and subfields of political science. Not open to seniors without instructor's consent.

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

213-3 State and Local Government. Structure, functions, and decision-making processes of subnational governments in the United States. Prerequisite: GEB 114.
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.
270-3 Introduction to International Relations. A study of world politics. The cause of international conflict and conditions of peace.
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.
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.
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.
318-3 Political Campaigns and Elections. (Same as Speech Communication 358.) 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: GEB 114.
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: GEB 114.
321-3 The Legislative Process. A comparative analysis of legislatures and legislative behavior. Emphasis is on the United States Congress. Prerequisite: GEB 114.
322-3 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: GEB 114.
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: GEB 114.
330-3 Introduction to the Legal Process. Designed to provide a basic background in the United States legal process for students who want only an overview of the process or who plan to take an extensive number of additional courses in the judicial area. The course will survey the history of common law, legal reasoning, basic terminology, conventional legal research, the legal profession, and provide an introduction to civil and criminal processes. Prerequisite: GEB 114.
332-3 Introduction to Civil Liberties and Civil Rights. (Same as Black American Studies 345.) 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: GEB 114 recommended. Not recommended for students planning to take 433b.
334-3 Criminal Justice in Society and Court Management. Designed to provide the student with an in-depth look at the organization and management of federal, state, and local criminal courts. Focuses on the criminal process and the rights of defendants as they are processed by the system. Prerequisite: GEB 114 recommended.
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: GEB 114.
353-3 Comparative Communist and Post Communist Systems. General introduction to the political systems of communist states and states that have evolved from origins in communist party rule. Attention given to the role of ideology, the party, reform, democratization, and change in decision-making structures and processes.
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.
371-3 International Political Economy. Political dynamics of international trade, finance, investment, multinational corporations, energy, development, world wealth distribution, technology transfers. Politics of economic relations between East and West, rich and poor. Assumes that the political system shapes the economic system, that political concerns often shape economic policy, and that international economic relations are political relations. Prerequisite: none; 270 or economics course recommended.
373-3 International and Transnational Organizations. The growth and role of international organizations, with special attention to the political effects of military, economic and ecological interdependence. The United Nations, regional organizations, and non-governmental organizations. The effects of these organizations on international peace and justice. Prerequisite: none; 270 recommended.
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.

390-1 to 3 Readings in Political Science. Specialized and advanced readings in areas not covered in other political science courses. Student must choose a faculty member to direct reading. Restricted Class Card, necessary for registration, must be signed by professor supervising readings and the student's political science advisor who files proper form with the director of undergraduate studies in the department. Fifteen hundred pages of reading per credit hour, or equivalent, is recommended. Students generally will be expected to have a 3.0 Political Science grade point average, a minimum of 21 hours already earned in the major or completed the introductory course and six additional hours in the subfield of the proposal readings. Prerequisite: authorization card signed by instructor and advisor prior to registration.

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. Political Science 395 is open only to students who are confirmed Political Science majors or minors. Students must have taken at least two courses in the department with a minimum grade point average of 2.5 in these courses. 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.)

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.

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: GEB 114 or consent of instructor.

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.

413-3 Contemporary Intergovernmental Relations. An examination of relationships among national, state, and local governments in the American federal system, with emphasis on recent literature and contemporary issues. Special attention is given to fiscal relations, and specific intergovernmental programs in areas such as housing and environmental quality are examined. Prerequisite: GEB 114.

414-3 Political Systems of the American States. The state level of government viewed with emphasis upon recent developments and current research. Prerequisite: 213.

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.

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.

418-3 Political Communications. (See Speech Communication 451.)

419-4 Political Sociology. (See Sociology 475.)

420-3 Interest Group Politics. An examination of the structure, mobilization and impact of interest groups on American political life. The course objectives are to study various normative critiques of American pluralism and examine the political influence of contemporary interest groups, such as labor, racial and women's organizations. Prerequisite: GEB 114.

433-6 (3, 3) Constitutional Law. (a) This, the initial course in a two-course sequence, is concerned with the basic structure and power relationships in the American constitutional system. Topics include judicial review, judicial restraint, separation of powers, the federal system, national powers, state powers, the contract clause, and substantive due process. Prerequisite: GEB 114. Political Science 330 recommended. **(b)** This, the second course in the constitutional law sequence concentrates on those provisions of the U.S. Constitution which protect individual rights and liberties against government encroachment. Prerequisite: GEB 114.

435-3 Judicial Process and Behavior. 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. The course will provide some insight into the methods used to study judicial behavior.

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: 340 or GEB 114 recommended.

437-3 Jurisprudence (Theories of Law). Major schools in legal thinking. Positive law and natural law. Idea of justice and concept of natural rights.

441-3 Administration of Bureaucratic Organizations. A study of the elements of bureaucratic organization and of problems and procedures in administration of complex public agencies. Emphasis is placed on the personnel aspects of public bureaucracy, including the history and structure of civil service systems, conditions of public service employment, and issues in leadership and supervision. Prerequisite: 340 or consent of instructor.

443-3 Public Financial Administration. An examination of governmental revenues and expenditures, with emphasis on state and local governments. Special attention is given to patterns of taxation and expenditure, intergovernmental fiscal relations, municipal debt, and administrative decisionmaking. Prerequisite: 213 recommended.

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.

445-4 Administration of Environmental Quality and Natural Resources. (Same as Geography 426.) An examination of institutional arrangement and administrative practices in the protection and use of land, water, air, and mineral resources. The course include analysis of responsibility and decision-making at all levels of government (federal, state, and local) as well as corporate, interest group, and individual responses to public programs. Particular attention will be given to administration of federal environmental quality legislation including the National Environmental Policy Act, the Clean Air Act, the Water Pollution Control Act, and the Surface Mining Reclamation Act.

446-3 Museum Administration. A comprehensive introduction to museum administration and management, including fiscal and budget oversight; an understanding of museum ethics; acquisition, conservation, and exhibition planning; personnel matters; and museum research. Museum practicum and research stressed.

447-4 to 5 (3, 1 or 2) Urban Planning. (See Geography 470a,b.)

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.

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. GEB 250 recommended.

458-3 Contemporary Europe. Comparative study of contemporary political systems and policy issues. Emphasis on selected countries and common problems facing governments. Topics covered include the European community, security institutions, economic, social and other public policies, and study of various governing processes.

459-3 Government and Politics of Russia. Transitions from communism in the former Soviet Union. Prerequisite: none. GEB 250 recommended.

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. GEB 250 recommended.

462-3 Governments and Politics of Vietnam. Origins of revolution. The war for national reunification. Impact of American involvement. Contemporary problems of consolidation and development under communist rule. Implications for regional security. Prerequisite: GEB 250 recommended.

463-3 Government and Politics of China. Internal political, economic, and social development of China. Prerequisite: none. GEB 250 recommended.

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. GEB 250 recommended.

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: none. GEB 250 recommended.

466-3 Government 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.

468-3 Comparative Civil-Military Politics. 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 counter-insurgency warfare, and the analysis of the role of the armed forces as a governing group in a large number of non-western states. Prerequisite: none. GEB 250 recommended.

475-6 (3, 3) International Law. (a) Rules and practices governing the nations in their relations in peace and war. Prerequisite: none. 270 recommended. **(b)** Investigation of special problems in international law. Prerequisite: 475a.

477-3 The Making of American Foreign Policy. An advanced course dealing with the formulation and administration of American foreign policy. Prerequisite: 378 for undergraduates.

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.

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. 270 recommended.

494-1 to 6 (1 to 3, 1 to 3)Honors Research. (a) Directed research for senior honors students. POLS honors students may register for these credits if they have met all the prerequisites described in the POLS Handbook. A three person faculty committee will administer an oral examination upon completion of senior thesis. Not for graduate credit. **(b)** Available to students who have completed all prerequisites of the University Honors Program and receive approval of their project from a Political Science instructor. Not for graduate credit.

Professional Education Experiences

Student Teaching

Student teaching constitutes a total professional commitment on the part of the student and is a full semester of experience in the field carrying 12 hours of credit. Special permission must be obtained from the Coordinator of Professional Education Experiences before any additional course work can be taken with student teaching.

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 extracurricular 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 will be assigned to work with a cooperating teacher in a preschool/kindergarten and/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. Similar grade level assignments will be made for art, music, and physical education majors. Students majoring in communication disorders and sciences 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 College of Education Student Services, Wham Building, Room 135, at least one semester in advance of the semester during which they wish an assignment. Student teaching credit during the summer session is restricted to those individuals who hold a provisional teaching certificate or who are enrolled in the Early Childhood-Preschool/Primary Specialization. Participation in this program also is 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 College of Education Student Services, Wham Building, room 135.

The student must register for the professional semester following normal registration procedures. Registration will include the following course: Education 401, 12 hours. Students will register for the section of this course designated for their majors. Registration during the summer session is by restricted class card for Education 402, 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 with affiliated schools located in southern Illinois as well as specific locations in Belleville and suburban Chicago. A current listing of specific schools to which student teachers may be assigned is available in the College of Education Student Services.

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 with the coordinator in the College of Education Student Services. 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 student must have completed a minimum of 20 semester hours in the subject area to be taught. The course work involved must meet the approval of the department chairperson of that major department. (Course work and 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 College of Education Student Services.

4. The student must have completed a minimum of 100 clock hours of prestudent teaching field experiences.

5. The student must have completed 75 semester hours of credit with a minimum cumulative average of 2.5 in the major before beginning work in student teaching.

6. 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. (See Teacher Education Program, Chapter 3.)

7. The student must have completed the special methods class required for the major prior to the professional semester.

8. Every student teacher must have a health clearance from the University Student Health Program. 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 College of Education Student Services by the tenth day of the semester immediately preceding the student's professional semester.

9. 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 310 and Education 316. Applications for these courses are available in the College of Education Student Services.

Psychology (Department, Major, Courses)

The undergraduate program in psychology provides a broad general education in the tradition of the liberal arts. This tradition focuses on the development of wide-ranging interests in the arts, humanities, and social sciences, and on the development of critical and analytical thinking. A student who has earned a degree in one of the liberal arts, such as psychology, should be prepared to pursue lifelong learning and personal enrichment, as well as to enter the work force or to pursue more advanced studies.

Graduates of the psychology program who have entered the work force immediately have found employment in a wide variety of settings, ranging from sales and personnel work in the business sector, to positions with the human service agencies of local, state, and federal governments. Graduates who have gone on to advanced study have successfully prepared themselves for professional careers in such fields as law, medicine, and psychology.

Students planning to apply to law or medical schools after completing a major in psychology should plan their programs of study in close consultation with the pre-medical or pre-law advisers on campus. Students planning to apply for admission to graduate study in psychology should plan their undergraduate program of study very carefully in consultation with advisers in the Department of Psychology. At least two years, and as many as six years, of graduate study are required for qualification as a professional psychologist, and admission to the graduate programs is highly selective and competitive.

Students who enter the University with a major in psychology should meet with the director of undergraduate studies in the Department of Psychology as soon as possible after arrival at the University in order to discuss their interests and plans of study. Students already at the University who wish to change to a major in psychology should contact the office of the director of undergraduate studies in the Department of Psychology in order to initiate the request for a change of major.

Bachelor of Arts Degree, College of Liberal Arts

General Education Requirements 46
College of Liberal Arts Academic Requirements (See Chapter 3.) ..... (4) + 8-14
Requirements for Major in Psychology 37-40
- GEB 202 ..... (3)
- Mathematics 108, 111, or 139 (choose one) ..... (3) + 0-2
- Psychology 211, 212 (completion before senior year recommended) 8
- Psychology Electives 29-30

  Ten courses from the list below. At least six must be from Groups A, B, and C, with at least one course from each of these three groups. A minimum of three courses must be chosen at the 400-level from among the total offerings in the A, B, and C Groups.
  - Group A: 301, 303, 304, 305, 307, 333, 431, 432, 440, 451, 461, 463
  - Group B: 302, 308, 309, 310, 371, 407, 409, 415, 416, 419, 445

Group C: 320, 322, 323, 340, 411, 413, 421, 441, 465
Group D: 222, 389, 391, 392, 393, 394, 489, 499,
Educational Psychology 402, Mathematics 282
Of all credits that a student completes for Psychology 391, 392, 393, and 394, a maximum of three hours from any or all of these courses may count towards the major.

Electives	20-29
Total	120

Minor

A minor in psychology requires the successful completion of at least 15 semester hours (5 courses) in courses offered by the Department of Psychology and acceptable to the department for fulfillment of major requirements. Courses in other departments, such as the Department of Educational Psychology, do not fulfill minor requirements. Students completing a minor in psychology for purposes of qualifying to teach psychology in the State of Illinois must complete a minimum of 20 semester hours in psychology.

A student wishing to complete a minor in psychology must apply to the Department of Psychology for approval of the program of study for the minor. Without this approval the minor will not be officially listed on the student's transcript at the time of graduation. Application forms are available in the office of the director of undergraduate studies in psychology.

Courses taken at other institutions may count towards the minor only if those courses are acceptable for transfer credit in psychology. If credit is not accepted for transfer, a revised application for the minor must be approved.

Transfer Credit

Credit for a course in psychology successfully completed at another accredited institution will be transferred to meet major or minor requirements in psychology at SIUC, subject to the following conditions:

1. The course number must bear a departmental prefix clearly indicating the course is a psychology course. Examples are *PSYCH* and *PSYC*.
2. The course must have covered substantially the same content material as a course currently offered at SIUC to meet major requirements.
3. Credit for a course completed at a community or junior college is not transferable if the corresponding course at SIUC is offered at the 400-level.
4. A grade of *C* or higher must have been earned in the course.
5. All transfers of credit to meet major or minor requirements in psychology must be explicitly approved by the department of psychology.

Courses from other institutions that do not meet these conditions may still be acceptable for elective credit to meet general university requirements. Students should consult their departmental or college adviser about such courses.

Senior Honors Program

A small number of students is 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 (PSYC)

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: GEB 202.

212-4 Field Research Methods in Psychology. An introduction to field and other quasiexperimental methods appropriate for use in settings in which the researcher can exercise minimal control and manipulation. Included are designs and analytical methods for exploring cause-effect relationships in naturalistic settings. Lecture and laboratory. Prerequisite: 211 or consent of instructor.

222-3 Effects of Recreational Drugs on Mind and Body. Describes the physiological and psychological effects of substances used as recreational drugs for their psychoactive effects. Drugs discussed will include alcohol, amphetamines, cocaine and other stimulants, the barbiturates, methaqualone, the psychedelics, marijuana, tranquilizers, and the opiates. The purpose of the course is to provide the student with the facts concerning the effects of these drugs and the potential for their abuse and physiological and psychological dependence on them.

301-3 Child Psychology. The biological and psychological development of the child from birth through puberty, and relevant research methods and results. Prerequisite: GEB 202.

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

303-3 Adolescence and Young Adulthood. Examines interrelated psychological, biological and social aspects of development during adolescence and young adulthood based on a life-span perspective of development. Prerequisite: GEB 202.

304-3 Adulthood and Aging. Examines the interrelated psychological, biological, and social aspects of development during middle and later adulthood based on a life-span perspective of development. Neuropsychological changes associated with normal and pathological aging will also be considered. Prerequisite: GEB 202.

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: GEB 202.

307-3 Social Psychology. Surveys contemporary issues such as love and friendship, shyness and loneliness, sexual attitudes and behavior, management of impressions made on others, attitude change and persuasion, leadership, group processes, aggression, and helping behavior. Prerequisite: GEB 202.

308-3 Psychology of Motivation. Examines variables affecting motivation in animals and humans. Topics include motivation based on cultural processes as well as those based on biological needs. Prerequisite: GEB 202.

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: GEB 202.

320-3 Industrial and Organizational Psychology. Introduction to industrial and organizational psychology. Emphasis is on psychological methods and psychological factors in the analysis and design of jobs and the work environment, and on the training, motivation, and evaluation of performance in the work setting. Prerequisite: GEB 202.

322-3 Personnel Psychology. Examines the methods of psychology used in the selection, placement, and evaluation of employees. Government regulations requiring equal opportunity, psychological measurement concepts, and employee performance evaluation in the work environment are covered. Prerequisite: GEB 202.

323-3 Psychology of Employee Relations. Applied human relations at work focusing on interpersonal and small-group behavior. Covers effective communication, employee morale and motivating others, behavior modification, leadership and group dynamics, human relations and the law, and stress and coping. Prerequisite: GEB 202.

333-3 Psychology of Women. (Same as Women's Studies 341.) 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: GEB 202 or consent of instructor.

340-3 Introduction to Clinical and Counseling Psychology. Provides an in-depth understanding of the nature of two major specialties in the field of psychology: clinical and counseling psychology. Students will examine the historical origins of the two areas, study their major theoretical definitions, compare and contrast the areas, and sample empirical and practitioner activities unique to them. Prerequisite: GEB 202.

371-3 Problem Solving and Decision Making. Indicates how problem solving and decision making can be characterized and evaluated and how they might be modified or improved. Research and theory in related areas of psychology are reviewed with emphasis on the role of thinking, problem solving, expert judgment, and decision making in man-machine systems. Prerequisite: GEB 202.

389-1 to 9 Seminar: Selected Topics. Varied content. Offered as need exists and as faculty interests and time permit. May be repeated as topics vary. Prerequisite: consent of instructor.

391-1 to 9 Individual Project. Individual study, research or experience under the supervision of a member of the Department of Psychology faculty. Of all credits that a student completes for PSYC 391, 392, 393, and 394, a maximum of three hours from any or all of these courses may count towards the major. Mandatory Pass/Fail. Prerequisite: consent of instructor.

392-1 to 9 Individual Project. Individual study, research or experience under the supervision of a member of the Department of Psychology faculty. For use in those cases where the faculty member deems a graded course to be appropriate. Of all credits that a student completes for PSYC 391, 392, 393, and 394, a maximum of three hours from any or all of these courses may count towards the major. Prerequisite: consent of instructor.

393-1 to 9 Preprofessional Practicum. Directed experience in human services or other activities relevant to psychology at a public or private institution, agency, or organization. The experience is usually, although not necessarily, on a volunteer basis. Enrollment must be approved in advance by the director of undergraduate field placements for the Department of Psychology. Mandatory Pass/Fail. 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. Of all credits that a student completes for PSYC 391, 392, 393, and 394, a maximum of three hours from any or all of these courses may count towards the major. Prerequisite: senior psychology major and permission 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: 211 and 309 or equivalent or graduate status.

409-3 History and Systems of Psychology. A review of the conceptual and empirical antecedents of modern psychology. Prerequisite: 211 and senior status, or graduate 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: 211 and 309, or graduate status.

413-3 Individual Differences. Reviews the reliable and theoretically significant individual and group differences that have been revealed by research in the behavioral sciences. Examines differences in general intelligence, specific verbal and spatial abilities, stylistic and personality characteristics, as well as such group differences as sex, race, and socioeconomic status. Prerequisite: 211 and 305, or graduate status.

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: 211 and 302, or graduate status.

416-3 Recovery of Function Following Brain Damage. A survey of experimental animal and human clinical research as they relate to behavioral recovery following damage in the central nervous system. Recent theories and literature are stressed. Prerequisite: 211 and 302 or consent of instructor, or graduate status.

419-3 Behavior and Heredity. Provides an overview of the experimental and quantitative methods used in studying behavioral differences associated with genetic variables. Elementary aspects of genetics will be included in the course, which will examine several aspects of both human and nonhuman behavior. Prerequisite: 211 or consent of instructor, or graduate status. Zoology 214, Biology 305 or equivalent recommended.

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: 211 or graduate status.

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: 211 and 305 or consent of instructor, or graduate status.

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: 211 and 301 or graduate status.

440-3 Theories of Personality. A review and evaluation of major personality theories and their supporting evidence. Prerequisite: 211 and 305 or consent of instructor, or graduate status.

441-3 Helping Skills in Clinical and Counseling Psychology. Provides systematic training in helping skills for students considering clinical or counseling psychology as a career. Students learn to identify and demonstrate such individual skills as encouragement, paraphrasing, and reflection of feeling, and will use them in practice situations. Students will also learn to apply various approaches to psychotherapy and counseling using hypothetical case studies. The course is complementary to 340. Prerequisite: 211 and 340 or consent of instructor, or graduate status.

445-4 Introduction to Psycholinguistics. (Same as Linguistics 445.) A broad spectrum introduction to psycholinguistics. Topics to be covered include general methodology for the study of psycholinguistics, the nature of language, theories of human communication, language comprehension and production, first and second language acquisition, meaning and thought, natural animal communication systems and language of the brain.

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, or graduate status.

461-3 Advanced Social Psychology. Critical examination of contemporary theories and research in social psychology. Practice in application of scientific findings to real-life problems of individuals and groups. Issues treated in depth are chosen for relevance to student's personal needs and career interests. Not for psychology graduate students. Prerequisite: 211 or 307 or graduate status.

463-3 Attitudes and Persuasion. An examination of theory and research regarding the formation of attitudes, the modification of attitudes, and the techniques for measuring attitudes. Prerequisite: 211 and 307 or graduate status.

465-3 Needs Assessment Techniques for Mental Health Planning. Surveys methodological techniques for assessing the need for mental health services including developing a resource inventory, use of census and other social indicator data, rates under treatments, community and consumer surveys, hearing and site visits. Attention is also paid to method of presenting results of need assessments to lay boards. Prerequisite: 211 and senior standing in psychology major, or graduate status, or consent of instructor.

489-1 to 12 Seminar: Selected Topics. Varied content. Offered as need exists and as faculty interests and time permit. Prerequisite: 211 and consent of instructor.

499-6 (3, 3) Senior Honors in Psychology. Intensive study in selective areas for students qualified for honors work in psychology. A research paper or equivalent will be required. Not for graduate credit. Prerequisite: 211 and consent of instructor.

Radio-Television (Department, Major, Courses)

The Department of Radio-Television prepares students for positions in broadcasting and telecommunications by combining practical and theoretical courses in broadcasting with a broad liberal arts background.

To be admitted to the Department of Radio-Television, incoming freshmen must rank in the top one-fourth of their high school graduating class and have a Standard Composite ACT Score of 20 or higher or rank in the top one-half of their graduating class and have a Standard Composite ACT score of 22 or higher.

Transfer students seeking admission from another institution or from another program at Southern Illinois University at Carbondale must have a 2.25 grade point average or above. Transfer students with fewer than 26 semester hours must have a 2.25 grade point average or above as well as the rank and test score requirements of an entering freshman.

The core courses, Radio-Television 300m and 300p, must each be completed with a grade of *C* or better and the language skills and English requirements described below must be met before students may advance into other radio-television courses beyond the core courses.

All radio-television students are required to maintain an overall 2.0 grade point average in the major. If a radio-television student does not achieve an accumulative 2.0 gpa in the major in any one semester, that student is subject to departmental *warning*. Students who are on departmental warning and do not earn an overall 2.0 gpa in radio-television courses in a subsequent semester will be placed in a status of departmental *dismissal*. A student who has been placed on collegiate dismissal will be transferred to Pre-Major Advisement or may seek transfer to another University program if the student has an overall Southern Illinois University at Carbondale grade point average of 2.0. A dismissed student may appeal to the Undergraduate Committee for reinstatement into the program.

Each student enrolled in the radio-television program must complete by the end of the sophomore year or, if a transfer student, by the end of the first semester of enrollment at Southern Illinois University at Carbondale and prior to enrollment in any RT course beyond 300m and 300p:

1. GED 101 and GED 102 with a grade of *B* and, if student receives less than a *B* in either GED 101 or GED 102, English 290 with a grade of *C*;
2. A language skills examination given by either the department or college with a passing score;

3. Radio-Television 300m and 300p with a grade of *C* or better before enrolling in any other radio-television course. Students must have completed twenty-six semester hours of credit before taking Radio-Television 300m and 300p. These courses may not be repeated more than once.

Transfer students must complete a minimum of 27 hours in radio-television courses at the University to earn a degree.

Bachelor of Arts Degree, College of Mass Communication and Media Arts

General Education Requirements 46
Requirements for Major in Radio-Television 42-50
Radio-Television 300m, 300p, with a grade of *C* or better and 305, 308, and 393 are required. Must include at least one 400-level radio-television course. Radio-television electives to bring total in the department to 36-42 36-42
Language Requirement 6-8
Foreign language or computer programming must be selected to meet this requirement.
Minor in a Related Area 15
All 15 hours must be in a single department beyond General Education courses. Students should check with departmental advisers for a list of recommended minors.
Electives (All electives must be pre-approved by the department.) 9-17
Total 120

Courses (RT)

200-3 Understanding Radio and Television. Review of responsibilities of television viewers and radio listeners, critical viewing and listening of radio and television programs. Analysis of techniques and content of programs. Lecture, discussion, critical review. Not for majors in radio-television. Credit will not count toward the major. Not open to students with credit in 300M or 300P.

300M-3 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 $15. 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-3 History and Foundations of Radio-Television. Basic communications theory as applied through the history, economics, government regulation of the American system of broadcasting, and in broadcasting programming and audience analysis. Prerequisite: sophomore standing.

305-3 Audience Research and Ratings Analysis. The interrelationships of programs and audiences. Methods of audience and program research. Ratings analysis, station surveys. Survey of relevant research in radio-television. Prerequisite: *C* in 300M and 300P.

308-3 Radio-Television Policies, Laws, and Regulations. Development of American radio and television policies from their constitutional base through federal law, regulatory agencies, and the judicial system. Rights and responsibilities of radio and television organizations and of the public. Required for majors. Prerequisite: *C* in 300M and 300P.

310-3 Radio-Television News Writing. Selecting, writing, rewriting, and editing news material for presentation on radio and television information programs. Laboratory hours required. Prerequisite: *C* in 300M and 300P.

311-3 Radio News. The basic techniques of writing, rewriting, and editing news from local and wire service sources, plus reporting and editing by means of audio tape. Students must have daily access to an audio tape recorder and are encouraged to obtain their own cassette recorder. Laboratory hours required. Prerequisite: *C* in 300M and 300P, 310 or consent of instructor.

325-3 Survey of Cable Communications. History and projections of CATV industry growth, patterns of regulation and use. Relation of cable communication to other media, and to society. Extensive readings and discussion of literature. Prerequisite: *C* in 300M and 300P.

340-3 Television Criticism. History and analysis of television genres. Analysis and evaluation of technique, content, and aesthetic effect of television messages. Extensive reading in critical literature, written assignments. Required for majors. Prerequisite: *C* in 300M and 300P.

351-3 Broadcast Programming. Discussion and analysis of radio and television programming formats, strategies, and scheduling. Prerequisite: *C* in 300M and 300P, 305 or consent of instructor.

357-3 Broadcast and Cable Promotion. Theory and management of campaigns promoting audience and sales growth by broadcasters, cable and pay-cable services, and program distributors; including design, implementation, and evaluation of campaigns and materials. Prerequisite: *C* in 300M and 300P, 305, or consent of instructor.

360-3 Radio-Television Performance. The development of disciplines controlling vocal and visual mechanics and interpretative performances for announcers, newscasters, interviewers, and narrators of various radio and television situations. Laboratory hours required. Prerequisite: 310 or 383 or concurrent enrollment or consent of instructor; Communication Disorders and Sciences 104 or Theatre 203 recommended.

363-3 Producing for Radio. Planning and producing for the special requirements of the medium. Study of differing formats; production of short forms in laboratory exercises. Laboratory hours required. Prerequisite: 310 or 383 or concurrent enrollment or consent of instructor.

365-3 Producing for Television. Planning and producing for the special requirements of the medium. Research, planning, and budgeting for individual and series productions. Laboratory exercises. Final projects carry over to 369. Laboratory hours required. Prerequisite: *C* in 300M and 300P, 310 or 383 or concurrent enrollment.

369-3 Directing for Television. Applications of communications theory and unique characteristics of the medium in directing televised productions. Laboratory hours required. Prerequisite: *C* in 300M and 300P; 365 with a grade of *B* or better; 340 or concurrent enrollment.

370-3 Television News. Reporting, writing, editing and producing television news for broadcast using professional grade cameras, recorders and editors. Students will participate in daily newsgathering for television newscasts. Laboratory hours in concentrated blocks of time for reporting are required. Prerequisite: 311 or consent of instructor.

377-3 Radio and Television Sales and Sales Management. A marketing approach to station and system sales. Use of ratings, RAB, TVB, and station promotion material. Includes selling methods and techniques and sales management techniques (systems approach, inventory control, pricing). Prerequisite: 305 or consent of instructor.

380-3 New Technologies. An examination of the factors and forces which lead to expansion and improvements in telecommunications technologies with particular emphasis on the "new technologies". The social issues raised or addressed by these technologies will also be analyzed to give students a broad and far-sighted view of the future directions of an expanding industry. Prerequisite: *C* in 300M and 300P.

383-3 Writing for Radio-Television. 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.

384-3 (1, 1, 1) Radio-Television Practicum. Practical experience in broadcast operations on the campus. Instructor makes determination on student duties, based on needs of the Broadcast Service or the department and the desires of the student. A minimum of four hours per week. Students obtain application form from academic adviser. Prerequisite: consent of instructor. Mandatory Pass/Fail.

391-2 Independent Study. Area of study to be determined by student in consultation with radio-television faculty. No more than two students may work on the same project. Prerequisite: consent of instructor.

393-3 Radio, Television, and Society. The interrelation of radio and television with social patterns and economic and political systems. Major theories of broadcasting. Effects on these media on society. Required for major. Prerequisite: *C* in 300 M and 300P, senior standing.

395-2 to 6 Internship Program. News production, performance or sales management work experience with a non-university professional organization. The student will be provided an educational experience beyond that available at the University. No retroactive credit for previous work experience. Prerequisite: junior status, gpa of 2.75 or better and consent of instructor. The student must submit an application to seek an internship and receive approval from the Undergraduate Curriculum Committee no later than the fourth week of the semester prior to the internship. May be repeated up to 6 hours.

430-3 News and Public Affairs Programming. Examination of history and scope of news and public affairs programming. Effects of public affairs on programs and audiences. Responsibility of radio and television stations in news and public affairs and community relations. Issues in news and public affairs including ethics. Prerequisite: senior standing.

453-3 Educational and Public Broadcasting. The history and regulatory structure of educational and 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 educational and public broadcasting considered. Prerequisite: senior standing.

465-3 Advanced Television Production. Instruction and practical experience in the development of programming for television, resulting in completed segments for broadcast in individual and series production. Students will utilize the facilities of the Broadcasting Service and produce programming for WSIU-TV. For undergraduate students only. Prerequisite: 365 or consent of instructor.

467-3 International Broadcasting. An examination of broadcasting theory related to rural audiences in the United States and abroad. History of farm broadcasting in the United States and abroad. Communications in development is explored. Research on effects on rural audiences. Open to non-majors with consent of instructor. Prerequisite: senior standing and *C* in 300M and 300P.

470-3 Television News Field Production. Advanced field reporting for television. Students will work under the supervision of the instructor to develop, investigate, and report news stories for television. This process will also study the development and production of the mini-documentary. Class will utilize 3/4 inch video recorders, cameras, and editing systems. Prerequisite: 370 or consent of instructor.

473-3 Radio-Television Management Principles. Management history, management styles and systems, sales management (marketing and developing sales packages), maximizing inventory, sales training, gamesmanship, leadership and financial evaluation of broadcast properties, procedures and objectives of broadcast management. Students will be required to prepare: audience analysis for sales/programming; computer generated inventory reports; and marketing strategies. Not for graduate credit. Prerequisite: 305 and senior standing.

481-3 Non-Broadcast Television. An examination of the special requirements of business, industrial, and medical uses of television. Management, budgeting, planning, and evaluating productions. Exploration of cable television, satellites and other technologies used in non-broadcast situations. Prerequisite: senior standing and 365, or consent of instructor.

483-3 Advanced Radio-Television Writing. Exercises in writing broadcast manuscripts including documentary, drama, and children's programming. Prerequisite: senior standing and 340, 310 or 383, and consent of instructor.

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 Independent Study. Area of study to be determined by student in consultation with graduate faculty. No more than two students may work on same project. Students must complete an application form which is available from the departmental adviser. Prerequisite: senior standing and consent of instructor.

Radiologic Technology (Program, Major)

(SEE ALLIED HEALTH CAREERS SPECIALTIES)

Radiography is an allied health specialty concerned with the production of x-ray films which enable the physician to diagnose disease processes occurring in the human body. The course of study involves mastering the ability to control radiation production and the ability to position the body properly in order to obtain radiographs of the required anatomical structure.

The curriculum is designed to prepare students to become registered radiologic technologists. Completion of the program provides graduates with the educational requirements necessary to take the national certification examination administered by the American Registry of Radiologic Technologists.

To be accepted into the radiologic technology degree program the student must have completed the requirements for the allied health careers specialties program and be admissible under the University baccalaureate entry requirements. These advanced radiologic technology courses combine classroom and clinical education, which upon completion allows the graduate to become registry eligible and to receive an Associate in Applied Science degree in radiologic technology.

The courses can be completed in two summer sessions and two regular semesters. The summer sessions and the regular semester sessions will utilize both classroom and clinical education learning experiences.

Associate in Applied Science Degree, College of Technical Careers

Requirements for Major in Radiologic Technology

Completion of Allied Health Careers Specialties degree	62
Radiologic Technology Advanced Courses (Allied Health Careers Specialties designated)	31
Total	93

Courses

(SEE ALLIED HEALTH CAREERS SPECIALTIES)

Recreation (Major, Courses)

The Recreation major prepares the student for positions in the management of leisure services. The curriculum is built on a broad General Education foundation, offers professional courses within the Department of Health Education and Recreation, and draws from many related majors of the University for competencies and skills in the preparation of professionals for the recreation field. The curriculum emphasizes the practical as well as the theoretical aspects of recreation by offering supervised field experience, and internships in various recreational settings throughout Illinois and the nation.

To be admitted to Recreation, incoming freshmen must rank in the top one-half of their high school graduating class and have a standard composite ACT score of 19 or higher. Transfer students seeking admission from another institution or from another program at SIUC must have a 2.25 grade point average or above. Transfer students with less than 26 semester hours must have a 2.25 grade point average or above as well as the rank and test score requirements of an entering freshman. 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 46 hours of General Education, 35 hours of professional core courses and 39 hours of professional courses in at least one area of specialization. Electives for their chosen area of specialization must have adviser approval. A total of 74 hours beyond General Education is required. A grade of *C* or better is required in all Recreation prefix required courses.

Recreation offers courses leading to specialization in therapeutic recreation and program services. A careful selection of recommended electives can be used to build competencies in recreation administration, outdoor recreation, and commercial recreation.

Students majoring in recreation should meet early in their college careers with a faculty member to identify their area of interest and recommended electives. Within the field of recreation, certifications may be required for employment in different interest areas and the faculty member will discuss these with interested students. All students are encouraged to obtain the American Red Cross First Aid Certificate. Students focusing on a therapeutic orientation should attempt to acquire either academic or practical experience related to physiological, psychological and sociological functioning and the concomitant effect of disability. As soon as possible, recreation majors will decide on one of the two specializations and elect courses for their area of specialization.

Bachelor of Science Degree, College of Education

General Education Requirements		46
Requirements for Major in Recreation		75
English 290	3	
Recreation 300, 301, 302, 303, 305, 367, 380-4, 490-12	32	
One of the specializations listed below	39	
Total		121

PROGRAM SERVICES SPECIALIZATION

Recreation 365, 375, 425, 445, 465	15
Accounting 210 or 220	3

Vocational Education Studies 306 or Curriculum and Instruction 483a	3
Six hours selected from Psychology 301, 303, 304, 305, 307, 320, 323, 333	6
Electives (May be subject to certification requirements)	12
Total	39

THERAPEUTIC RECREATION SPECIALIZATION

Recreation 304, 460, 461, 462	12
Six hours selected from Recreation 440a, 440b, 440c, 440d, 440e	6
Psychology 305 and 431 or 432	6
Physiology 209 and 300 or 301	7-8
Electives (in accordance with certification requirements)	7-8
Total	39

Courses (REC)

300-3 Introduction to Leisure Services. 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.

301-3 Leadership in Recreation. An examination of leadership theories and styles appropriate for activity leaders in recreation. Emphasis will be placed on leadership process and methodology as applicable to leisure service settings.

302-3 Program Design and Group Dynamics. A study of essential elements and basic principles involved with the organization and administration of various types of recreation programs and services. Prerequisite: 300 or concurrent enrollment.

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.

304-3 Principles and Practices of Therapeutic Recreation. Study of the existing practices and principles utilized in therapeutic recreation; professionalism; legislation; team approaches; activity analysis; supervision functions; community resources; special recreation programs. Prerequisite: 300, 302, 303.

305-1 Pre-Practicum. An introduction to the responsibilities and opportunities of field experience within the field of recreation. The course includes field experience identification and selection, resume preparation, letters of application, interview procedures, professional skills, and development.

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. Prerequisite: 300, 302, 303 or consent of department.

331-3 Outdoor Living Skills. Introduction to basic living skills in wilderness environments. Topics include low-impact camping, food rations planning, clothing, travel techniques, equipment, and navigation. Sixteen class meetings plus a one-week wilderness trip. Trip fee not to exceed $250. Wilderness Education Association Stewardship Certification may be earned.

365-3 Administration of Leisure Services. Administrative procedures in park and recreation departments — organization, finance, personnel, facilities, program, public relations, and other areas of administration. Prerequisite: 302.

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.

367-3 Research and Evaluation in Recreation. An introduction to methodological approaches to the scientific study of phenomena inherent to recreation and leisure. The course includes basic research and evaluation designs, research and evaluation report writing, analysis of current leisure research, and use of computers in leisure research and evaluation. Prerequisite: 300, 302, 303.

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.

375-3 Commercial Recreation and Tourism. Problems of commercial recreation and tourism will be addressed in this class. Topics include: free enterprise, marketing, transportation industry, attractions, food and lodging industry and government's role in tourism.

377-3 Overview of Campus Recreation. Focuses on the administration, organization, planning, implementation, and evaluation of programs and facilities in the campus recreation field. Specific topics

addressed include historical and philosophical aspects, administrative practices, competitive and non-competitive programming, future trends and issues, budgeting, public relations, professional associations, and examination of individual characteristics of a variety of campus recreation programs conducted nationwide.

380-1 to 4 Field Work in Recreation. Supervised leadership experiences in a public or private recreation setting. It is recommended that a student sign up for 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 and 305; a minimum SIUC gpa of 2.25, 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. Prerequisite: 15 hours in recreation.

395-3 Site Maintenance and Operation. 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 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.)

425-3 Planning and Design of Recreational Facilities. An examination of major design considerations for a variety of recreation facilities such as recreation centers, recreation sport complexes, parks, visitors centers, and natatoriums. Special attention will be given to long range facility planning. Prerequisite: senior or graduate standing.

431-3 Expedition Leadership. Course focuses on professional leadership of highly adventurous wilderness trips. Emphasis is on development of sound judgment, decision-making, and teaching in wilderness expeditions. Three to five week expeditions in a wilderness setting. Trip fee not to exceed $500. Outdoor Leader Certification by Wilderness Education Association is offered.

440-15 (3, 3, 3, 3, 3) Therapeutic Recreation for Selected Populations. Students will be made aware of problems and characteristics of special population groups. Emphasis is upon the role of therapeutic recreation with these groups in institutional and community settings: **(a)** Therapeutic Recreation for the Mentally Ill. **(b)** Therapeutic Recreation for the Developmentally Disabled. **(c)** Therapeutic Recreation for the Aged. **(d)** Therapeutic Recreation for the Socially Deviant. **(e)** Therapeutic Recreation for the Physically Disabled. Prerequisite: 300, 302, 303 or consent of department.

445-3 Outdoor Recreation Management. Philosophy and principles underlying the growth and development of outdoor recreation management. Outdoor recreation is examined in terms of historical values, long range planning, site design, visitor needs, and environment impact. A laboratory cost of up to $14 may be required. Prerequisite: 300, 302, 303 or consent of department.

460-3 Therapeutic Recreation Management. 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.

461-3 Program Design and Evaluation for Therapeutic Recreation. To equip the student with skills necessary to systematically design and evaluate programs. Philosophy and nature of systems, system analysis, program implementation and program evaluation. Prerequisites: 300, 302, 303, one section of 440, or consent of department.

462-3 Facilitation Techniques in Therapeutic Recreation. This course is designed to provide an understanding of the basic processes and techniques of therapeutic recreation and to develop technical competencies necessary for the provision of quality therapeutic recreation services. Emphasis is on the skillful application of various processes and techniques to facilitate therapeutic changes in the client and the client's environment, thus enabling the development of an appropriate leisure lifestyle.

465-3 Advanced Administrative Techniques. Designed to examine current administrative topics in recreation such as practices and trends in budget and finance, legal aspects, grant writing, personnel practices and policies, and others. Prerequisite: 365.

475-3 to 39 (3 credits per topic) Recreation Workshop. Critical examination and analysis of innovative programs and practices in one of the following areas: **(a)** Budget and Finance, **(b)** Campus Recreation Services, **(c)** Commercial, **(d)** Maintenance of Areas and Facilities, **(e)** Outdoor Recreation, **(f)** Personnel, **(g)** Technological Advances, **(h)** Therapeutic Recreation—Aging, **(i)** Therapeutic Recreation—Developmental Disability, **(j)** Therapeutic Recreation—Emotional Illness, **(k)** Therapeutic Recreation—Physical Disability, **(l)** Therapeutic Recreation—Prisons and Detention Centers, **(m)** Tourism.

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.

490-12 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: completion of all requirements for major in recreation or consent of course coordinator; 2.25 grade point average.

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 (REHB)

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.

401-3 Rehabilitation for Non-Majors. An introduction to the process and practice of rehabilitation for students not majoring in this field. An overview of counseling, evaluation, physical restoration, adjustment services, job placement, and rehabilitation administration will be presented. Also a survey of client characteristics will be provided. Clients with sensory, physical, developmental, and psychiatric disabilities will be discussed. Career opportunities in rehabilitation will be examined.

403-3 Independent Living Rehabilitation. Survey of principles and methods of independent living for persons with disabilities with attention to client assessment for rehabilitation, effective techniques for specific individuals with disabilities, and the variety of types and organization of independent living programs.

405-3 Modern Gerontology. (See Health Education 444.)

406-3 Introduction to Behavior Analysis and Therapy. A survey of the principles and procedures in behavior analysis and therapy and the scope of its application to human needs and problems.

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: consent of instructor.

425-1 to 6 Developing Employment Opportunities. Designed to train rehabilitation personnel in the attitudes, methods, and skills pertinent to placement of handicapped persons with disabilities 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, exposure to representative instruments in major categories, and the use of tests and work samples in assessing persons with disabilities 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.

445-3 to 12 Rehabilitation Services with Special Populations. Procedures and programs pertinent to the care and treatment of special populations. Three semester credits will ordinarily be granted for each unit. Prerequisite: consent of instructor.

(a)-9 (3, 3, 3) Alcohol and Drug Abuse.
(b)-9 (3, 3, 3) Emotionally Disturbed.
(c)-9 (3, 3, 3) Juvenile Offender.
(d)-9 (3, 3, 3) Mental Retardation.
(e)-9 (3, 3, 3) Physically Disabled.
(f)-9 (3, 3, 3) Public Offender.
(g)-9 (3, 3, 3) Sensory Disabled.
(h)-9 (3, 3, 3) Developmental Disabilities.

446-3 Psychosocial Aspects of Aging. Selected theories of psychosocial aspects of aging will be presented and the psychological and sociological processes of aging with the ensuing changes will be related to these conceptual frameworks. Included for discussion and related to field experience will be such concerns as stress reactions to retirement, physical disabilities, impact of reduced economic resources, and other personal-social changes in aging. Topics will address the knowledge base needed by students concerned with rehabilitation of aging clients in institutional, community and home settings. Therapeutic techniques to ameliorate these stresses will be an integral part of the course.

447-3 Biomedical Aspect of Aging. The aging process in a life-span developmental perspective; biological theories of aging, physiological changes in middle and old age and their effects on behavior, performance potential, and psychosocial functioning; senility and other age-related disabilities, their prevention and management; geriatric health maintenance and rehabilitation; institutionalization; death and dying. No prerequisites.

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.

452-3 Behavior Change Applications. An overview of the development and evolution of applied behavior analysis. Applications of behavior analysis to problems of social significance in institutions, schools, and communities are surveyed. Prerequisite: 406 or 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.

461-3 Introduction to Alcoholism and Drug Abuse. Orientation and introduction to a variety of topics related to alcohol and drug abuse; surveys history, theories of cause and development, consequences of abuse, classes and types of drugs, legislation, and other current issues relating to substance abuse and addiction.

468-3 Sexuality and Disability. Research and rehabilitation practices pertaining to the unique psychosexual aspects of various chronically disabling conditions will be examined.

471-3 Rehabilitation and Treatment of the Alcohol and Drug Abusers. A comprehensive examination of substance abuse treatment and rehabilitation; focus on various treatment approaches, treatment settings, and types of counseling to include an overview of individual, group, and family techniques; the rehabilitation counselor's role is addressed and necessary skills in treating drug and alcohol abusers. Prerequisite: 461 or consent of instructor.

479-3 Technical Writing in Rehabilitation. Fundamentals of writing skills for rehabilitation specialists, including preparation and drafting of program/grant proposals, vocational evaluation/work adjustment reports, news releases and other publicity materials. Prerequisite: consent of instructor.

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 Experience 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. Prerequisite: consent of department.

Respiratory Therapy Technology (Program, Major)

(SEE ALLIED HEALTH CAREERS SPECIALTIES)

Respiratory therapy is an allied health specialty concerned with the treatment, diagnostic testing, management, control, and care of patients with deficiencies and abnormalities associated with respiration. It involves the therapeutic use of medical gases and administering apparatus, environmental control systems, medications, ventilator control and breathing exercises, cardiopulmonary resuscitation, maintenance on natural, artificial, and mechanical airways, and diagnostic cardiac and pulmonary function studies.

The respiratory therapy technology curriculum is designed to prepare students to become registered respiratory therapists. Completion of the course provides graduates with the educational requirements necessary to take the national registry examination administered by the National Board of Respiratory Care (NBRC) and the Pulmonary Specialty Exam (CPFT).

Students must be accepted by both the University as baccalaureate eligible and the respiratory therapy technology program. A firm background in science and communication ability is mandatory to satisfactorily complete the program. The professional respiratory therapy courses consist of both formal classroom, laboratory, and clinical experiences. The clinical experience will be in a variety of locations to provide maximum opportunity for procedures. These sites are chosen in consultation with the student and the clinical coordinator of the program. It is highly advisable that the student complete all prerequisites before starting the professional sequence in the second year. The student should have all program application materials completed as soon as possible, since enrollment is limited. The minimum length of time to complete this program is two and one-half calendar years (five academic semesters and one summer session). While the regular semesters will utilize classrooms, laboratories, and clinical education experiences, the final fall semester is a full-time clinical internship at a designated full-service hospital. In the final semester, exit evaluations are adminis-

tered by the program and adjunct faculty to assess clinical and theoretical competency. Students are required to complete these satisfactorily to obtain a certificate of completion from the program. Upon successful completion of the curriculum, the student will be awarded two associate degrees and a certificate of completion. One associate degree with a major in allied health careers specialties and the other with a major in respiratory therapy technology.

The program at present cannot produce more than a fraction of the needed therapists for the region, so placement approaches 100%. Articulation with other programs can offer the ability to apply program course requirements fully toward baccalaureate credit.

Associate in Applied Science Degree, College of Technical Careers

Requirements for Major in Respiratory Therapy Technology

Completion of Allied Health Careers Specialties degree program	62
Respiratory Therapy Advanced Courses (Allied Health Careers Specialties designated)	20
Total	82

Courses

(SEE ALLIED HEALTH CAREERS SPECIALTIES)

Science (College, Courses)

Courses (SCI)

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. 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.

388-0 to 36 Study Abroad. Provides credit toward the undergraduate degree for study at accredited foreign institutions or approved overseas programs. Final determination of credit is made on the student's completion of the work. Zero to eighteen credits per semester, zero to nine for summer session. Prerequisite: one year of residence at Southern Illinois University at Carbondale, good academic standing, and prior approval of the course of study by the major department and the College of Science.

Social Studies (Major)

(SEE CURRICULUM AND INSTRUCTION)

Social Work (School, Major, Courses)

The major in social work is comprised of four parts. The University's general education program, required of all students pursuing a bachelor's degree, is a care-

fully balanced series of courses in the sciences, social sciences, humanities, English and communication skills, mathematics, and health and physical education. The general education courses in sociology and psychology are particularly useful to the social work major. The social work classes in the curriculum include courses that define the role of the profession as it relates to society, politics, and the economy; that provide the conceptual framework to address problems and changed circumstances for individuals, families, groups, and communities; and that examine the structure, functions, policies, programs, and strategies of the social welfare system. Methods courses cover interviewing and interpersonal helping skills, problem solving, group theory, community organization, community development, and social research. This core of courses is designed to give students a solid foundation in understanding, creating and applying research that will help the students become effective professionals; and to give the students the potential to add to the body of knowledge that will guide their daily decisions and behavior.

The field practicum provides an opportunity to integrate theoretical knowledge and helping skills learned in the classroom with the *real world* settings of Southern Illinois social service agencies. A concurrent weekly seminar supports this integration of theory and practice. The practicum is taken in the first semester of the senior year. Block placements do not begin during the summer.

For requirements for the graduate degree in social work, see the Graduate Catalog.

Accreditation. The bachelor's degree in social work is fully accredited by the Council on Social Work Education, the nationally recognized accrediting agency for social work. Graduation from an accredited program gives students an advantage both in the job market and in pursuit of graduate education. Many graduate programs in social work will give advanced standing to students who have completed an accredited bachelor's degree in social work.

Admission. Please refer to Social Work in Chapter 3 for admission requirements.

Course Sequencing. It is of the utmost importance that required social work courses be sequenced properly. Therefore, all courses must be approved by the student's academic and professional advisers. Courses on the 300 and 400 level are reserved for juniors and seniors.

Student Advisement. Students in social work have access both to the School's Office of Student Services and to a faculty adviser. Help is offered in course selection and registration, in long-range planning for the degree program and career information. Students are encouraged to meet with their adviser on a regular basis.

Requirements for the Degree. The program leads to the Bachelor of Science degree with a major in social work. In addition to 49 semester hours of general education requirements, majors must also complete a minimum of 54 hours of undergraduate social work courses. Students are also required to take 17 semester hours of general electives for a total of 120 semester hours.

Social work majors must maintain a minimum overall grade point average of 2.25 (on a 4.0 scale) and a 2.5 (on a 4.0 scale) in social work courses.

Bachelor of Science Degree

General Education Requirements 49
Must include GEA 115; GEB 108, 114, 202 and 211
Requirements for Major in Social Work 54
Foundations of Social Work: Social Work 375, 400a, 400b, 411, 421 15

Social Work Practice: Social Work 383, 401, 402, 441, 442, 443, 444	21
Social Work Policy, Practice, and Issues: A total of 6 hours selected from Social Work 450, 461, 463, 466 or other social work electives	6
Social Work or Black American Studies 391	3
At least two 300 or 400-level course selected from: anthropology, economics, history, political science, psychology, sociology	6
An introduction to statistics course	3
Electives	17
Total	120

Courses (SOCW)

289-3 Field Service Seminar. This seminar is to be taken concurrently with 295 or Community Development 295. Prerequisite: consent of instructor.

295-1 to 6 Field Service Practicum in Southern Illinois. (Same as Community Development 295.) This course is designed for freshmen and sophomores who are volunteering service to community, social service, or health agencies in southern Illinois. Credit based upon time spent in direct service. Approval of agency required for registration. Mandatory Pass/Fail.

375-3 Social Welfare as a Social Institution. Explores the 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. This class may require field activity.

383-3 Interviewing and Interpersonal Helping Skills. This is an introductory course in interpersonal skills in the social services. Interviewing, history taking, and goal setting are emphasized.

391-3 Social Services and Minority Groups. (Same as Black American Studies 391.) Explanation 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.

396-1 to 3 Readings in Social Work. Varying topics not ordinarily covered in depth in regular courses and of specific interest to advanced students. Prerequisite: consent of instructor.

400A-3 Human Behavior and the Social Environment. Provides an ecological perspective for the study of normal and dysfunctional human development and behavior. Examination of environmental forces impinging on the individual and implications for generalist social work practice. Not for graduate credit.

400B-3 Human Behavior and the Social Environment. A continuation of 400a. Provides an ecological perspective for studying the theory and development of groups, organizations and communities with implications for generalist social work practice. Not for graduate credit. Prerequisite: 400a.

401-3 Generalist Practice I. The first of two courses which prepares for generalist social work practice. Focuses on an examination of problem-solving interventions and environmental modification skills for use with individuals and families at a beginning level of proficiency. Not for graduate credit. Prerequisite: social work major and 375 and 383.

402-3 Generalist Practice II. Continuation of 401. Prepares for generalist practice by focusing on problem-solving methods and skills for work with groups, organizations and communities at a beginning professional level of proficiency. Not for graduate credit. Prerequisite: 401 and Social Work major.

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: Social Work major and Educational Psychology 402 or similar introduction to statistics course plus concurrent enrollment in either 401 or 402.

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: 375.

441-4.5 to 6 Social Work in Selected Agencies. At least 15 to 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. Mandatory Pass/Fail. Prerequisite: senior standing, 375, 383, 391, 400a, 400b, 401, 402, 411; and a 2.5 grade point average in departmental prerequisites. Must be taken concurrently with 443.

442-4.5 to 6 Advanced Field Practicum. Supervised field work experience in an approved social service agency with concurrent weekly seminar. At least 15 to 20 hours per week. Not for graduate credit. Field work practicums begin only in fall and spring semester. Mandatory Pass/Fail. Prerequisite: senior standing, 375, 383, 391, 400a, 400b, 401, 402, 411, 421, and 441, 443 if not taken concurrently in a block placement and a 2.5 grade point average in departmental prerequisites. Must be taken concurrently with 444.

443-1.5 Field Practicum Seminar. The seminar assists the student who is in the field work to systematically conceptualize and integrate the field experience with the generic social work practice model and micro and macro social welfare theory. The seminar builds on and re-emphasizes content provided in previous social work courses. Seminar discussion focuses on shared field work experience: practice issues related to social work principles, ethics, and professionalism; and intervention strategies. Not for graduate credit. Mandatory Pass/Fail. Prerequisite: Senior standing, 375, 383, 391, 400a, 400b, 401, 402, 411; and a 2.5 GPA in School prerequisites: Must be taken concurrently with 441.

444-1.5 Advanced Field Practicum Seminar. The seminar assists the student who is in field work to systematically conceptualize and integrate the field experience with the generic social work practice model and micro and macro social work practice. The seminar builds on and re-emphasizes content provided in previous social work courses. Seminar discussion focuses on shared field work experiences: practice issues related to social work principles, ethics, and professionalism; and intervention strategies. Not for graduate credit. Must be taken concurrently with 442. Mandatory Pass/Fail.

450-1 to 6 (1 per topic) Seminar in Special Issues for Social Work. (a) Practice. **(b)** Policy and planning. **(c)** Public welfare services. Topics will be selected from these three areas. Limited to no more than three credit hours per semester. May be repeated as topic varies up to six semester hours. Prerequisite: junior standing and 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.

463-3 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.

466-3 Public Policies and Programs for the Aged. An introduction to public policy, program and planning for the aged. A framework is utilized for analyzing policy issues, programs and research in such areas as income maintenance, long term care, transportation, leisure time, housing, and social services in order to aid present and future practitioners who work with the aged. Prerequisite: consent of instructor.

489-3 Field Service Seminar. (Same as Community Development 489.) This seminar is to be taken concurrently with 495 or Community Development 495. Prerequisite: consent of instructor.

495-1 to 6 Advanced Field Service Practicum in Southern Illinois. (Same as Community Development 495.) This course is directed at upperclassmen and graduate students volunteering service to community, social service, or health agencies in southern Illinois. Credit based on time spent in direct service. Approval of agency required for registration. Mandatory Pass/Fail.

496-1 to 6 Independent Research in Social Work. Provides opportunity for students to conduct independent research with the guidance of a faculty member. Topics of research are identified by the student and faculty member. Prerequisite: consent of instructor.

Sociology (Department, Major, Courses)

Sociology is the science of society. It explains how human groups, institutions, and social movements shape our lives. Sociology develops students' insights into theoretical and practical aspects of life. Sociology students study such topics as social thought, sex and gender roles, marriage and the family, social problems, criminology, large-scale business and government organizations, international development, and social change.

Training in sociology is basic both to creative living and to such practical tasks as the development and effective working of businesses, families, community service agencies, political movements and parties, churches, social clubs, government, industry, and schools.

Those with degrees in sociology find meaningful and rewarding employment as consultants to business and government, social change agents (e.g., community organizers), politicians, educators, and diplomats. Like other liberal arts students, sociology majors also enter the business world, particularly in the sales or personnel divisions of major corporations.

An undergraduate major in sociology is excellent preparation for those anticipating graduate study in law, social welfare, business administration, journalism, and many of the technical and scientific fields. In addition, many students have enjoyed the benefits of double majors or major-minor combinations between sociology and one of these related fields. Sociology and paralegal studies for legal assistants is an example of double majors involving two programs that are both

in the College of Liberal Arts, while sociology and journalism are double majors involving programs in the College of Liberal Arts and the College of Communications and Fine Arts.

The Department of Sociology offers the two following alternative plans of study for completion of its major.

General Sociology Plan. This plan is for students seeking a broad academic background in sociology. It usually is chosen either by those who want a general liberal arts education in the social sciences or those anticipating graduate study in one of the social sciences.

Applied Sociology Plan. This plan combines general study in sociology in individually planned programs built around applied courses, including field work/internship experience. The applied sociology plan is primarily for those who seek careers in governmental, business, or community service occupations for which graduate school training either is unnecessary or taken as an option somewhat later in one's career. Both the general and applied plans provide maximum flexibility in course selection by students, while still ensuring that all majors receive training in the fundamentals of the field. Such flexibility enables students to tailor either their general or applied plan to specific career goals.

Academic Advisement. A student planning to major or minor in sociology should consult the department's director of undergraduate studies as early as possible in order to plan an integrated program. After the petition to major in sociology has been approved, the student will be expected to visit the director each semester until all major requirements have been completed. A record of progress for each student will be on file in the department.

To graduate with a major in sociology the student must meet all the General Education requirements of the University and the requirements of the College of Liberal Arts. The major requires thirty-two hours of course work. Ten hours are in sociology core requirements: Sociology 301, 308 and 312. An additional four hours of senior year experience also is required: Sociology 497 or 498. The remaining eighteen hours for the major must include at least eight hours at the 400 level and may be elected from regularly scheduled departmental courses. These requirements are summarized below.

Transfer Students. Credits for some sociology courses taken at community colleges are transferable. Students should have their sociology credits evaluated by the department's director of undergraduate studies at the earliest opportunity. At least 20 hours of sociology credit must be earned at Southern Illinois University at Carbondale. The eight hours of 400-level courses must be earned at a senior level institution and Sociology 497 or 498 must be taken at Southern Illinois University at Carbondale.

Bachelor of Arts Degree, College of Liberal Arts

General Education Requirements 46
College of Liberal Arts Academic Requirements (See Chapter 3.) ..... (4) + 8-14
Requirements for Major in Sociology 32
1) Sociology Core Requirements:
Sociology 301-4, 308-3 and 312-3
2) Senior Year Work:
Sociology 497-4 (General Sociology Plan) or
Sociology 498-4 (Applied Sociology Plan)
3) At least eight hours must be earned in sociology 400-level courses
Electives 25-31
Total 120

Minor

A minor in sociology consists of a minimum of 16 hours of which four must be Sociology 301.

Honors Program

The department offers an honors program for academically outstanding sociology majors. Qualifications for acceptance into this program are: (1) an overall grade point average of at least 3.00; and (2) completion of 8 hours in sociology courses with a grade point average of at least 3.25 in all sociology courses taken at Southern Illinois University at Carbondale, and the completion of no fewer than six, nor more than fourteen, semester hours in research or independent study which are counted toward the major. Successful completion of the department's honors program is noted on the academic record at the time the degree is recorded and on the diploma, i.e., Departmental Honors in Sociology. For details, qualified students interested in this program should consult the department's director of undergraduate studies.

Courses (SOC)

101-2 The New Student in the University. Investigates the purposes of higher education, increases knowledge and utilization of the university and the learning process. Only for first semester students at this university. Special sections for junior college transfer students and others. Does not apply to hours in sociology major.

223-3 Women and Men in Contemporary Society. (Same as Women's Studies 221.) Examines theories of women's and men's roles in society. Surveys contemporary gender inequalities in the U.S. and developing countries. Special attention given to employment, race, sexual assault, feminist movements, alternative family/lifestyles and childrearing.

233-3 Sport and Modern Society. (Same as Physical Education 245). An overview of the social scientific study of sport is followed by an examination of sport and social institutions (education, politics, economics, etc.); sport and social inequality (racial, ethnic, gender, age, etc.); and sport and social change.

301-4 Principles of Sociological Analysis. This course familiarizes students with major domains of sociological analysis and basic methods of sociological inquiry. Emphasis on conceptual structure and diverse theoretical perspectives in contemporary sociology. Required of majors and minors in sociology. Recommended for students with special interest in social science. Satisfies the CoLA Writing-Across-the-Curriculum requirement.

302-3 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.

303-3 Sociology of Deviant Behavior. An overview of sociological theories and research in the study of social deviance. Examines such deviant behaviors as mental illness, sexual deviation, crime, prostitution, drug abuse, eating disorders, alcoholism, and suicide.

308-3 Statistics for Social Science. Methods and application of statistics in the social sciences. Measures to describe distribution, measures of relationship, statistical inference. Satisfies the CoLA Writing-Across-the-Curriculum requirement.

312-3 Elements of Sociological Research. The student is introduced to a variety of research methods in the social sciences including use of the library, techniques of observation, and elementary steps in quantitative measurements and analysis.

316-3 Political Socialization. (See Political Science 316.)

321-3 Society and the Individual. Examines the relative influence of individual characteristics, face-to-face interactions, and larger social structures in shaping human behavior. Emphasis is on socialization through the life cycle and in various sectors of society (family, schools, work settings.) Explores related topics of attitude formation and change, social influence, the self and self esteem, groups processes, and social power.

335-3 Urban Sociology. Development of cities and urban social life; present day ecology of cities: suburbs, ghettos, blight; strategies of urban renewal; urban life styles; violence and acute urban problems; urban housing needs; designing safe neighborhoods; urbanization in Europe and developing countries.

340-3 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.

351-3 Sociology of Religion. (Same as Religious Studies 351.) The origin and function of religious ideas and institutions in society, their relationship to social change and stability.

371-3 Population Problems. Characteristics and problems of population growth, composition, distribution, mortality, birth control and fertility, international and internal migration, and government policies.
372-3 Criminology. The nature of crime; criminal statistics; causal factors and theories of criminality; types of criminals.
385-3 Energy and Society. Development of human social organizations accompanied by increasing control of power, technology, and energy resources. Review of changes in social institutions, social processes, and energy use. Aspects of energy development, conservation, and control.
396-1 to 6 Readings in Sociology. Instructor and student select reading topics which are not covered in depth in regular course offerings. Prerequisite: consent of department and instructor.
397-3 Special Topics in Sociology. Varying sociological topics selected by the instructor for study in depth and breadth. Topics will be announced in advance of registration for the course. Prerequisite: consent of department and instructor.
406-4 Social Change. Theories and problems of social change; their application, with emphasis on the modern industrial period.
415-3 Logic of the Social Sciences. (See Philosophy 415.)
423-4 Sociology of Gender. (Same as Women's Studies 442.) Examines social science theory and research on gender issues and contemporary roles of men and women. The impact of gender on social life is examined on the micro level, in work and family roles, in social institutions, and at the global, cross-cultural level.
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.
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.
435-4 Social Inequality. Discussion of theories and evidence pertaining to the socio-structural causes and consequences of inequality based on social class, prestige, power, gender, wealth, and income.
437-4 Sociology of Development. Survey of sociological theories of development including modernization, dependency, and world-system perspectives. Problem areas of development are examined: economic growth, state structures, multinational corporations, labor force, education, migration, population, and women's roles.
438-4 Sociology of Ethnic Relations in World Perspective. Examines theories, concepts and research on the structure of ethnic relations and ethnic problems in contemporary societies in major world regions. Assimilationist, pluralist, secessionist, and militant types of ethnic and racial group relations are covered in selected societies. Designed for students with advanced interest in comparative ethnic relations. Prerequisites: GEB 215 is recommended.
450-4 Social Thought. A survey of Western social thought from the ancient world to the founding of the modern social sciences in the 19th century.
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.
465-4 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 Introduction to Social Demography. Survey of concepts, theories, and techniques of population analysis; contemporary trends and patterns in composition, growth, fertility, mortality, and migration. Emphasis is on relationship between population and social, economic, and political factors.
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: 6 hours of social/behavioral science recommended.
474-4 Sociology of Education. Methods, principles, and data of sociology applied to the educational situation; relation of education to other institutions and groups.
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.
476-4 Politics and Religion in Comparative Perspective. (Same as Religious Studies 476.) Examination of the interaction between politics and religion in the United States, with a comparative look at other nations and global regions. Consideration given to politics and religion as cultural and institutional systems, and to the impact of each upon the other.
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. Not for graduate credit. Satisfies the CoLA Writing-Across-the-Curriculum requirement.

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. Satisfies the CoLA Writing-Across-the-Curriculum requirement.

Special Education (Major, Courses)

In 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 149 hour program.

All programs are fully approved by the Illinois State Teacher Certification Board.

As with other teacher preparation programs within the University, major approval must be secured for each student after the student's first semester of membership in the major. In Special Education this approval and subsequent approvals are based not only on continued satisfactory academic performance, but acceptable professional behaviors which the faculty deem essential for competent and effective educators of exceptional children and youth.

Bachelor of Science Degree, College of Education

SPECIAL EDUCATION MAJOR — STANDARD SPECIAL CERTIFICATE WITH APPROVAL IN BEHAVIORAL DISORDERS, OR MENTAL RETARDATION, OR LEARNING DISABILITIES[1]

General Education Requirements 47
- GEA: 9 hours
- GEB: 9 hours including 114, 202 and 301
- GEC: 12 hours including Music 101 or GEC 100, GEC 213, and one literature course
- GED: GED 101; 102 or 120; GED 152 or 153; Mathematics 314 to substitute for GE Mathematics
- GEE: 4 hours including 201 and two hours of physical education activity.

Additional Requirements 12
- Art 348 or Curriculum and Instruction 325 or Physical Education 202
- Mathematics 114
- Psychology 301
- Educational Psychology 412 or Psychology 431

Requirements for Major in Special Education 53-56
- Professional Education Requirements 31
  - See Teacher Education Program, Chapter 3. (Education 312-3 hours)[1]
- Special Education Requirements 25-28
  - Special Education 400, 411, 423, 425 10
  - Curriculum and Instruction 312, 315 6
  - Certification Area 9-12
    - Behavioral Disorders: 401, 417, 430
    - Mentally Retarded:
      - Educable Mentally Retarded: 402, 406, 418, 430
      - Trainable-Severely/Profoundly Handicapped: 402, 406, 421, 431
    - Learning Disabilities: 404, 419, 430

Electives 2-5
Psychology 305, 307 (both required in behavioral disorders) Special Education 410; Curriculum and Instruction 407
Total 120

[1]To 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

General Education Requirements 50
GEA: 9 hours
GEB: 12 hours including 114, 202 and 301
GEC: 12 hours including Music 101 or GEC 100, GEC 213 and one literature course
GED: GED 101; 102 or 120; GED 152 or 153; Mathematics 114 to substitute for GED 107
GEE: 4 hours including 201 and two hours of physical education activity.
Additional Requirements 24
Art 348 or Music 325 or Physical Education 202
Mathematics 314
Concentration in Social Science to include:
Psychology 301, 305, 307, 431 18
Requirements for Major in Special Education 72-75
Professional Education Requirements[1] 34
See Teacher Education Program, Chapter 3.
(Education 312/400-6 hours)
Special Education Requirements 19-22
Special Education 400, 411, 423, 425 10
Certification Area 9-12
Behavioral Disorders: 401, 417, 430
Mentally Retarded:
Educable Mentally Retarded: 402, 406, 418, 430
Trainable-Severely/Profoundly Handicapped: 402, 406, 421, 431
Learning Disabilities: 404, 419, 430
Elementary Education Requirements 22
Curriculum and Instruction 312, 315, 423, 424, 426, 427, 435
Total 146-149

[1]Includes eight hours of student teaching for special education and eight hours of student teaching for elementary education.

Courses (SPED)

400-3 Introduction to Special Education. An overview of characteristics of all types of exceptional children and youth including physical, mental, emotional, and social traits. The course also covers the effects of disabling conditions in learning situations, and an overview of the history of special education including legislation and litigation.

401-3 Characteristics of Children and Youth Labeled Behavior Disordered. Diagnosis, screening, classroom management, placement considerations, goals, and the effective use of ancillary services for individuals who experience emotional disturbance and/or social adjustment problems. Emphasis on the understanding of maladaptive behavior through principles of learning and behavior. Prerequisite: 400 or concurrent enrollment or consent of department chairperson.

402-3 Characteristics of Children and Youth Labeled Mentally Retarded. 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 Characteristics of Children and Youth Labeled Gifted. Designed to help teachers in the identification of and programming for children labeled gifted and talented. Prerequisite: 400 or concurrent enrollment or consent of instructor.

404-3 Characteristics of Children and Youth Labeled Learning Disabled. Behavioral, emotional, physical, and learning characteristics of children and youth, 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 Introduction to Early Childhood Special Education: Infants, Toddlers, and Preschoolers with Special Needs and Families. This course presents an overview of Early Childhood Special Education including typical and atypical early development, federal and state legislation, goal setting, IEP and IFSPs, working with families, service delivery, case-management, curriculum methods and procedures for enhancing development in young children with special needs. Prerequisite: 400 or concurrent enrollment or consent of instructor.

406-3 Characteristics of Children and Youth with Moderate and Severe Disabilities. Presents historical, theoretical, and research developments in service delivery for individuals of all ages (0-21) with severe disabilities. Provides the basic developmental, instructional, and curricular background essential for prospective educators. Emphasizes a behavioral approach. Thirty hours of observation or equivalent applied experience is required.

409-1 to 6 Cross-Cultural Studies. Seminar and/or directed independent study concerned with sociocultural variables affecting the personality characteristics and educational needs of children and youth with a disability. Prerequisite: 400 or consent of instructor and department chairperson.

411-3 Assessment in Special Education. Course covers general assessment information, intelligence and academic norm-referenced test, informal inventories, and adaptive behavior and rating scales. A laboratory fee is required to cover the cost of materials. Prerequisite: 400; one of 401, 402, or 404; or consent of department chairperson.

412-3 Introduction to Assessment and Curriculum Methods in Early Childhood Special Education. This course presents an introduction to child and family assessment and the development of child and family goals in Early Childhood Special Education. Topics will include types of assessment commonly used, rationale for assessment, methods of assessment, reporting assessment results, writing child and family goals. A fee for testing materials is required. Prerequisite: 400 or concurrent enrollment or consent of instructor.

417-3 Methods and Materials for Teaching Children and Youth Labeled Behavior Disordered. Psychoeducational procedures used in teaching children and youth labeled behavior disordered. Includes field trips, meetings with parents, and visits by resource persons from schools and agencies. Prerequisite: 400, 401.

418-3 Methods and Materials for Teaching Children and Youth Labeled Mildly Retarded. Psychoeducational strategies used in teaching children and youth with mild mental retardation. Prerequisite: 400, 402.

419-3 Methods and Materials for Teaching Children and Youth Labeled Learning Disabled. Psychoeducational strategies used in teaching children and youth labeled learning disabled. Prerequisite: 400, 404.

421-3 Methods and Materials for Teaching Children and Youth Labeled Moderately and Severely Handicapped. Emphasizes a behavioral approach (i.e., systematic instruction) in teaching young students with severe disabilities (e.g., moderate MR, severe MR, profound MR, multiple handicapped, autistic). Systematic instruction is discussed in relation to applications across various curriculum domains. Each student must have access to working with students labeled moderately and severely disabled during the semester. All students are to develop and implement an instructional program during the course of the semester. Prerequisite: 400, 406.

423-2 General Procedures in Special Education. Presents key provisions of Public Law 94-142 and subsequent amendments, including Individualized Education Programs (IEPS). Course content also includes principles of behavior management effective for use in the instruction of students with special needs. Prerequisite: 400; and one of 401, 402, 403, or 404; or consent of department chair.

425-2 Home-School Coordination in Special Education. Cover techniques used in parent interviews, conferences, and referrals by school personnel; due process and procedural safeguards for parents of children and youth with disabilities. Prerequisite: 400 or consent of department chairperson.

430-3 Secondary Programming for Students Labeled Mildly Disabled. Deals with modifications of and additions to school programs to ensure that they are appropriate to the needs of the adolescents labeled mildly disabled. Includes detailed coverage of joint work-study programs as preparation for vocational adequacy, and addition of remedial and compensatory program models. Prerequisite: 400 and one of 401, 402, 403, or 404.

431-2 Work-Study Programs for Adolescents Labeled Severely Disabled. Deals with program offerings in public school special education programs designed to prepare adolescents labeled severely disabled for maximum vocational adequacy. Prerequisite: 400 and one of 401, 402, 404, or 406.

490-1 to 4 Readings in Special Education. Study of a highly specific problem area in the education of exceptional children. Open only to selected seniors. Not for graduate credit. Prerequisite: 400 and consent of department chairperson.

Speech Communication (Department, Major, Courses)

The Department of Speech Communication offers courses in the history, theory and application of communication. These courses reflect the liberal arts and social science tradition as an approach to theory and application.

The department also sponsors co-curricular activities in debate, forensics, performance studies (oral interpretation), and public relations, all of which are open to non-majors.

English is the language of instruction in the Department of Speech Communication and proficiency in written and oral English is required of all students in Speech Communication. To meet the requirements for a major in the Department of Speech Communication a student must demonstrate the following basic skills: the ability to deliver effective public speeches and oral performances of literature; the ability to write clear, correct English prose; the ability to communicate effectively at the interpersonal level as well as in small and large groups; and the ability to understand and apply theory and research which are relevant to the student's program specialization.

These communication competencies may be demonstrated by completing the major program and any one of the specializations described below and by receiving no lower than a *C* grade in courses listed in the required core and as required in the student's chosen specialization. Under certain circumstances, a student may elect to demonstrate a competency by passing a proficiency examination administered by the Department of Speech Communication.

In order to declare the speech communication major, a student must have attained a GPA of 2.25 and must maintain that GPA in order to remain a speech communication major.

Prior to entry to the speech communication major, a student must take the Language Skills Examination (LSE). In order to be admitted to the speech communication major, a student must score at or above the 70th percentile on that exam.

Bachelor of Science Degree, College of Liberal Arts

SPEECH COMMUNICATION MAJOR

General Education Requirements 46
GEC 200, GED 152 or 153 are recommended

Requirements for Major in Speech Communication 42

Required Core Courses 9
Communication theory: 230
Communication skills: 3 hours of public communication selected from 221, 325, 326 or 370; and 3 hours of interpersonal communication selected from 261, 262, 371 or 383.

Required Curriculum Specialization (see below) 33

Interpersonal Communication Specialization 33
For students interested in topics of communication in interpersonal relationships, language in everyday interactions, group communication dynamics, and non-verbal and intercultural aspects of communication; and careers in communication skills training, interviewing, communication research, conflict management, and employee or client relations.

Required: 261, 262, 361, 383, 442, 461; and 15 hours selected from 280, 340, 341, 362, 371, 382, 401, 440, 441, 443, 444, 446, 452, 460, 462, 465, 480 or 483.

Performance Studies Specialization 33

For students interested in theatrical and everyday performance and the oral interpretation of literature, and in careers in performance, writing-as-performance, and public presentation from business to the arts.

Required: 370, 371, 471, 472; 6 hours selected from 474, 475, 476; at least one hour selected from 390 or 490; and 15 hours selected from 221, 310, 325, 326, 341, 361, 383, 401, 411, 421(3), 431, 432, 433, 435 or 461.

Persuasive Communication Specialization 33

For students interested in public and political discourse, argumentation, rhetoric, social influence and media; careers in law, politics, sales, corporate and public advocacy, and selected areas in business and mass media.

Required: 221, 325, 326, 358, 411, 421(3), 442; 12 hours selected from 280, 281, 310, 341, 361, 362, 371, 382, 401, 421(3,3), 440, 441, 443, 446, 451, 452, 465 or 476.

Organizational Communication Specialization 33

For students interested in a broad spectrum of communication topics in the context of the organization including, but not limited to, compliance-gaining, superior-subordinate interaction, communication audit methods, organizational networks, organizational climate and culture, conflict resolution, impact of new communication technology, and information flow.

Required: 261, 280, 326, 383, 460, 480, 483; 12 hours selected from 221, 262, 281, 310, 325, 341, 358, 361, 362, 381, 382, 390, 411, 441, 442, 443, 452, 481, 490.

Public Relations Specialization 33

For students interested in social influence and change through diverse media; and careers in agency, corporate, or not-for-profit public relations.

Required: 280, 281, 326, 381, 382, 481, JRNL 309 and 310, Design 497d or JRNL 315, and 6 hours selected from 390, 490, 493 or 494.

Electives 32

Professional Requirements and Advisement:

1. Electives *cannot* be *professional communication* courses; *professional communication* includes journalism, graphics, cinema and photography, organizational communication, and radio and television.
2. It is strongly recommended that students include in their electives at least one advanced writing course such as English 290, 390 or 491, and at least one course in psychology such as Psychology 307, 320 or 323.
3. Students interested in agency or corporate public relations are also advised to select 15 hours of electives from the College of Business and Administration. Recommended courses are Management 304, Marketing 304, 305 and 363.

Total 120

Bachelor of Science Degree, College of Liberal Arts or Bachelor of Science Degree, College of Education

SPEECH COMMUNICATION MAJOR - COMMUNICATION EDUCATION SPECIALIZATION

For students interested in receiving teaching certification in Speech Communication, the requirements are the same as for the Bachelor of Science Degree in the College of Education, Speech Communication Major.

General Education Requirements 46
Must include GEB 114, 202 and 301, GEC 200, GEC literature, GEC 213, GED 152 or 153, GEE 201 and two hours of physical education courses.

Speech Communication Core Requirements 9
Speech Communication 230 and 326; and either 371 or 383.

Requirements for Major in Speech Communication 33
Speech Communication 221, 261, 262, 325, 370, 432, and either 474 or 475; 6 hours selected from 281, 310, 326, 340, 383, 401, 411 or 476; 6 hours selected from 371, 433, 435, 471 or 472.

Professional Education Requirements 31
Includes Speech Communication 431. See Teacher Education Program, Chapter 3 for education requirements.

Approved Minor ..... 15+
Number of hours needed depends on area selected for minor; see individual programs for specific requirements.

Total 134

Speech Communication Minor

A minor in Speech Communication consists of a minimum of 15 hours which must include 221, 230, 262, and one course (3 hours) at the 400-level. Students electing Speech Communication as a minor in a teacher education program must include Speech Communication 431.

Courses (SPCM)

Courses in speech communication are listed according to numerical order. However, the second digit in the course number indicates its topical focus in the speech communication curriculum, as follows:

00-09 Communication Theory and Research Methods
10-19 Rhetorical Theory and Criticism
20-29 Oral Communication and Public Address
30-39 Communication Education
40-49 Language and Semiotic Communication; Cultural Studies
50-59 Political Communication; Media Studies
60-69 Interpersonal and Phenomenological Communication; Philosophy of Communication
70-79 Performance Studies: Oral Interpretation
80-89 Organizational Communication and Public Relations
90-99 Research Reporting: Applied Studies and Practicum

100-3 Speech Communication Workshop. A workshop in debate, oral interpretation, or public speaking for secondary school seniors interested in intensive study in one or more or these areas. Prerequisite: consent of instructor.

221-3 Advanced Public Speaking. The components of effective speech with actual preparation and presentation of several types of speeches. Prerequisite: GED 153 or consent of instructor.

230-3 Introduction to Speech Communication Theory. Introduction to speech communication theory. Examination of history and theoretical issues as a basis for understanding applied communication areas.

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. Theoretical approaches and contemporary research on patterns of interpersonal communication in romantic, friendship, family, and work relationships. Emphasis on developing skills for analyzing interpersonal processes through close description and interpretation. Prerequisite: GED 152 or consent of instructor.

280-3 Business and Professional Communication. A survey of communication theory pertaining to business and professional settings. Provides practice applicable to interviews, conference briefings, and presentation techniques. Prerequisite: GED 152 or 153.

281-3 Introduction to Public Relations. Philosophies and principles of agency, business, governmental, and nonprofit public relations. Historical perspectives, current and future trends, and career opportunities explored.

310-3 Speech Composition. Rhetorical techniques of public address. Two major speeches prepared, with every possible refinement. Prerequisite: 221.

325-3 Argumentation and Debate. Through the study of argument, evidence, reasoning, and oral advocacy this course seeks to ensure 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. Prerequisite: 221, or 280, or GED 153, or consent of instructor.

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.

340-3 Introduction to Language Acquisition. Interdisciplinary approaches to the interaction between language acquisition and communication development. Topics include nonverbal communication, phonology, syntax, semantics, and pragmatics. Provides a background for those working with young children.

341-3 Introduction to Intercultural Communication. (Same as Linguistics 341.) 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: 262 or GED 152 or consent of instructor.

358-3 Political Campaigns and Elections. (See Political Science 318.)

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.

363-3 Analytic Creative Communication. Releasing creativity as creative interchange in persons and social relations, by analyzing and removing basic obstructions to beliefs, attitudes, desires, and habits, with increasing freedom to communicate creatively.

364-3 Synergetic Creative Communication. Releasing creativity as creative interchange in persons and social relations, by relating synergetically the analyzed fragments of knowledge for a creative lifestyle, with increasing freedom to communicate creatively.

370-3 Oral Interpretation II. Theory and practice in advanced interpretation techniques, with emphasis on the student as performer. Prerequisite: GEC 200 or consent of the instructor.

371-3 Storytelling and the Oral Tradition. Theory and practice in the art of storytelling with emphasis upon practical application, source materials, and historical and ethnic backgrounds.

381-3 Public Relations in Practice. Application of public theory and principles through training and practice in the development of public relations production skills including message construction and delivery, verbal, nonverbal, and visual production work and special events components. Prerequisite: 281 with a grade of *C* or better and passage of language skills examination.

382-3 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.

383-3 Interviewers and Interviewing. Planning, conducting, and analyzing interviews with emphasis on roles of interviewer and respondent in professional and organizational communication settings. Study of factors affecting accuracy, openness, and goal attainment in use of interview methods for evaluation and research. Individual and small group projects with selected aspects of interviewing. Prerequisite: 262 or 280 or consent of instructor.

390-1 to 6 Applied Communication. Supervised individual and group performance in various communication arts. Emphasis on the practical application of verbal skills in the following areas: (a) communication education, (b) communication studies, (c) debate, (d) interpersonal communication, (e) organizational communication, (f) performance studies, (g) persuasive communication, (h) public relations.

May be repeated for credit up to 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.

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 basic to 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 and consent of instructor.

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. Students enrolled as majors in speech communication with a specialization in communication education must complete this course before enrolling for student teaching. Not for graduate credit. Prerequisite: 325, GEC 200.

433-3 Children's Literature in Performance. Study of children's fiction and poetry through analysis, creative drama, and performance, including solo and group work.

435-3 to 6 (3, 3) Topics in Performance Studies. An exploration of advanced theories and techniques for conducting sessions in performance studies. Topics vary and are announced in advance. Students may repeat enrollment in the course, since the topics change. Lecture, discussion, class projects, school visitations.

440-3 Language Behavior. Study of linguistic approaches to speech communication based on behavioral determinants such as culture, history, speech community, value orientations, social perception and expression, and the nature and function of interpersonal transaction. Prerequisite: 340 or consent of instructor.

441-3 Intercultural Communication. Application of semiotic and cultural theories to language behavior. Emphasis on speech communication as an approach to the study of intercultural communication. Prerequisite: 341 or consent of instructor.

442-3 Psychology of Human Communication. Nature, development, and functions of verbal and nonverbal behavior; application of psychology 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 Studies in Language Acquisition. Research in and theories of the development of verbal and nonverbal language with attention to the maturational process. Includes investigation of social, phonological, syntactical, and semantic correlates of communication development. Appropriate for advanced students interested in working with or conducting research involving children.

445-3 Conversational Performance. Analysis of performance acts within everyday interaction: stories, jokes, laughter, teasing, etc. Application of theories of play, metacommunication and framing. Reperformance of recorded, transcribed conversations as method of exploring aesthetic dimensions of communication. Prerequisite: 9 hours of SPCM courses or consent of instructor.

446-3 Sociology of Language Discourse and Signs. Introduction to sociological semiotics, especially structuralism and post-structuralism. Reference to French theorists such as Barthes, Baudrillard, Bourdieu, Certeau, Deleuze and Guattari, Greimas, Group Mu, Lacan, Lyotard, and Perelman. Emphasis on the practice of discourse, language, and signs as a model for research in the human science of communicology.

447-3 Semiotic. (Same as Philosophy 422.) Introduction to Semiotic as the general theory of signs, including natural signs, signals and linguistic expressions. Concentration on contrasts and comparisons between language and more primitive types of signs.

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 analysis 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. Interpersonal 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 Communications 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.
463-3 Interpersonal Conflict. Study of sources, patterns, and outcomes of conflict in interpersonal relationships. Emphasis on interactive, systems-level analysis of naturally-occuring conflict episodes. Practice in managing conflicts, reframing, negotiation, and mediation. Prerequisite: 262 or consent of instructor.
465-3 Philosophy of Language. (See Philosophy 425.)
471-3 Prose Fiction in Performance. Study of prose fiction through analysis and individual performance. Prerequisite: 370 or consent of instructor.
472-3 Poetry in Performance. The study of poetic form through analysis and performance. Prerequisite: 370, GEC 200 or consent of instructor.
474-3 Staging Literature. Theory and practice of staging literature in the lyric mode with emphasis on adapting and directing. Prerequisite: 370 or consent of instructor.
475-3 Narrative Theatre. Theory and practice of staging narrative literature with emphasis on adapting and directing. Prerequisite: 471 or 474 or consent of instructor.
476-3 Writing as Performance. An examination of the practical and theoretical links between composition and performance. Lectures, reading, and assignments focus on performance as a means and an end to creative writing.
480-3 Dynamics of Organizational Communication. Introduction to interrelationships of communicative behavioral and attitudes with organizational policies, structures, outcomes. Uses case studies and role-plays to teach principles. Individual research into selected aspects of organizational communication. Prerequisite: 280, 442, or consent of instructor.
481-3 Public Relations Cases and Campaigns. Advanced course in public relations case analysis and campaign planning. Students critique public relations campaigns created by various profit, nonprofit, and agency organizations. Students also design public relations campaigns from problem identification through evaluation stages. Prerequisite: 381 and 382 with a grade of *C* or better.
483-3 Studies in Organizational Communication. Study of communication systems and behaviors within organizations. Consideration of relevance of communication to management operations, employee morale, networks, superior-subordinate relations, production, and organizational climates. Individual research into selected aspects of organizational communication. Prerequisite: 480 or consent of instructor.
490-1 to 6 Communication Practicum. A supervised experience using communication skills. Emphasis on the development of performance skills in the following areas: **(a)** Communication studies. **(b)** Performance activity. **(c)** Interpersonal communication. **(d)** Debate and forensic activity. **(e)** Political communication. **(f)** Organizational communication. **(g)** Instructional communication. May be repeated for credit. Undergraduates limited to a total of six hours and graduate students to three to be counted toward degree requirements.
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 Performance Studies. Summer offering concentrating in specialized areas of performance studies. Prerequisite: GEC 200 and 370 or consent of instructor.
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.
494-1 to 6 Internship in Public Relations. A supervised experience using public relations skills in a professional or career setting. Maximum of six hours to be counted toward degree requirements. Not for graduate credit. Prerequisite: consent of instructor. Mandatory Pass/Fail.

Technical Careers (College, Courses)

The College of Technical Careers offers the following general education substitutions and technically-related courses. These courses serve as common requirements for various majors. Select courses are available to students enrolled in other academic units.

Courses (TC)

100-3 Introduction to Technical Careers. Designed to introduce prospective clientele to careers in technical fields and in specific to the College of Technical Careers with a focus on career decision making, selective admission procedures, course and licensure requirements, and career placement and mobility.

102-2 Technical Writing. To successfully complete this course, student should be proficient in particular writing techniques (technical description, definition, classification, abstracting, etc.) and follow through a library or field research project in their individual technical fields. Lecture and individualized instruction. Prerequisite: GED 101.

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, and right triangle trigonometry. Lecture-discussion, four hours per week for eight weeks. Prerequisite: one year of high school algebra or equivalent. **(b)** Emphasizes the application of trigonometric relationships to problems in applied technologies, and contains additional topics in algebra including linear systems, quadratic equations, and exponential and logarithmic functions. Lecture-discussion, four hours per week for eight weeks. Prerequisite: 105a or equivalent. The use of an electronic calculator with scientific functions is required for both **(a)** and **(b)**.

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-discussion four hours per week. Prerequisite: 105a or equivalent.

120-3 Fiscal Aspects of Technical Careers I. An individualized program of instruction designed to acquaint students enrolled in the various technical programs of the College of Technical Careers with 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 sets. Open only to students in the College of Technical Careers. Lecture three hours.

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.

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. **(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.

220-3 Fiscal Aspects of Technical Careers II. A continuation of 120 for selected curriculum areas. Emphasis on continued development of knowledge and skills typically involved in small business management, ownership, partnerships, and corporations. 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. Prerequisite: 120.

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.

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 preceptor and coordinator. Reports and as-

signments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail.

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. This course may be classified as independent study. Prerequisite: consent of instructor.

Technology (Department)

Two undergraduate 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 specializations in one of two areas: 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) with specialization in one of two areas: manufacturing technology or mining 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 manufacturing systems.

Theater (Department, Major, Courses)

The Bachelor of Arts degree in Theater is designed to provide the student with broad-based exposure to human experience and sound foundation in basic skills of theater craft. The undergraduate theater major provides the student with invaluable interpersonal and intrapersonal skills and builds inquiring and open minds—qualities required in most professions the student might wish to pursue after graduation—and further offers essential education and training for continued work in graduate or professional schools.

The extensive production schedule in two theaters—a proscenium house, the McLeod Theater, seating about 488, and a flexible Laboratory Theater, seating about 100—provides training in all aspects of theater, augmented by courses in acting, voice, movement, directing, playwriting, production design, and technical theater. The production schedule is extensive enough to allow students the opportunity to design sets, lights, and costumes and to write, perform, and direct for productions bridging all dramatic genres, including musical theater.

In addition to the General Education requirements, all theater majors must complete a theater core curriculum of 27 semester hours, all of which must be completed with a grade of *C* or better; a liberal arts component of 15 hours, se-

lected by advisement from courses outside the Department of Theater; and 33 hours of theater electives, to include at least 9 hours at the 400 level. These 33 hours may include a minor of 15 hours in such complementary fields as art, clothing and textiles, computer science, English, foreign languages, history, journalism, music, philosophy, psychology, recreation, sociology, and speech communication.

Theater course credit earned at other institutions of higher learning, not used for General Education requirements at the time of transfer, can be applied to the Bachelor of Arts degree program with the approval of the faculty of the Department of Theater.

Bachelor of Arts Degree, College of Liberal Arts

General Education Requirements		46
Must include GEC 103.		
Requirements for Major in Theater		75
Theater Core Curriculum	27	
Theater 205	2	
Theater 218a	3	
Theater 218b or c	3	
Theater 217	3	
Theater 300	4	
Theater 311a	3	
Theater 354a,b	6	
Theater 402a	3	
Liberal Arts Component (by advisement)	15	
Theater Electives (minimum of 9 semester hours at the 400 level)	33	
Total		121

Students interested in acting might elect:

Theater 203	3
Theater 303a,b,	6
Theater 317a,b,	6
Theater 350	3
Theater 402b	3
Theater 403	3
Theater 417	3

Students interested in design/technical might elect:

Theater 218b or c	3
Theater 350	3
Theater 407	3
Theater 408	3
Theater 409	3
Theater 414	3
Theater 418	3
Theater 419	3

Minor

Requirements for Minor in Theater 15

A minor in theater consists of Theater 311a, with GEC 103 as a prerequisite, plus any combination of theater courses to reach a total of 15 semester hours.

Courses (THEA)

203-3 Introduction to Voice and Movement. Fundamentals of vocal production and movement for the stage: breathing, phonating, kinesthetic awareness, warm-up, and use of space.
205-2 Stage Make-up. Theory and technique of various types of make-up. Supplies, at least $25 per semester.
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.
218-9 (3, 3, 3) Beginning Stagecraft. (a) Fundamentals of scenic construction and stage rigging and fundamentals of stage lighting including basic tools, equipment, handing, focusing, and maintenance and basic techniques of constructing and handling stage costume. **(b)** Basic investigation of stage lighting design, theory, and professional practice. Special attention will be focused on color theory and its application to stage lighting. **(c)** Basic techniques of constructing and handling stage costume.
260-1 to 15 Internship. 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; written proposals must be approved by undergraduate adviser and curriculum committee prior to internship. Mandatory Pass/Fail.
300-1 to 4 (1 per semester) Theater Practicum. Offers students an opportunity to increase their skills in stagecraft, stage lighting, and costumes by working on department productions. Prerequisite: 218a,b, or c.
303-6 (3, 3) Movement and Voice for the Actor. (a) Movement for the Actor: Intermediate studies in stage movement. Combat, mask work, improvisation. **(b)** Voice for the Actor: Intermediate studies in stage voice. IPA, standard speech, text analysis, scansion, cold readings. Prerequisite: 203.
309-3 Drafting for the Theater. Development of the student's skill in scenographic techniques including ground plans, sections, elevations, and detail construction drawings. Prerequisite: 218a or concurrent enrollment.
311a-3 Play Analysis. Development of basic skills in play analysis and application of these skills to a variety of dramatic forms through class discussions and written assignments. Prerequisite: GEC 103 or one course in dramatic literature.
311b-3 to 6 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. Six credit hours are awarded for the more intensive workshop sessions in the summer while three credits are available during the academic year. Workshop productions are staged in cooperation with 511. Prerequisite: audition.
317-6 (3, 3) Intermediate Acting. (a) The study and application of various theories of the acting process. Coursework includes monologue and scene work. Prerequisite: 217. **(b)** The study and application of Shakespeare in the development of the actor's process. Prerequisite: 317a and consent of instructor.
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. This course may not be applied to a major in theater. Prerequisite: audition or consent of instructor.
350-3 to 9 (3 per topic) Topical Seminar. An intensive examination and application of selected areas of interest. Topics will vary and may include such areas as stage management, audition and interview, current political theater. Prerequisite: consent of instructor.
354-6 (3, 3) History of the Theater. (a) Theater history from primitive times to the 17th century. **(b)** Theater history from the 17th century to the present.
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.
400-1 to 6 (1 to 2 per semester) Production. Practicum for support of major department productions in all areas. Roles in department productions may fulfill requirement.
401-2 to 6 (2 per semester) Stage Management. Study and practical application of the theories and skills required to successfully stage manage a theater production. Students will fulfill stage management assignments in departmental productions. Prerequisite: 218a and consent of instructor.
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; and examination of theoretical viewpoint. Textual analysis; establishing the groundwork for the director's approach to production. Prerequisite: junior standing; 217 and 311a; or consent of instructor. **(b)** The principles of play direction including play selection, analysis and patterning of auditory and visual elements of production. Directing of a one-act play. Prerequisite: consent of instructor.
403-3 Advanced Voice and Movement. Advanced studies in voice and movement with special attention to period styles, commedia dell'arte, and period dance for the stage. Prerequisite: 303a and b.

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.
406-3 Properties and Crafts for the Stage. Studio work in traditional and non-traditional crafts for theatrical events, including life masks, upholstery, puppetry, stage furniture, and special effects.
407-3 Scene Design. Technical and artistic aspects of scene design. Theory and practice. Supplies at least $25 per semester. Prerequisite: 218a, 309, 409, or consent of department.
408-3 Model Making. The craft of scenic model making for the stage and other dramatic media. Prerequisite: 218a or consent of department.
409a-3 Scene Painting. Studio work in lining, paneling, tromp l'oeil ornament, and drapery. Prerequisite: 218a or consent of department.
409b-3 Advanced Scene Painting. Advanced studio work in scene painting, including dye painting, transparencies, color mixing, and mural work. Prerequisite: 409a or consent of instructor.
410-3 Children's Theater. Study of methods and their practical application of introducing children to theater and theatrical productions as an art form. Practicum with the Touring Youth Theater is an important part of the course.
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 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.
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 as the children's play, the musical, the outdoor historical drama, etc. In special cases, students may elect to write two short plays. Prerequisite: 411A or consent of instructor for non-majors; 311a for undergraduate theater majors.
414-3 Costume Design. History of western costume from Greek to Renaissance and its adaptation to stage use. Theory and practical application of design and color. Supplies at least $25. Prerequisite: 218c or graduate standing.
417-3 Advanced Acting. Utilization of the actor's process in the performance of European realism and various theories and styles of the twentieth century. Prerequisite: 317b.
418-3 Introduction to Lighting Design. Investigation of stage lighting design, theory, and professional practice. Special attention to color theory and its application to stage lighting. Four hours lecture/laboratory. Prerequisite: 218b, graduate standing, or consent of instructor.
419-3 Advanced Stagecraft. Advanced study of principles and procedures of scenic construction and stage rigging. Includes scene shop organization, materials, and specialized stage equipment; preparation for professional technical direction. Lecture and laboratory to be arranged. Prerequisite: 218a,b, 309, 407; or graduate standing.
454-3 American Theater. The development of American theater 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, and 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.

Tool and Manufacturing Technology

(Program, Major, Courses)

The Tool and Manufacturing Technology program offers three specializations: Machine Tool (Computer Aided Machining), Metal Fabrication and Processes, and Tool Design. These options provide training in a variety of manufacturing processes needed to successfully compete in today's job market in manufacturing, construction, and mining industry.

Graduates of Machine Tool (CAM) specialization will have the technical skills to assist engineers in research, development, and testing. They will also have skills in metal cutting and CNC programming needed to successfully compete for jobs such as tool and die maker, tool room machinist, CNC machine tool programmer, CNC machine tool operator, model maker and maintenance machinist.

The Metal Fabrication and Processes specialization provides an opportunity to blend basic machining skill, computer aided manufacturing, robotics, machine tool programming, welding and fabrication skills with the technical skills needed to successfully compete for jobs in research and development, computer aided

fabrication, robotic welding, model maker, materials testing, construction welding, maintenance welding and metal fabrication shops.

The Tool Design specialization provides the in-depth training required to develop computer aided design skills. Emphasis will be on the design of production tooling, stamping and form dies, mold dies, jigs, and fixtures for CNC tools. Basic machining and welding skills in combination with concentrated computer aided drawing and design skills provide the graduate with the technical skills to enter the manufacturing industry as qualified tool design technicians.

The tool and manufacturing curriculum is designed to award credit where applicable for industrial experience, special courses taken during military training, and transfer work from community colleges. Graduates of recognized area vocational centers or private vocational schools will be given an opportunity to qualify for advanced placement and proficiency credit.

The tool and manufacturing curriculum fits between the areas occupied by the mechanical and manufacturing engineer and the skilled trades person. 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 computer aided manufacturing, computer aided design, robotics, and computer integrated manufacturing in addition to traditional metal working and related classes. Students will learn to program CNC equipment, read working drawings, design basic jigs and fixtures, make shop sketches, build progressive dies, form dies, modify and repair equipment, select proper materials for repair and construction, heat treat tool steels, perform sophisticated welding operations and develop process planning sequences for manufacturing.

Advanced courses beyond the A.A.S. degree requirements are offered to enable a student to acquire advanced technical knowledge and skills. If a student chooses to pursue a baccalaureate degree in the College of Technical Careers' Advanced Technical Studies Division, the 300 level Tool and Manufacturing Technology classes can be a part of this curriculum.

Students in tool and manufacturing technology should expect to spend about $150 for instruments, tools, and supplies.

Representatives of industry and education form an Advisory Committee which helps to keep the program responsive to the needs of the manufacturing field. The industries represented include McDonnell Douglas Co., General Electric Co., Magic Chef, and Coal Age Service Corp.

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, College of Technical Careers

TOOL AND MANUFACTURING TECHNOLOGY MAJOR — MACHINE TOOL (COMPUTER AIDED MACHINING) SPECIALIZATION

GED 101	3
Social science elective	3
Communication elective	3
Technical Careers 105a,b, 107a,b	8
Tool and Manufacturing Technology 101, 102, 125, 126, 185, 186, 208, 210, 211, 220, 221, 225, 275, 276	54
Total	71

TOOL AND MANUFACTURING TECHNOLOGY MAJOR — METAL FABRICATION AND PROCESSES SPECIALIZATION

GED 101	3
Social science elective	3

Communication elective	3
Technical Careers 105a,b, 107a,b	8
Tool and Manufacturing Technology 101, 102, 125, 126, 180, 181, 182, 183, 185, 225, 275, 276, 310	50
Total	67

TOOL AND MANUFACTURING TECHNOLOGY MAJOR — TOOL DESIGN SPECIALIZATION

GED 101	3
Social science elective	3
Communication elective	3
Technical Careers 105a,b; 107a,b	8
Tool and Manufacturing Technology 101, 102, 125, 126, 180, 185, 186, 208, 225, 230, 240, 275, 276	49
Total	66

Courses (TT)

101-1 to 6 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. Student will pay shop supply charge of $1.50 per semester hour.

102-1 to 6 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. Student will pay shop supply charge of $1.50 per semester hour. Prerequisite: 101 or consent of instructor.

125-3 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.

126-3 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 machine and grinders; their construction, set-up, and operations. Lecture one to three hours. Prerequisite: 125 or consent of instructor.

180-3 Oxy-Acetylene and Elementary Arc Welding Procedures. Includes theory and practice of oxy-acetylene fusion welding, cutting, hard soldering, and introductory shielded metal arc welding with emphasis on flat and horizontal positions. Students will pay materials charge in the-amount of $1.50 per credit hour. Lecture one hour. Laboratory four hours.

181-3 Intermediate Arc Welding and Elementary Inert Gas Welding. Includes theory and practice of intermediate shielded metal arc welding with emphasis on vertical and overhead positions and an introduction to gas tungsten arc, gas metal arc, cored wire welding, and arc/air cutting procedures. Students will pay materials charge in the amount or $1.50 per credit hour. Lecture one hour. Laboratory four hours.

182-3 Advanced Shielded Metal Arc Welding Procedures. Includes theory and practice of gas, tungsten arc, gas metal arc, cored wire welding. Major emphasis will be placed on the preparation of weld specimens for destructive testing and subsequent analysis of the weldment. Student will pay materials charge in the amount of $1.50 per credit hour. Lecture one hour. Laboratory four hours. Prerequisite: 181 or consent of instructor.

183-2 Welding Blueprint Reading. Emphasizes the basic fundamentals of drawing interpretation as applied to welding and metal fabrication. The student will be expected to develop a core of blueprint reading skills in addition to a thorough familiarization of welding symbols and their significance. Through individualized instruction, students will progress at their own rate until course requirements have been satisfied as certified by the supervising faculty member.

185-3 Technical Sketching/Blueprint Reading. 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 one hour. Laboratory four hours.

186-3 Computer Aided Design Drafting. Upon completion of this course, the student should be familiar with basic computer operation and keyboard functions; be able to design and develop three dimensional drawings of tools, parts, drill jigs and fixtures. Lecture one hour, laboratory three hours. Prerequisite: 185 or consent of instructor.

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 of facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor and department chairperson.

208-3 C.N.C. Programming. The student will be introduced to the concepts and principles involved in controlling machine tool motion by computer. Emphasis on application of the microcomputer to numerical control programming and tool path simulation; to demonstrate his/her ability to program Computer

Numerical Control machine tools using manual input. Lecture two hours, laboratory two hours. Prerequisite: 102 and 105b or consent of instructor.

210-1 to 7 Tool and Die and Electrical Discharge Machining. The student will construct blanking die, form die or special tooling. He/she will be introduced to punch press operations, electrical discharge machining, and machining precision parts utilizing various machine tools. Shop supply fee of $2 per credit hour. Prerequisite: 102 or consent of instructor.

211-1 to 7 Advanced C.N.C. and Tool and Die. The student will demonstrate his/her ability to set-up and operate Computer Numerical Control machine tools; to use Computer Aided Manufacturing software to establish tool requirements and offsets for the generating of machine tool programming code in order to produce matching components for a progressive, compound, forming, or moulding die; to expand skills in machine tool operations. Laboratory fifteen hours. Student will pay shop charges of $2 per credit hour. Prerequisite: 102 or consent of instructor.

220-3 Tool and Die, E.D.M. and Inspection Practices. The student will be introduced to basic die design and die components in relationship to blanking and forming dies; 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 in the manufacturing industry. Lecture three hours. Prerequisite: 126 or consent of instructor.

221-3 C.A.M. and Production Machining. The student will be introduced to the use of Computer Aided Manufacturing software to select tool requirements, simulate tool path, generate machine tool programming code, and subsequently produce finished parts on the Computer Numerical Control lathe and milling machine; to understand the theories and principles involved in production machining in the computer integrated manufacturing environment. Prerequisite: 220 or consent of instructor.

225-2 Principles and Processes in Modern Manufacturing. This is an introduction to the principles involved, and the materials used in modern manufacturing. Emphasis will be on analysis and comparison of several processes relating to the Tool and Manufacturing field. Special attention is given to new technological advances related to the modern machine tool industry, including CAD, CAM, CIM and plastics production.

230-2 to 7 Tool Design I. Tool design practices with emphasis on jigs, fixtures, and gages. Students will develop concepts and prepare working drawings of production tooling with particular emphasis on manufacturing sequence, quality control, and utilization of standard components. Laboratory 3 to 10 hours. Material and supply cost $.75 per credit hour. Prerequisite: 186 or consent of instructor.

231-2 to 7 Tool Design II. Die design practices with emphasis on blanking, piercing, compound, and forming dies. Students will develop design concepts and prepare working drawings of dies in accordance with die design standards and utilization of standardized die components. Laboratory 3 to 10 hours. Material and supply cost $.75 per credit hour. Prerequisite: 230 or consent of instructor.

240-3 Fundamentals of Jig, Fixture and Gage Design. A study of the principles involved in developing appropriate tool design concepts. Such factors as processing sequence, clamping techniques, locating devices, and dimensional tolerances will be studied with appropriate considerations given to such factors as tool costs, quantity production, machine selection and operator safety. Lecture three hours. Prerequisite: 186 or consent of instructor.

241-3 Fundamentals of Die Design. A study of the principles involved in the use and design of dies used for the fabrication of sheet metal parts in punch press. Emphasis will be on blanking, piercing, compound, and forming dies. Such factors as drafting room standards, die design standards, punch press capacity, and the use of standardized and interchangeable components will be studied in keeping with desirable levels of manufacturing costs and product quality. Lecture three hours. Prerequisite: 240 or consent of instructor.

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.

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 of facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor and department chairperson is required.

310-3 to 24 Welder Qualification. Students may choose a concentrated area of training such as pipe welding or structural welding of carbon steel, alloy steel, stainless steel, and aluminum. They may choose any one or all of the following welding processes: shielded metal arc, gas metal arc, gas tungsten arc, and cored wire welding. Upon completion of this course, the student should have developed skills required for pressure and nuclear piping fields, structural steel and bridge welding. Qualification is determined through visual inspection and mechanical testing according to ASME or AWS code requirements. Through individualized instruction, students will progress at their own rate and may complete instruction at any time depending upon individual progress. Qualification papers will be completed by the College of Technical Careers and presented to the student or forwarded to an employer. A student will pay $1.50 per semester hour lab fee. Lecture Lab six hours per three credit hour load. Prerequisite: 182 or graduate of an approved welding program or consent of coordinator.

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 preceptor and coordinator. Reports and as-

signments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail.

320-1 to 12 (1 to 4 per topic) Advanced Tool and Manufacturing Studies. Provides students with an opportunity for advanced studies in their areas of interest in tool and manufacturing technology. Emphasis will be on literature search and advanced technical skills development in the student's areas of specialization. **(a)** Machine tool, i.e., numerical control programming, advanced diemaking, process planning, machinability studies. **(b)** Metal fabrication, i.e., design of welded structures, metallurgical aspects of welding, welding quality control procedures. **(c)** Tool design, i.e., plastic mold design, interchangeable die components, tooling for automatic processes. Students will develop written project objectives with the assistance of a sponsoring faculty member and submit a final paper detailing the semester's activities. Shop and supply charges to be individually determined and specified in project objectives. Credit to be individually arranged based on the nature and complexity of the project. Prerequisite: associate degree in tool and manufacturing technology or consent of instructor.

321-1 to 6 Computer Aided Die Design. This an introduction to the principles involved in advanced die design and production tooling. Emphasis will be on progressive dies, deep draw dies, forging dies, plastic injection molding dies, trim dies, and steel rule dies. Prerequisite: AAS degree in approved technical area or consent of coordinator.

322-1 to 6 Complex Die Making. This course will provide instruction in the high degree of precision skills required for complex die making. Emphasis will be on programming CNC machine tools to produce interchangeable complex die sections. Prerequisite: AAS in approved technical area or consent of coordinator.

323-1 to 6 Computer Integrated Manufacturing. This course will provide instruction with the manufacturing work cell. This will enable the student to design and build appropriate tooling to process raw material through a manufacturing line to produce a completed part fully automated. To accomplish this, the computer, robot, rotary table, conveyor, and CNC mill are programmed to complete the manufacturing process. Prerequisite: AAS in approved technical area or consent of program coordinator.

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. This course may be classified as independent study. Prerequisite: consent of instructor.

University Honors Program (Program, Courses)

The University Honors Program is a university-wide undergraduate program designed to reward SIUC's best students for their high academic achievement. The heart of the program is the Honors curriculum: small classes, called seminars, unique in character and specially designed for University Honors students by outstanding SIUC faculty. Each Honors seminar is limited in size to 15 students, and restricted in enrollment to Honors students only. The university allows Honors students to substitute Honors seminars for up to 32 of their 46 semester hours of General Education requirements (see General Education – approved substitutes, Chapter 4).

Membership in the University Honors Program brings additional advantages including extended check-out privileges at Morris Library, early academic advisement and registration, publication in *Papyrus* (the journal of the Honors Program), and others.

Continuing SIUC students and transfer students with at least 12 semester hours of college credit qualify for admission to the University Honors Program on the basis of a cumulative grade-point average of 3.25 or higher. Entering freshmen qualify for admission to the program on the basis of an ACT composite score in the 95th percentile or higher.

The program is also described in more detail in Chapter 3. Fuller information and application forms are available at the University Honors Program office, Faner Hall 2427.

Courses (UHON)

111-1 Freshman Honors Colloquium. Open to freshmen. Prerequisite: consent of the director of University Honors Program.

201-1 to 9 Honors Seminar. Topics vary and will be announced by the University Honors Program each time the course is offered. Prerequisite: consent of the director of University Honors Program.

251a-1 to 9 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 Education Area A. Prerequisite: consent of the director of University Honors Program.
251b-1 to 9 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 Education Area B. Prerequisite: consent of the director of University Honors Program.
251c-1 to 9 Honors Seminar in the Humanities or the Arts. Seminars in the area of the humanities or the arts intended primarily for freshmen. These seminars may be used to satisfy the requirement for General Education Area C. Prerequisite: consent of the director of University Honors 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. Prerequisite: consent of the director of University Honors 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 a part of the requirement for General Education Area E. Prerequisite: consent of the director of University Honors Program.
299-1 to 15 Honors Project. Preparation of honors paper or comparable project under joint supervision of University Honors Program and a faculty member of subject-matter department. Intended primarily for freshmen and sophomores. Prerequisite: consent of the director of University Honors Program.
301-1 to 9 Honors Seminar. Undergraduate honors seminar. Topics vary and will be announced by the University Honors Program each time the course is offered. Prerequisite: consent of the director of University Honors 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 Education Area A. Prerequisite: consent of the director of University Honors Program.
351b-1 to 9 Honors Seminar in the Social Sciences. Seminars in the area of social sciences. These seminars may be used to satisfy the requirement for General Education Area B. Prerequisite: consent of the director of University Honors Program.
351c-1 to 9 Honors Seminar in the Humanities or the Arts. Seminars in the area of the humanities or the arts. These seminars may be used to satisfy the requirement for General Education Area C. Prerequisite: consent of the director of University Honors Program.
351d-1 to 6 Honors Seminar in Language or Mathematics. Seminars in the area of the organization and communication of ideas. Prerequisite: consent of the director of University Honors 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 a part of the requirement for General Education Area E. Prerequisite: consent of the director of University Honors Program.
399-1 to 15 Honors Project. Preparation of honors paper or comparable project under joint supervision of University Honors Program and a faculty member of a subject-matter department. Prerequisite: consent of the director of University Honors 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 University Honors Program. Prerequisite: consent of the director of University Honors Program.

University Studies (Program)

The University Studies program allows the eligible student to design a multidisciplinary, interdisciplinary, or general 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. To receive a degree from the College of Liberal Arts, students are required to take one course in English composition in addition to the general education composition requirement.

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 no more 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 the individual program plan approved by an advisor and the associate dean from the College of Liberal Arts.

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 ensure that students pursue a program that matches their abilities, educational goals, and future aspirations.

Bachelor of Arts Degree

General Education Requirements		46[1]
Requirements for University Studies		74[2]
Foreign language	(4) + 4	
300-400 level coursework	40[1]	
Other courses as approved by an academic advisor and the associate dean from the College of Liberal Arts	31	
Total		120

Bachelor of Science Degree

General Education Requirements		46[1]
Requirements for University Studies		74[2]
300-400 level coursework	40[1]	
Other courses as approved by an academic advisor and the associate dean of the College of Liberal Arts	35	
Total		120

[1]The student must have a minimum grade point average of 2.00 for the 40 semester hours of 300-400 level coursework. General Education courses at the 300-level count toward both the General Education requirements and toward the requirement of 40 semester hours at the 300-400 level.

[2]There are two limitations placed on course distribution:

a. The student may take no more than 40 semester hours in any academic unit *excluding* the basic 46 semester hours required in General Education — 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 Education courses are to be included in the total *except* for the basic 46 semester hours required. In other words, *any* General Education courses taken in addition to the minimum requirements are counted both toward the academic unit limits allowed and toward the department limits allowed.

Women's Studies (Minor)

A women's studies minor is interdisciplinary and designed to enrich and extend a student's major field of sharing insights gained from the study of women including issues of gender, race and class. Course work can be selected to reflect individual student interests and enhance the major by contributing knowledge, understanding, and sensitivities helpful to students in both the university and work settings.

Women's studies is an appropriate minor for many undergraduate majors as well as for students planning graduate or professional studies. For example, people's orientation toward their work may be affected by an historical understanding of the ways women have been treated by the courts, the health care professions, the educational system, employment, religion, literature, or the arts.

Because it is interdisciplinary, inclusive of race and class scholarship, the women's studies minor should reflect academic work in the arts and humanities, the natural and social sciences and race and cross-cultural issues.

Minor

Minors must be approved by the coordinator of women's studies in order to assist students in developing a coherent program that meets their individual interests. The minor requires 18 semester hours of credit, 15 of which must be in women's studies courses, while the remaining 3 hours may be selected from a special interest or related course for example, in Black American Studies. Schedules of classes contain listings of relevant courses. The minor must include 221 and 492. Students are urged to discuss and plan their minors with the coordinator of women's studies or with a faculty member who teaches women's studies courses.

Courses (WMST)

221-3 The Sexes in the Modern World: The Social Science Perspective. (See Sociology 223)
225-3 Women in Literature. (See English 225)
260-3 Greek Civilization. (See GEC 230)
286-3 Marriage and Family Living. (See Curriculum and Instruction 227)
326-3 Women in Communications and Fine Arts. (See Communications and Fine Arts 397b)
341-3 Psychology of Women. (See Psychology 333)
347-3 Women in American History. (See History 368)
348-3 Women in European Society 1600 to Present. (See History 324)
352-3 Images of Women in French Literature. (See French 300)
364-3 Classical Mythology. (See GEC 330)
427-3 Women in the Visual Arts. (See Art 457)
442-4 Sociology of Gender. (See Sociology 423)
445-3 Women and the American Political Process. (See Political Science 429)
454-3 to 6 Topics in Women's Literature. (See English 496)
456-3 Philosophical Perspectives on Women. (See Philosophy 446)
463-2 Greek Literature in Translation. (See Classics 405)
476-3 Women and the Criminal Justice System. (See Administration of Justice 460)
488-3 Women in the Home and Labor Market. (See Consumer Economics and Family Management 480)
490-1 to 6 Readings. Supervised readings in selected content areas of women's studies. Prerequisite: consent of instructor and women's studies coordinator.
491-1 to 6 Special Topics. Concentration on a topic of interest not offered through the regular course listings. Prerequisite: consent of instructor and women's studies coordinator.
492-3 to 6 Seminar in Women's Studies. A synthesizing experience required of seniors completing a minor in women's studies. Activity may include, but is not limited to, the preparation and presentation of a scholarly paper or the conduct of a research project. Prerequisite: 221, senior standing, and consent of women's studies coordinator.
493-2 to 6 Individual Research. Exploration of a research project under the supervision of a faculty member having graduate faculty status. The project must result in a written research report which is filed with the coordinator of women's studies. Prerequisite: consent of instructor and coordinator of women's studies and senior standing.
494-1 to 6 Practicum. Supervised practical experience in situations centering on women's issues, organizations, services, etc. The setting may be in one's own field of study or in the general content areas recognized in the women's studies program. Prerequisite: consent of instructor and coordinator of women's studies.

Workforce Education and Development

(Department, Majors, Courses)

The Department of Workforce Education and Development offers two majors: Workforce Education and Development and Clothing and Textiles. Graduates with a degree in Workforce Education and Development are prepared to teach in public vocational/technical education programs and private sector training and development departments. Graduates with a degree in Clothing and Textiles assume technical, supervisory and managerial roles in the fashion industry.

Students who qualify in either of the two majors may elect to apply for Capstone. Criteria for acceptance into the Capstone Option appear in Chapter 4.

WORKFORCE EDUCATION AND DEVELOPMENT (Major, Courses)

Students majoring in workforce education and development are prepared as instructors, instructional support personnel, and administrators for positions in education, business, industry, labor, and government training organizations. Students may develop competencies in one of five specializations: business education; home economics education; education, training and development; administrative services training; and vocational teacher development.

Bachelor of Science Degree, College of Education

WORKFORCE EDUCATION AND DEVELOPMENT MAJOR

General Education Requirements	46
Requirements for Major in Workforce Education and Development	75-89
Core Requirements	9
Nine hours of upper division work approved by the department from the following areas: social-psychological aspects of work (466), instructional methods and materials (462), assessment of learner performance (463). Students must demonstrate competence in computer information processing and problem solving.	
Specialization Requirements (see below)	66-80
Total	121-135

BUSINESS EDUCATION SPECIALIZATION

Accounting 210 or 220	3
Management 170 or 304	3
Office Systems and Specialties 111	3
Workforce Education and Development 258 and/or 395, 302, 310, 415G	7
Courses in selected certification areas: accounting, business computer programming/systems, basic business, information processing or marketing	25-36
Professional Education Sequence See Chapter 3.	28
Total	69-80

EDUCATION TRAINING AND DEVELOPMENT SPECIALIZATION

Workforce Education and Development 258 and/or 395, 259 or prescribed courses to complete technical speciality, 460, 468, 469, 474, 495 or 496	63
Educational Psychology 307 or other approved elective	3
Total	66

HOME ECONOMICS SPECIALIZATION

Workforce Education and Development 320, 321 or 322, 431	7
Related home economics core and restricted electives	45
Certification (28) or career electives (14) for educational services/extension	14-28
Total	66-80

ADMINISTRATIVE SERVICES TRAINING SPECIALIZATION

Accounting 210	3	
Management 170 or 304	3	
Finance 280	3	
Office Systems and Specialities 341, 414, 415	9	
Workforce Education and Development 302, 412, 417, 418, 496	15	
Electives	18	
Total		66

VOCATIONAL TEACHER DEVELOPMENT SPECIALIZATION (NON-ENTITLEMENT)[1]

Workforce Education and Development 258, 259, or prescribed courses to complete technical speciality, 460, 466, 468, 474, 495	66	
Total		66

[1]For secondary health occupations, industrial and other vocational teachers with provisional or temporary provisional certificates. Completion does not constitute entitlement to regular secondary school certification.

Minor

A minor in Workforce Education and Development consists of 20 hours. Minors are planned by the student and advisor within each of the five specializations.

CLOTHING AND TEXTILES (Major, Courses)

Students majoring in clothing and textiles prepare for positions in industrial or commercial businesses in various apparel design or allied design occupations and/or positions in retail companies as buyers, managers, or visual merchandisers. Design and retailing courses available to students include topical areas such as fashion merchandising, buying, textiles, fashion design, pattern making, and apparel production.

Bachelor of Science Degree, College of Education

CLOTHING AND TEXTILES MAJOR

General Education Requirements		46
GEB 202, 211	6	
Requirements for Major in Clothing and Textiles		74
Core requirements	25	
Twenty-five hours of upper division work approved by the Department of Workforce Education and Development in the following areas: careers in fashions (334), survey of clothing (336), clothing for consumers (337), apparel accessories (343), textiles (345A,B), visual merchandising (346), fashion motivation (347), and textile product testing (445).		
Specialization requirements (see below)		49
Total		120

APPAREL DESIGN SPECIALIZATION

Workforce Education and Development 338b, 340, 342, 344, 348, 439 or 449, 440, 444, 446, 448	33	
Art and Design 100a, 110, 206	9	
Professional electives	7	
Total		49

RETAILING SPECIALIZATION

Workforce Education and Development 306, 339, 341b, 341a or c, 349, 350, 442	17	
Art and Design 100a	3	
Accounting 210 or 220	3	
Management 301 or 304 or Psychology 320 or 323	3	
Marketing 304, 363, 401 plus 3 additional hours in Marketing	12	
Professional Electives	11	
Total		49

Minor

A minor in clothing and textiles is intended to provide background that will assist students in pursuing their career goals or other interests. A minor in clothing and textiles must have approval of the program coordinator. At least 16 hours of clothing and textiles courses are required as follows:

345a	2-4
336 and 337 or 347	6
Other clothing and textiles courses	7

Courses (WED)

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 at Carbondale.

259-2 to 48 Occupational Subjects. Credit for documented occupational study in accredited and selected other programs. Prerequisite: 12 hours of *C* or better at Southern Illinois University at Carbondale.

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 knowledge in one shorthand system; the learning of the theory of one or more additional shorthand systems, either alphabetic or symbolic. Prerequisite: Office Systems and Specialties 132 or equivalent.

306-3 Introduction to Computers and Information Systems. An overview of computer technology and the uses of information systems in education and the business world. Hands-on applications with business and educational software is stressed. An introduction to programming languages is incorporated using the BASIC language.

310-3 Introduction to Business Education. An introduction to teaching business in public and private schools, and business/industry training. Emphasis is on curriculum structures, philosophical bases, student characteristics, employment requirements, and career opportunities.

320-2 Home Economics as a Profession. A social, psychological, and philosophical interpretation of home economics in today's world. Overview of career areas, the homemaker-professional worker, and vocational and occupational home economics programs.

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.

322-2 Curriculum in Home Economics. Curriculum planning for the total home economics program. Includes management of student organizations and business of a department. Prerequisite: Education 315.

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.

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.

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: $2 for supplies.

334-3 Careers in Fashion. Explores the wide range of careers in the fashion industry from the design to the production, to the distribution and to the ultimate consumer of the fashion goods. Field trips.
335-2 Basic Textiles. Emphasis on recognition of fabrics and weaves, suitability, care, and maintenance, especially household textiles. Credit cannot be earned for 335 after receiving credit for 345.
336-3 Survey of Clothing. Multidisciplinary overview of study of clothing. Course will include aesthetic, cultural, economic, psychological, social, and anthropological aspects.
337-3 Clothing for Consumers. 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. Prerequisite: 336.
338A-3 Clothing Construction — Beginning. Basic clothing construction laboratory. Beginning skills: use of machine, fabric selection and preparation, pattern alteration, garment construction.
338B-3 Clothing Construction — Intermediate. Intermediate skills in fitting, construction, and pattern and fabric usage. Prerequisite: 338a.
339-1 to 12 (1 to 6 per semester) Field Experience. Supervised learning experience in approved business or industry. Intended for majors in clothing and textiles only. Prerequisite: consent of chairperson.
340-3 Flat Patternmaking and Drafting. Fitting basic tissue of muslin and making sloper; making styles through flat pattern manipulation and drafting; testing and refining patterns to provide perfect fit. Prerequisite: 338b.
341-3 (1, 1, 1) Fashion-Business Systems. Mathematical concepts and financial operations for fashion businesses. "Hands-on" problem solving in wholesale and retail situations. Prerequisite: 100 hours of approved retail experience.
342-3 Draping. Application of design principles to dress; making garment form; refining patterns draped in muslin. Garments constructed of fashion fabric. Prerequisite: 338b.
343-3 Apparel Accessories. Product knowledge, levels of quality, setting points, and care of plastics, leather goods, furs, jewelry, cosmetics.
344-3 Fashion Illustration. Original designs for male and female apparel and accessories using various media. Designs based on various sources of inspiration.
345A-3 Textiles - Lecture. Presentation of aspects of textiles having an influence on properties and performance of textiles and products such as apparel and home furnishings. Characteristics of fibers, yarns, and fabrics will be discussed and other factors such as manufacturing methods of and legal constraints on the textile industry will be mentioned.
345B-1 Textiles - Laboratory. Investigation of fiber, yarn, and fabric construction properties that influence textile performance. Prerequisite: concurrent enrollment in 345a is required.
346-3 Visual Merchandizing. Basics of apparel merchandise presentation using fashion shows, window displays, point-of-purchase displays, and mass merchandise presentations emphasizing the elements of design, lighting, and fixture/prop concepts.
347-3 Fashion Motivation. Psychological motivation for wearing clothing; societal functions of clothing, cultural differences in dress. Prerequisite: 336.
348-3 Tailoring. Basic principles of tailoring applied to coat or suit. Prerequisite: 338B.
349-3 Fashion Merchandising. Basic philosophies, principles, and procedures used in fashion retailing establishments as they relate to the functions, organization, and operations of those firms. Topical coverage also includes merchandise and expense planning, inventory management, and personnel training. Prerequisite 337.
350-3 Retail Fashion Buying. Responsibilities of a fashion retail buyer. Includes information sources, determination of consumer needs, characteristics of a buyer. Prerequisite: 336, 341-1.
363-3 Career Education. An examination of the historical, social, economic, and psychological foundations for career education. A typical career education curriculum model will be presented. Instructional materials and methods for facilitating career development will be demonstrated.
364-3 Leadership of Youth and Peer Groups. (Same as Agricultural Education and Mechanization 364.) Identification and discussion of the role of organizations, both structured and unstructured. Identification and development of qualities of leadership.
381-4 (2, 2) Instructional Support for Training Systems Development. (a) Identifying, assessing, and utilizing instructional resources for vocational education and training programs. **(b)** Developing training prospecti and funding proposals in accordance with agency or corporate specifications.
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.
395-1 to 24 Occupational Internship. Special educational activities are based upon required occupational skills and knowledges and are related to each student's academic program and career objective. May include independent study. Hours and credit arranged by coordinator. (**a**) Agricultural education, (**b**) business education, (**c**) home economics education, (**d**) industrial education, (**e**) health occupations education. Prerequisite: consent of coordinator and employment in a University-approved position.
398-1 to 3 Special Problems. Independent study for qualified students. (**a**) Agricultural education, (**b**) business education, (**c**) clothing and textiles, (**d**) education, training and development, (**e**) health occupations education, (**f**) home economics education, (**g**) industrial education, (**h**) vocational education. Prerequisite: consent of instructor.
409-3 Applications of Integrated Software for Education. Design of agricultural or educational applications of integrated software. Spreadsheet, database, word processing, and graphic and communi-

cations software will be applied to the solution of business problems. Individual student projects will be the focus of the applied nature of the class. Not for graduate credit. Prerequisite: junior standing or consent of instructor.

410-3 Issues in Business Training/Education. A study of current issues in the broad field of business training and education related to history, current status, and trends. Emphasis on organization of instruction, instructional settings, relation to general education, integration and impact of technology, curriculum development/review, and evaluation of business training/education impact in the workplace.

412-3 Office Systems Planning and Implementation. (Same as OSS 412.) Planning for office systems development through investigation of procedures and systems used in various types of offices will be emphasized. Involves study of work flow, information processing, employee and workgroup interactions. Office information systems from the end user perspective through study of development and implementation processes and strategies will be detailed through a field-based project. Students enrolled for graduate credit will develop an end-user office support system as a result of the project.

415-7 (1, 1, 1, 1, 1, 1, 1) Instructional Methods for Business Education. Specific methods, techniques, and materials to deliver instruction in these business education areas of **(a)** accounting, **(b)** basic business and marketing, **(c)** computer systems, **(d)** keyboarding, **(e)** information processing, **(f)** shorthand, **(g)** employability skills. Prerequisite: 310, 462 or Education 315.

417-3 Administrative Office Communications. Application of communication and human relations concepts, research methods, and information technology to the internal communication of professionals who work in environments with automated information and communication systems. Applications include development of: oral and written reports and presentations using technology support and systems-related documents (proposals, procedures, systems documentation for users).

418-3 Training and Development in Administrative Services. This course provides application of theories of learning and instructional development to the education and training of employees in office systems/administrative services. Topics include analysis of office and administrative services occupations, instructional design, instructional and presentation strategies, training evaluation, use of instructional technology, and the implementation, evaluation and management of training in an organizational environment.

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.

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 to $8.

439-3 Historic Clothing: Western Cultures. Development of clothing in western civilization to the present time. Consideration of social, economic, and aesthetic factors, and technical innovations influencing clothing. Prerequisite: 347.

440-3 Experimental Apparel Design. Development of apparel to meet aesthetic, structural, and functional needs; problem solving for exceptional proportions, rehabilitation, activity, performing arts, new technology, materials, environment. Prerequisite: 340, 342, 344, 348.

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: GEB 211 or Economics 214.

444-3 Mass-Market Apparel Design. Design of a line to specifications; drafting; toiles, mass-production costs; work flow; use of industrial equipment. Field trips. Prerequisite: 340, 342, 344, 348.

445-3 Textile Product 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. Prerequisite: 345a and 345b.

446-3 Professional Practices in Fashion Design. Business principles of apparel design, including systems, forms, and logistics of money and materials. Functions and responsibilities of the fashion designer. Career opportunities in the fashion industry. Not for graduate credit. Prerequisite: 340, 342, 344, and 348.

448-3 Custom Tailoring. Individualizing, fitting, and contouring of male or female garment for customer from commercial pattern or from original pattern. Organization of work and time. Not for graduate credit. Prerequisite: 348.

449-3 Historic Clothing: Non-Western Cultures. Traditional dress in non-western cultures. Aesthetics, symbolism, and uses of costume in the culture; effect of clothing on economy. Cultures studied may vary with each offering. Prerequisite: 347.

450-3 Introduction to Health Occupations Education. An orientation course for health occupations education. Provides information on the current and historical directions in health occupations education, resources for teaching and training of prospective students; program articulation and career mobility; the role of professional and student health organizations; state and federal legislation/regulations in health occupations education; licensure and certification requirements and their impact on education; and health occupations career clustering within Illinois' vocational system. Prerequisite: 460 and 462.

460-3 Occupational Analysis and Curriculum Development. The first of a two-course sequence presenting a systems approach to curriculum development and instructional methods utilized in voca

tional and occupational education. Includes analyzing occupations and jobs, specifying objectives, and developing curriculum. (**a**) Agricultural education, (**b**) business education, (**d**) education, training and development, (**e**) health occupations education, (**f**) home economics education, (**g**) industrial education.

462-3 Teaching Methods and Materials. The second of a two-course sequence presenting a systems approach to curriculum development and instructional methods utilized in vocational and occupational education. Concerned with instructional methods and materials unique to vocational and occupational education. (**a**) Agricultural Education, (**b**) Business Education.

463-3 Assessing Vocational Student Progress. Development and use of evaluation instruments to assess occupational student growth. Use of systems approach to course design, criterion-referenced and norm-referenced objectives, and four taxonomies of educational objectives in development of written tests, laboratory and work station performance tests, and attitude measures. Data are used for evaluation of student progress and program modification. Prerequisite: 460.

464-3 Special Needs Learners and Work Education. Theoretical and applied concepts in teaching special needs learners. Effective aspects of learning are emphasized. Curricula and teaching materials are examined and prepared. Field trips.

466-3 Principles and Philosophies of Vocational Education. Historical and philosophical foundations of vocational education. The nature and role of vocational education in preparing people for the world of work.

468-3 Education/Labor Force Linkages. Examines education/labor linkages. Particular attention given to the following areas: overcoming barriers to the linkage process; developing effective lines of communication; resource sharing; conducting joint problem solving with other agencies and individuals within the community; and jointly developing and providing programs and services.

469-3 Training Systems Management. Principles and techniques of managing training organizations. Design, promotion, conduct, and evaluation of training programs in accordance with needs, restraints, and resources in corporate and government settings. Prerequisite: 460 and 462.

472-3 Organizing Cooperative Vocational Education. Introduction to cooperative vocational education including history, rationale, legislative basis, and goals and objectives. Investigation into the competencies required for developing programs, public relations, and evaluation of cooperative vocational education. Introduction of student selection and management of cooperative vocational education. Fulfills three semester hours of six required for State of Illinois certification.

473-3 Coordinating Cooperative Vocational Education. Overview of cooperative vocational education. Investigation into the competencies required for the establishment, implementation, and coordination of cooperative vocational education to include selection and maintenance of training stations, student placement, related instruction in cooperative vocational education, and the management of cooperative vocational education programs. Fulfills the remaining three semester hours of the six required for State of Illinois certification. Prerequisite: 472.

474-3 Individualized Vocational Instruction. Study of the theory, characteristics, appropriateness, and evaluation techniques of individualized programs. Will include a review of the current state of individualized instruction in education for work programs.

478-3 Contemporary Principles in Management of Technical Education Programs. Study of contemporary approaches to the teaching of technology education including: developing an understanding of the philosophical base; identifying a curriculum development procedure in teaching strategies; and locating resources and educational aides for teaching technologies related to communication, energy utilization, production, and transportation.

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 (1, 1, 1) Post-Secondary Vocational-Technical Teaching. Contemporary approaches to teaching vocational-technical education in post-secondary institutions and agencies. (**a**) Orientation to and preparation for teaching occupations. (**b**) Situations and issues which arise in professional education sessions. (**c**) Interpersonal relations in teaching and other educational assignments. Not for graduate credit.

488-3 Initiating Vocational Student Placement and Follow-Up. Planning, implementing, operating, and evaluating school-based placement systems for vocational education.

490-1 to 4 Readings. Supervised reading for qualified students. May include independent study. (**a**) Agricultural education, (**b**) business education, (**c**) clothing and textiles, (**d**) education, training and development, (**e**) health occupations education, (**f**) home economics education, (**g**) industrial education, (**h**) vocational education. Prerequisite: consent of instructor and program coordinator.

491-1 to 5 Advanced Occupational Skills. Modern occupational practice in selected fields. For experienced professionals seeking advanced techniques in specialized areas of vocational education. (**a**) Agricultural education, (**b**) business education, (**c**) home economics education, (**d**) industrial education, (**e**) health occupations education. Prerequisite: intermediate level study in the specialty.

494-1 to 4 Workshop. Study of current issues of importance to vocational, occupational, and career education teachers, supervisors, and administrators. Emphasis of each workshop will be identified in each workshop announcement. (**a**) Agricultural education, (**b**) business education, (**c**) clothing and textiles, (**d**) education, training and development, (**e**) health occupations education, (**f**) home economics education, (**g**) industrial education, (**h**) vocational education.

495-2 to 12 Teaching Internship. Internship teaching in vocational programs in approved centers. The intern teacher will follow the program of the supervising teacher in both regular and extra class ac-

tivities. May include independent study. (**a**) Agricultural education, (**b**) business education, (**c**) home economics education, (**d**) industrial education, (**e**) health occupations education. Prerequisite: 18 months full-time equivalent of documented or nine months full-time equivalent of supervised experience or a combination.

496-2 to 12 Professional Internship. Research or curriculum development or program management at approved education or training sites. The intern will follow the program of the supervising professional in regular and related activities. Not for graduate credit. Prerequisite: 18 months full-time equivalent of documented or nine months full-time equivalent of supervised work experience or a combination.

497-1 to 6 Practicum. Applications of vocational, occupational, and career education skills and knowledge. Cooperative arrangements with corporations and professional agencies to study under specialists. (**a**) Agricultural education, (**b**) business education, (**c**) clothing and textiles, (**d**) education, training and development, (**e**) health occupations education, (**f**) home economics education, (**g**) industrial education, (**h**) vocational education. Prerequisite: twenty hours in specialty.

498-1 to 5 Special Problems. Assistance and guidance in the investigation and solution of vocational, occupational, or career education problems. May include independent study. (**a**) Agricultural education, (**b**) business education, (**c**) clothing and textiles, (**d**) education, training and development, (**e**) health occupations education, (**f**) home economics education, (**g**) industrial education, (**h**) vocational education. Prerequisite: consent of instructor and program coordinator.

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.

In the field of zoology, a student may work toward either a Bachelor of Arts or Bachelor of Science degree. The Bachelor of Arts degree with a major in zoology permits a student to take 18-23 semester hours of courses in other areas of interest. Having obtained a Bachelor of Arts degree, students may continue their education toward a graduate degree in zoology or related field, although it may be necessary to absolve deficiencies in physics, organic chemistry and mathematics.

The Bachelor of Science degree with a major in zoology permits a student to take 7-14 semester hours of courses in other areas of interest. This degree requires additional courses in chemistry and/or physics and quantitative science (mathematics, statistics, or computer programming) and will normally be pursued by students desiring to do graduate work in zoology or other specialized training such as medicine, dentistry, or veterinary science.

The individualized curriculum for the Bachelor of Arts degree in zoology must include: a year of chemistry or physics, one course in mathematics beyond the College of Science requirement (or a course in statistics or computer programming), Biology 305 and 307, Zoology 220a, 220b, and 300 (or equivalent, i.e. Biology 309), Zoology 482, and at least 18-19 additional semester hours of electives in zoology. Courses offered in the General Education program and Zoology 212, 214, and 316 will not be accepted as electives. A minimum of 37 semester hours of biology and zoology must be completed for the major, and no more than 11 semester hours of courses (biology or zoology) which are used to satisfy degree requirements of another major may be used to meet the zoology requirements.

Bachelor of Science degree requirements include all requirements for a Bachelor of Arts degree in zoology, plus two additional courses selected from chemistry and/or physics and one additional course in either statistics, computer programming or calculus.

Bachelor of Arts Degree, College of Science

General Education Requirements	46[1]
Supplementary College of Science Requirements	11-13
Foreign Languages	(4)[2] + 4
Mathematics 108 and 109 or 111 or 140	(3)[2] + 1-3
Physical Science (Not General Education)	6[3]
Requirements for Major in Zoology	40-43[4]
Biology 305, 307	6
Zoology 220a,b, 300 (or its equivalent), 482	13
Elective Zoology courses	18
Chemistry or Physics (Not General Education)	(6)[2] + 0-2[5]
A course in mathematics (beyond Mathematics 108 and 109 or 111), statistics, or computer programming	3-4
Electives	18-23
Total	120

[1]The 46 hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Education courses.
[2]Semester hours in parentheses represent approved substitutes for General Education courses.
[3]May apply toward General Education if approved substitutes are taken.
[4]Zoology requirements will satisfy biological science requirements for the College of Science.
[5]Satisfies physical science requirements for the College of Science.

Bachelor of Science Degree, College of Science

General Education Requirements	46[1]
Supplementary College of Science Requirements	11-13
Foreign Languages	(4)[2] + 4
Mathematics 108 and 109 or 111 or 140	(3)[2] + 1-3
Physical Science (Not General Education)	6[3]
Requirements for Major in Zoology	49-50[4]
Biology 305, 307	6
Zoology 220a,b, 300 (or its equivalent), 482	13
Elective Zoology courses	18
Chemistry or Physics (Not General Education)	(6)[2] + 6[5]
Two courses in mathematics (beyond Mathematics 108 and 109 or 111), statistics, or computer programming	6-7
Electives	7-14
Total	120

[1]The 46 hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Education courses.
[2]Semester hours in parentheses represent approved substitutes for General Education courses.
[3]May apply toward General Education if approved substitutes are taken.
[4]Zoology requirements will satisfy biological science requirements for the College of Science.
[5]Satisfies physical science requirements for the College of Science.

Bachelor of Science Degree, College of Education

The degree is taken in the College of Education and must satisfy all requirements of that college for the Bachelor of Science degree. The requirements for the major in zoology are the same as those for either the Bachelor of Arts or Bachelor of Science in the College of Science, except that to meet teacher certification requirements a minor in plant biology is required. Curriculum and Instruction 468 is also required. College of Education professional education and other certification requirements may be found in the section of this catalog titled Curriculum and Instruction. See Teacher Education Program, Chapter 3.

Minor

A minor in zoology consists of 16 hours, including 220a,b, and 482. Zoology courses acceptable for majors as well as Biology 305, 306, 307, 308, and 309 may be used to complete the 16-hour minimum requirement; no General Education courses can be included. Courses used to satisfy degree requirements for a major or another minor cannot be used for the minor in zoology.

Honors Program

An honors program is available to those juniors and seniors in zoology who maintain a grade point average of 3.25 or better, overall and in the major. To enroll in Zoology 493, the student must complete a departmental form that requires the project title; a description of the proposed project; and the signatures of the student, the faculty adviser, and the chairperson of the department. The student must complete six hours of 493 with a grade of *B* of better, file with the department a final report on the research, and present the results at a public seminar in order to graduate with departmental honors in zoology. At the time of graduation, an indication of participation in the program is made on the diploma and transcript for students who complete the requirements. Concurrent participation in the University Honors Program is encouraged. Students receiving credit for Zoology 493 may not apply Zoology 393 hours toward the major.

Courses (ZOOL)

Students enrolled in zoology courses may incur field or laboratory expenses of $5 to $25.

212-2 Birding. Bird watching for pleasure. Consideration of identification, songs and ecology of birds, information on bird organization, equipment, and techniques. Credit may not be used toward a major in zoology. Two lectures per week. Offered Fall term.

214-3 Human Heredity. Principles of heredity as related to humans, with emphasis on the affects of environment on the biological inheritance. Credit may not be used toward a major in zoology.

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: GEA 118 or strong background in high school biology recommended.

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: 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. 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.

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 lectures and one 2-hour laboratory per week. Credit may not be used toward a major in zoology. Offered Fall term. Prerequisite: GEA 118 or equivalent.

351-4 Ecological Methods. Basic ecological field techniques for analysis of community structure and functional relationships. Two 4-hour laboratories per week. Offered Spring term. Prerequisite: 220a,b and Biology 307.

390-1 to 3 Internship. Supervised off-campus training (as in a laboratory or zoological institution) may be counted for credit in zoology. Must receive approval from a zoology faculty supervisor who will evaluate the performance. A proposal must be filed with the director of undergraduate studies. Prerequisite: major in zoology.

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 2.50 GPA (A = 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: 300 or Biology 309 or advanced standing in Life Sciences or consent of instructor.

401-3 Developmental Neurobiology. This course presents a survey of the basic principles that underlie the development of the nervous system, including an examination of the important questions and issues currently being studied by neuroembryologists. Prerequisite: advanced standing in biology/science or consent of instructor.

402-3 Natural History of Invertebrates. Introduction to ecology, intraspecies communication and interspecies relationships of invertebrate animals. Recommended for teacher preparation programs. Two lectures and one 2-hour laboratory per week. Offered Fall term. Prerequisite: 220a.

403-3 Natural History of Vertebrates. Life histories, adaptations, and identification of fish, amphibians, reptiles, birds, and mammals, emphasizing local species. Recommended for teacher preparation programs. One lecture and two 2-hour laboratories per week. Offered Spring semester. Prerequisite: 220b or consent of instructor.

404-3 Evolutionary Biology. Concepts and principles of modern evolutionary theory at a level appropriate for upper-division majors and graduate students in any biological science. Prerequisite: 220a,b or equivalent and Biology 305 or consent of instructor.

405-3 Systematic Zoology. Theory and procedure of classification; population taxonomy; variation and its analysis; rule of zoological nomenclature; taxonomic publication. Three one-hour lecture-discussion meetings per week. Prerequisite: 220a, b or consent of instructor.

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. Offered Fall term. Prerequisite: 220a.

407-4 Parasitology. Principles, collection, identification, morphology, life histories, and control measures. Two lectures and two 2-hour laboratories per week. Offered Spring term. Prerequisite: 220a.

408-3 Herpetology. Taxonomic groups, identification, morphology, and natural history of amphibians and reptiles. One lecture and two 2-hour laboratories per week. Offered Fall term. Prerequisite: 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. Offered Spring term. Prerequisite: 10 to 12 semester hours of biological science.

413-4 The Invertebrates. Structure, phylogeny, distinguishing features and habitats of the invertebrates. Two lectures and two two-hour laboratories per week. Offered Spring term. 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. Prerequisite: 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. Offered Fall term. Prerequisite: 220a.

418-4 Comparative Vertebrate Anatomy. The comparative structure and evolution of vertebrate organ systems. Two lectures and two 2-hour laboratories per week. Offered spring term. Prerequisite: 220b.

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. Offered Fall term. Prerequisite: 10 semester hours of biological science.

426-3 Comparative Endocrinology. Comparison of mechanisms in influencing hormone release, hormone biosynthesis, and the effects of hormones on target tissues. Include ablation and histology of glands and chemical and bio-assays with vertebrates and invertebrates. Two lectures and one 2-hour laboratory per week. Offered Spring term.

430-3 Molecular Evolution and Systematics. Survey of the theory and processes of organic evolution at the level of protein and DNA sequences in animals. Quantitative analysis of empirical genetic information; methods of phylogenetic inference from molecular data. Three lectures per week. Prerequisite: Biology 305 and consent of instructor.

460-2 Upland Game Birds. Biological overview and identification of upland and shoreline game birds plus raptors and selectively-managed species. One lecture and one 2-hour laboratory per week; there will be up to two Saturday field trips. Offered Spring term. Prerequisite: 220b or consent of instructor.

461-3 Mammalogy. Taxonomic characteristics, identification, and natural history of mammals. Two one-hour lectures and one 2-hour laboratory per week. Offered Spring semester. Prerequisite: 220b.

462-3 Waterfowl. Identification, life history, ecology, and management. Two lectures and one 2-hour laboratory per week; there will be three or four Saturday field trips. Prerequisite: 220b or consent of instructor.

463-3 Game Mammals. Natural history and management. Two lectures and one 2-hour laboratory per week. Prerequisite: 220b or consent of instructor.

464-3 Wildlife Administration and Policy. Responsibilities of private, state, and federal natural resources management agencies. Legal and political processes in areas of wildlife and natural resources. Three lectures per week. Offered Spring term. Prerequisite: consent of instructor.

465-3 Ichthyology. Taxonomic groups, identification, and natural history of fishes. Two lectures and one 2-hour laboratory per week. Offered Spring term. Prerequisite: 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. Offered Fall term. Prerequisite: 10 hours of biological science or consent of instructor.

467-3 Ornithology. Classification and recognition of birds and the study of their songs, nests, migratory habits, and other behavior. One lecture and one 4-hour laboratory per week. Offered Spring term. Prerequisite: 220b.

468-6 (3, 3) Wildlife Biology. Basic concepts and techniques for managing wildlife populations and their habitats. A basic ecology course is desirable as background for this course. (**a**) Principles. Three 1-hour lectures per week. (**b**) Techniques. Two 3-hour laboratory sessions per week, four of which may be field trips on Saturdays. Offered Fall term. Prerequisite: 10 semester hours of biological science; concurrent enrollment in 468a and 468b desirable.

471-4 Entomology. Structure, classification, and life histories of insects. Two lectures and two 2-hour laboratories per week. Offered Fall term. Prerequisite: 220a.

473-4 Aquatic Entomology. Structure, classification, and biology of aquatic insects. Two lectures and two 2-hour laboratories per week. Offered Fall term. Prerequisite: 220a.

475-3 Advanced Cell Biology. (Same as Plant Biology 475) Cell structure at molecular and cytological levels. Includes discussions of research methods, and plasma membrane, cell exterior and recognition, the endomembrane system and related organelles, self-replicating organelles, the cytoskeleton, nuclear structure and function in cell replication, cell differentiation and response, and eukaryotic cell evolution. Prerequisite: BIOL 306 or equivalent.

476-2 Advanced Cell Biology Laboratory. (Same as Plant Biology 476) Laboratory course to accompany 475. Light and electron microscopy, cell culturing, biochemical methods, and experimental protocols are used to study the structure of cell membranes, intracellular organelles, including the Golgi apparatus, ER, mitochondria, plastids, and lysosomes, the cytoskeleton and nucleus. Prerequisite: 475 or concurrent enrollment.

478-3 Animal Behavior. Biological basis of the behavior of animals. Two lectures and one 2-hour laboratory per week. Offered Fall semester. Prerequisite: one year of biological science or permission of instructor.

480-3 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. Offered Spring semester. Prerequisite: at least *B* work in 478 or permission of instructor.

482-1 Zoology Seminar for Seniors. Each student reports on a selected topic, using original scientific literature, and the report is discussed by the class. One meeting per week. Offered Fall, Spring, Summer terms. Not for graduate credit. Prerequisite: senior standing or 24 hours of life science completed. Mandatory Pass/Fail.

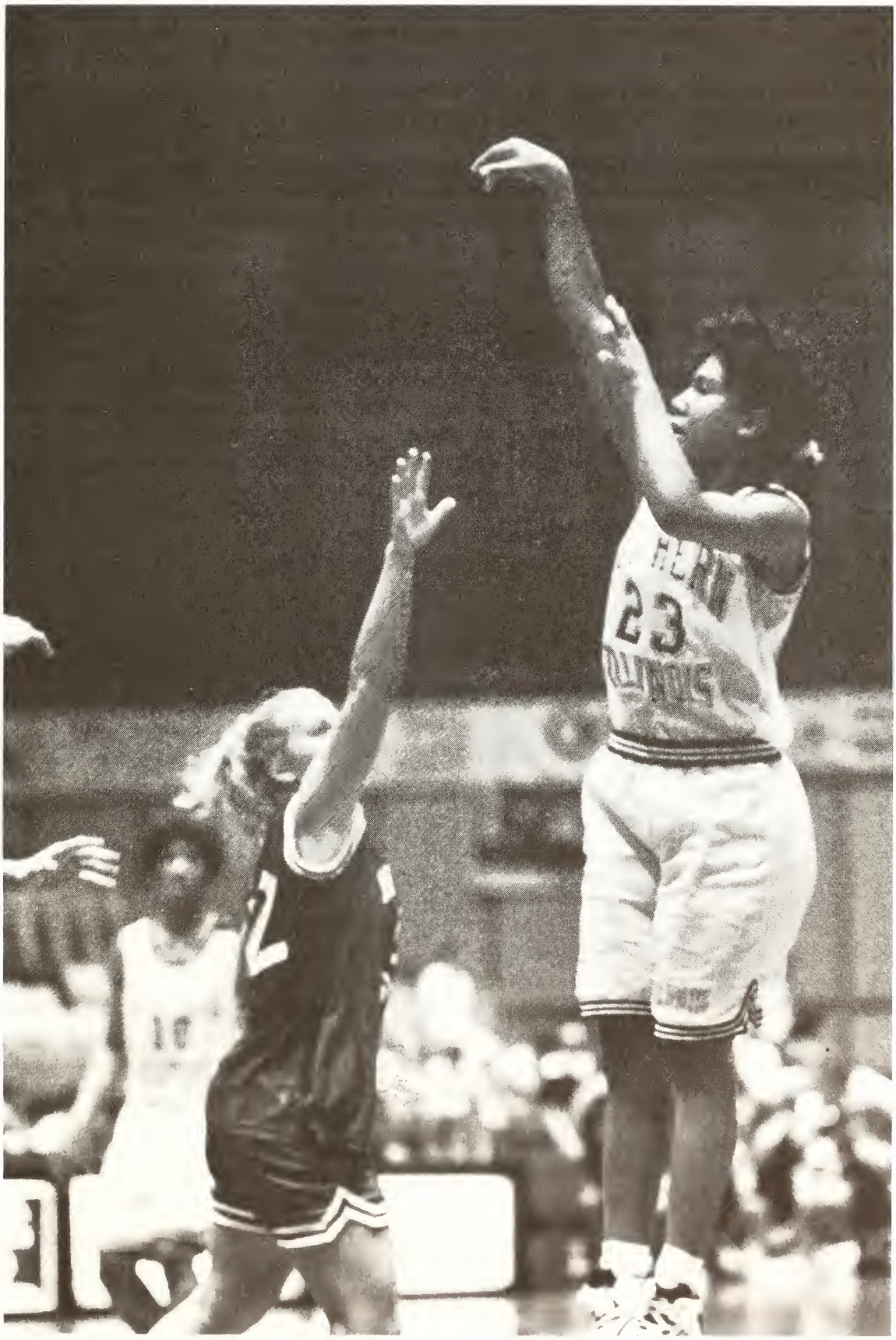
485-2 to 4 Special Topics in Zoology. Examination of topics of special interest not available in other departmental courses. Offered in response to student need and faculty availability. Prerequisite: consent of instructor.

493-1 to 6 Honors Research. Individual research for honors students in zoology. For undergraduate credit only. Prerequisite: approval of departmental chairperson and a faculty supervisor.

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. Offered Fall, Spring, Summer terms. Prerequisite: consent of department.

497-3 Helminthology. Identification, structure, physiology, and life history of parasitic helminths. Three lectures per week. Prerequisite: 407.

6 Student Services



Campus Life

STUDENT DEVELOPMENT

The central focus of Student Development is to promote individual student growth and personal achievement through a wide range of programs and services intentionally designed to complement and enhance the student's educational experience. A primary goal is to provide opportunities for student involvement, student development, and experiential learning, which contribute to student success and satisfaction. Units of Student Development include:

Student Orientation Programs

Student Development provides a comprehensive orientation program for new students and their parents through the Student Orientation Programs office. These programs are designed to assist students in making a smooth transition into the University community and to introduce both new students and their parents to the University's vast resources, services, and programs. Orientation sessions are offered prior to the beginning of each semester and on new student advisement guest days. Specially trained upperclassmen, known as student life advisers, serve as orientation peer advisers to help the new student learn about the campus and its services. The Student Orientation Committee is available year round to assist students. For additional information, contact Student Orientation Programs on the third floor of the Student Center, telephone 453-5714.

First Year Experience: A Magic Step Ahead

It's MAGIC. Project MAGIC (Maximize Academic Growth In College) is one of three unique freshman experience programs designed as a general advisement program for new students. The purpose of the program is to help new students derive the greatest benefit from the people, programs, and facilities at the University. This is accomplished by providing interested new students with the opportunity to develop a friendly and helpful relationship with a member of the University faculty or staff, a mentor, who can assist the new student in developing career and academic goals, in learning how to maximize the educational opportunities available at the University, and in becoming acclimated to college life. Since its inception in 1983, nearly 400 students and 200 faculty and staff members have volunteered each year to participate in the project, making the program one of the largest of its type in the country. To enroll in Project MAGIC, contact the Office for the First Year Experience, Student Development Annex T-40, 536-2338.

Project STEP. Project STEP (Success Through Experienced Peers), one of three in a series of First Year Experience programs, is a peer mentoring program for new students. The purpose of the program is to help prepare freshman students for success at the University by providing interested new students with the opportunity to develop a friendly and informal mentoring relationship with an experienced Southern Illinois University at Carbondale student. Trained volunteer peer mentors help new students become acclimated to college life, develop academic and career goals, and learn about involvement and leadership opportunities at the University. To participate, contact the Office for the First Year Experience, Student Development Annex T-40, 536-2338.

Project AHEAD. In cooperation with the Department of Sociology, the Office for the First Year Experience provides an academic course, Sociology 101, for first semester students at the University. Commonly referred to as Project AHEAD

(A Humanistic Educational Approach to Development), the course is designed to help prepare students for success in college and is one of the three programs specifically designed for new students. The course uses an experiential learning mode of activities and group discussions pertaining to the first year experience. Topics for discussion focus on factors and issues associated with successful adjustment in college and academic achievement. Students learn valuable tips on study skills, communication skills, reading skills, time management techniques, and testing skills. Contact the Office for the First Year Experience, Student Development Annex T-40, 536-2338 for more information.

Center of Student Involvement

Registered Student Organizations. Over 400 registered student organizations offer opportunities for student involvement, student leadership development, and experiential learning. A core of over 400 volunteer faculty/staff advisers, along with the professional staff of the Center of Student Involvement, provide direction and consultation with the student organizations in the areas of fiscal management, organizational management, and the University policies and procedures. The office also provides a variety of services designed especially for the organizations: membership referrals, student organization directories, leadership development workshops, equipment checkout service, copy duplicating service, mail box service, and programming resource library. Included among the organizations are student governmental groups, coordinating councils, public interest groups, fraternities and sororities, publication and media groups, scholastic and professional honoraries, departmental clubs, special interest groups, religious organizations, and sports and recreation clubs. Interested students should contact the Center of Student Involvement, third floor of the Student Center, 453-5714.

Minority Programming Initiative. The Center of Student Involvement, COSI, offers a variety of programs and activities designed to promote the educational and personal growth and development of the SIUC minority student population. The primary goals for the minority programming initiative component administered by COSI include: orientation of minority students to the culture of the University; training in leadership skills and other personal and social skills for minority students; offer and identify appropriate minority mentors and role models. Additional activities and programs are coordinated by the Black Affairs Council, Hispanic Student Council and Asian-American Student Coalition. These organizations serve as coordinating and governmental bodies for Black, Hispanic and Asian-American student organizations on campus. Each group assumes responsibility for programming social, cultural, and educational programs for Black, Asian-American, and Hispanic SIUC students. Specific programs include historical commemorations and celebrations, awards programs, and special interest orientation sessions. For more information, contact the Center for Student Involvement in the Student Development Complex on the third floor of the Student Center, telephone 453-5714.

Greek Affairs. The Greek Affairs Program promotes the growth and development of SIUC students who elect to affiliate with Greek letter organizations. Composed of seventeen fraternities and eight sororities, the University's social fraternal system represents one of several alternative lifestyles for college students to pursue. Primary program emphasis of the SIUC Greek Affairs Program includes: promoting the intellectual, vocational, social, moral, and recreational development of students; providing training in leadership skills and other personal and social skills; promoting student involvement in extracurricular activities and community projects; promoting Greek life as a productive and viable lifestyle on campus; and promoting an appreciation for different lifestyles and

cultural heritages. The Inter-Greek Council, which consists of elected representatives from each of the nationally recognized chapters, serves as the activity coordinating council for the system. Sub-Councils include the Interfraternity Council, Panhellenic Council, and the Pan-Hellenic Council. Major programs and activities sponsored by the Greek system include New Student Orientation Welcomefest, Greek Week, Operation Happy Holiday, and the Annual All-Campus Theta Xi Variety Show, in addition to numerous philanthropic and service projects. Rush, or membership recruitment, is sponsored at the beginning of fall semesters, as well as at designated times throughout the year. For additional information, contact the Center for Student Involvement in the Student Development Complex on the third floor of the Student Center, telephone 453-2633 or 453-5714.

The Leadership Center. The Leadership Center, TLC, a component of the Center of Student Involvement, serves as a student leadership development resource center. The primary goal of TLC is to provide activities and experiences that enhance leadership skills and promote involvement both on- and off-campus. TLC programs include:

The Academy. Students at SIUC have the opportunity to enhance their leadership and citizenship potential by participating in The Academy. This program includes a 'catalog' of involvement opportunities that complement classroom experience. Through specially designed modules, as well as documented University and community experiences, students may grow and contribute to the University and to the community.

Big Brother/Big Sister Program. The Big Brother/Big Sister program is designed to monitor the progress of incoming minority freshman students. The objectives of the program are to increase retention on the SIUC campus; to provide an orientation to the campus environment from an African-American perspective; to assist students with problem solving; to assist students with their studies as necessary and to encourage students to utilize tutorial services.

Emerging Leaders Program. The Emerging Leaders Program is designed to assist freshman minority students in developing their full potential as both scholars and citizens. Students who participate in the program not only gain insight into what it is like to be a campus leader at SIUC, but also gain confidence in making or seeking leadership opportunities. Through their leadership involvement and activity, students are able to apply problem solving, interpersonal and persuasive skills to their lives after college.

Saluki Volunteer Corps. The Saluki Volunteer Corps promotes student involvement and community service learning activities in the University and community. It serves as a clearinghouse to coordinate student volunteer interests with the needs of service organizations on campus, in Carbondale, and within the surrounding communities. The outreach programs provide opportunities for students to gain experience in nearly every field of interest: child care, senior citizens, recreation, disabled, mental health, youth, tutorial, corrections, crisis, and intervention. The Saluki Volunteer Corps also serves as a referral and coordinating agent for student organizations which promote services and need assistance with a project or special event.

Student Publications. Special opportunities are available for students who have an interest in the areas of media and publications. These include serving as an editor, photographer, artist, writer for the *Monolith* new student record book; the *Five O'Clock News*, a periodic publication of the Black Affairs Council, which features news and event information of special interest to Black students; *Insight*, an award-winning newsletter published especially for members of the SIUC Parents Association; *Visor Vision*, a periodic newsletter of particular in-

terest to orientation Student Life Advisers; *Columns*, a periodic publication directed toward the interests of fraternity and sorority members; *Southern Portrait*, a monthly newsletter devoted to special features and items of particular interest to student leaders and members of registered student organizations; *Rainbow Connection*, a weekly newsletter for parents of children enrolled at Rainbow's End child development center. Interested students should contact the Center of Student Involvement, 453-5714.

Credit for Involvement. In cooperation with various academic units, the Center of Student Involvement provides opportunities for students to receive academic credit for their participation in student activities and student organizations. Opportunities available include leadership development courses for fraternity and sorority members, community service-learning programs for Saluki Volunteer Corps workers, leadership development seminars for orientation student life advisers, and undergraduate and graduate internships in such areas as student development, early childhood education, and media and publications. For additional information, call or stop by the Center of Student Involvement.

Student Judicial Affairs

Student Judicial Affairs administers the *Student Conduct Code* and supervises the judicial program for social misconduct. The purpose the *Student Conduct Code* is to establish and maintain an orderly environment conducive for learning, free expression, free inquiry, intellectual honesty, respect for others, and participation in constructive change; to promote the development of ethically sensitive and responsible persons; and to protect relevant legal rights of students. The judicial program is designed to contribute to the teaching of appropriate individual and group behavior as well as to protecting the campus community from harm and disruption. Special emphasis is placed on the training and contributions of students and faculty who serve on judicial review boards. For additional information regarding the rights and responsibilities of students under the *Student Conduct Code* or the judicial review process, contact Student Judicial Affairs, Student Development Annex T-40, 536-2338.

SIUC Parents Association

Open to all parents of students at the University, the SIUC Parents Association provides opportunities for parents to become better informed and actively involved with their student's education and university experiences. The nominal annual family membership fee entitles parents to periodic newsletters, special event programs, and a number of University and community discounts. Membership applications are available from the Parents Association Office, third floor of the Student Center, 453-5714.

Rainbow's End

Rainbow's End is a comprehensive child development center designed to serve children, ages 6 weeks to 10 years, of University students, faculty, and staff members. The center, which is staffed by qualified professionals, is licensed by the Illinois Department of Children and Family Services, is a participant in the State of Illinois Child Care Food Program, and serves as a replication site in an international research project through the Warner Institute for Childhood Creativity at California State University at Northridge. Special features of Rainbow's End include a range of full and part time day care options, the assessment of tuition and fees based upon the number of hours for which the child is enrolled, and reduced tuition fees for student parents. Programs offered include infant/toddler, preschool, five-year-old, summer school age, and before- and after-school, in addition to an intergenerational program, sponsored in cooperation with the Carbondale Senior Citizens. Rainbow's End is open from 7:30 a.m.

to 5:30 p.m. each day the University is in session. For additional information telephone 453-6358.

Transitional Programs

Undergraduate Student Withdrawals. All undergraduate students registered for academic work must obtain a withdrawal from the University through Transitional Programs. Transitional Programs staff members conduct exit interviews for all undergraduate students contemplating withdrawal from the University. The purpose of the exit interview is to assess the student's need, suggest alternatives to withdrawal, explain the implications of withdrawal, and guide the student through the withdrawal process. Withdrawal from the University may have an adverse effect on the student's financial obligations that could affect eligibility to receive future financial assistance, as well as the student's permanent academic record and eligibility to be readmitted to the University. Each withdrawal request is viewed separately and independently from any request for a refund of tuition and fees. Contact the Office of Transitional Programs, Student Development Annex T-40, telephone 536-2338, for complete details on how to properly withdraw from the University.

Student Absence Requests. Transitional Programs provides a system to verify and document the reason(s) for student absences. Although the staff of Transitional Programs does not, and cannot excuse student absences, information is forwarded to the student's professors and college dean. This service is provided largely for students who are ill, hospitalized, experience family illness, death, or other personal tragedy. For additional information, contact the Office of Transitional Programs, 536-2338.

Student Death Notices. Transitional Programs is the office of record regarding all student deaths, including those of former students. When a student death has been verified, a notice is sent to appropriate University offices so that their records may be adjusted to remove the name of the deceased student. The Transitional Programs staff is also available to provide appropriate assistance to the parents or family. To report a student death, telephone Transitional Programs, Student Development Annex T-40, 536-2338.

Power of Attorney. If a student is unable to be on campus to claim a check, the Transitional Programs staff may act for the student to negotiate the check to pay any outstanding indebtedness. This is done when the student graduates and cannot remain on campus until the check is available or when the student is away from campus for a practicum or student teaching assignment. The student signs a power of attorney form, has the signature notarized, and Transitional Programs negotiates the check. Exclusions to negotiating checks include grants and student loans. For additional information, contact the Office of Transitional Programs, Student Development Annex T-40, 536-2338.

Non-Traditional Student Services

Non-Traditional Student Services assists and serves non-traditional students—those who are 24 or older, married, have dependents, are enrolled part time, or who have been away from formal education for some time. Increasing the awareness and response within the University community to the unique needs and circumstances of non-traditional students is a primary concern of the office. The staff provides assistance, information, support, and referral to other University and community programs and services to help non-traditional students obtain the maximum benefits from their university education.

Campus Services

Student Center

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

The Student Center offers students many work and cocurricular opportunities. Approximately 450 students annually have job opportunities in the Student Center and the center receives sizeable student work aid to supplement work opportunities. There are also academic credit and work-related opportunities in conjunction with Commercial Graphics-Design, and the Departments of Educational Administration and Higher Education, Food and Nutrition, and Recreation. In addition, through Student Center and Student Programming Council programs, nonmajors may become actively involved in theater, dance, and other performing arts activities.

As a community center it performs four important missions. It supplies support services which complement 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 University 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, graduate assistants and interns the opportunity to develop on-the-job expertise in their fields 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 to which alumni and students can relate 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. An extensive food service includes fast food offerings such as McDonald's, Pizza Hut Express and Yogurt and Cream as well as traditional services, Marketplace Cafeteria, Old Main Restaurant, Bakery, Pecos Pete's and catering. Other facilities and services include a campus-wide ID system, automated post office, automated banking, event ticket sales, check cashing, Student Health Assessment Center, Western Union money order receiving station, bowling lanes, billiard room, craft shop, art exhibit and display case areas, television and video lounges, and 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 Development Office, the University Programming Office, and student organization and student government offices.

University Bookstore

The University Bookstore is an integral part of the Student Center and is located on the ground floor with the main entrance at the cross halls.

As part of the educational process, the University Bookstore provides textbooks and specialized supplies for all classes. It also has a general book department with references and current best sellers. In the supply sections, the University Bookstore carries a variety of office supplies, school supplies, art and engineering materials, computer supplies, imprinted apparel, gift items and greeting cards, and personal products.

The University Bookstore also provides the following services: book and thesis binding, laminating, rubber stamp ordering, class ring sales, technical pen cleaning, typewriter rentals, gift wrapping, document placquing, geological survey maps, postage stamps, telex news via Western Union, Visa and Mastercard, cap and gown rental and sales, special order services for books and supplies, and textbook buy back service. Money spent at the University Bookstore returns to the operation of the Student Center.

Another important mission of the University Bookstore is to provide job opportunities, retailing and marketing experiences, internships, and a laboratory for research.

SIU Arena

The SIU Arena, which will be celebrating three decades of excellence this year, has hosted a variety of athletic events, meetings, musical programs, stage performances, and similar activities which demand an indoor participant area or a facility capable of accommodating large audiences. The facility and staff are available to assist in achieving the goals of the educational programs of various University departments, Intercollegiate Athletics, and student activities. Finally, the SIUC Arena presents a popular entertainment series that helps to fulfill the educational, cultural, social, and entertainment needs of the University and its surrounding communities.

Shryock Auditorium

Located on the "old campus" of Southern Illinois University at Carbondale, Shryock Auditorium stands as one of the fine and performing arts centers of southern Illinois.

Constructed in 1917 and named after University president Henry William Shryock, the facility was renovated in 1970 at a cost of 1.5 million dollars. Upon re-opening in January, 1971, guests were pleased and surprised to find a new decor of opulent grand opera splendor, while the original motif of the building had been retained.

As the largest auditorium on campus, seating over 1,200, Shryock Auditorium is well equipped to handle almost any type of event, from the performing arts on a grand scale to large group meetings and conferences. Facilities include dressing rooms capable of accommodating up to 70 performers, modern stage rigging, lighting and sound systems, and air conditioning throughout the audience areas.

The Shryock Auditorium Celebrity Series annually presents the finest in touring musicals, plays, ballet, modern dance, opera, international entertainment, and big bands. In addition, the Auditorium is utilized by functional units of the University, by recognized student organizations, and by non-student on-campus groups when the event is of educational, cultural, or social significance.

The beautiful decor and appointments of Shryock Auditorium with the nostalgic memories surrounding this old campus landmark make it one of the places to which students and alumni return and proudly show campus visitors year after year.

University Museum

The University Museum serves the campus community and surrounding area through its active exhibit program and in its cooperative ventures with other academic units to improve the quality of instruction.

The exhibits housed in the University Museum facility, Faner Hall, C wing, are designed to give viewers an authentic glimpse of the area's past. Changing exhibits displayed in the University Museum include a series of graduate student thesis presentations, faculty art, and photography, as well as exhibits from the permanent collections and special national and international exhibits de-

signed around a particular theme. In addition to these formal exhibits, many permanent collection objects are displayed at several other campus locations.

The University Museum also serves students in more specific ways, by providing on-the-job training, courses in museum studies, and opportunity for creating and installing practicum exhibits of art, history, and science. Through these avenues, students are able to draw on the extensive collections which include works of fine art, ethnographic artifacts from many areas of the world and 19th and 20th century historic objects.

The University Museum provides a community service through guided tours, lecture programs, a loan program, and exhibits in public places; and works with many area groups to provide meaningful learning experiences.

Campus Communications Media

SIUC BROADCASTING SERVICE

The SIUC Broadcasting Service operates public television stations WSIU-TV8 in Carbondale and WUSI-TV16 in Olney, and public radio station WSIU-FM 91.9 in Carbondale and WUSI-FM 90.3 in Olney. Students are provided opportunities to get hands-on experience in a wide range of radio and television specialties. The Broadcasting Service encourages active student volunteer participation in all areas of its operations. Students are able to work with modern equipment in actual on-the-air situations. They can become involved in the creation of radio and television programming, and they can compete for paid student staff positions.

The stations of the SIUC Broadcasting Service are affiliated with a variety of national organizations such as National Public Radio and the Public Broadcasting Service. Students who work at the stations have learning experiences available to them which are extremely valuable upon entering the job market. Southern Illinois University at Carbondale is known nationally and admired for the practical experience it provides its students through participation in radio and television station activities.

NEWSPAPER

The *Daily Egyptian*, campus newspaper, is published when the University is in session Mondays through Fridays, spring and fall semesters and Tuesday through Fridays during the summer session, and serves as a morning daily newspaper for the University community. The publication also serves as a laboratory newspaper for students in the School of Journalism, produced under professional supervision, using student editors and staff. About 100 students work at news gathering, editing and layout, production, advertising and distribution. The circulation is about 27,000. Students do not have to be enrolled in journalism to be employed in the newspaper departments of news, photography, camera, paste-up, typesetting, advertising, business, printing, and circulation. The newspaper is published and printed in a plant equipped with electronic facilities to produce a 40-page daily newspaper on a web offset press.

Intercollegiate Athletics

Excellence within the realm of competition and the classroom remains the standard for Southern Illinois University at Carbondale's athletics program which provides 18 sports for men and women. All intercollegiate sports compete at the NCAA Division I level.

Sports are offered in basketball, baseball, cross country, football, golf, softball, swimming and diving, tennis, track and field, and volleyball. All saluki sports compete within the Missouri Valley Conference (MVC), except for swimming and diving, which is an independent, and football, which belongs to the Gateway Conference.

The 1992-93 sports year proved memorable.

The men's basketball team, which has won 109 games in the past five seasons, claimed its first post-season Missouri Valley Conference tournament since 1977 and, as a result, made its first trip to the NCAA in the past 16 years. The Salukis finished with a 23-10 record, which included a first-round loss to Duke, the two-time defending national champions, in the NCAA's Midwest Regional in Chicago. Senior forward Ashraf Amaya was a unanimous choice to the MVC's All-Conference team for the second year in a row and was also voted the league's Most Outstanding Defensive Player a second time. Amaya completed his career as SIUC's Number 3 all-time scorer with 1,864 points, while Rich Herrin became the 12th winningest coach in the 85-year history of the MVC.

Women's basketball, which has captured three Gateway titles and made four NCAA appearances since 1986, competed in the MVC for the first time last season. SIUC finished 19-10 overall and 12-4 in league play, placing second in the Valley during regular season and in the conference tourney. Senior guard Anita Scott (St. Louis, MO) was a unanimous All-MVC pick. Seniors Kelly Firth (Springfield, IL) and Angie Rougeau (Memphis, TN) capped brilliant careers as 1000-point scorers for the Salukis. Cindy Scott, the 35th winningest active coach in NCAA Division I with a 312-152 career record, became President of the Women's Basketball Coaches Association.

In football, the Salukis ranked sixth in the nation in total offense last fall, averaging a school-record 459.7 yards per game (229.2 rushing, 229.5 passing). Scott Gabbert, voted SIUC's '93 Male Athlete of the Year, established numerous passing marks. SIUC, which tied for fourth in the Gateway Conference and finished 4-7 overall, has 35 lettermen and a host of red-shirted freshmen returning this fall.

SIUC track teams, which train at one of the finest indoor facilities in the Midwest, continue to rank as perennial powers. The men have captured seven of twelve MVC track titles the last six years. During 1992-93, Cameron Wright (Marion, IL) was the Valley's best indoors and outdoors in high jump. On the women's side, SIUC won the inaugural MVC cross country championship and Don DeNoon was awarded Coach of the Year honors. In track, Nacolia Moore (Georgetown, IL) led the Salukis in scoring and was named team MVP for the fourth year in a row.

Baseball has one of the richest traditions of any Saluki sport. In 1990, Southern was ranked tenth in the nation and tied for first in the MVC at the end of regular season. SIUC, which has made five trips to the College World Series, was the Valley titlist in 1986 and received a spot in the NCAA post-season tourney for the fourteenth time in 1990.

In softball, SIUC enjoyed its fourth consecutive 30-win season. A 34-12 record in spring of 1993 included a 12-4 mark in the MVC, with the Salukis copping second in the Valley during regular season. SIUC set team records in batting (.301) and slugging (.440), while tying an NCAA mark with 40 triples. Senior Colleen Holloway (Chillicothe, IL), who now holds 18 school records, was named the SIUC Female Athlete of the Year and the conference MVP. Holloway was one of four First Team All-MVC picks for SIUC.

SIUC's swimming and diving programs remain nationally prominent. The men have finished in the top 20 at NCAA Nationals 26 of the last 34 years -- with 102 team members earning All-American honors. During 1992-93, junior diver Rob Siracusano (Long Island, NY) became the school's latest All-American, setting school records in one and three meter springboard, as well as platform diving. The women have cracked the NCAA's top ten four times since 1983. Since fall of 1989, five female greats have been inducted into the University's Hall of Fame.

Many former Salukis have starred professionally and in the highest amateur circles. Steve Finley (Houston Astros) and Dave Stieb (Toronto Blue Jays) have made their marks in the major leagues. In football, SIUC had free agent signees this spring in Scott Gabbert (Cleveland Browns) and Yonel Jourdain (Buffalo Bills). In track and field, Connie Price, Darrin Plab and Cameron Wright rank among '96 Olympic hopefuls for the U.S.

SIUC athletes routinely gain high marks in the classroom. Forty-three percent of the University's 368 sports participants had at least *B* averages during fall '92. In particular, teams sparkled academically in women's tennis (3.39 gpa) and women's golf (3.33 gpa); eleven members of the women's track team were among 46 Dean's List honorees. In 1991, six student athletes were named GTE Academic All-Americans.

Intramural-Recreational Sports

The Office of Intramural-Recreational Sports provides campus-wide, year-round programs and services to meet the needs of students and their families who wish to participate in sport or leisure time activities. A wide variety of programs are held at the Student Recreation Center, playfields and tennis courts located across campus, Pulliam Hall, and the Lake-on-the-Campus beach and boat dock activity areas.

The Student Recreation Center houses an Olympic-size swimming pool, two indoor tracks, fourteen racquetball/handball courts, two squash courts, a rock climbing practice wall, a weight room, a martial arts room, an indoor tennis court, seven activity areas for basketball, volleyball and badminton play, an equipment check-out desk, saunas in each locker room, a dance studio and aerobic area, a sports medicine office, and a fitness forum filled with toning and conditioning equipment.

The Office of Intramural-Recreational Sports also provides a broad range of structured programs, including aerobic classes for every skill level and more than 40 intramural competitive events. The special populations area provides unique entertainment and recreation tailored to specific groups such as re-entry students, international students, disabled students, and the family members of students and eligible users. Instruction is available in a wide variety of activities, including Yoga, massage, weight-training, golf, tennis, and more. In addition, the Adventure Resource Center provides outdoor recreational information and sponsors day and overnight outdoor trips as well as informative clinics on topics such as fishing, hunting, rock-climbing, nature photography, and more. Windsurfing, sailing, and lifeguarding lessons are available courtesy of the Aquatics staff. The Sports Medicine office, operated cooperatively by the Wellness Center and Intramural-Recreational Sports, offers injury rehabilitation, fitness assessments, blood pressure and body fat checks, nutrition analyses, and a supervised workout and exercise program.

Recreational equipment is available for indoor and outdoor use. The equipment check-out counter offers free use of an extensive selection of sports equipment. Base Camp, Intramural-Recreational Sports' outdoor equipment rental program, offers camping, canoeing, hiking, and fishing equipment for a nominal daily fee.

For detailed information concerning the programs and facilities, contact Intramural-Recreational Sports at 536-5531.

Campus Ministries

Campus Ministries at Southern Illinois University at Carbondale, with an awareness of the diverse religious and cultural traditions existing in society, are committed to all efforts unifying the people of God with loving concern for one another. The member ministries see the University as a unique setting for the

development of personal growth and commitment in a richly varied environment, providing dialogue and interaction in all aspects of a person's life. They share with the University community in a joint search for truth and an ever deeper meaning in life. Sixteen individual ministries, Jewish and Christian, constitute the Campus Ministries organization. For a current brochure containing more detailed information about their worship, programs, and fellowship offerings, telephone (618) 549-1694 or write Campus Ministries, 700 S. Illinois Avenue, Carbondale, Il 62901.

Student Health Program

The University provides an extensive health benefits plan through the Student Health Program. Student input to the plan is provided through the Student Health Program Advisory Board. Interested students may contact the chairperson of the Student Health Program Advisory Board, 536-7575.

AREAS OF SERVICE

The Student Health Program offers the following interrelated programs.

Wellness Center. The Wellness Center offers programs and services to help students achieve optimal health and to skillfully administer self-care when ill. Individual and small group counseling, workshops, and seminars in the Student Center, residence halls, and Student Recreation Center, classroom presentations and special programs are offered throughout the year. Specific services provided through the Wellness Center are as follows:

Stress Management Information
Nutrition Assessment Information
Self Care Advice for Athletic Injuries
Patient Education
Birth Control Information
Pregnancy Consultation
Sexuality Information
Alcohol and Drug Information
Wellness Library
Wellness Outreach Program—Student Center
Environmental Health and Safety
Special Population Programs
Residence Hall Programs and Public Presentations
Practicum and Internship Training
Health Advocate Program
Biofeedback for Stress Reduction

On-Campus Outpatient Care. This care or primary care is the same as that offered by private general physicians. The Health Service is staffed by the equivalent of six full-time physicians, a full-time psychiatrist, support staff, and student workers. The student benefits include all routine office care and a wide range of diagnostic tests, including x-ray and laboratory procedures. The benefit does not cover pharmacy charges and may include a small front door fee. To be seen at the clinic, call for an appointment 536-2391. Walk in services are available for urgent care from 8:00 A.M. to 4:00 P.M..

Dial-A-Nurse. The Dial-A-Nurse program provides an after hours advisory service 6:00 A.M. to 11:00 P.M. Monday through Thursday, and Friday 6:00 A.M. to Sunday at Midnight, 536-5585.

Dental Services. The Student Emergency Dental Service provides dental care to resolve emergency dental disorders. There is a small front door fee. For appointments or information, call 536-2421.

LOCATION OF SERVICES

On-campus services of the Student Health Program are available at the following locations. The outpatient clinic and x-ray and laboratory services are located in 115 Greek Row, 453-3311, or 536-2391 for appointments. The pharmacy, wellness center, and administration office are located at 112 Greek Row. The

student emergency dental program is located at the College of Technical Careers building, Room 25D, 536-2421. The Student Health Assessment Center is located in the Student Center. Health Advocate Offices are located in 106A Grinnell, 106 Trueblood, and 4 Lentz Hall.

Off-campus services for after hour emergency care are available at Memorial Hospital of Carbondale at 404 West Main Street, 549-0721.

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. See student health manual for specific coverage dates. Dependents of students or staff members of the University are not eligible for Student Health Program benefits.

FEES

The student health fee is assessed each semester and summer session and is distributed to the programs listed 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.

Wellness Center On-Campus
On-Campus Outpatient Program
Student Emergency Dental Service On-Campus

Off-Campus Insurance. The student medical insurance fee is assessed each semester and summer session and is distributed to the off-campus insurance benefits listed below. The overall maximum per illness or injury is $100,000.

Emergency Room
Ambulance
Professional Services
Hospitalization
Out-Patient Surgery
Accidental Death and Dismemberment Benefit

Optional coverages are available as follows: excess supplemental, dependent coverage, and continuing coverage for graduating students. Open enrollment for these programs will take place during the first three weeks of each semester. Optional summer coverage is available to those students not attending the University during summer session. This optional coverage must be purchased prior to the expiration of the spring semester coverage period. Optional graduating coverage must be purchased prior to the expiration date of the regular coverage.

For additional information on benefits and specific details of the student insurance coverage and optional coverages, please call 453-4413. The brochure entitled *Searching for Health* is available upon request.

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. 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 administration office—insurance section of the Student Health Program. When applying, students should provide a copy of their insurance policy. The administration office—insurance section is located in Room 118 of 112 Greek Row, 453-4413.

CONFIDENTIALITY OF INFORMATION

All visits to any division of the Student Health Program 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 Services

Women's Services is a component of the Counseling Center which is devoted to the support, education, and personal growth of women. Women's Services offers short-term individual counseling, theme-oriented support and training groups, workshops, classroom presentations, and consultation to other University units on matters of concern to women. Among other services provided are information and referral, an emergency locator system for students who are parents, advocacy, an extensive women's resource file, and a lending library. Women's Services also cosponsors and promotes small and large scale events such as Women's Safety Week and the Take Back the Night march held each fall. A newsletter, *Women in Transition*, keeps University and community women informed of current issues and upcoming events.

Women's Services coordinates the Re-entry Women's Program and the Campus Safety Program. The Re-entry Program serves women who are returning to school and non-traditional age women entering school for the first time. Services provided through this program include personal and career counseling, information on financial aid, child care, and University procedures, as well as networking opportunities to help re-entry women find support and encouragement from one another. The Campus Safety Program coordinates and promotes efforts to increase women's safety on campus and provides services to women who have been physically or sexually assaulted. Safety related offerings include the Program for Rape Education and Prevention (PREP), self-defense classes, counseling and support for victims of sexual assault, the Brightway Path, the night safety van, and women's safety transit.

Women's Services is located on the second floor of Woody Hall in room B244 (453-3655). Services are available to all persons from the University or community who have a concern relevant to women. Men having questions or concerns relating to women's issues are welcome to use Women's Services. No appointment is necessary; walk-ins are always welcome.

University Career Services

From your arrival on campus through graduation, our goal is to assist your quest to shape an education that is both meaningful and marketable. Individual consultation appointments, professional development seminars, career entry tests, on-campus interviews, job listing and referral services, and career fairs are just a sampling of the activities we sponsor to assist you.

Career counselors are available to help you answer your questions surrounding all aspects of career planning, including choosing a major and finding careers that match interests, personality, and values. Placement counselors representing each instructional unit or college assist students and alumni in developing job search skills and strategies as well as introducing you to prospective employers.

Negotiating entry into college, specific majors, graduate school and even some professions can involve the taking of one or more standard tests. As a regional testing center, University Career Services is committed to providing opportunities for you to successfully complete your goals by offering undergraduate/graduate admission, placement, proficiency, and other specialized tests.

Make your career a priority: stop in and visit with us often! University Career Services is located in Woody Hall, B204, 453-2391.

Counseling Center

The Counseling Center provides services to students who want to resolve various personal, developmental, or emotional problems. It is staffed with professional psychologists and counselors who are qualified to help with such concerns as relationship adjustment difficulties, family conflict, sex role awareness development, unusual eating behaviors, managing anger, drug and alcohol abuse, recovering from sexual abuse, social skills development, becoming more assertive, and others. The Counseling Center provides individual, couple, and group counseling, as well as crisis intervention, within an atmosphere of confidentiality and trust. For more information or to set up an initial (intake) appointment call 453-5371, or stop by A302 Woody Hall.

Services to Students with Disabilities

The University maintains a strong commitment to make all services, programs, and activities equally available to students with disabilities. Students who have disabilities are integrated into regular programs and services. Academic support services are provided through the Disabled 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 include pre-admission information, pre-enrollment planning, orientation, transportation, recreational activities, career counseling and placement services, proctoring academic examinations, alternate materials and equipment for visually impaired students and learning disabled students, reader recruitment and referral, recruitment and referral of personal attendants, interpreters and notetakers for hearing impaired students, wheelchair repair, special parking, liaison with academic departments and service offices, and liaison with agencies such as Department of Rehabilitation Services.

The campus is quite accessible and usable by students who use wheelchairs, and by those who are semi-ambulatory, visually handicapped, hearing impaired, learning disabled or otherwise disabled. The University Housing Office provides modified housing in the Thompson Point Residential Area and in the family housing areas.

Persons with disabilities apply and are considered for admission in the same manner as non-disabled persons. The nature or severity of disability is not considered in the admission determination. Persons with disabilities interested in attending Southern Illinois University at Carbondale are encouraged to visit the campus in order to discuss programs and services and to tour the campus. Prospective students who have a disability are also encouraged to formally apply for admission as far in advance as possible to ensure sufficient time for planning support services after being admitted but before the starting date of the semester.

Any further information may be obtained by writing to the Office of Admissions or the Disabled Student Services Office. The Disabled Student Services Office may be reached by calling (Area Code 618) 453-5738 (V/TDD).

Office of the University Ombudsman

The Office of the University Ombudsman was established to assist individuals in resolving problems that arise in the University. The office is independent from other offices of the University and reports directly to the president. The office acts on complaints or suggestions from students, faculty, and staff in an attempt to ensure that members of the University community receive fair and equitable treatment within the University system. This includes ensuring that decisions affecting individuals are made promptly and with due process, not only with respect to the adequacy of the procedures used in decision making, but also with

respect to the appropriateness of the criteria and rules upon which decisions are based.

The office helps individuals resolve a broad range of problems expeditiously, including academic matters, employment matters, and matters regarding University services. Such assistance may include: advising individuals on steps to take so that their claims may be heard or their questions answered; making referrals to other offices; investigating claims of unfair treatment or erroneous procedures; engaging in mediation to obtain a fair settlement; and assisting in accessing University grievance mechanisms when other methods are unsuccessful. In addition, the ombudsman will intervene in the bureaucratic process on behalf of individuals when such process unnecessarily or unfairly impinges upon them.

The ombudsman office also brings to the attention of those in authority any gaps or inadequacies in existing University procedures that might jeopardize the human rights and civil liberties of members of the University community.

The ombudsman has the authority to access official files as required to fulfill the functions of the office. However, names of persons requesting help cannot be used in the investigation of a case without permission; and all ombudsman records, contacts and communications are kept in the strictest confidence.

The office is located in Woody Hall C302; hours are 8:00 to 4:30, Monday through Friday; and the telephone number is 453-2411.

Clinical Center

The Clinical Center is staffed by professionally trained faculty and by supervised student diagnosticians, therapists, and counselors. It provides diagnostic and treatment services to faculty, staff, University students, and other individuals in the community.

Services include diagnostic assessment of psychological, speech, hearing, reading, and general educational problems. Therapy services encompass various forms of counseling and behavior modification, speech and hearing therapies, physical therapy, and educational remediation.

Alumni Services

Founded in 1896, the Southern Illinois University Alumni Association provides services and support to alumni and students of the university. The association publishes the quarterly *Alumnus* magazine and sponsors alumni chapters, college alumni societies, reunions, Homecoming activities, and a number of special events throughout the year. Ongoing services to students include externships, opportunities for graduating seniors to serve career internships with alumni, and the Student Alumni Council, a registered student organization that links current students with alumni.

International Programs and Services

International Programs and Services is an administrative unit within the Office of International and Economic Development. Programs and services offered by the unit are operated through three divisions: International Students and Scholars, Study Abroad, and International Development.

International Students and Scholars. A comprehensive range of programs and services is provided to international students and the broader community to facilitate educational and cultural exchange by the International Students and Scholars division. These include the areas of immigration and financial services, educative and supportive services, and intercultural community activities.

Immigration and financial services include processing financial clearance for admissions of foreign students, serving as a liaison with foreign governments and sponsoring agencies, and providing certification for foreign currency exchange. Information about sources of financial aid for international students is available. Also, assistance with U.S. immigration regulations, visas, and interpretation of the law pertaining to non-immigrant students and scholars is provided. Forms prescribed for use by the Immigration and Naturalization Service for documenting foreign students and scholars are available here.

Educative and supportive services add a full complement of programs and activities from pre-arrival information for new students to preparation for going home workshops. Within this area are: a monthly newsletter, the *International Dateline*; individual foreign student advisement and counseling; advisement of international student associations and the International Student Council; assistance with initial arrival and settling in; and referrals to community or other campus agencies. The annual International Festival is a major event of interest to the University community.

International Programs and Services works closely with the International Friends Club, a community volunteer organization, on community programs. Eight programs are offered to international students and their families and international visitors for the purpose of intercultural understanding and exchange. The programs include the Hospitality Program, English in Action, Language Exchange, Speakers' Bureau, International Custom Cooking Demonstration, American Cuisine, International Spouses Group, and a Loan Closet. An extension of the Speakers' Bureau is the IN GEAR program, an International Network for Global Educational Activities in Rural Schools, whereby international students are invited to speak in public school classrooms. Information about any of these programs may be obtained from International Programs and Services. International Students and Scholars is located at 910 South Forest. The telephone number is 453-5774.

Study Abroad Programs. The study abroad division coordinates services for American students and faculty, including international grant programs, exchanges, and study abroad programs. It is the central referral point for information on the student and faculty Fulbright programs and on the British Marshall, International Research and Exchange Board (IREX), Belgian-American Educational Association, and Rhodes scholarships. Students may also participate in inter-university international exchange programs, semester abroad programs, and in travel/study programs offered during the summer and intersession periods. Study Abroad Programs is located at 803 South Oakland. The telephone number is 453-7670.

International Development. The International Development division provides University-wide coordination, support, and leadership for a wide variety of developmental activities. These activities include research and dissemination of information on externally funded programs, maintenance of an international resource collection, development of proposals for grants and projects, administration of international agreements, coordination of services for visiting international scholars and delegations, and reports, planning statements, and studies on international activities.

Assistance is provided to faculty and staff in the exploration of international linkages, grant or project ideas, identification of external funding sources, proposal development, campus coordination, and follow-up activities. International Development is located at 803 South Oakland. The telephone number is 453-7670.

7 University Policies

Determination of Residency Status

The following is a direct quotation from the Board of Trustees' "Residency Status Policies", which govern 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 term *the State* means the State of Illinois except in the following instances: (1) For the purposes of assessing undergraduate- and graduate-level student tuition, the Presidents, with the agreement of the Chancellor, may take the term "the State" to include the Kentucky Counties of Ballard, Caldwell, Calloway, Carlisle, Crittenden, Fulton, Graves, Hickman, Livingston, Lyon, McCracken, Marshall, Trigg, and Union. (2) For purposes of assessing undergraduate- and graduate-level student tuition for not more than six semester or nine quarter hours, the Presidents, with the agreement of the Chancellor, may take the term "the State" to include the State of Missouri. Neither exception may apply to the assessment of tuition at the School of Dental Medicine, the School of Law, or the School of Medicine. 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.

Note. On October 7, 1981, and effective with Spring Semester 1982, the above policy exceptions for Kentucky and Missouri residents were approved for *graduate students only.* Graduate students from Missouri who take more than six semester hours per term will be charged non-resident tuition for *all* semester hours taken during the term. *Effective Summer 1986, the above policy exception for Kentucky residents was extended to include undergraduate students.*

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 in 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 the individual registers at the University, and must continue to maintain a bona fide residence 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 the 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 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 the student has been supported for a period of at least three consecutive months immediately preceding registration at the University for any term, if the person's parents are dead or have abandoned said person 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 said person (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 the 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, the minor shall be considered to be a resident even though the 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 a dwelling place has been maintained within the State uninterruptedly for a period of at least three consecutive months immediately preceding the term registration 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 the individual continues to reside in the State; however, a spouse through which a student claims residency must demonstrate 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 who meets and complies with all of the other applicable requirements of these regulations may establish residence status unless the person holds a visa which on its face precludes an intent to reside in the United States.

Note. On May 12, 1988 the above policy exception for persons without United States citizenship was approved effective Summer 1988.

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 the individual was a resident of the State at the time of entry into military service, except as otherwise specified by Board policy.

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

Contractual Agreements

The Presidents, with the approval of the Chancellor, may enter into agreements with other institutions in or out of state under the terms of which students at the other institutions are defined as residents of the State of Illinois.

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 deter-

mined 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 residence is a domicile of an individual which is the true, fixed, and permanent home and place of habitation. It is the place to which, whenever absent, the individual 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, the student may appeal the ruling to the President or his designee by filing with that official within twenty days of the notice of the ruling a written request.

Immunization

Students who enroll in on-campus courses shall present to the Student Health Program proof of immunity evidencing the following immunizations, UNLESS they are exempt from doing so as hereinafter provided:

I. Diphtheria, Tetanus
   A) Any combination of three or more doses of DPT, DT, or Td vaccine, with the most recent dose having been received within 10 years prior to enrollment.
   B) The minimum time interval between the first and second dose must have been at least four weeks, with the third dose having been received at least six months after the second or last dose of the basic series.
   C) Receipt of Tetanus Toxoid (T.T.) vaccine is not acceptable in fulfilling this requirement.

II. Measles
   A) Immunization with two live measles virus vaccines on or after the first birthday. If vaccine was received prior to 1968, proof must be provided that a live virus vaccine, without gamma globulin, was administered; or
   B) Laboratory (serologic) evidence of measles immunity; or
   C) A physician's signed confirmation of disease history and date of conclusive diagnosis.

III. Rubella
   A) Immunization with rubella vaccine on or after the first birthday; or
   B) Laboratory (serologic) evidence of rubella immunity.
   C) History of disease is not acceptable as proof of immunity.

IV. Mumps
   A) Immunization with live mumps vaccine on or after the first birthday; or
   B) A Physician's signed confirmation of disease history and date of conclusive diagnosis.
   C) Laboratory (serologic) evidence of mumps is not acceptable as proof of immunity.

PROOF OF IMMUNITY

I. Proof of immunity may be provided by a certificate of immunity containing the following information:
   A) The month, day, and year of vaccine receipt for measles, mumps, and rubella. Whole year dates (e.g. 1980) are acceptable only when it is clear that the student was at least twelve months of age when the vaccine was received.
   B) The month, day, and year of vaccine receipt for diphtheria and tetanus.

II. Proof of immunity may also be provided by a copy of the student's Illinois high school health record which complies with the immunization requirements.

EXEMPTIONS

I. This policy does not apply to:
   A) persons enrolled at the University prior to Fall Semester 1989;
   B) persons born before January 1, 1957;
   C) persons whose instruction solely involves research, field work or study outside of a classroom environment.

II. Medical Exemption
   A) No proof of immunization shall be required if a physician licensed to practice medicine in all of its branches, certifies that any immunization required herein is medically contraindicated.

III. Religious Exemption
   A) No proof of immunization shall be required if the person or his or her parent(s) or guardian state, in writing, an objection to immunization on religious grounds.

A student to whom this requirement applies who enrolls without providing the required proof of immunity shall be precluded from enrolling in a subsequent term until such time as appropriate documentation is presented to the Student Health Program or until a medical or religious exemption is granted by the University.

These requirements are drafted in accordance with the College Immunization Code promulgated by the State Department of Public Health. In the event that said Code is changed and conflicts with these requirements, The Code shall be controlling. If students have any questions concerning these requirements, they should contact the Student Health Program.

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 parents, 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. Date 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 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 evaluating 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 the 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 about 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 educational 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 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 Financial Aid Office maintains records of student 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 the Financial Aid Office.

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 the 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 director of Student Development.

E. Placement Records

The University Placement Center 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 employers. It consists of self-completed resumes and various personal references. For information concerning these records, contact the director of the University Placement Center.

V. Access to Records

A. Right to Inspect or Review Educational Records
   1. The student has the right to physically review his/her 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.

Student Conduct Code

I. Introduction

A. Purpose

Southern Illinois University at Carbondale is dedicated not only to learning, research, and the advancement of knowledge, but also to the development of ethically sensitive and responsible persons. The University seeks to achieve these goals through sound educational programs and policies governing individual conduct that encourage independence and maturity. By accepting membership in this University, an individual joins a community characterized by free expression, free inquiry, intellectual honesty, respect for others, and participation in constructive change. All rights and responsibilities exercised within this academic environment shall be compatible with these principles.

B. Rights and Responsibilities

Students shall be free to examine all questions of interest to them and to express opinions. They shall be guaranteed all constitutional rights including free inquiry, expression, and assembly. All regulations shall seek the best possible reconciliation of the principles of maximum academic freedom and necessary order.

C. Title/Authority/Enforcement

These regulations shall be known as the Student Conduct Code for Southern Illinois University at Carbondale. The regulations contained herein are established under the authority granted by law to the Board of Trustees to establish rules and regulations for Southern Illinois University and pursuant to Chapter 3 *Policies of the Board of Trustees C* authorizing the President to develop regulations dealing with student rights and conduct. All students of the University community have the responsibility to comply with these regulations. The responsibility for the enforcement of the Code rests with the President of Southern Illinois University at Carbondale or that officer's designees. The effective date for this Code is June 9, 1986.

D. Jurisdiction

The University community has a responsibility to provide its members those privileges, opportunities, and protections which encourage and maintain an environment conducive to educational development. Accordingly, this Code shall apply to (1) conduct occurring on property owned or controlled by the University, and (2) conduct occurring elsewhere, but only if the student's conduct has substantially interfered with the University's educational functions, including, but not limited to, interference with the educational pursuits of students, faculty, or staff or conduct having its origins in the educational process.

When a student has been apprehended for violation of a law the University will not request special consideration because of the individual's status as a student. The University will cooperate fully with law enforcement and other agencies administering a corrective or rehabilitative program for the student. The University reserves the right to initiate concurrent disciplinary action.

Academic dishonesty violations in the School of Law will be adjudicated through that unit's Professional Ethics Policy. Academic dishonesty violations in the School of Medicine will be adjudicated

through that unit's Student Progress System. Law students and medical students on the Carbondale campus charged with other violations of the Code will be treated as any undergraduate and graduate student. In addition, law students charged with violations of social misconduct may also be charged under the School of Law's Professional Ethics Policy and medical students on the Carbondale campus charged with violations of social misconduct may also be charged under the School of Medicine's Student Progress System.

E. Definitions
   1. "Academic officer" means any Instructor, Department Chairperson, Dean, Director, or Coordinator.
   2. "Adjudication" means the resolution of disciplinary charges, including the appeal process.
   3. "Admission" means admission, readmission, re-entry, registration, and re-registration as a student in any educational program at the University.
   4. "Appeal" means a process for reviewing an earlier decision.
   5. "Board" means the Board of Trustees of Southern Illinois University.
   6. "Charge" means an accusation of a violation of the Student Conduct Code of Southern Illinois University at Carbondale.
   7. "Code" means the Student Conduct Code for Southern Illinois University at Carbondale.
   8. "Days" means all days when classes are in session.
   9. "Formal" disciplinary procedures are disciplinary procedures used when the question of guilt is contested or when the student accepting responsibility for the disciplinary charges prefers to have a full hearing on the sanction.
   10. "Informal" disciplinary procedures are disciplinary procedures used when the question of guilt is not contested and the student prefers to have an immediate decision on the sanction.
   11. "Instructor" means any teaching assistant or member of the faculty.
   12. "Members of the University Community" means the members of the Board of Trustees, employees, and registered students of Southern Illinois University at Carbondale.
   13. "President" means that individual appointed by the board as the chief executive, administrative, and academic officer of Southern Illinois University at Carbondale and any person authorized or directed by the president to act on that officer's behalf.
   14. "Sanction" means a measure imposed on account of violation(s) of the Code.
   15. "Student" means any person registered for, enrolled in, or auditing one or more classes.
   16. "University" means Southern Illinois University at Carbondale.
   17. "University official" means any individual authorized or directed by the President or that officer's designee to perform any delegated function.
   18. "Violation" means a breach of conduct governed by the Code. The standard of proof used shall be a preponderance of the evidence.

II. Violations

A. Acts of Academic Dishonesty
   1. Plagiarism: Representing the work of another as one's own work.

2. Preparing work for another that is to be used as that person's own work.
3. Cheating by any method or means.
4. Knowingly and willfully falsifying or manufacturing scientific or educational data and representing the same to be the result of scientific or scholarly experiment or research.
5. Knowingly furnishing false information to a University official relative to academic matters.
6. Soliciting, aiding, abetting, concealing, or attempting conduct in violation of this Code.

B. Acts of Social Misconduct
1. Violence
   a. Rape
   b. Physical abuse
   c. Direct threat of violence
   d. Harassment*
   e. Intimidation
   f. Intentional obstruction or substantial interference with any person's right to attend or participate in any University function.
   g. Participation in any activity to disrupt any function of the University by force or violence
   h. Reckless behavior representing a danger to person(s)
2. Property Damage
   a. Arson
   b. Willful or malicious damage or destruction of property
   c. Reckless behavior representing a danger to property
3. Weapons (unauthorized possession and/or use)
   a. Firearms
   b. Explosives and/or explosive devices
   c. Any type of arms defined as weapons in Chapter 38 of the Illinois Revised Statutes
   d. Pellet guns and B-B guns
   e. Fireworks
4. Disobedience
   a. Disobedience, interference, resistance, or failure to comply with direction of an identified University official acting in the line of duty.
   b. Trespassing
   c. Unauthorized entry
5. Deception
   a. Furnishing false information to the University with intent to deceive
   b. Forgery, alteration, or misuse of University documents, records, and identification cards
   c. Forgery or issuing a bad check with intent to defraud
6. Theft
   a. Misappropriation or conversion of University funds, supplies, equipment, labor, material, space, or facilities
   b. Possession of stolen property
7. Safety
   a. Intentionally entering false fire alarms
   b. Bomb threats
   c. Tampering with fire extinguishers, alarms, or safety equipment

d. Tampering with elevator controls and/or equipment
e. Failure to evacuate during a fire, fire drill, or false alarm

8. Cannabis or Controlled Substances (as defined in Chapter 56½ of the Illinois Revised Statutes)
   a. Manufacture
   b. Sale or delivery
   c. Unauthorized possession and/or use
9. Hazing (as defined in Chapter 144 of the Illinois Revised Statutes)
10. Abusive or disorderly conduct
11. Violations of University Housing regulations
12. Violations of other duly promulgated University policies or regulations, including but not limited to, alcohol, demonstrations, pets, smoking, solicitation, and guidelines for access to data and programs stored on the computer, will be adjudicated under this Code.
13. Acts Against the Administration of this Code
    a. Initiation of a complaint or charge knowing that the charge was false or with reckless disregard of its truth
    b. Interference with or attempt to interfere with the enforcement of this Code, including but not limited to, intimidation or bribery of hearing participants, acceptance of bribes, dishonesty, or disruption of proceedings and hearings held under this Code.
    c. Knowing violation of the terms of any disciplinary sanction or attached conditions imposed in accordance with this Code.
14. Soliciting, aiding, abetting, concealing, or attempting conduct in violation of this Code.

*Charges of sexual harassment may be adjudicated under the University Sexual Harassment Policy.

III. Sanctions

The following are sanctions which may be imposed for a violation of this Code. Also, a condition may accompany a sanction. Conditions include, but are not limited to, restitution of damages, work projects, required counseling or therapy, required academic performance, etc. A condition may include loss of certain university privileges. If a condition accompanies a sanction, the condition must be related to the violation.

A. Failure of an assignment, quiz, test, examination, or paper
   A failing grade (F) may be assigned for the work in connection with which the violation occurred.
B. Failure in a course
   A failing grade (F) may be assigned for the course in which the violation occurred.
C. Disciplinary Reprimand
   In cases of minor violations and when the violation is acknowledged by the student, a written reprimand may be issued by the dean for Student Life or that officer's designee upon the recommendation of a University official. The purpose of the reprimand shall be to call to the student's attention the responsibility of meeting certain minimal community standards. Since a reprimand is given only when the violation is acknowledged the sanction may not be appealed.
D. Disciplinary Censure
   Disciplinary censure is a written warning to the student that the cited behavior is not acceptable in the University community and

that further misconduct may result in more severe disciplinary action. The student may appeal the finding of a violation but may not appeal the severity of the sanction.

E. Disciplinary Probation
Disciplinary probation removes a student from good disciplinary standing. The probation shall last for a stated period of time and until specific conditions, if imposed, have been met. Any misconduct during the probationary period will bring further disciplinary action and may result in suspension. Probationary status prevents the student from representing the University in some extracurricular activities and may result in the loss of some types of financial assistance.

F. Disciplinary Suspension
Disciplinary suspension is an involuntary separation of the student from the University for a stated period of time and until a stated condition, if imposed, is met after which readmission will be permitted. Disciplinary suspension is entered on the student's transcript for the duration of the suspension.

G. Indefinite Suspension
Indefinite suspension is an involuntary separation of the student from the University for an unprescribed period of time and until a stated condition, if imposed, is met. Any consideration for readmission requires a written petition to the appropriate administrative official before readmission will be considered. The indefinite suspension is entered on the student's transcript for the duration of the suspension.

H. Interim Separation
If the president or that officer's designee has reasonable cause to believe that a serious and direct threat to the safety and well-being of the members and/or property of the University community will be present if an individual is permitted to remain an active member of the community an interim separation may be imposed. A preliminary hearing or the opportunity for a preliminary hearing shall be afforded. If it is impossible or unreasonably difficult to conduct a preliminary hearing prior to the interim separation the individual shall be afforded the opportunity for such a preliminary hearing at the earliest practical time. The purpose of the preliminary hearing is to determine if there is justification to invoke an interim separation. During the preliminary hearing, the student will be provided a statement of the reasons for interim separation and will be afforded an opportunity to rebut. Interim separation is temporary and shall be enforced only until the completion of a full disciplinary hearing. A full disciplinary hearing shall be provided within a reasonable period of time.

IV. Policies and Procedures Applicable to Academic Dishonesty

A. Judicial Structure

1. Department Level
The department chairperson shall have initial jurisdiction over complaints of academic dishonesty and may adjudicate the case if the student accepts responsibility for the violation(s). In any case where the student does not accept responsibility for the violation(s) the chairperson shall review the complaint of alleged academic dishonesty and decide whether there are sufficient grounds to formally charge the student with a violation of the code. When social misconduct is also involved in an incident(s) of

academic dishonesty, the chairperson shall charge the student with all violations. All charges shall be adjudicated under the provisions for academic dishonesty.

2. College/School Level
   a. Each dean has the responsibility for the formal resolution of charges against a student. For the purpose of administering this code, the Graduate School dean shall operate at the level of other deans.
   b. Charges of falsifying information on applications for admission shall be adjudicated by the director of Admissions and Records. The director of Admissions and Records, for the purpose of administering this Code, shall operate at the level of other deans.
3. Presidential Level
   This level has jurisdiction to hear appeals.

B. Informal Disciplinary Procedures
1. Informal Hearing
   In cases where the student admits to a violation of the Code relating to academic dishonesty the matter may be adjudicated at the department level. An informal discussion between the instructor and the student shall be held. If the student admits to a violation of the Code, the instructor shall inform the departmental chairperson and the student whether, as a sanction for the violation, the instructor will assign a failing grade for the work and/or course. The instructor shall also recommend to the chairperson any other sanction that may be imposed, pursuant to IV.B.2. The chairperson shall meet with the instructor and the student, receive the acknowledgement of responsibility from the student, receive the recommendation from the instructor, and apprise the student of the sanction.
2. Sanctions
   The full disciplinary history of the student shall be considered in determining the sanction. Sanctions which may be imposed when the student accepts responsibility for the conduct are:
   a. The student may be removed from the class for the remainder of the testing period.
   b. The instructor may assign the student a failing grade for the work and/or course.
   c. The student may be placed on disciplinary probation.
   d. Any combination of the above.
   e. The department chairperson may recommend to the dean that the student be suspended from the University. The departmental chairperson shall also inform the student in writing that a disciplinary suspension is recommended as an appropriate sanction for the student's violation of the Code.
      (1) If the student elects to challenge the severity of the recommended suspension, the student may request an informal hearing on the proposed sanction(s) before the dean.
      (2) The student must submit a request in writing for an informal hearing on the proposed sanction(s) within 5 days of receipt of the chairperson's recommendation.
      (3) In such cases the dean or that officer's designee shall meet with the student, the chairperson and/or instructor, and apprise the student of the sanction(s).

3. Notification
   The department chairperson shall send written verification of the sanction(s) to the student. Such notification will normally be sent within five days of the meeting with the instructor and the student.
4. Appeal
   The student may appeal the severity of the sanction or failure to follow prescribed procedure, pursuant to IV.C.8. A student may not appeal the question of guilt.

C. Formal Disciplinary Procedures
   1. Initiation of a Complaint
      Any member of the University community may initiate disciplinary proceedings by filing a complaint within twenty days of discovery of an alleged violation of the Student Conduct Code.
      a. The complaint must be made in writing with all available evidence attached.
      b. The complaint shall be filed with the departmental chair of the unit in which the violation is alleged to have occurred.
      c. The complaint may include a recommendation concerning the appropriate sanction(s) to be imposed if, following formal adjudication, the student is found in violation of the Code.
      d. In any case initiated by an instructor, the complaint shall state whether or not the instructor will assign a failing grade for the work and/or course if, following formal adjudication, the student is found in violation of the Code in the manner alleged in the complaint. In any such case the instructor shall assign an "Incomplete" in lieu of a letter grade pending adjudication and final resolution of the complaint.
   2. Formal Charges
      The departmental chairperson shall review the complaint and, within ten days, determine whether there are grounds to believe a violation may have occured.
      a. If there are sufficient grounds to believe a violation may have occured, within five days of such determination the chairperson shall notify the student in writing of the violation with which the student is charged. A copy of the charges shall be submitted to the appropriate academic Dean.
      b. If there are no grounds for disciplinary charges the complainant shall be notified. If the complainant wishes to proceed with a disciplinary charge, a written request must be submitted to the appropriate academic dean within (10) ten days of the receipt of the notification. The dean shall review the request, the complaint, and the departmental chair decision and decide whether to allow the complainant to pursue formal charges of the alleged violation set forth in the complaint.
   3. Formal adjudication
      In cases of alleged academic dishonesty where guilt is disputed by the student, the case will be adjudicated at the dean's level with a formal hearing. The dean shall notify the student in writing regarding the date, time, and place of the hearing. The notification will be considered to have been delivered if the notice is sent to the current local address of the student as provided to the Office of Admissions and Records by the student.

Thus, failure to notify the University of changes of address could result in a hearing being held *in absentia*.

a. The student has the right to:
   (1) Be apprised of all evidence.
   (2) Hear and question available witnesses. Sworn statements will be accepted from those persons unable to attend the hearing.
   (3) Not be compelled to offer evidence which may be self-incriminating.
   (4) Receive a written decision specifying judicial actions.
   (5) Appeal the decision, pursuant to IV.C.8.

b. The student has the option to have:
   (1) Advisory assistance. The responsibility for selecting an advisor is placed on the charged student. The advisor may be any individual except a principal in the hearing. The advisor shall be limited to advising the student and shall not participate directly in the hearing.
   (2) An open or closed hearing.
   (3) Witnesses testify in his/her behalf. Sworn statements shall be accepted from those persons unable to attend the hearing. Character witnesses may be excluded by the hearing agent.

c. Hearing agent
   The charged student may submit a preference for a hearing before a judicial board or the dean or his/her designee. The dean shall decide the hearing agent.

4. Judicial Hearing Agents
   a. Judicial Board Directives
      (1) Size
      A judicial board shall be comprised of seven members. A quorum required to conduct a hearing shall be five members. A decision shall be reached by majority vote.
      (2) Membership
         (a) Student members shall meet the following standards:
            (i) Fulltime as defined by the director of Admissions and Records.
            (ii) Good disciplinary standing since matriculation.
            (iii) Minimum grade point average of 2.5 (undergraduate); 3.0 (graduate); or professional student in good standing.

         NOTE: Fulltime University employees who are enrolled in classes may not serve as student members. Graduate assistants and student workers in the department in which the incident occurred shall be excluded from judicial boards.

         (b) Faculty members may include any person under faculty appointment, excluding administrators.

         (c) All appointments shall be reviewed by the Office of the director of Student Development to ensure that candidates meet the minimal requirements. A list of judicial board members will be available upon request within the office of the academic dean.
      (3) Judicial Board Operating Papers
      Each Judicial Board may develop its own operating paper. Each operating paper shall be reviewed by the office of the

director of Student Development to ensure consistency with the provisions of this Code.

(4) Administrative Advisors
Each judicial board shall have an administrative advisor from the Office of Student Judicial Affairs. The advisor's role shall be limited to providing guidance and clarification. The advisor shall sit with the panel in both open and executive sessions.

(5) Terms
Each judicial board shall be in session for twelve weeks during the fall and spring terms and for four weeks during the summer term. A board is not expected to meet during the first two nor the last two weeks of a term. Disciplinary cases shall be adjudicated by an administrative hearing officer when a board is not in session or is defunct.

(6) Powers
A judicial board shall make a decision of guilt or innocence and shall make a recommendation on the sanction to the Dean.

b. Administrative Hearing Officer
The administrative hearing officer shall be the academic dean or that officer's designee.

5. Judicial Hearings

a. Time limitations

(1) A student electing formal adjudication shall have a minimum of five days written notice prior to a hearing.

(2) A student shall have five days after receiving notification of the decision in which to submit an appeal.

b. Failure to appear
Initial jurisdiction hearings shall be held *in absentia* when the charged student fails to appear. An appeal shall be dismissed when the student fails to appear.

c. Tape recordings
All formal judicial hearings shall be tape recorded. After the appeal period has expired the tape may be erased.

d. Challenge for cause
A student may challenge panel members for cause. The decision to remove a panel member will be made by the other panel members.

e. Peremptory challenge
A student may challenge one panel member without assigning any cause. A peremptory challenge will be automatically honored by the chair of the panel.

f. Confidentiality
All evidence, facts, comments, and discussion at a closed hearing and all executive sessions shall be held in strict confidence. Failure to maintain confidentiality may result in removal of judicial board members by the dean.

6. Sanctions
A student's disciplinary history shall have no bearing on the question of guilt or innocence. If, however, a student is found to be in violation of the Code, the full disciplinary history shall be considered in determining the sanction. The academic dean shall request the student's disciplinary record from the Office of Student Judicial Affairs. The academic dean and the director of Stu-

dent Development shall develop lines of communication to keep each other apprised of a student's disciplinary history for this purpose. Sanctions which may be imposed are:

(1) The instructor may assign the student a failing grade for the work and/or course.
(2) The student may be placed on disciplinary probation.
(3) The student may be suspended from the University.
(4) Any combination of the above.

7. Notification
The dean shall send written notification of the decision of the hearing and sanction(s) to the student. Such notifications will normally be sent within five days of the receipt of the judicial board's recommendation or within five days of the administrative hearing.

8. Appeals
Any disciplinary determination or sanction involving academic dishonesty may be appealed from the dean's level by submitting an application for appeal to the vice president for academic affairs and provost within five days after receiving notification of the prior decision. However, the right of appeal does not guarantee that an appeal will be granted nor does it entitle the student to a full rehearing of the case. An appeal hearing, if granted, will be limited to the issues set forth in subparagraph c. below.

a. The student may submit a preference for an appeal hearing before a judicial board or an administrative hearing officer. The vice president for academic affairs and provost shall decide the hearing agent.
b. The burden of proof at the initial jurisdiction level is on the University. At the appeal level, however, the student bears the burden of demonstrating error as defined in the following item.
c. Three issues constitute possible grounds for an appeal:
   (1) Were judicial procedures correctly followed?
   (2) Did the evidence justify a decision against the student?
   (3) Was the sanction(s) imposed in keeping with the gravity of the violation? Previous violation(s) of the Code and the accompanying sanction(s) will be considered in determining a proper sanction for a current violation.
d. The appropriate committee of the judicial board or the administrative hearing officer will review the appeal to ascertain whether there are sufficient grounds for a hearing.
e. If an appeal hearing is granted the agent hearing the appeal will not rehear the case. The agent will limit its review to the specific points of the appeal that were accepted at the screening review.
f. The agent hearing the appeal may:
   (1) Affirm the decision(s) of the initial jurisdiction.
   (2) Affirm the decision(s) and reduce the sanction.
   (3) Modify the decision(s) of violation and reduce the sanction.
   (4) Reverse the decision(s) of violation, remove the sanction, and dismiss the case.
g. A student dissatisfied with the decision on appeal may seek review by the president by submitting such a request in writing within five days after receiving notification of the prior de-

cision. Review by the president shall also be limited to the issues specified in subparagraph c. above.

h. Further appeal may be made to the Board of Trustees by filing an application for appeal in accordance with Article VI Section 2 of the Board of Trustees Bylaws. The Board of Trustees will review only those administrative decisions which meet the requirements for review established by the Board's Bylaws.

9. Implementation of Sanction(s)
   a. The disciplinary sanction(s) shall be implemented when:
      (1) The student has waived or exhausted the right of appeal, or
      (2) The appeal period has expired.
   b. The sanction shall be as specified by the final adjudicating agent. However, when the sanction relates to the assignment of a grade, the instructor has the responsibility of assigning the grade. In any case where an "incomplete" was assigned for a course pending adjudication of charges of academic dishonesty against the student, the instructor shall immediately change the "incomplete" to an appropriate letter grade.
   c. A student separated from the University for disciplinary reasons is subject to the normal guidelines for tuition and fee refunds, grades, and financial penalties for terminating a housing contract.
   d. Following the implementation of the sanction, all records relating to the case will be filed with the director of Student Development.
10. Exceptions
    The above procedures shall be followed unless an exception is authorized in writing by the Vice President for Academic Affairs and Research. All requests for temporary exceptions shall be submitted in writing to the Vice President. Any exception allowed shall be limited to individual cases and shall not infringe upon a student's right to written notice, opportunity for a hearing, and an appeal.

V. Policies and Procedures Applicable to Social Misconduct

A. Judicial Structure
   1. Unit Level
      A case may be resolved informally by a University official in a department/office as authorized by the director of Student Development, pursuant to V.B.1. All cases in which guilt is disputed shall be referred to the Office of Student Judicial Affairs.
   2. Campus Level
      The Campus Judicial Board for Discipline and/or the coordinator of Student Judicial Affairs has initial jurisdiction over social misconduct not handled by other offices. The campus level also shall hear appeals from the unit level.
   3. Presidential Level
      This level has jurisdiction to hear appeals.

B. Informal Disciplinary Procedures
   1. Informal Hearing
      In cases where the student accepts responsibility for the social misconduct the matter may be adjudicated at the departmental/office level. An informal discussion between the University official and the student shall be held. If the student accepts re-

sponsibility for the charge(s) the University official shall recommend a sanction to the coordinator of Student Judicial Affairs.

2. Sanctions
   The full disciplinary history of the student shall be considered in determining the sanction. The University official may recommend to the coordinator of Student Judicial Affairs any of the following sanctions:
   a. Disciplinary reprimand
   b. Disciplinary censure
   c. Disciplinary probation
   d. Disciplinary suspension
   e. Indefinite suspension
   f. Interim suspension
3. Notification
   The coordinator of Student Judicial Affairs shall send written verification of the sanction to the student within five days of the receipt of the recommendation.
4. Appeals
   A student may appeal the severity of the sanction pursuant to V C 9 or failure to follow prescribed procedure. A student may not appeal the question of guilt.

C. Formal Disciplinary Procedures
   1. Initiation of a Complaint
      a. Any member of the University community may initiate disciplinary proceedings by filing a complaint with the coordinator of Student Judicial Affairs within twenty days of the discovery of an alleged violation of the Student Conduct Code. The complaint must be in writing with all available evidence attached.
      b. The coordinator of Student Judicial Affairs shall make a preliminary review of the complaint. If there are no grounds for disciplinary charges or if the complaint should be processed under another policy the complainant shall be notified. If the complainant wishes to proceed with a disciplinary charge a written request must be submitted to the director of Student Development within ten days of the receipt of the notification. The director shall review the request, the complaint, and the coordinator of Student Judicial Affairs decision and decide whether to pursue formal charges.
   2. Formal Charges
      In cases of alleged social misconduct when guilt is disputed by the student, the case will be adjudicated at the appropriate level with a formal hearing. The coordinator of Student Judicial Affairs shall notify the student in writing regarding the charge(s) as well as the date, time, and place of the hearing. The notification will be considered to have been delivered if the notice is sent to the current local address of the student provided to the Office of Admissions and Records by the student. Thus, failure to notify the University of changes of address could result in a hearing being held *in absentia.*
   3. Fact-Finding Conference
      The coordinator of Student Judicial Affairs shall conduct a fact-finding conference which shall include the charged student and may include the complainant and/or witnesses. Matters to be examined at the fact-finding conference are:
      a. The charge(s) filed against the student.

b. The evidence against the student.
c. The witnesses, if any, that shall testify.
d. The provisions of the Student Conduct Code.
e. Whether to continue disciplinary procedures.
f. The student may elect to acknowledge the violation(s) at the fact-finding conference and have a decision made on the sanction by the coordinator of Student Judicial Affairs at the fact-finding conference. If this option is chosen the student may appeal only the severity of the sanction.
g. The student may elect to have a formal hearing scheduled in the future.
h. If the student fails to make an appointment for or fails to keep a scheduled appointment for a fact-finding conference the case may automatically be referred to the appropriate hearing agent for a hearing.

4. Formal Adjudication
   a. The student has the right to:
      (1) Be apprised of all evidence.
      (2) Hear and question available witnesses. Sworn statements will be accepted from those persons unable to attend the hearing.
      (3) Not be compelled to offer evidence which may be self-incriminating.
      (4) Receive a written decision specifying judicial actions.
      (5) Appeal the decision, pursuant to V.C.9.
   b. The student has the option to have:
      (1) Advisory assistance. The responsibility for selecting an advisor is placed on the charged student. The advisor may be any individual except a principal in the hearing. The advisor shall be limited to advising the student and shall not participate directly in the hearing.
      (2) An open or closed hearing.
      (3) Witnesses testify in his/her behalf. Sworn statements shall be accepted from those persons unable to attend the hearing. Character witnesses shall be excluded.
   c. Hearing agent
      The charged student may submit a preference for a hearing before a judicial board or an administrative hearing officer. The appropriate University official may decide the hearing agent.
5. Judicial Hearing Agents
   a. Judicial Board Directives
      (1) Size
         A judicial board shall be comprised of seven members. A quorum required to conduct a hearing shall be five members. A decision shall be reached by majority vote.
      (2) Membership
         (a) Student members shall meet the following standards:
            (i) Fulltime as defined by the Director of Admissions and Records.
            (ii) Good disciplinary standing since matriculation.
            (iii) Minimum grade point average of 2.5 (undergraduate); 3.0 (graduate); or professional student in good standing.

NOTE: Fulltime University employees who are enrolled in classes may not serve as student members.

(b) Faculty members may include any person under faculty appointment, excluding administrators.

(c) All appointments shall be reviewed by Student Development to ensure that candidates meet the minimal requirements. A list of judicial board members will be available upon request within the office of the director of Student Development.

(3) Judicial Board Operating Papers
Each Board may develop its own operating paper. Each operating paper shall be reviewed by the Office of Student Development to ensure consistency with the provisions of this Code.

(4) Administrative Advisors
Each judicial board shall have an administrative advisor from the Office of Student Judicial Affairs. The advisor's role shall be limited to providing guidance and clarification. The advisor shall sit with the panel in both open and executive sessions.

(5) Terms
Each judicial board shall be in session for twelve weeks during the fall and spring terms and for four weeks during the summer term. A board is not expected to meet during the first two nor the last two weeks of a term. Disciplinary cases shall be adjudicated by an administrative hearing officer when a board is not in session or is defunct.

(6) Powers
A judicial board shall make a decision of guilt or innocence and shall make a recommendation on the sanction to the appropriate administrator.

b. Administrative Hearing Officer
An administrative hearing officer appointed by the director of Student Development shall be available at all levels to adjudicate disciplinary cases.

6. Judicial Hearings

a. Time Limitations

(1) A student electing formal adjudication shall have a minimum of five days written notice prior to a hearing.

(2) A student shall have five days after receiving notification of the decision in which to submit an appeal.

b. Failure to appear
Initial jurisdiction hearing shall be held *in absentia* when the charged student fails to appear. An appeal shall be dismissed when the student fails to appear.

c. Tape recordings
All formal judicial hearings shall be tape recorded. After the appeal period has expired the tape may be erased.

d. Challenge for cause
A student may challenge panel members for cause. The decision to remove a panel member will be made by the other panel members.

e. Peremptory challenge
A student may challenge one panel member without assigning any cause. A peremptory challenge will be automatically honored by the chair of the panel.

f. Confidentiality
All evidence, facts, comments, and discussion at a closed hearing and all executive sessions shall be held in strict confidence. Failure to maintain confidentiality may result in administrative removal of judicial board members by the director of Student Development.

7. Sanctions
A student's disciplinary history shall have no bearing on the question of guilt or innocence. If, however, a student is found to be in violation of the Code, the full disciplinary history shall be considered in determining the sanction. The director of Student Development shall request the student's disciplinary records from the academic dean. The academic dean and the director of Student Development shall develop lines of communication to keep each other apprised of the student's disciplinary history for this purpose.
Sanctions which may be imposed are:
a. Disciplinary reprimand
b. Disciplinary censure
c. Disciplinary probation
d. Disciplinary suspension
e. Indefinite suspension
f. Interim separation

8. Notification
The coordinator of Student Judicial Affairs shall send written notification of the decision of the hearing and sanction(s) to the student. Such notification will normally be sent within five days of receipt of the judicial board's recommendation or within five days of the administrative hearing.

9. Appeals
Any disciplinary determination or sanction involving social misconduct may be appealed to the next level in the judicial structure by submitting an application for appeal in writing to the director of Student Development or the Vice President for Student Affairs, as appropriate, within five days after receiving notification of the prior decision. However, the right of appeal does not guarantee that an appeal will be granted nor does it entitle the student to a full rehearing of the case. An appeal, if granted, will be limited to the issues set forth in subparagraph c. below.
a. The student may submit a preference for an appeal hearing before a judicial board or an administrative hearing officer. The appropriate university official shall decide the hearing agent.
b. The burden of proof at the initial jurisdiction level is on the University. At the appeal level, however, the student bears the burden of demonstrating error as defined in the following item.
c. Three issues constitute possible grounds for an appeal:
(1) Were judicial procedures correctly followed?
(2) Did the evidence justify a decision against the student?

(3) Was the sanction(s) imposed in keeping with the gravity of the violation? Previous violation(s) of the Code and the accompanying sanction(s) will be considered in determining a proper sanction for a current violation.

d. The appropriate committee of the judicial board or the administrative hearing officer will review the appeal to ascertain whether there are sufficient grounds for a hearing.

e. If an appeal hearing is granted the agent hearing the appeal will not rehear the case. The agent will limit its review to the specific points of the appeal that were accepted at the screening review.

f. The agent hearing the appeal may:

(1) Affirm the decision(s) of the initial jurisdiction.

(2) Affirm the decision(s) and reduce the sanction.

(3) Modify the decision(s) of the violation and reduce the sanction.

(4) Reverse the decision(s) of violation, and remove the sanction, and dismiss the case.

g. A student dissatisfied with the decision of the Vice President for Student Affairs may seek review by the President by submitting such a request in writing within five days after receiving notification of the prior decision. Review by the President shall also be limited to the issues specified in subparagraph c. above.

h. Further appeal may be made to the Board of Trustees by filing an application for appeal in accordance with article VI section 2 of the Board Bylaws. The Board of Trustees will review only those administrative decisions which meet the requirements for review established by the Board's Bylaws.

10. Implementation of Sanction(s)

a. The disciplinary sanction(s) shall be implemented when:

(1) The student has waived the right of appeal, or

(2) The appeal period has expired.

b. The sanction shall be as specified by the final adjudicating agent.

c. A student separated from the University for disciplinary reasons is subject to the normal guidelines for tuition and fee refunds, grades, and financial penalties for terminating a housing contract.

d. Any type of disciplinary separation from the University may be accompanied by a condition which bars the student from University property.

11. Exceptions

The above procedures shall be followed unless an exception is authorized in writing by the director of Student Development. All requests for temporary exceptions shall be submitted in writing to the director of Student Development. Any exception allowed shall be limited to individual cases and shall not infringe upon a student's right to written notice, opportunity for a hearing, and an appeal.

VI. Amending Procedures

A. Review and/or Revisions

At the request of any recognized constituency, the Vice President for Academic Affairs and Research, or the Vice President for Student Af-

fairs, the President or that officer's designee shall appoint a committee to consider amendments to this Code. The committee shall consist of two undergraduate students, one graduate student, two faculty members, one academic dean, one representative from the University Housing Office, one representative from the Office of Student Judicial Affairs, and an ex officio representative from the Legal Counsel Office. The student and faculty members shall be designated by their appropriate constituencies. The Vice President for Student Affairs shall appoint a chairperson for the committee who may be one of the members listed above.

B. Amendments
The President may propose to the Chancellor amendments to the Code. Whenever the circumstances allow, due consideration shall be given to the recommendations of the committee provided for in the preceding paragraph. Amendment will be accomplished by the regular procedures for amendment of University policy.

C. Notification
Any amendment of the Code shall become effective only after general notice of such change has been given to the student body, faculty, and administrative staff. General notice shall include, but not be limited to, public notification of approved amendments twice successively published in the *Daily Egyptian* in their entirety within seven days after approval of said amendments by the Chancellor.

Policy Accommodating Religious Observances of Students

Admissions/Registration

The University's admissions process provides ample opportunity for admission and registration activities without conflicting with religious holidays and observances. However, students may receive another appointment when an appointment for admission counseling, or an appointment for academic advisement, or an appointment for registration for classes falls on a date or at a time that would conflict with the student's observances of major religious holidays. The individual student must notify in writing the appropriate admissions officer or academic adviser of the conflict with the student's observance of the religious holiday. That notification shall be made immediately after the student's receipt of the appointment or at least five (5) work days prior to the appointment time, whichever is later.

Class Attendance

Students absent from classes because of observances of major religious holidays will be excused. Students *must notify the instructor at least three regular class periods in advance of an absence from class for a religious holiday* and must take the responsibility for making up work missed.

Examinations

Instructors are requested not to schedule class examinations on dates that would conflict with major religious holidays. In the event an examination must be scheduled on a date that conflicts with a student's required observance of a religious holiday, the student should be given reasonable opportunity to make up the examination. It is the student's responsibility to notify the instructor of the class when the examination will be missed. That notification must occur at

least three regular class meeting periods in advance of the absence or at the time the announcement of the examination is made, whichever is later.

Grievance Procedure

A student who believes that he or she has been unreasonably denied an educational benefit due to his or her religious belief or practices may petition in writing as follows:

Cases involving class attendance or class examinations that are unresolved at the class instructor level may be appealed by the student by filing a petition in writing, within thirty calendar days of the incident being appealed, to the chair or coordinator of the department or program in which the course is offered. In the event the case is not resolved to the student's satisfaction at the department/program level within five (5) working days after the chair's receipt of the petition, the student may petition in writing to the dean of the school or college to which that teaching department or program reports. The student's petition to the school or college level must be filed with the dean within five (5) working days of the decision at the department level. Should the case not be resolved to the student's satisfaction at the school or college level within five (5) working days of the petition filing at that level, the student may petition the Vice President for Academic Affairs. If the student is still not satisfied at that level within the five working day time period, he or she may petition to the President within another five working days. Decisions of the President may be appealed to the Chancellor, and to the Board of Trustees if necessary, in accordance with Bylaws of the Board of Trustees.

In cases involving admissions, *the grievance process should follow the time frames described above*, with the initial petition being filed with the Director of Admission and Records, which is the only filing point prior to the Vice President for Academic Affairs.

Clean Air Policy for Southern Illinois University at Carbondale

I. Policy and Principles

In order to promote the health of the University community, to preserve and protect University property, and to provide a clean and safe environment to study, work, and learn, Southern Illinois University at Carbondale hereby adopts this policy prohibiting smoking in indoor areas. This policy replaces the interim rules and guidelines implemented in 1988.

II. Rules

Beginning August 15, 1993, smoking is prohibited in all indoor areas of property owned or controlled by the University. No indoor areas may be designated for permitted smoking, except as follows:

A. Private dormitory rooms where all occupants agree to allow smoking, and in private residences on campus until recommendations are received from the ad hoc committee assigned to evaluate this portion of the policy.

B. Use of tobacco products required in connection with approved research activities may be permitted when authorized by the Associate Vice President for Research and Dean of the Graduate School.

III. Coordinative Responsibility and Implementation

A. The President, vice presidents, deans, chairs, administrative officials, and supervisors are generally responsible for the implementation and enforcement of this Clean Air Policy. It is expected, in light of the health issues involved, that most people will comply with this policy out of self-interest and concern for others. However, complaints or concerns regarding this policy or disputes regarding its implementation should be referred to the immediate administrator/supervisor for resolution.

B. All department or unit heads will be responsible for assuring that this policy is communicated to everyone within their jurisdiction and to all new members of the University community.

C. Responsibility for honoring the provisions of this policy shall be the obligation of all employees, students, and visitors of Southern Illinois University at Carbondale.

D. Smoking cessation counseling shall be offered to all students and employees by the SIUC Wellness Center. Faculty and staff will be assessed a nominal charge.

IV. Resolution of Complaints and Enforcement of Policy

The standard to be used in resolving complaints or disputes concerning the Clean Air Policy shall be that the right to breathe clean air is superior to the privilege to smoke. The success of the Clean Air Policy for SIUC will depend upon the thoughtfulness, consideration, and cooperation of smokers and nonsmokers. It is the responsibility of all members of the campus community to observe this smoking policy. All employees and students are encouraged to remind others of the restrictions of the Clean Air Policy when appropriate.

A. Unit Resolution

In the event of a violation, employees, students, and other persons using campus facilities may attempt to achieve resolution themselves or may bring the situation to the attention of the appropriate unit coordinator for resolution. The unit coordinator may utilize appropriate administrative actions to assure compliance with the policy.

B. Campus Resolution

Resolution of a dispute or complaint, if not achieved at the unit level, may also be sought as follows:

1. Complaints Against Employees

The Office of Personnel Services will be responsible for resolving any dispute or complaint concerning this policy when the person against whom the complaint is lodged is a member of the faculty or staff of SIUC. That office may take appropriate administrative and disciplinary action to assure compliance with the Clean Air Policy.

2. Complaints Against Students

The Office of the Vice President for Student Affairs will be responsible for resolving any dispute or complaint concerning this policy when the person against whom the complaint is lodged is a student. That office may refer specific complaints or disputes to the director of University Housing or to the Office of Student

Life. Those offices may take appropriate administrative and disciplinary action to assure compliance with the Clean Air Policy.

3. Complaints Against Non-employees and Non-students

   The Office of the Vice President for Administration will be responsible for resolving any dispute or complaint concerning this policy when the person against whom the complaint is lodged is a non-employee or non-student. That office will take appropriate action to assure compliance with the Clean Air Policy.

University Policy Statement on AIDS

I. General Policy

After careful study, the University AIDS Task Force has accepted the conclusions of the American College Health Association, that:

Current knowledge ... indicates that college and university students or employees with AIDS, ARC (AIDS Related Complex) or a positive HTLV-III antibody test do not pose a health risk to other students or employees in the usual academic or residential setting. *AIDS on the College Campus (1986)*

The following policies are based on the current state of medical knowledge, and are subject to change as new information becomes available.

II. Policy Foundations

A. University decisions involving persons who suffer from AIDS shall be based on current and well-informed medical information.

B. Current prevailing medical authorities agree that AIDS is not communicated through casual contact but requires intimate sexual contact or an exchange of body fluids.

C. For the purpose of this policy statement, the term *AIDS* shall include AIDS, AIDS-Related Complex and a positive test for Human Immunodeficiency Virus.

D. This policy should be reviewed periodically to ensure that it reflects the most current information available from both governmental and medical authorities.

III. Non-Discrimination

A. The University shall not discriminate in enrollment or employment against an individual with AIDS.

B. No one shall be denied access to campus activities or facilities solely on the ground that he/she suffer from AIDS.

IV. Confidentiality

A. The University shall comply with all pertinent statutes and regulations which protect the privacy and welfare of persons in the University community who suffer from AIDS as well as the welfare of others within the University community.

B. The University will maintain procedural safeguards throughout the University with the objective of protecting the privacy of persons living with AIDS.

C. All confidential medical information about an individual will be handled in compliance with legal requirements and professional ethical standards.

D. The University will not disclose the identity of any student or employee who has AIDS, except as authorized by law or pursuant to guidelines following the general standards included in the *American College Health Associations' Recommended Standards and Practices for a College Health Program*, fourth edition:

> In general, it is recommended that no specific or detailed information concerning complaints or diagnosis be provided to faculty, administrators, or even parents, without the expressed written consent of the patient in each case.

V. University Responsibilities

A. The University shall develop and maintain a comprehensive educational program about AIDS.
B. The University shall identify sources of competent and confidential testing for AIDS as well as counseling services upon request.
C. The University shall identify sources of qualified medical care and encourage those with AIDS to utilize such sources.
D. The University shall adopt and implement safety guidelines as proposed by the U.S. Public Health Service for handling and disposing of blood and other body fluids.
E. Decisions in all situations involving students or employees with health problems are to made on a case by case basis, based on the medical facts in each case and with concern for the confidentiality and best interests of all parties involved. The President, or designee, shall identify the person(s) to be involved in each case.

University Policy on Sexual Harassment

Southern Illinois University at Carbondale is committed to creating and maintaining a community in which students, faculty, and staff can work together in an atmosphere free of all forms of harassment, exploitation, or intimidation. Sexual harassment, like harassment on the basis of race or religion, is a form of discrimination expressly prohibited by law. It is a violation of Title VII of the Federal 1964 Civil Rights Act and Title IX of the Educational Amendments of 1972 and a civil rights violation of the Illinois Human Rights Act.

In addition to being illegal, sexual harassment runs counter to the objectives of the University. When people feel coerced, threatened, intimidated, or otherwise pressured by others into granting sexual favors, or are singled out for derision or abuse because of their gender, their academic and work performance is liable to suffer. Such actions violate the dignity of the individual and the integrity of the University as an institution of learning. Academic freedom can exist only when every person is free to pursue ideas in a non-threatening, non-coercive atmosphere of mutual respect. Sexual harassment is harmful not only to the persons involved but also to the entire University community.

The University will take whatever action is needed to prevent, stop, correct, or discipline behavior that violates this policy. Disciplinary action may include, but is not limited to, oral or written warnings, demotion, transfer, suspension, or dismissal for cause.

Definitions and Examples

Sexual harassment is defined as unwelcome sexual advances, requests for sexual favors, verbal or other expressive behaviors, or physical conduct commonly understood to be of a sexual nature, when:

submission to, or toleration of, such conduct on or off campus is made, either explicitly or implicitly, a term or condition of instruction, employment, or participation in other University activities;

submission to, or rejection of, such conduct is used as a basis for employment or for academic decisions or assessments affecting the individual's status as an employee or student; or such conduct has the purpose or effect of unreasonably interfering with an individual's status as a student or employee or creates an intimidating, hostile, or offensive work or educational environment.

Sexual harassment may involve the behavior of a person of either sex toward a person of the opposite or the same sex. Examples of behavior that would be considered sexual harassment include, but are not limited to, the following:

physical assault;

direct or implied threats that submission to sexual advances will be a condition of employment, work status, promotion, grades, or letters of recommendation;

a pattern of conduct, annoying or humiliating in a sexual way, that includes comments of a sexual nature and/or sexually explicit statements, questions, jokes, or anecdotes;

a pattern of conduct that would annoy or humiliate a reasonable person at whom the conduct was obviously directed. Such conduct includes, but is not limited to gestures, facial expressions, speech, or physical contact understood to be sexual in nature or which is repeated after the individual signifies that the conduct is perceived to be offensively sexual.

Consenting Relationships

Consenting romantic and sexual relationships between a faculty member and a student or between a supervisor and an employee, while not expressly forbidden, are discouraged. Taking note of the respect and trust accorded a professor by a student and of the power exercised by the professor, a relationship between a faculty member and a student should be considered one of professional and client, in which sexual relationships are inappropriate. A similar relationship exists between a supervisor and an employee. The power differential inherent in such relationships compromises the subordinate's free choice. A faculty member or supervisor who enters into a sexual relationship with a student or an employee, where a professional power differential obviously exists, must realize that if a charge of sexual harassment is subsequently lodged, the burden will be on the faculty member or supervisor to prove immunity on grounds of mutual consent.

Relationships between a graduate student and an undergraduate, when the graduate student has some supervisory responsibility for the undergraduate, belong in this category. Among other relationships included are those between a student or employee and an administrator, coach, adviser, program director, counselor, or residential staff member who has supervisory responsibility for that student or employee.

Protection of the Complainant and Others

No student, faculty member, or staff member may be subjected to any form of reprisal for seeking information on sexual harassment, filing a sexual harassment complaint, or serving as a witness in a proceeding involving a complaint of sexual harassment. Any retaliatory action will be a violation of this policy and will be grounds for disciplinary action. Individuals who believe they have been subjected to reprisal for their participation in a sexual harassment complaint may use the procedures of this policy to seek redress.

Protection of the Accused

Accusations of sexual harassment are grievous and can have serious and far-reaching effects on the careers and lives of accused individuals. Allegations of sexual harassment must be made in good faith and not out of malice. Individuals who believe they have been falsely accused of sexual harassment may use the procedures of this policy to seek redress.

Responsibility of Supervisors

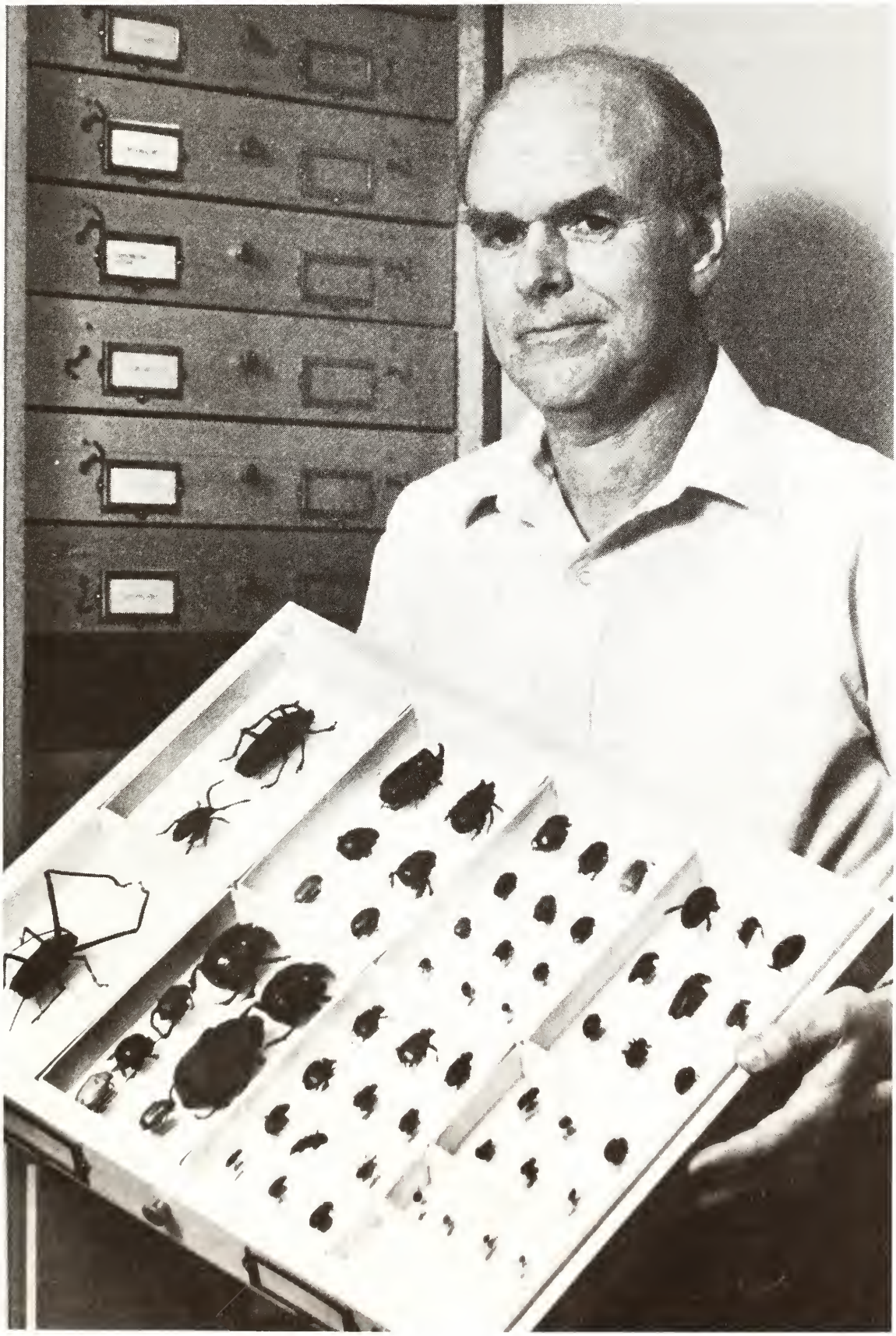
Supervisory personnel are charged with maintaining an atmosphere that discourages sexual harassment and ensuring that the University policy is enforced in their areas. Supervisors are directed to discourage all behavior that might be considered sexual harassment and to respond promptly to sexual harassment complaints. University officials who knowingly condone incidents of sexual harassment or instances of reprisal for reporting such complaints will be subject to disciplinary action.

Complaint Resolution Office

The President has assigned responsibility for the administration of this policy to Personnel Services and Labor Relations and has named its Executive Director as the complaint resolution officer for the University. The complaint resolution officer will disseminate the policy to the University community, devise education and training programs, maintain centralized records of sexual harassment complaints, oversee the grievance process, coordinate the resolution of complaints, and evaluate the effectiveness of the complaint resolution procedures and related educational programs.

For further information about the sexual harassment policy and complaint resolution procedures, you may contact one of the Sexual Harassment Information Centers: Affirmative Action 536-6618; Counseling Center 453-5371; International Programs and Services 453-5774; Ombudsman 453-2411; Personnel Services and Labor Relations 536-3369; Women's Services 453-3655; Women's Studies 453-5141; and Graduate School 453-4540.

8 Faculty



Accountancy (College of Business and Administration)

Barbeau, Debra J., Lecturer, M.Acc., Southern Illinois University, 1985.
Basi, Bartholomew A., Professor, C.P.A., J.D., D.B.A., Indiana University, 1971.
Burger, Clifford R., Professor, *Emeritus*, C.P.A., M.S., Indiana State University, 1947.
Gribbin, Donald W., Assistant Professor, C.P.A., Ph.D., Oklahoma State University, 1989.
Hahn, Randall, Associate Professor, C.P.A., D.B.A., University of Kentucky, 1984.
Karnes, Allan, Assistant Professor, C.P.A., M.A., J.D., Southern Illinois University, 1986.
King, James B., II, Assistant Professor, C.P.A., Ph.D., Indiana University, 1987.
Lumbattis, Cathy, Lecturer, C.P.A., M.B.A., Southern Illinois University at Edwardsville, 1975.
Masoner, Michael, Associate Professor, C.P.A., Ph.D., University of Minnesota, 1975.
Rivers, Richard A., Associate Professor, C.P.A., D.B.A., Kent State University, 1976.
Robinson, William T., Lecturer, M.S., A.B.D., Southern Illinois University, 1987.
Schmidlein, Edward J., Jr., Professor, *Emeritus*, C.P.A., Ph.D., New York University, 1953.
Sterner, Julie A., Associate Professor, C.P.A., Ph.D., St. Louis University, 1982.
Swick, Ralph D., Professor, *Emeritus*, C.P.A., D.B.A., Indiana University, 1954.
Tucker, Marvin W., Professor, Ph.D., University of Alabama, 1966.
Wacker, Raymond F., Assistant Professor, C.P.A., Ph.D., University of Houston, 1989.
Welker, Robert B., Professor, Ph.D., Arizona State University, 1976.
Wright, Roland M., Professor, *Emeritus*, C.P.A., Ph.D., University of Iowa, 1962.
Wu, Frederick H., Professor and *Director*, Ph.D., Texas Tech University, 1975.

Administration of Justice (College of Liberal Arts)

Anderson, Dennis B., Associate Professor, Ed.D., University of Nebraska, 1970.
Castellano, Thomas C., Associate Professor, Ph.D., State University of New York at Albany, 1986.
Coughlin, Joseph S., Professor, *Emeritus*, M.S.W., University of Wisconsin, 1954.
Cowles, Ernest L., Assistant Professor, Ph.D., Florida State University, 1981.
Ferdinand, Theodore N., Professor, Ph.D., University of Michigan, 1961.
Garofalo, James, Professor and *Chair*, Ph.D., State University of New York at Albany, 1978.
Johnson, Elmer H., Distinguished Professor, *Emeritus*, Ph.D., University of Wisconsin, 1950.
LeBeau, James L., Associate Professor, Ph.D., Michigan State University, 1978.
Lorinskas, Robert A., Associate Professor, Ph.D., University of Georgia, 1973.
Matthews, Charles V., Associate Professor, *Emeritus*, M.S., University of Kansas City, 1951.
McDermott, M. Joan, Assistant Professor, Ph.D., State University of New York at Albany, 1979.
Riedel, Marc P., Associate Professor, Ph.D., University of Pennsylvania, 1972.
Robinson, Cyril D., Professor, *Emeritus*, LL.B., Northwestern University, 1952.
Small, Mark A., Assistant Professor, J.D., Ph.D., University of Nebraska, 1990.

Aerospace Studies

Closson, Alan J., Adjunct Assistant Professor, M.S., Air Force Institute of Technology, 1988.
Fowler, Daniel R., Adjunct Professor, M.S., Indiana University, 1971.
Heckler, Rattanaprasert T., Adjunct Assistant Professor, M.B.A., New Mexico Highlands University, 1986.
Iwasiuk, Kenneth P., Adjunct Instructor.
Whitmore, Patricia M., Adjunct Instructor.

Agribusiness Economics (College of Agriculture)

Beaulieu, Jeffrey, Associate Professor, Ph.D., Iowa State University, 1984.
Beck, Roger, Associate Professor, Ph.D., Pennsylvania State University, 1977.
Eberle, Phillip, Associate Professor, Ph.D., Iowa State University, 1983.
Harris, Kim, Associate Professor, Ph.D., University of Illinois, 1985.
Herr, William McD., Professor, Ph.D., Cornell University, 1954.
Keepper, Wendell E., Professor, *Emeritus*, Ph.D., Cornell University, 1938.
Kraft, Steven E., Professor, Ph.D., Cornell University, 1980.
Solverson, Lyle, Associate Professor and *Chairperson*, Ph.D., University of Wisconsin, 1967.

Wills, Walter J., Professor, *Emeritus*, Ph.D., University of Illinois, 1952.

Agriculture Education and Mechanization (College of Agriculture)

Legacy, James, Professor, Ph.D., Cornell University, 1976.
Reneau, Fred W., Professor, Ed.D., Virginia Tech, 1979.
Smith, Owen R., Assistant Professor, Ph.D., Purdue University, 1988.
Stitt, Thomas R., Professor, Ph.D., Ohio State University, 1967.
Wolff, Robert L., Professor and *Chairperson*, Ph.D., Louisiana State University, 1971.

Animal Science (College of Agriculture)

Arthur, Robert D., Professor and *Chairperson*, Ph.D., University of Missouri, 1970.
Gardiner, Catherine, Assistant Professor, Ph.D., Oregon State University, 1988.
Goodman, Bill L., Professor, *Emeritus*, 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.
Kammlade, W. G., Jr., Associate Professor, *Emeritus*, Ph.D., University of Illinois, 1951.
King, Sheryl S., Associate Professor, Ph.D., University of California at Davis, 1984.
Kroening, Gilbert H., Professor, Ph.D., Cornell University, 1965.
Olson, Howard H., Professor, *Emeritus*, Ph.D., University of Minnesota, 1952.
Strack, Louis E., Associate Professor, *Emeritus*, D.V.M., University of Illinois, 1961.
Woody, H. Dee., Associate Professor, Ph.D., Michigan State University, 1978.
Young, Anthony W., Professor, Ph.D., University of Kentucky, 1969.

Anthropology (College of Liberal Arts)

Adams, Jane, Associate Professor, Ph.D., University of Illinois, 1987.
Bender, M. Lionel, Professor, Ph.D., University of Texas at Austin, 1968.
Benefit, Brenda R., Assistant Professor, Ph.D., New York University, 1987.
Butler, Brian M., Adjunct Assistant Professor, Ph.D., Southern Illinois University, 1977.
Corruccini, Robert S., Professor, Ph.D., University of California at Berkeley, 1975.
Cronk, Christine E., Adjunct Assistant Professor, DSc, Harvard University, 1980.
Dark, Philip J. C., Professor, *Emeritus*, Ph.D., Yale University, 1954.
Ford, Susan M., Associate Professor, Ph.D., University of Pittsburgh, 1980.
Gumerman, George J., Professor, *Emeritus*, Ph.D., University of Arizona, 1969.
Handler, Jerome S., Professor, Ph.D., Brandeis University, 1965.
Hill, Jonathan, Associate Professor, Ph.D., Indiana University, 1983.
Kelley, J. Charles, Professor, *Emeritus*, Ph.D., Harvard University, 1948.
Maring, Ester G., Assistant Professor, Ph.D., Indiana University, 1969.
Maring, Joel M., Associate Professor, Ph.D., Indiana University, 1967.
Muller, Jon D., Professor, Ph.D., Harvard University, 1967.
Rands, Robert L., Professor, *Emeritus*, Ph.D., Columbia University, 1952.
Rice, Don S., Professor, Ph.D., Pennsylvania State University, 1952.
Rice, Prudence M., Professor and *Chair*, Ph.D., Pennsylvania State University, 1976.
Riley, Carroll L., Distinguished Professor, *Emeritus*, Ph.D., University of New Mexico, 1952.
Shimada, Izumi, Assistant Professor, Ph.D., University of Arizona, 1976.
Taylor, Walter W., Professor, *Emeritus*, Ph.D., Harvard University, 1943.

Applied Arts (College of Technical Careers)

Boza, Gertrude, Instructor, *Emerita*, Graphic Design, Fine Arts Degree, Syracuse University, 1932.
Bramlet, James E., Assistant Professor, Commercial Graphics-Design, M.A., Western Illinois University, 1970.
Branson, Carl, Assistant Professor, Construction Technology, M.S., Southern Illinois University, 1974.
Courvoisier, Gerald F., Assistant Professor, Photographic Production Technology, B.S., Southern Illinois University, 1987.
Davey, Jon, Associate Professor, Architectural Technology, M.S., Southern Illinois University, 1987.
Davis, L. Noel, Assistant Professor, *Emeritus*, Architectural Technology, B.S., University of Illinois, 1948.
DeMattei, Michael, Lecturer, Construction Technology, B.S., Southern Illinois University, 1990.

Dobbins, John, Visiting Assistant Professor, Architectural Technology, M. Arch., University of Illinois, 1986.
Gimenez, Atilio M., Assistant Professor, Architectural Technology, M.Arch., University of Buenos Aires, 1964.
Hampton, Robbye Joanna, Assistant Professor, *Emerita*, M.S., Southern Illinois University, 1965.
Hays, Denny M., Associate Professor, Interior Design, M. Arch., University of Utah, Salt Lake City, 1971.
Lach, Norman, Assistant Professor, Architectural Technology, M.Arch., University of Illinois, 1974.
Ladner, Joel Brooks, Associate Professor, Architectural Technology, M.Arch., University of Houston, 1984.
LaGarce, Melinda, Assistant Professor, Interior Design, M.F.A., Texas Technology University, 1972.
Little, Harold E., Associate Professor, *Emeritus*, Architectural Technology, B.S., Pennsylvania State University, 1951.
Mailloux, Lawrence O., Assistant Professor, *Emeritus*, Commercial Graphics-Design, B.F.S., Rhode Island School of Design, 1947.
Osborn, Harold W., Assistant Professor, *Emeritus*, Construction Technology, M.S.Ed., Southern Illinois University, 1960.
Owens, Terry A., Associate Professor and *Interim Chair*, Applied Arts, M.S., Southern Illinois University, 1984.
Poggas, Christy, Assistant Professor, Architectural Technology, M.S.Ed., Southern Illinois University, 1990.
Richey, Helen E., Assistant Professor, *Emerita*, Graphic Communication, M.S., Southern Illinois University, 1953.
Rohrer, Mary A., Assistant Instructor, Commercial Graphics-Design, B.F.A., University of Illinois, 1973.
Rutledge, Clifton D., Associate Professor, *Emeritus*, Architectural Technology, M. Arch., Kansas State University, 1968.
Smith, Peter B., Visiting Assistant Professor, Architectural Technology, M. Arch., University of Illinois, 1980.
Staley, Glenn Lamb, Instructor, *Emeritus*, Construction Technology, M.S., Southern Illinois University, 1976.
Tully, Timothy R., Assistant Professor, Interior Design, M.S., Southern Illinois University, 1990.
Walker, Gregory, Lecturer, Construction Technology, B.S., Southern Illinois University, 1985.
Wessel, Stewart P., Visiting Assistant Professor, Interior Design, M.F.A., University of North Texas, 1992.
White, David J., Assistant Professor, Commercial Graphics—Design, M.S.Ed., Southern Illinois University, 1991.
White, Robert, Associate Professor, *Emeritus*, Photographic Production Technology, M.S., Southern Illinois University, 1962.
Yack, John L., Associate Professor, *Emeritus*, Commercial Graphics-Design, M.F.A., University of Oklahoma, 1959.

Applied Technologies (College of Technical Careers)

Beauchamp, Clarence, Assistant Professor, *Emeritus*, M.S., University of Wisconsin, Stout, 1949.
Behrmann, Michael, Instructor, Automotive Technology, B.S., Southern Illinois University, 1987.
Cash, Joe R., Associate Professor, Automotive Technology, M.S.Ed., Southern Illinois University, 1970.
Collard, Rodney, Instructor, Automotive Technology, Southern Illinois University, M.S. Ed., 1990.
Crenshaw, J. Howard, Instructor, *Emeritus*, Mathematics and Science, M.S., University of Illinois, 1940.
Ferketich, Gregory, Lecturer, Tool and Manufacturing Technology, M.S., California State University, 1989.
Greer, Jack, Assistant Professor, Automotive Technology, B.S., Southern Illinois University, 1974.
Harbison, James L., Instructor, *Emeritus*, Mathematics and Science, M.S., University of Illinois, 1940.
Jones, Paul, Instructor, *Emeritus*, Automotive Technology.
Kazda, Joseph G., Assistant Professor, Automotive Technology, M.S.Ed., Southern Illinois University, 1965.
Lampman, Duncan, Associate Professor, *Emeritus*, Construction Technology and Tool and Manufacturing Technology, M.S.Ed., Southern Illinois University, 1956.
Morris, Michael, Instructor, Automotive Technology, B.S., Southern Illinois University, 1991.
Muhich, Frank W., Associate Professor, *Emeritus*, Tool and Manufacturing Technology, M.S.Ed., Southern Illinois University, 1957.
Romack, Charles, Assistant Professor, Automotive Technology, B.S., Southern Illinois University, 1965.
Sanders, Eugene, Assistant Professor, Tool and Manufacturing Technology, B.S., Southern Illinois University, 1956.
Schultz, James R., Instructor, Tool and Manufacturing Technology, B.S., Southern Illinois University, 1982.
Simpson, Jerry, Assistant Professor, Automotive Technology, M.S., Colorado State University, 1966.

Soderstrom, Harry R., Professor, *Emeritus*, Tool and Manufacturing Technology, M.S., Bradley University, 1952.
Traylor, George Lelon, Associate Professor, *Emeritus*, 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, 1965.
White, James E., Assistant Professor and *Chair*, Applied Technologies, B.S.Ed., Southern Illinois University, 1961.

Army Military Science

Mahoney, Hubert R., SGM, Adjunct Assistant Professor.
Mitchell, Clay W., CPT, Adjunct Assistant Professor, B.S., Southern Illinois University at Carbondale, 1985.
Rucker, Teddy R. MSG, Adjunct Instructor.
Rodvelt, Gary B., LTC, Adjunct Professor and *Director*, M.P.A., Jacksonville State University, 1990.
Tupper, Keith A., SGT, Adjunct Instructor.

Art and Design (College of Liberal Arts)

Abrahamson, Roy E., Associate Professor, Ed.D., Columbia University, 1965.
Addington, Aldon M., Associate Professor, M.F.A., Cranbrook Academy of Art, 1966.
Archer, Richard E., Assistant Professor, M.S., Governors State University, 1979.
Bernstein, Lawrence A., Associate Professor, *Emeritus*, M.F.A., Cranbrook Academy of Art, 1953.
Boysen, Bill H., Professor, M.F.A, University of Wisconsin, 1966.
Briggs, Larry S., Associate Professor, B.F.A., University of Oklahoma, 1956.
Busch, W. Larry, Associate Professor, M.S., Southern Illinois University, 1970.
Chapman, Gretel, Associate Professor, Ph.D., University of Chicago, 1964.
Croston, Robert B., Associate Professor, M.S., University of Massachusetts, 1981.
Deller, Harris, Professor, M.F.A., Cranbrook Academy of Art, 1973.
Feldman, Joel B., Professor, M.F.A., Indiana University, 1967.
Fink, Herbert L., Distinguished Professor, *Emeritus*, M.F.A., Yale University, 1958.
Greenfield, Sylvia R., Professor, M.F.A., University of Colorado, 1967.
Jackson, Jed, Assistant Professor, M.F.A., Cornell University, 1980.
Kington, L. Brent, Professor and *Director*, M.F.A., Cranbrook Academy of Art, 1961.
Lawson, Elnora, Instructor, *Emerita*, B.Ed., Southern Illinois University, 1936.
Lintault, M. Joan, Professor, M.F.A., Southern Illinois University, 1962.
Mavigliano, George J., Associate Professor, M.A., Northern Illinois University, 1967.
Mawdsley, Richard, Professor, M.F.A., University of Kansas, 1969.
Montieth, Jerry Carlis, Assistant Professor, M.F.A., Cranbrook Academy of Art, 1978.
Onken, Michael O., Associate Professor, M.A., Northern Illinois University, 1966.
Paulson, Robert L., Professor, M.F.A., University of Wisconsin, 1967.
Saunders, Ann, Associate Professor, M.F.A., Syracuse University, 1984.
Shay, Edward Holden, Professor, M.F.A., University of Illinois, 1971.
Sullivan, James E., Associate Professor, M.A., University of California at Los Angeles, 1965.
Sullivan, Milton F., Professor, *Emeritus,* M.A., Columbia University, 1951.
Walsh, Thomas J., Professor, M.F.A., University of Michigan, 1962.
Youngblood, Michael S., Associate Professor, Ph.D., University of Oregon, 1975.

Aviation Management and Flight (College of Technical Careers)

Biggs, V. Eugene, Assistant Professor, M.S., Southern Illinois University, 1971.
Bowman, Terry S., Associate Professor, M.A., Webster College, 1979.
Brooks, John, Lecturer, B.S., Parks College, 1975.
Dunn, Wayne, Visiting Assistant Professor, J.D., University of Arkansas, 1981.
Falkenberry, W.A., Visiting Assistant Professor, M.S., Southern Illinois University, 1980.
Hupp, Ted, Assistant Professor, M.S., Troy State University, 1979.
Kaps, Robert W., Assistant Professor, M.A., Webster University, 1990.
Kmiecik, Kip, Lecturer, B.S., Southern Illinois University, 1987.
Martinez, Richard, Lecturer, B.S., California State University at Los Angeles, 1983.
NewMyer, David, Associate Professor and *Chair*, Aviation Management and Flight, Ph.D., Southern Illinois University, 1987.

Norman, Glen, Lecturer, B.S., Southeast Missouri University, 1968.
Sharp-Oakes, Susan, Lecturer, M.E., Northeast Louisiana University, 1983.
Thiesse, James, Assistant Professor, Ed.D., Auburn University, 1960.
Widick, Leland, Assistant Professor, B.A., Central State University, 1963.

Aviation Technologies (College of Technical Careers)

Birkhead, Larry M., Assistant Professor, Avionics Technology, M.S., Southern Illinois University, 1986.
Cannon, Richard H., Assistant Professor, Aviation Maintenance Technology, B.S., Southern Illinois University, 1982.
Cotter, John D., Assistant Professor, Aviation Maintenance Technology, M.S.Ed., Southern Illinois University, 1988.
Kolkmeyer, Robert O., Associate Professor, Aviation Maintenance Technology, M.S.Ed., Southern Illinois University, 1971.
Milton, William C., Assistant Professor, Aviation Maintenance Technology, M.S., Southern Illinois University, 1986.
Most, Michael T., Assistant Professor, Aviation Maintenance Technology, M.A., Central Washington University, 1974.
O'Brian, Benjamin H., Assistant Professor, *Emeritus*, Aviation Maintenance Technology, M.S., Southern Illinois University, 1985.
Ohman, Lennart R., Assistant Professor, Aviation Maintenance Technology, B.S., University of Illinois, 1964.
Rodriguez, Charles L., Assistant Professor, Aviation Maintenance Technology, M.S.Ed., Southern Illinois University, 1987.
Russell, Lewis G., Assistant Professor, Avionics Technology, M.S.Ed., Southern Illinois University, 1978.
Sanders, Robert F., Assistant Professor, Aviation Maintenance Technology, M.S.Ed., Southern Illinois University, 1986.
Schafer, Joseph A., Associate Professor, Aviation Technologies, B.S., Lewis College, 1960.
Staples, Laurence C., Assistant Professor and *Chair*, Aviation Technologies, B.S., Southern Illinois University, 1975.
Verner, Gerry D., Assistant Professor, Aviation Maintenance Technology, B.S., Southern Illinois University, 1973.

Black American Studies
(College of Liberal Arts)

Thompson, Julius E., Assistant Professor, Ph.D., Princeton University, 1973.

Chemistry and Biochemistry
(College of Science)

Arnold, Richard T., Professor, *Emeritus*, Ph.D., University of Illinois, 1937.
Bartholomew, Blaine, Assistant Professor, Ph.D., University of California, Davis, 1988.
Bausch, Mark J., Associate Professor, Ph.D., Northwestern University, 1984.
Beyler, Roger E., Professor, *Emeritus*, Ph.D., University of Illinois, 1949.
Caskey, Albert L., Associate Professor, *Emeritus*, Ph.D., Iowa State University, 1961.
Davis, Joe M., Associate Professor, Ph.D., University of Utah, 1985.
Gaston, Ricky D., Assistant Professor, Ph.D., Indiana University, 1987.
Groziak, Michael P., Assistant Professor, Ph.D., Northwestern University, 1983.
Gupta, Ramesh, Associate Professor, Ph.D., University of Illinois, 1981.
Guyon, John C., Professor, Ph.D., Purdue University, 1961.
Hadler, Herbert I., Professor, *Emeritus*, Ph.D. University of Wisconsin, 1952.
Hadley, Elbert H., Professor, *Emeritus*, Ph.D., Duke University, 1940.
Hardwicke, Peter M.D., Associate Professor, Ph.D., Kings College, London, 1969.
Hinckley, Conrad C., Professor, Ph.D., University of Texas, 1964.
Koropchak, John A., Associate Professor, Ph.D., University of Georgia, 1980.
Koster, David F., Professor, Ph.D., Texas A & M University, 1965.
Lewis-Bevan, Wyn, Assistant Professor, Ph.D., Cambridge University, 1983.
Lim, Louis, Assistant Professor, Ph.D., Washington University, 1979.
Meyers, Cal Y., Distinguished Professor, Ph.D., University of Illinois, 1951.
Neckers, J. W., Professor, *Emeritus*, Ph.D., University of Illinois, 1927.
Niederhoffer, Eric C., Assistant Professor, Ph.D., Texas A&M University, 1983.
Phillips, John B., Professor, Ph.D., University of Arizona, 1977.
Scheiner, Steven I., Professor and *Chair*, Ph.D., Harvard University, 1976.

Schmidhauser, Thomas J., Assistant Professor, Ph.D., University of California at San Diego, 1986.
Schmit, Joseph, Associate Professor, Ph.D., Purdue University,1971.
Schmulbach, C. David, Professor, *Emeritus*, Ph.D., University of Illinois, 1958.
Shriver, John W., Professor, Ph.D., Case Western University, 1977.
Smith, Gerard V., Professor, Ph.D., University of Arkansas, 1959.
Trimble, Russell F., Professor, *Emeritus*, Ph.D., Massachusetts Institute of Technology, 1951.
Tyrrell, James, Professor, Ph.D., University of Glasgow, 1963.
Van Lente, Kenneth A., Professor, *Emeritus*, Ph.D., University of Michigan, 1931.
Wotiz, John H., Professor, *Emeritus*, Ph.D., Ohio State University, 1948.
Zhu, Xiaoyang, Assistant Professor, Ph.D., University of Texas, 1992.

Cinema and Photography (College of Mass Communication and Media Arts)

Blumenberg, Richard M., Professor, Ph.D., Ohio University, 1969.
Boruszkowski, Lilly A., Associate Professor, M.F.A., Northwestern University, 1979.
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.
Kolb, Gary P., Associate Professor, M.F.A., Ohio University, 1977.
Mercer, John, Professor, *Emeritus*, University of Nebraska, 1952.
Overturf, Dan, Assistant Professor, M.F.A., Southern Illinois University, 1983.
Paine, Frank, Associate Professor, *Emeritus*, B.S., Iowa State University, 1950.
Roddy, Jan, Assistant Professor, M.F.A., University of Illinois, 1987.
Swedlund, Charles A., Professor, M.S., Illinois Institute of Technology, 1961.
Williams, Tony, Associate Professor, Ph.D., University of Manchester, 1974.

Civil Engineering and Mechanics (College of Engineering)

Bravo, Rolands, Assistant Professor, University of Houston, 1990.
Cook, Echol E., Professor, Ph.D., Oklahoma State University, 1970.
Craddock, James N., Associate Professor, Ph.D., University of Illinois at Urbana-Champaign, 1979.
Das, Braja M., Professor, Ph.D., University of Wisconsin, 1972.
Davis, Philip, Professor, *Emeritus*, Ph.D., University of Michigan, 1963.
DeVantier, Bruce, Associate Professor, Ph.D., University of California at Davis, 1983.
Evers, James, Associate Professor, Ph.D., University of Alabama, 1969.
Ghafoori, Nader, Assistant Professor, Ph.D., University of Miami-Coral Gables, 1986.
Hamed, Jihad, Assistant Professor, Ph.D., Louisiana State Univesity, 1990.
Kassimali, Aslam, Associate Professor, Ph.D., University of Missouri, 1976.
Nowacki, C. Raymond, Associate Professor, *Emeritus*, Ph.D., University of Illinois at Urbana-Champaign, 1965.
Puri, Vijay K., Assistant Professor, Ph.D., University of Missouri at Rolla, 1984.
Ray, Bill T., Associate Professor, Ph.D., University of Missouri at Rolla, 1984.
Rubayi, Najim, Professor, *Emeritus*, University of Wisconsin, 1966.
Sami, Sedat, Professor and *Interim Chair*, Ph.D., University of Iowa, 1966.
Yen, Shing-Chung, Associate Professor, Ph.D., Virginia Polytechnic Institute and State University, 1984.

Computer Science (College of Science)

Chu, Jiang-Hsing, Assistant Professor, Ph.D., University of Maryland, 1989.
Crawford, Albert, Assistant Professor, Ed.D., Oklahoma State University, 1970.
Danhof, Kenneth J., Professor and *Chair*, Ph.D., Purdue University, 1969.
Gupta, Bidyut, Assistant Professor, Ph.D., University of Calcutta, 1986.
Hou, Wen-Chi, Assistant Professor, Ph.D., Case Western Reserve University, 1989.
Mark, Abraham M., Professor, *Emeritus*, Ph.D., Cornell University, 1947.
McGlinn, Robert, Associate Professor, Ph.D., Southern Illinois University, 1976.
Phillips, Nicholas C. K., Associate Professor, Ph.D., University of Natal, 1967.
Tragondas, Spyros, Assistant Professor, Ph.D., University of Texas at Dallas, 1991.
Varol, Yaakov, Professor, Ph.D., University of Wyoming, 1971.
Wainer, Michael S., Assistant Professor, Ph.D., University of Alabama-Birmingham, 1987.

Wright, William E., Professor, D.Sc., Washington University, 1972.
Zargham, Mehdi R., Associate Professor, Ph.D., Michigan State University, 1983.

Curriculum and Instruction

(College of Education)

Aikman, Arthur L., Professor, *Emeritus*, Ph.D., Southern Illinois University, 1965.
Alston, Melvin O., Professor, *Emeritus*, Ed.D., Columbia University, 1945.
Appleby, Bruce C., Professor, Ph.D., University of Iowa, 1967.
Barrette, Pierre, Associate Professor, Ed.D., University of Massachusetts, 1971.
Bauner, Ruth E., Associate Professor, Ph.D., Southern Illinois University, 1978.
Becker, Jerry P., Professor, Ph.D., Stanford University, 1967.
Bedient, Douglas, Professor, Ph.D., Southern Illinois University, 1971.
Boykin, Arsene O., Associate Professor, *Emeritus*, Ed.D., University of Illinois, 1964.
Bradfield, Joyce M., Instructor, *Emerita*, M.A., George Peabody College for Teachers, 1946.
Bradfield, Luther E., Professor, *Emeritus*, Ed.D., Indiana University, 1953.
Brown, Bill, Instructor, *Emeritus*, M.Ed., University of Missouri, 1946.
Buser, Margaret, Assistant Professor, M.S.Ed., Indiana University, 1966.
Butts, Gordon K., Professor, *Emeritus*, Ed.D., Indiana University, 1956.
Campbell, James A., Associate Professor, Ph.D., Ohio State University, 1978.
Casey, John P., Professor, *Emeritus*, Ed.D., Indiana University, 1963.
Copenhaver, Ron W., Associate Professor, Ed.D., Indiana University, 1978.
Coscarelli, William, Professor, Ph.D., Indiana University, 1977.
Cox, Dorothy, Assistant Professor, *Emerita*, Ph.D., Southern Illinois University, 1976.
Dale, Doris C., Professor, D.L.S., Columbia University, 1968.
DeWeese, Jewel V., Instructor, *Emerita*, M.S.Ed., Southern Illinois University, 1971.
Dixon, Billy G., Associate Professor and *Chairperson*, Ph.D., Southern Illinois University, 1967.
Eddleman, E. Jacqueline, Associate Professor, *Emerita*, Ph.D., Southern Illinois University, 1970.
Edwards, Troy W., Professor, *Emeritus*, Ed.D., Indiana University, 1954.
Eichholz, Barbara, Lecturer, Ph.D., Southern Illinois University, 1986.
Erickson, Lawrence, Professor, Ph.D., University of Wisconsin, 1972.
Grace, Barbara E., Lecturer, M.S., Southern Illinois University, 1985.
Gulley, S. Beverly, Professor, Ph.D., Southern Illinois University, 1974.
Hill, Margaret K., Professor, *Emerita*, Ed.D., Boston University, 1948.
Hungerford, Harold R., Professor, *Emeritus,* Ph.D., Southern Illinois University, 1970.
Jackson, James, Associate Professor, Ph.D., University of Wisconsin, 1976.
Jackson, Michael, Associate Professor, Ed.D., University of Florida, 1971.
Jones, Dan R., Associate Professor, Ed.D., Indiana University, 1978.
Jones, Jennie Y., Assistant Professor, *Emerita*, A.M., University of Illinois, 1949.
Karmos, Ann, Associate Professor, Ph.D., Southern Illinois University, 1975.
Killian, Joyce E., Professor, Ph.D., Pennsylvania State University, 1980.
Klasek, Charles B., Professor, Ph.D., University of Nebraska, 1971,
Lacey, Jerome, Assistant Professor, Ph.D., Southern Illinois University, 1975.
Lamb, Morris L., Associate Professor, Ed.D., University of Oklahoma, 1970.
Leming, James, Professor, Ph.D., University of Wisconsin, 1973.
Lindberg, Dormalee H., Professor, Ed.D., University of Missouri, Columbia, 1969.
Lipsey, William, Lecturer, *Emeritus*, Ed.D., Northwestern University, 1952.
Malone, Willis E., Professor, *Emeritus*, Ph.D., Ohio State University, 1950.
Matthias, Margaret, Professor, Ph.D., Southern Illinois University, 1972.
McIntyre, D. John, Professor, Ed.D., Syracuse University, 1977.
Meyer, Edra T., Instructor, *Emerita*, M.S., Southern Illinois University, 1956.
Moberly, Deborah, Lecturer, M.S., Southern Illinois University, 1984.
Moore, Eryn E., Assistant Professor, *Emerita*, Ph.D., Southern Illinois University, 1976.
Nelson, JoAnn, Assistant Professor, *Emerita*, Ph.D., University of Illinois, 1980.
Norris, William, Associate Professor, Ed.D., Indiana University, 1973.
Paige, Donald, D., Professor, *Emeritus*, Ed.D., Indiana University, 1966.
Pape, Sharon, Assistant Professor, Ph.D., Ohio State University, 1988.
Pearlman, Susan F., Assistant Professor, Ph.D., University of Missouri, 1987.
Post, Donna M., Assistant Professor, Ph.D., Pennsylvania State University, 1990.
Pultorak, Edward Jr., Assistant Professor, Ph.D., Indiana State University, 1988.
Quisenberry, James D., Associate Professor, Ph.D., Indiana University, 1972.
Quisenberry, Nancy L., Professor, Ed.D., Indiana University, 1971.

Randolph, Victor, Professor, *Emeritus*, Ph.D., George Peabody College for Teachers, 1942.
Saunders, Gerald W., Assistant Professor, Ph.D., University of Nebraska at Lincoln, 1991.
Seiferth, Berniece B., Professor, *Emerita*, Ed.D., University of Missouri, 1955.
Shelton, Vivian H., Assistant Professor, *Emerita*, M.S.Ed., Southern Illinois University, 1965.
Shepherd, Terry R., Associate Professor, Ph.D., University of Illinois, 1971.
Shrock, Sharon A., Associate Professor, Ph.D., Indiana University, 1979.
Sloan, Fred A., Professor, Ed.D., George Peabody College of Vanderbilt University, 1959.
Smith, Lynn C., Associate Professor, Ph.D., University of Georgia, 1984.
Solliday, Michael, Associate Professor, Ph.D., Southern Illinois University, 1975.
Spigle, Irving S., Associate Professor, *Emeritus*, Ed.D., Indiana University, 1955.
Starbuck, Sara, Lecturer, M.S., Southern Illinois University, 1985.
Volk, Gertrude L., Lecturer, Ph.D., Southern Illinois University, 1983.
Waggoner, Jan, Assistant Professor, Ed.D., Memphis State University, 1990.
Wendt, Paul R., Professor, *Emeritus*, Ph.D., University of Minnesota, 1948.
Wise, Kevin C., Assistant Professor, Ed.D., University of Georgia, 1983.
Wood, Ruth B., Instructor, *Emerita*, M.S., University of Illinois, 1948.

Economics (College of Liberal Arts)

Chung, Heetaik, Assistant Professor, Ph.D., University of Minnesota, 1990.
Edelman, Milton T., Professor, *Emeritus*, Ph.D., University of Illinois, 1951.
Ellis, Robert J., Jr., Associate Professor, *Emeritus*, Ph.D., University of Virginia, 1966.
Fare, Rolf, Professor, Docent., University of Lund, 1976.
Foran, Terry G., Associate Professor, Ph.D., Pennsylvania State University, 1971.
Grabowski, Richard, Professor, Ph.D., University of Utah, 1977.
Grosskopf, Shawna, Professor, Ph.D., Syracuse University, 1977.
Hickman, C. Addison, Professor, *Emeritus*, Vandeveer Chair of Economics, Ph.D., University of Iowa, 1942.
Laumas, G. S., Professor and *Chairperson*, Ph.D., Wayne State University, 1966.
Layer, Robert G., Professor, *Emeritus*, Ph.D., Harvard University, 1952.
Mitchell, Thomas, Associate Professor, Ph.D., Brown University, 1983.
Myers, John G., Professor, *Emeritus*, Ph.D., Columbia University, 1961.
Primont, Daniel A., Professor and *Chair*, Ph.D., University of California at Santa Barbara, 1970.
Sharma, Subhash, Professor, Ph.D., University of Kentucky, 1983.
Shields, Michael P., Associate Professor, Ph.D., University of Utah, 1975.
Takayama, Akira, Professor, Vandeveer Chair of Economics, Ph.D., University of Rochester, 1962.
Trescott, Paul B., Professor, Ph.D., Princeton University, 1954.
Wiegand, G. C., Professor, *Emeritus*, Ph.D., Northwestern University, 1950.

Educational Administration and Higher Education (College of Education)

Aper, Jeffery P., Assistant Professor, Ph.D., Virginia Polytechnic Institute and State University, 1989.
Bach, Jacob O., Professor, *Emeritus*, Ph.D., University of Wisconsin, 1951.
Belch, Holley A., Assistant Professor, Ph.D., Bowling Green State University, 1991.
Brammell, Paris R., Professor, *Emeritus*, Ph.D., University of Washington, 1930.
Bryant, Roye R., Professor, *Emeritus*, D.Ed., Washington University, 1952.
Buser, Robert L., Professor, Ed.D., Indiana University, 1966.
Casebeer, Arthur L., Professor, *Emeritus*, Ed.D., Oregon State University, 1963.
Clark, Elmer J., Professor, *Emeritus*, Ph.D., University of Michigan, 1949.
Davis, I. Clark, Professor, *Emeritus*, Ed.D., Indiana University, 1956.
Dennis, Lawrence J., Professor, Ph.D., Southern Illinois University, 1968.
Duff, Grace H., Assistant Professor, *Emerita*, Ph.D., Southern Illinois University, 1970.
Eaton, William E., Professor and *Chairperson*, Ph.D., Washington University, 1971.
Evans, John, Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1968.
Fishback, Woodson W., Associate Professor, *Emeritus*, Ph.D., University of Chicago, 1947.
Goldman, Samuel, Professor, Ph.D., University of Chicago, 1961.
Graham, Jack W., Professor, *Emeritus*, Ph.D., Purdue University, 1951.
Hall, James H., Associate Professor, *Emeritus*, Ed.D., George Washington University, 1950.

Hawley, John B., Professor, *Emeritus*, Ph.D., University of Michigan, 1957.
Jacobs, Robert, Professor, *Emeritus*, Ed.D., Wayne State University, 1949.
Jung, Loren B., Professor, *Emeritus*, Ph.D., Southern Illinois University, 1969.
Kaiser, Dale E., Professor, *Emeritus*, Ph.D., University of Illinois, 1963.
Keene, Roland, Professor, *Emeritus*, Ph.D., Washington University, 1962.
Keim, Marybelle C., Associate Professor, Ph.D., Michigan State University, 1972.
King, John E., Professor, *Emeritus*, Ph.D., Cornell University, 1941.
Loucks, Hazel H., Assistant Professor, Ph.D., Saint Louis University, 1987.
Matthias, William, Associate Professor, *Emeritus*, Ed.D., University of Illinois, 1964.
McKenzie, William R., Professor, *Emeritus*, Ed.D., University of Denver, 1953.
Merwin, Bruce W., Professor, *Emeritus*, Ph.D., University of Kansas, 1929.
Miller, Harry G., Professor, Ed.D., University of Nebraska, 1970.
Moore, Malvin E., Professor, *Emeritus*, Ed.D., George Peabody College for Teachers, 1959.
Morrill, Paul H., Professor, *Emeritus*, Ph.D., Northwestern University, 1956.
Neal, Charles D., Professor, *Emeritus*, Ed.D., Indiana University, 1948.
Sasse, Edward B., Professor, *Emeritus*, Ph.D., University of Wisconsin, 1966.
Sharp, William, Associate Professor, Ph.D., Northwestern University, 1978.
Shelton, William E., Associate Professor, *Emeritus*, Ph.D., University of Chicago, 1950.
Spees, Emil R., Associate Professor, Ph.D., Claremont Graduate School, 1969.
Stuck, Dean, Professor, *Emeritus*, Ph.D., Iowa State University, 1968.
Tolle, Donald J., Professor, *Emeritus*, Ed.D., Florida State University, 1957.
Verduin, John R., Jr., Professor, Ph.D., Michigan State University, 1962.
Wohlwend, Herbert W., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University, 1964.

Educational Psychology and Special Education (College of Education)

Altekruse, Michael K., Professor, Ed.D., Indiana University, 1967.
Baeza, Jr., Jesus, Assistant Professor, Ph.D., University of Iowa, 1989.
Bardo, Harold R., Associate Professor, Ph.D., Southern Illinois University, 1972.
Bates, Paul, Professor, Ph.D., University of Wisconsin, 1978.
Beggs, Donald L., Professor, Ph.D., University of Iowa, 1966.
Bradley, Richard W., Professor, Ph.D., University of Wisconsin, 1968.
Brown, Beverly, Associate Professor, Ph.D., University of Iowa, 1974.
Casey, John P., Professor, *Emeritus*, Ed.D., Indiana University, 1963.
Cody, John J., Professor and *Chairperson*, Ph.D., University of Wisconsin, 1961.
Cordoni, Barbara, Professor, Ed.D., Duke University, 1976.
Crowner, James, Professor, *Emeritus*, Ph.D., Michigan State University, 1960.
Daniels, M. Harry, Professor, Ph.D., University of Iowa, 1978.
Deichmann, John W., Associate Professor, Ph.D., St. Louis University, 1969.
DeWeese, Harold L., Professor, *Emeritus*, Ed.D., University of Illinois, 1959.
Dillon-Sumner, Ronna, Professor, Ph.D., University of California at Riverside, 1978.
Elmore, Patricia B., Professor, Ph.D., Southern Illinois University, 1970.
Ewing, Norma J., Associate Professor, Ph.D., Southern Illinois University, 1974.
Foley, Regina, Assistant Professor, Ed.D., Northern Illinois University, 1989.
Hisama, Toshiaki, Associate Professor, Ph.D., University of Oregon, 1971.
Juul, Kristen D., Professor, *Emeritus*, Ed.D., Wayne State University, 1953.
Karmos, Joseph, Visiting Professor, Ph.D., Southern Illinois University, 1974.
Kelly, Francis J. Professor, Ph.D., University of Texas, 1963.
Leitner, Dennis, Associate Professor, Ph.D., University of Maryland, 1975.
Lewis, Ernest, Professor, Ph.D., Southern Illinois University, 1971.
Miller, Sidney R., Professor, Ph.D., Pennsylvania State University, 1974.
Morgan, Howard, Professor, *Emeritus*, Ed.D., Wayne State University, 1962.
Mouw, John T., Professor, Ed.D., University of South Dakota, 1968.
Mundschenk, Nancy, Assistant Professor, Ed.D., University of Iowa, 1992.
Pohlmann, John T., Professor, Ph.D., Southern Illinois University, 1972.
Presley, Priscilla H., Lecturer, Ph.D., Southern Illinois University, 1981.
Prichard, Karen K., Associate Professor, Ph.D., Kent State University, 1981.
Snowman, Jack, Professor, Ph.D., Indiana University, 1975.
Teska, James, Associate Professor, Ph.D., University of Illinois, 1969.
White, Gordon, Assistant Professor, Ph.D., University of Iowa, 1969.
White, Lyle J., Assistant Professor, Ph.D., University of Iowa, 1988.

Woehlke, Paula L., Professor, Ph.D., Arizona State University, 1973.
Yates, J. W., Professor, *Emeritus*, Ed.D., University of Missouri, Columbia, 1951.

Electrical Engineering
(College of Engineering)

Birmiwal, Kailash, Assistant Professor, Ph.D., University of Connecticut, 1988.
Botros, Nazeih, Associate Professor, Ph.D., University of Oklahoma, 1985.
Brown, David P., Professor, Ph.D., Michigan State University, 1961.
Daneshdoost, Morteza, Associate Professor, Ph.D., Drexel University, 1984.
Dhali, Shirshak, Professor, Ph.D., Texas Tech University, 1984.
Feiste, Vernold K., Associate Professor, Ph.D., University of Missouri at Columbia, 1966.
Galanos, Glafkos, Professor and *Chairperson*, University of Manchester, England, 1970.
Goben, Charles A., Professor, Ph.D., Iowa State University, 1965.
Gupta, Lalit, Associate Professor, Ph.D., Southern Methodist University, 1986.
Harackiewicz, Frances J.,Assistant Professor, University of Massachusetts at Amherst, 1990.
Hatziadoniu, C., Associate Professor, Ph.D., West Virginia University, 1988.
Hu, C. J., Professor, Ph.D., University of Colorado-Boulder, 1966.
Manzoul, Mahmoud, Associate Professor, Ph.D., West Virginia University, 1985.
Margon, Irving, Visiting Assistant Professor, M.S., University of Southern California—Los Angeles, 1948.
Pourboghrat, Farzad, Associate Professor, Ph.D., University of Iowa, 1984.
Purcell, Kay, Visiting Instructor, M.S., Southern Illinois University, 1978.
Rawlings, Charles A., Professor, Ph.D., Southern Illinois University, 1974.
Sayeh, Mohammad, Associate Professor, Ph.D., Oklahoma State University, 1985.
Schoen, Alan, Professor, Ph.D., University of Illinois, 1958.
Smith, James G., Professor, Ph.D., University of Missouri at Rolla, 1967.
Viswanathan, R., Associate Professor, Ph.D., Southern Methodist University, 1983.

English (College of Liberal Arts)

Appleby, Bruce C., Professor, Ph.D., University of Iowa, 1967.
Bennett, Paula, Associate Professor, Ph.D., Columbia University, 1970.
Benziger, James G., Professor, *Emeritus*, Ph.D., Princeton University, 1941.
Blakesley, David, Assistant Professor, Ph.D., University of Southern California, 1989.
Brown, William J., Associate Professor, Ph.D., Duke University, 1966.
Brunner, Edward J., Associate Professor, Ph.D., University of Iowa, 1974.
Clark, Martha, Instructor, *Emerita*, A.M., Southern Illinois University, 1953.
Collins, K. K., Associate Professor, Ph.D., Vanderbilt University, 1976.
Dodd, Diana L., Assistant Professor, *Emerita*, M.A., Southern Illinois University, 1954.
Donow, Herbert S., Professor, Ph.D., University of Iowa, 1966.
Fanning, Charles, Professor, Ph.D., University of Pennsylvania, 1972.
Fox, Robert Elliot, Associate Professor, Ph.D., SUNY at Buffalo, 1976.
Friend, Jewell A., Associate Professor, *Emerita*, Ph.D., Southern Illinois University, 1970.
Goodin, George V., Associate Professor, Ph.D., University of Illinois, 1962.
Griffin, Robert P., Associate Professor, *Emeritus*, Ph.D., University of Connecticut, 1965.
Haruf, Kent A., Associate Professor, M.F.A., Iowa University, 1973.
Hatton, Thomas J., Associate Professor, Ph.D., University of Nebraska, 1966.
Hawes, Clement C., Assistant Professor, Ph.D., Yale University, 1986.
Hillegas, Mark, Professor, *Emeritus*, Ph.D., Columbia University, 1957.
Hilliard, Lewis J., Assistant Professor, M.S. in Ed., Southern Illinois University, 1952.
Howell, John M., Professor, Ph.D., Tulane University, 1963.
Humphries, Michael L., Assistant Professor, Ph.D., The Claremont Graduate School, 1990.
Hurley, Paul J., Professor, *Emeritus*, Ph.D., Duke University, 1962.
Jones, Rodney G., Professor, M.F.A., University of North Carolina at Greensboro, 1973.
Klaver, Elizabeth T., Assistant Professor, Ph.D., University of California at Riverside, 1990.
Krappe, Edith, Associate Professor, *Emerita*, Ph.D., University of Pennsylvania, 1953.
Kvernes, David M., Assistant Professor, Ph.D., University of Minnesota, 1967.
Lamb, Mary E., Professor, Ph.D., Columbia University, 1976.
Lawson, Richard A. Associate Professor, Ph.D., Tulane University, 1966.
Light, James F., Professor, *Emeritus*, Ph.D., Syracuse University, 1953.
Little, Judy Ruth, Professor, Ph.D., University of Nebraska, 1969.
Lordan, E. Beth, Assistant Professor, M.F.A., Cornell University, 1987.

Martin, Joan Foley, Assistant Professor, *Emerita*, M.A., Southern Illinois University, 1959.
McClure, Lisa, Assistant Professor, D.A., University of Michigan, 1988.
McEathron, Scott, Assistant Professor, Ph.D., Duke University, 1993.
McNichols, Edward L., Assistant Professor, M.A., University of Detroit, 1958.
Mitchell, Betty Lou, Associate Professor, M.A., Southern Illinois University, 1951.
Moss, Sidney P., Professor, *Emeritus*, Ph.D., University of Illinois, 1954.
Nelms, Ralph Gerald, Assistant Professor, Ph.D., Ohio State University, 1990.
Partlow, Robert B., Jr., Professor, *Emeritus*, Ph.D., Harvard University, 1955.
Perillo, Lucia Maria, Assistant Professor, M.A., Syracuse University, 1986.
Person, Leland S., Jr., Professor, Ph.D., Indiana University, 1977.
Peterson, Richard F., Professor and *Chairperson*, Ph.D., Kent State University, 1969.
Piper, Henry Dan, Professor, *Emeritus*, Ph.D., University of Pennsylvania, 1950.
Porter, Connie R., Assistant Professor, M.F.A., Louisiana State University, 1987.
Rainbow, R. S., Associate Professor, *Emeritus*, Ph.D., University of Chicago, 1950.
Richman, Lois Anne, Assistant Professor, *Emerita*, M.A.T.E., University of Illinois. 1962.
Riedinger, Anita R., Assistant Professor, Ph.D., New York University, 1985.
Rudnick, Hans H., Professor, Ph.D., University of Freiburg, Germany, 1966.
Schonhorn, Manuel S., Professor, Ph.D., University of Pennsylvania, 1963.
Simeone, William E., Professor, *Emeritus*, 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.
Vieth, David Muench, Professor, *Emeritus*, Ph.D., Yale University, 1953.
Webb, Howard W., Jr., Professor, *Emeritus*, Ph.D., University of Iowa, 1953.
Weshinskey, Roy K., Assistant Professor, *Emeritus*, M.A., Southern Illinois University, 1950.
Zimra, Clarisse, Assistant Professor, Ph.D., University of Washington, 1974.

Finance (College of Business and Administration)

Cornett, Marcia M., Associate Professor, Ph.D., Indiana University, 1983.
Davids, Lewis E., Professor, *Emeritus*, Ph.D., New York University, 1949.
Davidson, Wallace N., III, Professor, Ph.D., Ohio State University, 1982.
Elsaid, Hussein H., Professor, Ph.D., University of Illinois, 1968.
Mathur, Iqbal, Professor and *Chairperson*, Ph.D., University of Cincinnati, 1974.
Rangan, Nanda, Associate Professor, Ph.D., Texas A&M University, 1986.
Schwarz, Thomas V., Assistant Professor, D.B.A., Florida State University, 1984.
Szakmary, Andrew C., Assistant Professor, Ph.D., University of New Orleans, 1989.
Tyler, R. Stanley, Associate Professor, *Emeritus*, J.D., University of Illinois, 1952.
Vaughn, Donald E., Professor, Ph.D., University of Texas, 1961.
Waters, Gola E., Professor, J.D., University of Iowa, 1957, Ph.D., Southern Illinois University, 1970.

Food and Nutrition (College of Agriculture)

Anderson, Sara L., Assistant Professor, Ph.D., Southern Illinois University at Carbondale, 1991.
Ashraf, Hea-Ran L., Associate Professor, Ph.D., Iowa State University, 1979.
Becker, Henrietta, Lecturer, *Emerita*, M.S., Southern Illinois University, 1964.
Ditkus, Kim, Assistant Professor, Ph.D., Washington State University, 1991.
Endres, Jeannette M., Professor, Ph.D., St. Louis University, 1972.
Girard, T.C., Assistant Professor, M.S., University of Wisconsin, 1992.
Harper, Jenny M., Professor, *Emerita*, Ph.D., Cornell University, 1941.
Konishi, Frank, Professor, *Emeritus*, Ph.D., Cornell University, 1958.
Payne, Irene R., Professor, *Emerita*, Ph.D., Cornell University, 1960.
Welch, Patricia, Professor, Ph.D., Southern Illinois University, 1982.

Foreign Languages and Literatures (College of Liberal Arts)

Aydt, Judith, Assistant Professor, M.A., Southern Illinois University, 1966.
Bender, M. Lionel, Professor, Ph.D., University of Texas at Austin, 1968.
Betz, Frederick, Professor, Ph.D., Indiana University, 1973.
Bork, Albert W., Professor, *Emeritus*, Doctor en Letras, National University of Mexico, 1944.

Cohen-Scali, Stella, Assistant Professor, Ph.D., Florida State University, 1988.
Davis, J. Cary, Professor, *Emeritus*, Ph.D., University of Chicago, 1936.
Edwards, Robert W., Assistant Professor, Ph.D., University of Texas at Austin, 1988.
Fair-Christianson, Janet K., Assistant Professor, Ph.D., University of Chicago, 1993.
Gobert, David L., Professor, Ph.D., University of Iowa, 1960.
Hammond, Charles E., Associate Professor, Ph.D., Columbia University, 1986.
Hartman, Steven Lee, Associate Professor, Ph.D., University of Wisconsin, 1971.
Hartwig, Hellmut A., Professor, *Emeritus*, Ph.D., University of Illinois, 1943.
Keller, Thomas, Associate Professor and *Chair*, Ph.D., University of Colorado, 1975.
Kilker, James, Professor, *Emeritus*, Ph.D., University of Missouri at Columbia, 1961.
Kim, Alan Hyun-Oak, Assistant Professor, Ph.D., University of Southern California, 1985.
Leal-McBride, Maria-Odilia, Assistant Professor, Ph.D., University of Texas at Austin, 1981.
Liedloff, Helmut, Professor, *Emeritus*, 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, Professor, Ph.D., Fordham University, 1961.
Orechwa, Olga, Associate Professor, *Emerita,* Ph.D., Ukrainian Free University, Germany, 1970.
Sanjabi, Maryam, Assistant Professor, Ph.D., University of Paris-Sorbonne, 1992.
Speck, Charles, Assistant Professor, Laurea in Diritto Canonico, Pontifical Lateran University, Italy, 1963.
Timpe, Eugene F., Professor, Ph.D., University of Southern California, 1960.
Toldos-Bayle, Pilar, Assistant Professor, Ph.D., Michigan State University, 1992.
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, Assistant Professor, *Emerita*, M.A., Southern Illinois University, 1965.
Williams, Frederick, Associate Professor, Ph.D., Cornell University, 1976.
Winters, Margaret E., Professor, Ph.D., University of Pennsylvania, 1975.
Woodbridge, Hensley, Professor, *Emeritus*, Ph.D., University of Illinois, 1950.

Forestry (College 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, Associate Professor, Ph.D., University of Arizona, 1975.
Chen, Peter Y.S., Adjunct Assistant Professor, Ph.D., University of Minnesota, 1968.
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., Professor, Ph.D., Michigan State University, 1968.
McCurdy, Dwight R., Professor and *Chairperson*, Ph.D., Ohio State University, 1964.
Myers, Charles C., Associate Professor, Ph.D., Purdue University, 1966.
Phelps, John, Assistant Professor, Ph.D., University of Missouri, 1980.
Rink, George, Adjunct Assistant Professor, Ph.D., University of Tennessee, 1974.
Roth, Paul L., Professor, Ph.D., Kansas State University, 1968.
Stokke, Douglas D., Adjunct Assistant Professor, Ph.D., Iowa State University, 1986.
Van Sambeek, Jerome W., Adjunct Assistant Professor, Ph.D., Washington University, 1975.

Geography (College of Liberal Arts)

Arey, David G., Associate Professor, Ph.D., Clark University, 1969.
Baumann, Duane D., Professor, Ph.D., Clark University, 1968.
Bhattacharyya, Jnanabrota, Associate Professor, Ph.D., University of Delhi, India, 1969.
Beazley, Ronald I., Professor, *Emeritus*, Ph.D., Purdue University, 1954.
Bennett, David A., Assistant Professor, Ph.D., University of Iowa, 1993.
Christensen, David E., Professor, *Emeritus*, Ph.D., University of Chicago, 1956.
Denise, Paul S., Assistant Professor, Ph.D., University of California at Berkeley, 1974.

Dorn, Jared H., Adjunct Associate Professor, Ph.D., Southern Illinois University, 1973.
Dziegielewski, Benedykt, Associate Professor, Ph.D., Southern Illinois University, 1983.
Horsley, A. D., Assistant Professor, Ph.D., Southern Illinois University, 1974.
Irwin, Daniel R., Associate Professor, *Emeritus*, Ph.D., Syracuse University, 1972.
Jones, David L., Professor, *Emeritus*, Ph.D., Pennsylvania State University, 1960.
Klasek, Charles B., Professor, Ph.D., University of Nebraska, 1971.
Lant, Christopher, Assistant Professor, Ph.D., University of Iowa, 1988.
Lieber, Stanley R., Professor, Ph.D., University of Iowa, 1974.
Miller, Harry George, Professor, Ed.D., University of Nebraska, 1970.
Perk, H. F. W., Lecturer, A.B., University of California at Los Angeles, 1951.
Poston, Richard W., Professor, *Emeritus*, B.A., University of Montana, 1940.
Sharpe, David M., Professor and *Chair*, Ph.D., Southern Illinois University, 1968.

Geology (College of Science)

Berry, Margaret E., Assistant Professor, Ph.D., University of Colorado, 1990.
Blum, Michael D., Assistant Professor, Ph.D., University of Texas at Austin, 1992.
Crelling, John C., Professor, Ph.D., The Pennsylvania State University, 1973.
Dutcher, Russell R., Professor, Ph.D., The Pennsylvania State University, 1960.
Esling, Steven Paul, Associate Professor, Ph.D., University of Iowa, 1984.
Fifarek, Richard H., Associate Professor, Ph.D., Oregon State University, 1985.
Flanagan, Kathryn M., Assistant Professor, Ph.D., University of Wyoming, 1990.
Frank, Charles O., Assistant Professor, Ph.D., Syracuse University, 1973.
Harris, Stanley E. Jr., Professor, *Emeritus*, Ph.D., University of Iowa, 1947.
Kruge, Michael A., Associate Professor, Ph.D., University of California, Berkeley, 1985.
Marzolf, John E., Associate Professor, Ph.D., University of California at Los Angeles, 1970.
Ravat, Dhananjay, Assistant Professor, Ph.D., Purdue University, 1989.
Ritter, Dale F., Professor, *Emeritus*, Ph.D., Princeton University, 1964.
Sexton, John L., Professor, Ph.D., Indiana University, 1974.
Staub, James R., Assistant Professor, Ph.D., University of South Carolina, 1985.
Utgaard, John E., Professor, Ph.D., Indiana University, 1963.
Zimmerman, Jay, Jr., Professor, Ph.D., Princeton University, 1968.

Health Care Professions

(College of Technical Careers)

Beaver, Shirley, Assistant Professor, Dental Hygiene, RDH, M.S., University of Iowa, 1971.
Branson, Bonnie, Assistant Professor, Dental Hygiene, RDH, Ph.D., Southern Illinois University, 1992.
Callaghan, Mary E., Assistant Professor, *Emerita,* Dental Hygiene, R.D.L., M.A., University of San Francisco, 1962.
Cittadino, Dominic, Adjunct Associate Professor, Dental Hygiene, DDS.
Craven, M. Joyce, Visiting Assistant Professor, Health Care Management, Ph.D., Southern Illinois University, 1988.
DeMattei, Ronda, Assistant Professor, Dental Hygiene, RDH, M.S., Southern Illinois University, 1986.
Dittmar, Alicia K., Assistant Professor, Physical Therapist Assistant, PT, B.S., Texas Women's University, 1979.
Elliott, James R., Associate Professor, Dental Hygiene, RDH, D.D.S., University of Tennessee, 1953; M.S., Ohio State College of Dentistry, 1962.
Grace, Linda M., Assistant Professor, Ph.D., Southern Illinois University, 1985.
Grey, Michael, Assistant Professor, Allied Health Careers Specialties, RT(R), M.S., Southern Illinois University at Carbondale, 1991.
Griffith, Cydney A., Assistant Professor, Mortuary Science and Funeral Services, M.S., Southern Illinois University, 1991.
Hees, Alice Jane, Associate Professor, Allied Health Careers, RN, Ph.D., Southern Illinois University at Carbondale, 1991.
Heischmidt, Cynthia Jo, Associate Professor, Dental Hygiene, RDH, Ph.D., Southern Illinois University, 1991.
Hertz, Donald G., Associate Professor, *Emeritus*, Mortuary Science and Funeral Service, Ed.M., University of Oklahoma, 1953.
Holland, Susan, Assistant Professor, Allied Health Careers Specialties, RRT, M.A., University of Manitoba, 1973.
Ijams, Kayleonne, Assistant Professor, Dental Technology, CDT, M.A., Southern Illinois University, 1980.
Jefferies, Danny P., Assistant Professor, Dental Hygiene, RDH, M.S., University of North Carolina, 1986.
Jensen, Steven, Associate Professor, Allied Health Careers Specialties, RT(R), Ph.D., Southern Illinois University, 1987.
Kahler, Raymond D., Assistant Professor, Ph.D., Southern Illinois University, 1990.

Laake, Dennis J., Associate Professor, Dental Technology, CDT, M.S.Ed., Southern Illinois University, 1973.
Lukes, Sherri M., Visiting Instructor, Dental Hygiene, RDH, B.S., Southern Illinois University, 1984.
Marx, Bonnie, Adjunct Instructor, Allied Health and Public Services.
Maurizio, Sandra J., Visiting Instructor, Dental Hygiene, RDH, B.S., Southern Illinois University, 1979.
McMurry, William S., Visiting Associate Professor, *Emeritus,* Dental Hygiene, D.D.S., University of Missouri, 1950.
Milkevitch, Joseph, Visiting Assistant Professor, M.B.A., Golden Gate University, 1982.
Morgan, Frederic L, Associate Professor and *Chair*, Health Care Professions, Ed.D., Ball State University, 1969.
Okita, Ted Y., Professor, *Emeritus*, Physical Therapist Assistant, RPT, M.A., Northwestern University, 1964.
Pape, Carolyn D., Assistant Professor, Physical Therapist Assistant, RPT, M.S., Southern Illinois University, 1983.
Paulk, Marilyn, Assistant Professor, Dental Hygiene, RDH, M.S., Southern Illinois University, 1987.
Pearson, Stanley, Assistant Professor, Allied Health Careers Specialties, RRT, M.S., Southern Illinois University, 1986.
Poston, George H., Professor, Mortuary Science and Funeral Service, Ph.D., Southern Illinois University, 1987.
Rogers, Janet L., Assistant Professor, Physical Therapist Assistant, M.S., Southern Illinois University, 1985.
Szekely, Rosanne, Assistant Professor, Allied Health Careers Specialties, RT(R), B.S., Guinnipiac College, 1983.
Tiebout, Leigh, Assistant Professor, Dental Technology, CDS, M.S., Southern Illinois University, 1988.
Vitello, Elaine M., Professor and *Dean*, Ph.D. Southern Illinois University, 1977.
Westphal, Dwight, Assistant Professor, Dental Laboratory Technology, CDT, B.S., Southern Illinois University, 1977.
Winings, John R., Associate Professor, Dental Laboratory Technology, M.A., Governors State University, 1972.

Health Education and Recreation (College of Education)

Aaron, James E., Professor, *Emeritus*, Ed.D., New York University, 1960.
Abernathy, William, Assistant Professor, *Emeritus*, M.S.Ed., Southern Illinois University, 1963.
Boydston, Donald N., Professor, *Emeritus*, Ed.D., Columbia University, 1949.
Bridges, A. Frank., Professor, *Emeritus*, D.H.S., Indiana University, 1952.
Drolet, Judy C., Professor, Ph.D., University of Oregon, 1982.
Glover, James, Associate Professor, Ph.D., University of Maryland, 1980.
Glover, Regina, Associate Professor and *Chairperson*, Ph.D., University of Maryland, 1983.
Grissom, Deward K., Professor, *Emeritus*, Ed.D., Columbia University, 1952.
Hailey, Robert, Assistant Professor, M.Ed., University of Missouri, Columbia, 1959.
Kittleson, Mark J., Associate Professor, Ph.D., University of Akron, 1986.
Lacey, Ella P., Associate Professor, Ph.D., Southern Illinois University, 1979.
LeFevre, John R., Professor, *Emeritus*, Ed.D., Teachers Colleges, Columbia University, 1950.
Malkin, Marjorie J., Associate Professor, Ed.D., University of Georgia, 1986.
McEwen, Douglas, Professor, Ph.D., Michigan State University, 1973.
O'Brien, William, Professor, *Emeritus*, D.Rec., Indiana University, 1967.
Ogletree, Roberta J., Assistant PRofessor, H.S.D., Indiana University, 1991.
Phillips, Frances K., Associate Professor, *Emerita*, M.A., Columbia University, 1940.
Richardson, Charles E., Professor, *Emeritus*, Ed.D., University of California, Los Angeles, 1959.
Ritzel, Dale O., Professor, Ph.D., Southern Illinois University, 1970.
Russell, Robert D., Professor, Ed.D., Stanford University, 1954.
Sarvela, Paul, Professor, Ph.D., University of Michigan, 1984.
Sims, Steven, Assistant Professor, University of Oregon, 1987.
Sliepcevich, Elena M., Professor, *Emerita*, D.P.E., Springfield College, 1955.
Teaff, Joseph, Professor, Ed.D., Columbia University, 1973.
Vaughn, Andrew T., Professor, *Emeritus*, D.Ed., Columbia University, 1958.
Vitello, Elaine, Professor, Ph.D., Southern Illinois University, 1977.
Vogel, Herbert, Instructor, M.S., Indiana University, 1954.
Welshimer, Kathleen J., Assistant Professor, Ph.D., University of North Carolina, 1990.
Zunich, Eileen M., Assistant Professor, *Emerita*, Ph.D., Southern Illinois University, 1970.

History (College of Liberal Arts)

Allen, Howard W., Professor, Ph.D., University of Washington, 1959.
Allen, James S., Associate Professor, Ph.D., Tufts University, 1979.

Ammon, Harry, Professor, *Emeritus*, Ph.D., University of Virginia, 1948.
Barton, H. Arnold, Professor, Ph.D., Princeton University, 1962.
Batinski, Michael C., Associate Professor, Ph.D., Northwestern University, 1969.
Bengtson, Dale R., Assistant Professor, Ph.D., Hartford Seminary Foundation, 1971.
Carr, Kathryn, Assistant Professor, Ph.D., University of Chicago, 1987.
Carrott, M. Browning, Associate Professor, Ph.D., Northwestern University, 1966.
Conrad, David E., Professor, Ph.D., University of Oklahoma, 1962.
Detwiler, Donald S., Professor, Dr. Phil., Göttingen University, Germany, 1961.
Dotson, John E., Associate Professor, Ph.D., Johns Hopkins University, 1969.
Fladeland, Betty L., Distinguished Professor, *Emerita*, Ph.D., University of Michigan, 1952.
Gardiner, C. Harvey, Professor, *Emeritus*, Ph.D., University of Michigan, 1945.
Gold, Robert L., Professor, *Emeritus,* Ph.D., University of Iowa, 1964.
Haller, John S., Professor, Ph.D., University of Maryland, 1968.
Kuo, Ping-Chia, Professor, *Emeritus*, Ph.D., Harvard University, 1933.
Lieberman, Robbie, Assistant Professor, Ph.D., University of Michigan, 1984.
Morgan, Marjorie L., Assistant Professor, Ph.D., Tulane University, 1988.
O'Day, Edward J., Assistant Professor, A.M., Indiana University, 1956.
Shelby, Lon R., Professor, Ph.D., University of North Carolina, 1962.
Simon, John Y., Professor, Ph.D., Harvard University, 1961.
Sun, Youli, Assistant Profesor, Ph.D., University of Chicago, 1988.
Thompson, Julius E., Assistant Professor, Ph.D., Princeton University, 1973.
Vyverberg, Henry S., Professor, *Emeritus*, Ph.D., Harvard University, 1950.
Weeks, Theodore, Assistant Professor, University of California-Berkeley, 1992.
Werlich, David P., Professor and *Chairperson*, Ph.D., University of Minnesota, 1968.
Wilson, David L., Associate Professor, Ph.D., University of Tennessee, 1974.
Wu, Tien-Wei, Professor, *Emeritus*, Ph.D., University of Maryland, 1965.

Information Management Systems (College of Technical Careers)

Ashworth, Edwin Robert, Assistant Professor, *Emeritus*, Computer Information Processing, Ph.D., Southern Illinois University, 1972.
Caldwell, Paul N., Associate Professor, *Emeritus*, Electronics Technology, M.S.Ed., Southern Illinois University, 1965.
Cook, F. Roger, Assistant Professor and *Chair*, Computer Information Processing, M.S., Southern Illinois University, 1987.
Davis, Diane, Associate Professor, Office Systems and Specialties, Ph.D., Southern Illinois University, 1990.
Devenport, William R., Assistant Professor, Electronics Technology, M.S., Illinois State University, 1985.
Dotson, Michael, Assistant Professor, Electronics Technology, M.S., Southern Illinois University, 1986.
Einig, Raymond G., Jr., Assistant Professor, Computer Information Processing, M.S., St. Louis University, 1962.
Ellner, Jack R., Professor, *Emeritus*, Ph.D., New York University, 1969.
Evans, Candy Duncan, Associate Professor, Office Systems and Specialties, Ph.D., Southern Illinois University, 1992.
Fisher, Valerie, Assistant Professor, Office Systems and Specialties, M.S., Southern Illinois University, 1975.
Gonzenbach, Nancy, Associate Professor, Office Systems and Specialties, Ph.D., Southern Illinois University, 1990.
Hampton, Robbye Joanna, Assistant Professor, *Emerita*, M.S., Southern Illinois University, 1965.
Harre, Paul A., Associate Professor, Electronics Technology, M.S., Southern Illinois University, 1974.
Henry, Janice Schoen, Associate Professor, Office Systems and Specialties, Ph.D., Southern Illinois University, 1987.
Hudson, Shirley A., Assistant Professor, Computer Information Processing, M.S., Southern Illinois University at Carbondale, 1988.
Jeralds, Lawrence E., Assistant Professor, Computer Information Processing, M.S., Southern Illinois University, 1988.
Kearney, Brian, Assistant Professor, Electronics Technology, B.S., Southern Illinois University, 1981.
Keim, William, Visiting Professor, Office of the Dean, Ed.D., University of Southern California, 1969.

Mogharreban, Namdar, Visiting Assistant Professor, Computer Information Processing, Ph.D., Southern Illinois University at Carbondale, 1989.
Morgan, Barbara, Assistant Professor, Office Systems and Specialties, Ph.D., Southern Illinois University, 1992.
Morse, H. Pauletta, Associate Professor, Office Systems and Specialties, Ph.D., Southern Illinois University, 1989.
Moss, Lorna, Lecturer, Office Systems and Specialties, M.S., Southern Illinois University, 1978.
Novak, Mary Ann, Associate Professor, Office Systems and Specialties, Ph.D., Southern Illinois University, 1987.
Payne, Michael A., Associate Professor, Computer Information Processing, M.S., Southern Illinois University, 1974.
Rehwaldt, Susan S., Assistant Professor, Office Systems and Specialties, Ph.D., Southern Illinois University, 1982.
Rossi, Eric, Visiting Assistant Professor, Electronics Technology, B.A., Southern Illinois University, 1982.
Sheets, Joyce, Associate Professor, Office Systems and Specialties, M.S., Southern Illinois University, 1985.
Sheets, Leslie P., Associate Professor, Electronics Technology, M.S., Southern Illinois University, 1976.
Shin, Wangshik, Associate Professor, Office Systems and Specialties, M.S., Southern Illinois University, 1963.
Shupe, William G., Associate Professor, Electronics Technology, M.S., Southern Illinois University, 1977.
Stanley, Charles R., Assistant Professor, *Emeritus*, Technical Careers, M.S., University of Houston, 1976.
Stitt, Beverly A., Associate Professor, Office Systems and Specialities, Ph.D., Southern Illinois University, 1980.
Tregoning, Elizabeth, Lecturer, Related Studies, B.S., University of Illinois, 1979.
Vaughn, F. Eugene, Associate Professor, *Emeritus*, Office Systems and Specialties, M.S.Ed., Southern Illinois University, 1961.
Wolfson, Ruth Ann, Lecturer, Related Studies, B.S., Eastern Illinois University, 1976.
Woolard, Linda, Assistant Professor, Computer Information Processing, M.S., Southern Illinois University, 1984.

Journalism (College of Mass Communication and Media Arts)

Akhavan-Majid, Roya, Associate Professor, Ph.D., University of Minnesota, 1988.
Atwood, L. Erwin, Professor, Ph.D., University of Iowa, 1965.
Brown, George C., Professor, *Emeritus*, Ph.D., Southern Illinois University, 1963.
Elliott, William, Associate Professor, Ph.D., University of Wisconsin, 1972.
Ford, James L. C., Professor, *Emeritus*, Ph.D., University of Minnesota, 1948.
Gruny, C. Richard, Assistant Professor, J.D., University of Illinois, 1959.
Hart, Jim Allee, Professor, *Emeritus*, Ph.D., University of Missouri, 1959.
Jaehnig, Walter, Associate Professor and *Director*, Ph.D., University of Essex, 1974.
Johnson, Thomas J., Assistant Professor, Ph.D., University of Washington, 1989.
Kelly, James, Assistant Professor, Ph.D., Indiana University, 1989.
Lowry, Dennis, Professor, Ph.D., University of Iowa, 1972.
McCoy, Ralph E., Professor, *Emeritus*, Ph.D., University of Illinois, 1956.
Paddon, Anna R., Assistant Professor, Ph.D., University of Tennessee, 1985.
Ramaprasad, Jyotika, Associate Professor, Ph.D., Southern Illinois University, 1985.
Rice, W. Manion, Associate Professor, *Emeritus*, Ph.D., Southern Illinois University, 1967.
Shidler, Jon A., Assistant Professor, M.S., Roosevelt University, 1980.
Spellman, Robert L., Jr., Associate Professor, J.D., Cleveland State University, 1977.
Stonecipher, Harry W., Professor, *Emeritus*, Ph.D., Southern Illinois University, 1971.
Wanta, Wayne, Assistant Professor, Ph.D., University of Texas, 1989.

Library Affairs

Bauner, Ruth E., Associate Professor, Ph.D., Southern Illinois University, 1978.
Black, George W., Jr., Professor, *Emeritus,* M.S.L.S., Columbia University, 1966.
Boydston, Jo Ann, Distinguished Professor, *Emerita*, Ph.D., Columbia University, 1950.
Brown, F. Dale, Associate Professor, Ph.D., Southern Illinois University, 1978.
Callahan, Daren, Assistant Professor, M.S., University of North Carolina at Chapel Hill, 1989.
Chervinko, James S., Assistant Professor, M.S.L.S., University of Illinois, 1973.
Cook, Margaret K., Associate Professor, Ph.D., Southern Illinois University, 1977.
Cox, Shelley M., Associate Professor, M.A., Southern Illinois University, 1981.
Crane, Lilly E., Assistant Professor, M.A.L.S., University of Michigan, 1967.
Davis, Harry, Assistant Professor, M.A.L.S., University of Denver, 1969.
Davis, Marta A., Assistant Professor, M.A.L.S., University of Denver, 1969.

Drickamer, Karen D., Assistant Professor, M.L.S., State University of New York at Albany, 1987.
Fahey, Kathleen G., Assistant Professor, M.S., University of Michigan, 1971.
Foote, Jody B., Assistant Professor, M.L.S., University of Texas, 1979.
Fox, James W., Assistant Professor, M.S.L.S., University of North Carolina, 1975.
Fox, Mary Anne, Associate Professor, M.A., Southern Illinois University, 1979.
Harwood, Judith Ann, Associate Professor, Ph.D., Southern Illinois University, 1981.
Hostetler, Jerry, Assistant Professor, Ph.D., Southern Illinois University, 1977.
Hutton, Betty Jean, Assistant Professor, *Emerita,* M.S., Southern Illinois University, 1968.
Isbell, Mary K., Assistant Professor, *Emerita*, M.S., Southern Illinois University, 1971.
Jenkins, Darrell L., Associate Professor, M.A., New Mexico State University, 1976.
Keel, Robert L., Assistant Professor, *Emeritus,* M.A.L.S., George Peabody College for Teachers, 1961.
Kilpatrick, Thomas L., Professor, Ph.D., George Peabody College, 1982.
Koch, David V., Associate Professor, M.A., Southern Illinois University, 1963.
Koch, Loretta, Assistant Professor, M.S.L.S., University of Illinois, 1974.
Lampman, Wilma L., Assistant Professor, *Emerita*, M.S., Southern Illinois University, 1978.
MacLeod, Judith M., Assistant Professor, M.A.L.S., University of Illinois, 1990.
Marrero, Carlos E., Assistant Professor, *Emeritus*, M.A., University of Denver, 1961.
Matson, Susan A., Assistant Professor, Ph.D., University of Wisconsin, 1972.
Matthews, Elizabeth W., Professor, *Emerita*, Ph.D., Southern Illinois University, 1972.
Person, Roland C., Professor, Ph.D., Southern Illinois University, 1982.
Peterson, Kenneth G., Professor, *Emeritus*, Ph.D., University of California at Berkeley, 1968.
Pixley, Lorene, Assistant Professor, M.S., University of Illinois, 1960.
Preece, Barbara G., Associate Professor, M.A.L.S., University of Minnesota, 1979.
Rubin, Angela, Assistant Professor, M.S., University of Illinois, 1956.
Russell, Thyra K., Assistant Professor, Ph.D., Southern Illinois University, 1987.
Scott, W. Willie, Assistant Professor, M.M., Southern Illinois University, 1981.
Simon, John Y., Professor, Ph.D., Harvard University, 1961.
Snyder, Carolyn A., Professor, M.A.L.S., University of Denver, 1965.
Starratt, Joseph, Associate Professor, M.L.S., Emory University, 1980.
Stubbs, Walter R., Associate Professor, Ph.D., Southern Illinois University, 1983.
Tax, Andrew T., Assistant Professor, M.L.S., Charles University, Prague, 1962.
Watson, John Mark, Assistant Professor, M.L.S., Indiana University, 1989.
Wilson, Betty Ruth, Associate Professor, *Emerita*, M.A., George Peabody College for Teachers, 1957.
Wood, Don E., Assistant Professor, M.S., University of Illinois, 1965.

Linguistics (College of Liberal Arts)

Angelis, Paul J., Associate Professor and *Chair*, Ph.D., Georgetown University, 1968.
Gilbert, Glenn G., Professor, Ph.D., Harvard University, 1963.
Lakshmanan, Usha, Assistant Professor, Ph.D., University of Michigan, 1989.
Nathan, Geoffrey S., Associate Professor, Ph.D., University of Hawaii, 1978.
Nguyen, Dinh-Hoa, Professor, *Emeritus*, Ph.D., New York University, 1956.
Parish, Charles, Professor, *Emeritus,* Ph.D., University of New Mexico, 1959.
Perkins, Allen Kyle, Professor, Ph.D., University of Michigan at Ann Arbor, 1976.
Redden, James E., Professor, *Emeritus*, Ph.D., Indiana University, 1965.
Winer, Lise S., Associate Professor, Ph.D., University of the West Indies, 1982.
Winters, Margaret E., Professor, Ph.D., University of Pennsylvania, 1975.

Management (College of Business and Administration)

Bateman, David N., Professor, Ph.D., Southern Illinois University, 1970.
Bedwell, R. Ralph, Associate Professor, *Emeritus*, Ph.D., Southern Illinois University, 1969.
Bhattacharyya, Siddhartha, Assistant Professor, Ph.D., University of Florida, 1993.
Larson, Lars L., Associate Professor, Ph.D., University of Illinois, 1971.
Melcher, Arlyn J., Professor and *Chairperson*, Ph.D., University of Chicago, 1964.
McKinley, William, Associate Professor, Ph.D., Columbia University, 1983.
Nelson, Reed E., Associate Professor, Ph.D., Cornell University, 1983.
Ponce De Leon, Jesus, Assistant Professor, Ph.D., Indiana University, 1989.
Rai, Arun, Assistant Professor, Ph.D., Kent State University, 1991.

Ramaprasad, Arkalqud, Associate Professor, Ph.D., University of Pittsburgh, 1980.
Sekaran, Uma, Professor, *Emerita,* Ph.D., University of California at Los Angeles, 1977.
Stubbart, Charles I., Associate Professor, Ph.D., University of Pittsburgh, 1983.
Tadisina, Suresh, Associate Professor, Ph.D., University of Cincinnati, 1987.
Troutt, Marvin, Professor, Ph.D., University of Illinois at Chicago Circle, 1975.
Vicars, William M., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University, 1969.
Westberg, William C., Professor, *Emeritus*, Ph.D., Pennsylvania State University, 1948.
White, Gregory P., Associate Professor, Ph.D., University of Cincinnati, 1976.
Wilson, Harold K., Associate Professor, *Emeritus*, D.B.A., University of Colorado, 1972.

Marketing (College of Business and Administration)

Adams, Kendall A., Professor, *Emeritus*, Ph.D., Michigan State University, 1962.
Andersen, R. Clifton, Professor, D.B.A., Indiana University, 1960.
Anderson, Carol H., Associate Professor, *Emerita* Ph.D., Texas A & M University, 1981.
Bruner, Gordon C., II, Associate Professor, Ph.D., University of North Texas, 1983.
Dommermuth, William P., Professor, *Emeritus,* Ph.D., Northwestern University, 1964.
Fraedrich, John P., Assistant Professor, Ph.D., Texas A & M University, 1988.
Grant, John A., Instructor, M.B.A., Eastern Illinois University, 1985.
Herche, Joel E., Assistant Professor, Ph.D., University of Oregon, 1989.
Hindersman, Charles H., Professor, *Emeritus,* D.B.A., Indiana University, 1959.
King, Maryon F., Assistant Professor, Ph.D., Indiana University, 1989.
Mathur, Lynette L., Assistant Professor, Ph.D., Ohio State University, 1990.
Moore, James Ray, Assistant Professor, *Emeritus,* Ph.D., University of Illinois, 1972.
Perry, Donald L., Associate Professor, Ph.D., University of Illinois, 1966.
Summey, John H., Associate Professor, Ph.D., Arizona State University, 1974.

Mathematics (College of Science)

Beckemeyer, Imogene C., Assistant Professor, *Emerita*, M.A., Southern Illinois University, 1952.
Beintema, Mark, Assistant Professor, Ph.D., University of South Carolina, 1990.
Budzban, Gregory, Assistant Professor, Ph.D., University of South Florida, 1991.
Burton, T. A., Professor, Ph.D., Washington State University, 1964.
Chen, Pei-Li, Assistant Professor, Ph.D., State University of New York at Buffalo, 1988.
Clark, Lane, Associate Professor, Ph.D., University of New Mexico, 1980.
Crenshaw, James, Associate Professor, Ph.D., University of Illinois, 1967.
Danhof, Kenneth, Professor, Ph.D., Purdue University, 1969.
Dharmadhikari, Sudhakar, Professor, Ph.D., University of California at Berkeley, 1962.
Earnest, Andrew, Professor, Ph.D., Ohio State University, 1975.
Elston, George, Assistant Professor, *Emeritus*, M.S., University of Wisconsin, 1949.
Feinsilver, Philip, Professor, Ph.D., New York University (Courant), 1975.
Fitzgerald, Robert W., Professor, Ph.D., University of California at Los Angeles, 1980.
Foland, Neal E., Professor, *Emeritus*, Ph.D., University of Missouri, 1961.
Gates, Leslie D., Associate Professor, *Emeritus*, Ph.D., Iowa State University, 1952.
Gregory, John, 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., Professor, Ph.D., University of Oklahoma, 1967.
Hughes, Harry R., Assistant Professor, Ph.D., Northwestern University, 1988.
Hunsaker, Worthen N., Professor, Ph.D., Washington State University, 1966.
Jeyaratnam, Sakthivel, Professor, Ph.D., Colorado State University, 1978.
Kammler, David, Professor, Ph.D., University of Michigan, 1971.
Kirk, Ronald B., Professor and *Chairperson*, Ph.D., California Institute of Technology, 1968.
Koch, Charles, Assistant Professor, *Emeritus* Ph.D., University of Illinois, 1961.
Langenhop, Carl E., Professor, *Emeritus*, Ph.D., Iowa State University, 1948.
Mark, Abraham M., Professor, *Emeritus*, Ph.D., Cornell University, 1947.

Maxwell, Charles, Professor, *Emeritus*, Ph.D., University of Illinois, 1955.
McDaniel, Wilbur C., Professor, *Emeritus*, Ph.D., University of Wisconsin, 1939.
Mohammed, Salah-Eldin A., Professor, Ph.D., University of Warwick (England), 1976.
Moore, Robert A., Associate Professor, *Emeritus*, Ph.D., Indiana University, 1961.
Neuman, Edward G., Professor, Ph.D., University of Wroclaw (Poland), 1972.
Olmsted, John M. H., Professor, *Emeritus*, Ph.D., Princeton University, 1940.
Paine, Thomas B., Assistant Professor, *Emeritus* Ph.D., University of Oregon at Eugene, 1966.
Panchapakesan, S., Professor, Ph.D., Purdue University, 1969.
Parker, George D., Associate Professor, Ph.D., University of California at San Diego, 1971.
Patula, William T., Professor, Ph.D., Carnegie-Mellon University, 1971.
Pedersen, Franklin D., Associate Professor, *Emeritus*, Ph.D., Tulane University, 1967.
Pericak-Spector, Kathleen, Associate Professor, Ph.D., Carnegie-Mellon University, 1980.
Porter, Thomas D., Assistant Professor, Ph.D., University of New Mexico, 1990.
Redmond, Donald, Associate Professor, Ph.D., University of Illinois, 1976.
Skalsky, Michael, Professor, *Emeritus*, D.Nat.Sc., University of Gottingen, 1949.
Slechticky, James L., Instructor, *Emeritus*, M.S. Washington University, 1940.
Snyder, Herbert H., Professor, *Emeritus*, Ph.D., Lehigh University, 1965, Ph.D., University of South Africa, 1971.
Spector, Scott J., Professor, Ph.D., Carnegie-Mellon University, 1978.
Tarabek, Michael, Assistant Professor, Ph.D., Carnegie Mellon University, 1989.
Wallis, Walter, Professor, Ph.D., University of Sydney, 1968.
Wilson, Joseph C., Professor, *Emeritus*, Ph.D., Louisiana State University, 1954.
Wright, Mary H., Associate Professor, Ph.D., McGill University (Montreal), 1977.
Yucas, Joseph, Professor, Ph.D., Pennsylvania State University, 1978.
Zeman, Marvin, Professor, Ph.D., New York University (Courant Institute), 1974.

Mechanical Engineering and Energy Processes

(College of Engineering)
Agrawal, Om, Associate Professor, Ph.D., University of Illinois at Chicago, 1984.
Chen, Juh W., Professor, Ph.D., University of Illinois, 1959.
Chu, Tsuchin, Assistant Professor, Ph.D., University of South Carolina, 1982.
Don, Jarlen, Associate Professor, Ph.D., Ohio State University, 1982.
Farhang, Kambiz, Assistant Professor, Ph.D., Purdue University, 1989.
Helmer, Wayne Allen, Professor, Ph.D., Purdue University, 1974.
Hesketh, Howard B., Professor, Ph.D., Pennsylvania State University, 1968.
Hippo, Edwin J., Professor, Ph.D., Pennsylvania State University, 1977.
Jefferson, Thomas B., Professor, *Emeritus*, Ph.D., Purdue University, 1955.
Kent, Albert C., Professor and *Chairperson*, Ph.D., Kansas State University, 1968.
Lalvani, S.B., Professor, University of Connecticut, 1982.
Margon, Irving, Visiting Associate Professor, M.S., University of California, Los Angeles, 1948.
Muchmore, Charles B., Professor, Ph.D., Southern Illinois University, 1970.
O'Brien, William S., Associate Professor, Ph.D., West Virginia University, 1972.
Orthwein, William, Professor, *Emeritus*, Ph.D., University of Michigan, 1959.
Rajan, S., Professor, Ph.D., University of Illinois, 1970.
Swisher, James H., Professor, Ph.D., Carnegie-Mellon University, 1963.
Tempelmeyer, Kenneth E., Professor, *Emeritus*, Ph.D., University of Tennessee, 1969.
Wittmer, Dale, Associate Professor, Ph.D., University of Illinois, 1980.

Microbiology (College of Science)

Achenbach, Laurie A., Assistant Professor, Ph.D., University of Illinois, 1988.
Borgia, Peter, Associate Professor, Ph.D., University of Illinois, 1973.
Brewer, Gregory, Professor, Ph.D., University of California, 1972.
Caster, John, Assistant Professor, Ph.D., St. Louis University, 1968.
Christianson, Thomas W., Assistant Professor, Ph.D., University of Chicago, 1983.
Clark, David P., Associate Professor, Ph.D., University of Bristol (England), 1976.
Cooper, Morris D., Professor, Ph.D., University of Georgia at Athens, 1971.
Fix, Douglas F., Associate Professor, Ph.D., Indiana University, 1983.
Jackson, Robert, Professor, Ph.D., Purdue University, 1963.
Madigan, Michael T., Professor, Ph.D., University of Wisconsin, 1976.
Martinko, John M., Associate Professor, Ph.D., State University of New York at Buffalo, 1978.

Moticka, Edward A., Professor, Ph.D., University of Illinois at the Medical Center, 1970.
Myers, Walter L., Professor, D.V.M., Ph.D., University of Wisconsin, 1961.
Parker, Jack, Professor and *Chairperson*, Ph.D., Purdue University, 1973.
Rouhandeh, Hassan, Professor, Ph.D., Kansas State University, 1959.
Rowan, Dighton F., Professor, *Emeritus*, 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; Ph.D., Ohio State University, 1966.
Watabe, Kounosuke, Associate Professor, Ph.D., Kyoto University, Japan, 1981.

Mining Engineering (College of Engineering)

Chugh, Yoginder P., Professor and *Chairperson*, Ph.D., Pennsylvania State University, 1971.
Honaker, Ricky Q., Assistant Professor, Ph.D., Virginia Polytechnic Institute and State University, 1992.
Missavage, Roger, Instructor, M.S., Southern Illinois University at Carbondale, 1991.
Paul, Bradley C., Assistant Professor, Ph.D., University of Utah-Salt Lake, 1989.
Sevim, Hasan, Associate Professor, Ph.D., Columbia University, 1984.
Sinha, Atmesh K., Professor, Ph.D., University of Sheffield, 1963.

Music (College of Liberal Arts)

Allison, Robert, Associate Professor, D.M.A., University of Illinois, 1988.
Barta, Michael, Associate Professor, M.M., Franz Liszt Academy of Music (Hungary), 1977.
Barwick, Steven, Professor, *Emeritus*, Ph.D., Harvard University, 1949.
Bateman, Marianne Webb, Professor, M.Mus., University of Michigan, 1959.
Beattie, Donald, Associate Professor, M.Mus., University of Colorado, 1977.
Best, Richard, Professor, Northwestern University.
Bottje, Will Gay, Professor, *Emeritus*, D.M.A., Eastman School of Music, 1955.
Breznikar, Joseph, Professor, M.Mus., University of Akron, 1977.
Brown, Philip, Assistant Professor, M.M.E., University of North Texas, 1983.
Delphin, Wilfred, Professor, D.M.A., University of Southern Mississippi, 1976.
Fligel, Charles, Associate Professor, M.M., University of Kentucky, 1966.
Grizzell, Mary Jane, Assistant Professor, *Emerita*, M.Mus., Eastman School of Music, 1943.
Hanes, Michael, Associate Professor, M.M.E., Southern Illinois University, 1965.
Hartline, Elisabeth, Assistant Professor, *Emerita*, M.Mus. Northwestern University, 1936.
House, Mary Elaine Wallace, Professor, *Emerita*, M.Mus., University of Illinois, 1954.
Hunt, C. B., Jr., Professor, *Emeritus*, Ph.D., University of California, Los Angeles, 1949.
Hussey, George, Professor, M.A.Ed., Washington University, 1963.
Mandat, Eric, Associate Professor, D.M.A., Eastman School of Music, 1986.
McHugh, Catherine, Professor, *Emerita*, Ed.D., Columbia University, 1959.
Mellado, Daniel, Associate Professor, Ph.D., Michigan State University, 1979.
Mochnick, John, Associate Professor, D.M.A., University of Cincinnati, 1978.
Mueller, Robert, Professor, *Emeritus*, Ph.D., Indiana University, 1954.
Olsson, Phillip, Professor, *Emeritus*, M.Mus., Chicago Conservatory, 1949.
Phillips, Dan, Assistant Professor, M.M., University of Notre Dame, 1979.
Poulos, Helen, Associate Professor, D.M., Indiana University, 1971.
Resnick, Robert, Professor, *Emeritus*, M.Mus., Wichita State University, 1949.
Ritcher, Gary, Assistant Professor, Ed.D., University of Illinois, 1989.
Romersa, Henry, Visiting Associate Professor, M.M.Ed., Oberlin College, 1955.
Roubos, Robert, Professor and *Director*, D.M.A., University of Michigan, 1966.
Simmons, Margaret, Associate Professor, M.M., University of Illinois, 1976.
Stemper, Frank, Associate Professor, Ph.D., University of California, 1981.
Taylor, Charles, Associate Professor, *Emeritus*, Ed.D., Columbia University, 1950.
Underwood, Jervis, Professor, Ph.D., North Texas State University, 1970.
Wagner, Jeanine, Associate Professor, D.M.A., University of Illinois, 1987.
Weiss, Robert, Associate Professor, Ph.D., Southern Illinois University, 1984.
Werner, Kent, Associate Professor, *Emeritus*, Ph.D., University of Iowa, 1966.

Paralegal Studies for Legal Assistants (College of Liberal Arts)

Dibble, Elizabeth, Lecturer, J.D., Southern Illinois University, 1983.
Hood, Howard, Lecturer, J.D., University of Illinois, 1968.

Hughes, Kenneth, Lecturer, J.D., Southern Illinois University, 1982.
Lacey, Pamela, Lecturer, J.D., Southern Illinois University, 1982.
Smoot, Carolyn, Lecturer, J.D., Southern Illinois University at Carbondale, 1983.
Starkweather, Lee Ellen, Lecturer, J.D., Southern Illinois University, 1984.

Philosophy (College of Liberal Arts)

Alexander, Thomas, Associate Professor, Ph.D., Emory University, 1984.
Black, Andrew, Assistant Professor, Ph.D., University of Massachussetts at Amherst, 1991.
Clarke, David S., Jr., Professor, Ph.D., Emory University, 1964.
Diefenbeck, James A., Professor, *Emeritus*, Ph.D., Harvard University, 1950.
Eames, Elizabeth R., Professor, *Emerita*, Ph.D., Bryn Mawr College, 1951.
Gaskill, Thomas E., Assistant Professor, Ph.D., Vanderbilt University, 1992.
Gatens-Robinson, Eugenie, Assistant Professor, Ph.D., Southern Illinois University, 1984.
Gillan, Garth J., Professor, Ph.D., Duquesne University, 1966.
Hahn, Lewis E., Professor, *Emeritus*, and Editor of *Library of Living Philosophers*, Ph.D., University of California, 1939.
Hahn, Robert A., Associate Professor, Ph.D., Yale University, 1976.
Hickman, Larry A., Professor, Ph.D., University of Texas at Austin, 1971.
Howie, John, Professor, Ph.D., Boston University, 1965.
Johnson, Mark, Professor and *Chair*, Ph.D., University of Chicago, 1977.
Kelly, Matthew J., Associate Professor, *Emeritus*, of Notre Dame, 1963.
Plochmann, George Kimball, Professor, *Emeritus*, Ph.D., University of Chicago, 1950.
Schedler, George E., Professor, Ph.D., University of California at San Diego, 1973; J.D., Southern Illinois University 1987.
Schilpp, Paul A., Professor, *Emeritus*, Ph.D., Stanford University, 1936.
Summerfield, Donna M., Assistant Professor, Ph.D., University of Notre Dame, 1984.
Tyman, Stephen, Associate Professor, University of Toronto, 1980.

Physical Education (College of Education)

Ackerman, Kenneth, Assistant Professor, M.A., Michigan State University, 1959.
Baker, John A.W., Associate Professor, Ph.D., University of Iowa, 1980.
Becque, M. Daniel, Assistant Professor, Ph.D., University of Michigan, 1988.
Blackman, Claudia J., Assistant Professor, M.S.Ed., Southern Illinois University, 1968.
Blinde, Elaine M., Assistant Professor, Ph.D., University of Illinois, 1987.
Brechtelsbauer, Kay M., Assistant Professor, Ph.D., Southern Illinois University, 1980.
Carroll, Peter, Assistant Professor, Ph.D., Pennsylvania State University, 1970.
DeVita, Paul, Assistant Professor, Ph.D., University of Oregon, 1986.
Dirks, W. Edward, Instructor, M.S., Southern Illinois University, 1964; Certificate, Physical Therapy, Ohio State University, 1965.
Good, Larry, Associate Professor, Ph.D., Temple University, 1968.
Hartzog, Lewis, Instructor, *Emeritus*, M.E., Colorado State University, 1954.
Illner, Julee Ann, Assistant Professor, M.S.Ed., Southern Illinois University, 1968.
Judd, Michael,Assistant Professor, Ph.D., University of Southern California, 1990.
Kelley, Betty, Assistant Professor, Ph.D., University of North Carolina at Greensboro, 1990.
Knowlton, Ronald, Professor and *Chairperson*, Ph.D., University of Illinois, 1961.
Long, Linn, Instructor, M.S., University of Colorado, 1967.
Martin, Janis, Assistant Professor, Ed.D., University of Tennessee, 1982.
Okita, Ted, Professor, *Emeritus*, M.A., Northwestern University, 1964.
Perkins, Sally A., Instructor, M.S., Indiana University, 1976.
Potter, Marjorie Bond, Professor, *Emerita*, Ph.D., University of Southern California, 1958.
Shea, Edward, Professor, *Emeritus*, Ph.D., New York University, 1955.
Stotlar, John, Associate Professor, *Emeritus*, D.P.Ed., Indiana University, 1954.
Thorpe, Jo Anne Lee, Professor, *Emerita*, Ph.D., Texas Woman's University, 1964.
West, Charlotte, Professor, Ph.D., University of Wisconsin, 1969.

Wilson, Donna, Associate Professor, M.F.A., University of Oklahoma, 1975.
Zimmerman, Helen, Professor, *Emerita*, Ph.D., University of Wisconsin, 1951.

Physics (College of Science)

Ali, Naushad, Associate Professor, Ph.D., University of Alberta, 1984.
Arvin, Martin J., Professor, *Emeritus*, Ph.D., University of Illinois, 1934.
Cutnell, John D., Professor, Ph.D., University of Wisconsin, 1967.
Gruber, Bruno J., Professor, Ph.D., University of Vienna, Austria, 1962.
Hart, Charles F., Associate Professor, Ph.D., University of Texas, 1981.
Henneberger, Walter C., Professor, Ph.D., Gottingen University, Germany, 1959.
Johnson, Kenneth W., Associate Professor, Ph.D., Ohio State University, 1967.
Malhotra, Vivak, Professor, Ph.D., Indian Institute of Technology, Kanpur, 1978.
Masden, J. Thomas, Associate Professor, Ph.D., Purdue University, 1983.
Malik, F. Bary, Professor, Ph.D., Gottingen University, West Germany, 1958.
Migone, Aldo, Associate Professor, Ph.D., Pennsylvania State University, 1984.
Nickell, William E., Professor, *Emeritus*, Ph.D., University of Iowa, 1954.
Sanders, Frank C., Associate Professor, Ph.D., University of Texas, 1968.
Saporoschenko, Mykola, Professor, Ph.D., Washington University, 1958.
Tao, Rongjia, Associate Professor, Ph.D., Columbia University, 1982.
Watson, Richard E., Professor *Emeritus*, Ph.D., University of Illinois, 1938.
Zitter, Robert N., Professor, Ph.D., University of Chicago, 1962.

Physiology (School of Medicine)

Banerjee, Chandra M., Professor, M.D., University of Calcutta, 1959; Ph.D., Medical School of Virginia, Richmond, 1967.
Bartke, Andrzej, Professor and *Chairperson*, Ph.D., University of Kansas, 1965.
Browning, Ronald A., Professor, Ph.D., University of Illinois Medical Center, Chicago, 1971.
Collard, Michael W., Assistant Professor, Ph.D., Washington State University, 1987.
Coulson, Richard L., Professor, Ph.D., University of Toronto, 1971.
Cox, Thomas C., Associate Professor, Ph.D., Arizona State University, 1979.
Dunagan, Tommy T., Professor, Ph.D., Purdue University, 1960.
Ellert, Martha S., Associate Professor, Ph.D., University of Miami, 1967.
Falvo, Richard E., Professor, Ph.D., University of Wyoming, 1970.
Ferraro, James S., Associate Professor, Ph.D., The Chicago Medical School, 1984.
Huggenvik, Jodi I., Assistant Professor, Ph.D., Washington State University, 1985.
Hunter, William S., Associate Professor, Ph.D., Michigan State University, 1971.
Johnson, Anne K., Instructor, M.S., Ohio State University, 1962.
Miller, Donald M., Professor, Ph.D., University of Illinois, Champaign-Urbana, 1965.
Murphy, Laura L., Research Assistant Professor, Ph.D., Medical College of Georgia, 1983.
Myers, J. Hurley, Professor, Ph.D., University of Tennessee, Health Science Center at Memphis, 1969.
Nequin, Lynn G., Associate Professor, Ph.D., University of Illinois College of Medicine, Chicago, 1970.
Russell, Lonnie D., Professor, Ph.D., University of Nebraska, 1974.
Shanahan, Michael F., Professor, Ph.D., University of Michigan, 1976.
Sollberger, Arne R., Professor, *Emeritus*, M.D., Karolinska Institute, Sweden, 1957.
Steger, Richard W., Professor, Ph.D., University of Wyoming, 1974.
Wade, David R., Associate Professor, Ph.D., Cambridge University, England, 1967.
Yau, William M., Professor, Ph.D., Medical College of Virginia, 1971.

Plant and Soil Science (College of Agriculture)

Chong, She Kong, Professor, Ph.D., University of Hawaii, 1979.
Diesburg, Kenneth, Assistant Professor, Ph.D., Iowa State University, 1987.
Elkins, Donald M., Professor and *Associate Dean*, Ph.D., Auburn University, 1967.
Hillyer, Irvin G., Professor, Ph.D., Michigan State University, 1956.
Jones, Joe H., Professor, *Emeritus*, Ph.D., Ohio State University, 1960.
Kapusta, George, Professor, Ph.D., Southern Illinois University, 1975.
Klubek, Brian P., Professor, Ph.D., Utah State University, 1977.
Leasure, J. K., Professor, *Emeritus*, Ph.D., University of Illinois, 1953.
Lightfoot, David A., Assistant Professor, Ph.D., University of Leeds, 1984.
Midden, Karen L., Assistant Professor, M.L.A., University of Georgia, 1983.
Myers, Oval, Jr., Professor, Ph.D., Cornell University, 1963.

Olsen, Farrel J., Professor, Ph.D., Rutgers University, 1961.
Portz, Herbert L., Professor, *Emeritus*, Ph.D., University of Illinois, 1954.
Preece, John E., Professor, Ph.D., University of Minnesota, 1980.
Stucky, Donald J., Professor and *Chairperson*, Ph.D., Purdue University, 1963.
Taylor, Bradley H., Associate Professor, Ph.D., Ohio State University, 1982.
Tweedy, James A., Professor, *Dean*, Ph.D., Michigan State University, 1966.
Varsa, Edward C., Associate Professor, Ph.D., Michigan State University, 1970.

Plant Biology (College of Science)

Ashby, William C., Professor, *Emeritus*, Ph.D., University of Chicago, 1950.
Bozzola, John J., Professor, Ph.D., Southern Illinois University, 1975.
Crandall-Stotler, Barbara C., Professor, Ph.D., University of Cincinnati, 1968.
Gibson, David J., Assistant Professor, Ph.D., University of Wales - Bangor, 1984.
Matten, Lawrence C., Professor and *Chairperson*, Ph.D., Cornell University, 1965.
Middleton, Beth, Assistant Professor, Ph.D., Iowa State University, 1989.
Mohlenbrock, Robert H., Distinguished Professor, *Emeritus*, Ph.D., Washington University, 1957.
Nickrent, Daniel L., Assistant Professor, Ph.D., Miami University, Ohio, 1984.
Olah, Ladislao V., Professor, *Emeritus*, Ph.D., Stephen Tisza University, Hungary, 1934.
Pappelis, Aristotel J., Professor, Ph.D., Iowa State University, 1957.
Richardson, John A., Associate Professor, M.F.A., Ohio University, 1969.
Robertson, Philip A., Professor, Ph.D., Colorado State University, 1968.
Schmid, Walter E., Professor, Ph.D., University of Wisconsin, 1961.
Stotler, Raymond E., Professor, Ph.D., University of Cincinnati, 1968.
Sundberg, Walter J., Professor, Ph.D., University of California, 1971.
Tindall, Donald R., Professor, Ph.D., University of Louisville, 1966.
Ugent, Donald, Professor, Ph.D., University of Wisconsin, 1966.
Verduin, Jacob, Professor, *Emeritus*, Ph.D., Iowa State University, 1947.
Yopp, John H., Professor, Ph.D., University of Louisville, 1969.

Political Science (College of Liberal Arts)

Baker, John H., Associate Professor, Ph.D., Princeton University, 1961.
Bhattacharyya, Jnanabrota, Associate Professor, Ph.D., University of Delhi, 1969.
Brown, Barbara L., Lecturer, Ph.D., Southern Illinois University, 1985.
Chou, Ikua, Professor, *Emeritus*, Ph.D., Fletcher School of Law and Diplomacy, 1949.
Clinton, Robert, Associate Professor, Ph.D., University of Texas at Austin, 1985.
Dale, Richard, Associate Professor, Ph.D., Princeton University, 1962.
Derge, David Richard, Professor, Ph.D., Northwestern University, 1955.
Desai, Uday, Professor, Ph.D., University of Pittsburgh, 1973.
Ervin, Osbin L., Associate Professor, Ph.D., University of Tennessee, 1974.
Esler, Michael, Assistant Professor, Ph.D., Ohio State University, 1990.
Foster, John L., Associate Professor and *Chairperson*, Ph.D., University of Minnesota, 1971.
Garner, William R., Associate Professor, Ph.D., Tulane University, 1963.
Hamman, John, Assistant Professor, Ph.D., University of Illinois, 1988.
Hanson, Earl Thomas, Professor, *Emeritus*, Ph.D., University of Illinois, 1948.
Hardenbergh, William, Professor, *Emeritus*, Ph.D., University of Illinois, 1954.
Hays, Scott, Assistant Professor, Ph.D., Florida State University, 1991.
Jackson, John S., III, Professor, *Dean*, Ph.D., Vanderbilt University, 1971.
Kamarasy, Egon K., Assistant Professor, *Emeritus*, Doctor Politics, Budapest University, Hungary, 1942.
Kenney, David, Professor, *Emeritus*, Ph.D., University of Illinois, 1952.
Klingberg, Frank L., Professor, *Emeritus*, Ph.D., University of Chicago, 1938.
Landecker, Manfred, Associate Professor, Ph.D., Johns Hopkins University, 1965.
Mason, Ronald M., Associate Professor, Ph.D., University of Iowa, 1976.
McKinney, Lucinda, Instructor, M.A., American University, 1991.
Melone, Albert, Professor, Ph.D., University of Iowa, 1972.
Miller, Roy E., Associate Professor, Ph.D., University of Illinois, 1971.
Morton, Ward M., Professor, *Emeritus*, Ph.D., University of Texas, 1941.
Nelson, Randall H., Professor, *Emeritus*, Ph.D., University of Michigan, 1956.
Schmidt, Diane, Assistant Professor, Ph.D., Washington University, 1988.
Schubert, Glendon, Research Professor, *Emeritus*, Ph.D., Syracuse University, 1948.
Snavely, Keith, Associate Professor, Ph.D., University of California at Davis, 1984.

Somit, Albert, Distinguished Service Professor, *Emeritus*, Ph.D., University of Chicago, 1947.
Turley, William S., Professor, Ph.D., University of Washington, 1972.
Truitt, Lawrence, Assistant Professor, Ph.D., Arizona State, 1992.

Psychology (College of Liberal Arts)

Bekker, L. DeMoyne, Associate Professor, *Emeritus*, Ph.D., Ohio State University, 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, *Emeritus*, Ph.D., University of Michigan, 1956.
Clancy, Stephanie M., Assistant Professor, Ph.D., Syracuse University, 1989.
Corcoran, Kevin J., Associate Professor, Ph.D., University of Connecticut, 1984.
DiLalla, David Louis., Assistant Professor, Ph.D., University of Virginia, 1989.
Dillon-Summer, Ronna, Professor, Ph.D., University of California, Riverside, 1978.
Dollinger, Stephen J., Professor, Ph.D., University of Missouri-Columbia, 1977.
Dunagan, Shirley S., Instructor, M.S., University of Tennessee, 1954.
Ehrenfreund, David, Professor, *Emeritus*, Ph.D., State University of Iowa, 1947.
Gannon, Linda, Professor, Ph.D., University of Wisconsin, 1975.
Gilbert, Brenda O., Assistant Professor, Ph.D., University of Florida, 1985.
Gilbert, David G., Associate Professor, Ph.D., Florida State University, 1978.
Glidden, Cynthia E., Instructor, A.M., University of Illinois, 1987.
Graham, Jack W., Professor, Ph.D., Purdue University, 1951.
Holly, Daniel, Adjunct Assistant Professor, Ph.D., University of Utah, 1982.
Jensen, Robert A., Associate Professor, Ph.D., Northern Illinois University, 1976.
Kelley, Noble H., Professor, *Emeritus*, Ph.D., State University of Iowa, 1936.
Lit, Alfred, Professor, *Emeritus*, Ph.D., Columbia University, 1948.
McHose, James H., Professor and *Chair*, Ph.D., University of Iowa, 1961.
McKillip, John A., Professor, Ph.D., Loyola University of Chicago, 1974.
Meltzer, Donald, Professor, Ph.D., University of Pittsburgh, 1963.
Mitchell, Thomas O., Associate Professor, *Emeritus*, Ph.D., University of Colorado, 1969.
Molfese, Dennis L., Professor, Ph.D., Pennsylvania State University, 1972.
Molfese, Victoria J., Professor, Ph.D., Pennsylvania State University, 1974.
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.
Ramanaiah, Nerella, Professor, Ph.D., University of Oregon, 1971.
Ringuette, Eugene L., Associate Professor, *Emeritus*, Ph.D., Purdue University, 1963.
Schill, Thomas R., Professor, Ph.D., Oklahoma State University, 1963.
Schmeck, Ronald R., Professor, Ph.D., Ohio University, 1969.
Shea, Sandra, Assistant Professor, Ph.D., Vanderbilt University, 1980.
Shoemaker, Donald J., Professor, *Emeritus*, Ph.D., Ohio State University, 1955.
Smith, Douglas C., Associate Professor, Ph.D., Kansas State University, 1977.
Snyder, John F., Associate Professor, Ph.D., Loyola University, 1965.
Stockdale, Margaret S., Assistant Professor, Ph.D., Kansas State University, 1990.
Swanson, Jane L., Assistant Professor, Ph.D., University of Minnesota, 1986.
Tinsley, Diane J., Adjunct Assistant Professor, Ph.D., University of Minnesota, 1972.
Tinsley, Howard E.A., Professor, Ph.D., University of Minnesota, 1971.
Vaux, Alan C., Professor, Ph.D., Trinity College, Ireland, 1979; Ph.D., University of California at Irvine, 1980.
Westberg, William C., Professor *Emeritus*, Ph.D., Pennsylvania State University, 1948.
Wendt, Rachel, Assistant Professor, *Emerita*, Ph.D., Southern Illinois University, 1966.
Yanico, Barbara, Associate Professor, Ph.D., Ohio State University, 1977.

Radio-Television (College of Mass Communication and Media Arts)

Birk, Thomas A., Assistant Professor, M.A., University of Nebraska, Omaha, 1990.
Brown, William Edward, Assistant Professor, *Emeritus*, M.S., Southern Illinois University, 1974.
Collette, Larry A., Assistant Professor, Ph.D., Michigan State University, 1991.

Dybvig, Homer E., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University, 1970.
Foote, Joe S., Professor and *Chairperson*, Ph.D., University of Texas at Austin, 1979.
Gher, Leo, Lecturer, M.S., Southern Illinois University, 1980.
Hildreth, Richard, Associate Professor, *Emeritus*, M.S,. Syracuse University, 1968.
Hodgson, Scott R., Assistant Professor, M.S., Southern Illinois University, 1990.
Keller, Kenneth R., Associate Professor, M.TV., University of Illinois, 1966.
Murrie, Michael H., Assistant Professor, M.A., University of Missouri, 1977.
O'Neill, Patrick, Assistant Professor, Ph.D., Ohio University, 1979.
Pregowski, Konrad S., Lecturer, M.A., Warsaw University, 1978.
Robbins, Buren, Associate Professor, *Emeritus*, M.A., University of Iowa, 1935.
Shipley, Charles W., Professor, *Emeritus*, Ph.D., Florida State University, 1971.
Sitaram, K. S., Professor, Ph.D., University of Oregon, 1969.
Starr, Michael F., Associate Professor, L.L.M., Georgetown University, 1966.
West-Johnson, Phylis, Assistant Professor, M.A., Texas A&M University.

Rehabilitation Institute
(College of Education)

Allen, Harry A., Professor, Ed.D., University of Arkansas, 1971.
Anderson, John O., Professor, *Emeritus*, Ph.D., Ohio State University, 1950.
Austin, Gary, Professor, Ph.D., Northwestern University, 1973.
Beck, Richard, Assistant Professor, Ph.D., University of Wisconsin-Madison, 1987.
Bender, Eleanor, Assistant Professor, *Emerita*, M.S., Southern Illinois University, 1962.
Benshoff, John J., Associate Professor, Ph.D., University of Northern Colorado, 1988.
Blache, Stephen E., Professor, Ph.D., Ohio State University, 1970.
Bordieri, James E., Professor, Ph.D., Illinois Institute of Technology, 1980.
Brackett, I. P., Professor, *Emeritus*, Ph.D., Northwestern University, 1947.
Brutten, Gene J., Professor, *Emeritus*, Ph.D., University of Illinois, 1957.
Bryson, Seymour L., Professor, Ph.D., Southern Illinois University, 1972.
Crimando, William, Professor, Ph.D., Michigan State University, 1980.
Cuvo, Anthony J., Professor, Ph.D., University of Connecticut, 1973.
Dickey, Thomas W., Assistant Professor, *Emeritus*, M.A., Southern Illinois University, 1964.
Falvo, Donna R., Professor, Ph.D., Southern Illinois University, 1978.
Gardner, Margaret S., Associate Professor, *Emerita*, Ph.D., Northwestern University, 1960.
Greene, Brandon F., Professor, Ph.D., Florida State University, 1979.
Grenfell, John E., Professor, *Emeritus*, Ed.D., Oregon State University, 1966.
Hafer, Marilyn, Associate Professor, *Emerita*, Ph.D., Texas Tech University, 1971.
Hoshiko, Michael S., Professor, Ph.D., Purdue University, 1957.
Janikowski, Timothy, Associate Professor, Ph.D., University of Wisconsin-Madison, 1988.
Lee, Robert E., Associate Professor, *Emeritus*, Ph.D., University of Minnesota, 1964.
Lehr, Robert, Professor, Ph.D., Baylor University, 1971.
Nappe-Hartom, Jeannine, Clinical Supervision and Training, *Director*, Ph.D., Wayne State University, 1991.
Poppen, Roger L., Professor, Ph.D., Stanford University, 1968.
Renzaglia, Guy A., Professor, *Emeritus*, Ph.D., University of Minnesota, 1952.
Riggar, Theodore F., Professor, Ed.D., University of Northern Colorado, 1977.
Rubin, Harris B., Professor, Ph.D., University of Chicago, 1965.
Rubin, Stanford E., Professor, Ed.D., University of Illinois, 1968.
Ruder, Kenneth F., Professor, Ph.D., University of Florida, 1969.
Schultz, Martin C., Professor, Ph.D., University of Iowa, 1955.
Schumacher, Brockman, Professor, *Emeritus*, Ph.D., Washington University, 1969.
Taylor, Darrell, Assistant Professor, Ph.D., University of South Florida, 1992.
Vieceli, Louis, Associate Professor, *Emeritus*, M.S.Ed., Southern Illinois University, 1959.
Wright, W. Russell, Associate Professor, Ph.D., Southern Illinois University, 1974.

Social Work (School of Social Work)

Auerbach, Arnold J., Professor, *Emeritus*, Ph.D., University of Pittsburgh, 1961.
Cheng, Chi-Wai, Assistant Professor, Ph.D., University of Alabama, 1993.
Davidson, Mary E., Associate Professor and *Director*, Ph.D., Brandeis University, 1975.
Gammon, Anne E., Assistant Professor, Ph.D., University of Wisconsin-Madison, 1989.

McFadden, Judith V., Instructor, M.S.W., University of Illinois-Champaign, 1983.
Miah, Mizan M., Assistant Professor, Ph.D., Southern Illinois University, 1985.
Soliman, Hussein, Lecturer, M.S.W., University of Southern Mississippi, 1987.
Szabo, Alexander, Assistant Professor, Ed.D., Columbia University, 1990.
Thomas, Galen R., Instructor, M.S.W., University of Arkansas at Little Rock, 1977.

Sociology (College of Liberal Arts)

Alix, Ernest K., Associate Professor, Ph.D., Southern Illinois University, 1966.
Best, Joel, Professor, and *Chairperson*, Ph.D., University of California- Berkeley, 1971.
Burger, Thomas, Associate Professor, Ph.D., Duke University, 1972.
Eynon, Thomas G., Professor, Ph.D., Ohio State University, 1959.
Hendrix, Lewellyn, Associate Professor, Ph.D., Princeton University, 1974.
Hope, Keith, Professor, Ph.D., Oxford University, 1963.
Nall, Frank C., II, Associate Professor, Ph.D., Michigan State University, 1959.
Patterson, Edgar I., Assistant Professor, M.A., University of Kansas, 1961.
Shelby, Lon R., Professor, *Emeritus*, Ph.D., University of North Carolina, 1962.
Taub, Diane E., Associate Professor, Ph.D., University of Kentucky, 1986.
Ward, Kathryn B., Associate Professor, Ph.D., University of Iowa, 1982.
Williams, Rhys, Assistant Professor, Ph.D., University of Massachusetts at Amherst, 1988.
Wright, Mareena, Assistant Professor, Ph.D., North Carolina-Chapel Hill, 1992.

Speech Communication (College of Liberal Arts)

Breniman, Lester R., Associate Professor, *Emeritus*, Ph.D., Ohio State University, 1953.
Crow, Bryan, Associate Professor, Ph.D., University of Iowa, 1982.
Daughton, Suzanne, Assistant Professor, Ph.D., University of Texas at Austin, 1990.
French, Kathryn, Assistant Professor, Ph.D., University of Southern California, 1990.
Glenn, Phillip, Associate Professor, Ph.D., University of Texas at Austin, 1987.
Goodiel, Eunice B., Assistant Professor, *Emerita*, M.A., Northwestern University, 1941.
Greer, Norman, Assistant Professor, Southern Illinois University.
Higgerson, Mary Lou, Associate Professor, Ph.D., University of Kansas, 1974.
Hoffmann, Janet, Assistant Professor, Ph.D., University of Washington, 1990.
Kleinau, Marion L., Professor, *Emerita*, Ph.D., University of Wisconsin, 1961.
Kleinau, Marvin D., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University, 1977.
Langsdorf, L., Professor, Ph.D., S.U.N.Y. at Stony Brook, 1977.
Lanigan, Richard L., Professor, Ph.D., Southern Illinois University, 1969.
Pace, Thomas J., Professor, Ph.D., University of Denver, 1957.
Parkinson, Michael G., Associate Professor, A.P.R., Ph.D., University of Oklahoma, 1978.
Pelias, Mary, Associate Professor, Ph.D., Southern Illinois University, 1982.
Pelias, Ronald J., Professor, Ph.D., University of Illinois, 1979.
Pineau, Elyse, Assistant Professor, Ph.D., Northwestern University, 1990.
Potter, David J., Professor, *Emeritus*, Ph.D., Columbia University, 1943.
Smith, William D., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University, 1964.
Stucky, Nathan, Assistant Professor, Ph.D., University of Texas at Austin, 1988.
VanOosting, James, Professor and *Chairperson*, Ph.D., Northwestern University, 1980.
Wiley, Raymond D., Assistant Professor, *Emeritus*, M.S., Southern Illinois University, 1965.

Student Services (College of Education)

Arseneau, Donna, Lecturer, M.S. in Ed., Southern Illinois University, 1986.
Bonn, Kathleen L., Lecturer, M.A.T., Indiana University, 1992.
Buser, Margaret, Assistant Professor, *Assistant Coordinator*, Professional Education Experiences, M.S.Ed., Indiana University, 1966.
McIntyre, D. John, Professor, *Director,* Teaching Skills Laboratory, Ed.D., Syracuse University, 1977.
Moore, Eryn E., Assistant Professor, *Emerita*, Ph.D., Southern Illinois University, 1976.
Norris, William R., Associate Professor, *Coordinator*, Professional Education Experiences, Ed.D., Indiana University, 1973.
Riess, Deanne F., Lecturer, Ph.D., Indiana State University, 1989.
Turner, Doris Sewell, Lecturer, *Emerita*, M.S. Ed., Southern Illinois University, 1949.

Technical and Resource Management (College of Technical Careers)

Adams, Deborah K., Visiting Instructor/Administrative Assistant, M.A., Southern Illinois University, 1983.
Armstrong, Connie J., Assistant Professor, Ph.D., Southern Illinois University, 1989.
Baumgardner, Barbara, Visiting Assistant Professor, M.P.A., Golden Gate University, 1989.
Bryars, Janet C., Visiting Assistant Professor, M.Ed., Harvard University, 1962.
Clarke, David S., Professor, Ph.D., California University for Advanced Studies, 1986.
Clemons, John, Lecturer, Law Enforcement, J.D., DePaul University, 1975.
Graziano, Joseph R., Assistant Professor, Law Enforcement, M.S., Eastern Kentucky University, 1971.
Hertz, Vivienne, Associate Professor, *Emerita*, Communications, Ph.D., Southern Illinois University, 1980.
Hoffman, Nancy L., Visiting Instructor/Administrative Assistant, M.S., Southern Illinois University, 1969.
Horton, John B., Visiting Assistant Professor, M.Ed., Clemson University, 1972.
Isberner, Fred R., Associate Professor, Ph.D., Southern Illinois University, 1984.
Laedtke, Ralph, Visiting Assistant Professor, *Emeritus*, M.A., Webster College, 1977.
Magney, John, Assistant Professor, Ph.D., University of Michigan at Ann Arbor, 1977.
Moberly, Michael, Assistant Professor, Law Enforcement, M.A., Indiana University, 1981.
Noblett, Ruth E., Visiting Instructor and *Acting Director*, Office of Off-Campus Academic Programs, Southern Illinois University, 1988.
Novick, Jehiel, Assistant Professor, *Emeritus*, Ph.D., Southern Illinois University, 1970.
Richard, Harold, Associate Professor, Ed.D., Pennsylvania State University, 1976.
Robb, James A., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University, 1974.
Singh-Gupta, Vidya, Assistant Professor, Ph.D., Southern Illinois University, 1988.
Troutt-Ervin, Eileen, Associate Professor and *Chair*, Technical and Resource Management, Ph.D., Southern Illinois University, 1986.
Walton, Gary, Visiting Assistant Professor, M.A., Webster College,
Yates, Loyd, Assistant Professor, Ph.D., Southern Illinois University, 1981.

Technology (College of Engineering)

Andrews, Paul E., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University, 1980.
Barbay, Joseph E., Jr., Associate Professor, Ph.D., University of Missouri, Columbia, 1971.
Besterfield, Dale H., Professor, *Emeritus*, Ph.D., Southern Illinois University, 1971.
Butson, Gary J., Associate Professor and *Chair*, Ph.D., University of Illinois, 1981.
Chen, Han Lin, Associate Professor, *Emeritus*, M.S., Southern Illinois University, 1958.
Contor, Keith L., Associate Professor, M.S., State College of Washington at Pullman, 1960.
Cross, Bud D., Visiting Assistant Professor, *Emeritus, M.*S., Southern Illinois University, 1965.
Dunning, E. Leon, Professor, *Emeritus*, Ph.D., University of Houston, 1967.
Ferketich, Robert R., Associate Professor, Ph.D., Southern Illinois University, 1980.
Hart, Willard C., Instructor, *Emeritus*, B.S., University of Illinois, 1939.
Johnson, Marvin E., Professor, *Emeritus*, Ed.D., University of Missouri, Columbia, 1959.
King, Frank H., Visiting Assistant Professor, *Emeritus*, Ph.D., Southern Illinois University, 1981.
Lindsey, Jefferson F., III., Professor, D. Engr., Lamar University, 1976.
Marusarz, Ronald K., Assistant Professor, M.S., Southern Illinois University, 1978.
Meyers, Fred E., Associate Professor, M.B.A., Capitol University, 1975.
Orr, James P., Associate Professor, Ph.D., Southern Illinois University, 1983.
Ott, Carlyle G., Assistant Professor, *Emeritus*, M.S.Ed., Southern Illinois University, 1951.
Rogers, C. Lee, Associate Professor, *Emeritus*,Ph.D., Southern Illinois University, 1975.
Szary, Marek, Assistant Professor, Ph.D., Wroclaw (Poland), 1977.
Trivedi, Abhay V., Associate Professor, M.S., North Dakota State University, 1984.
Weston, Alan J., Assistant Professor, Ph.D., Southern Illinois University, 1991.

Theater (College of Liberal Arts)

Blackstone, Sarah J., Associate Professor, Ph.D., Northwestern University, 1983.
Chrestopoulos, Alexander, Assistant Professor, M.F.A., University of Arizona, 1979.
Houchin, John H., Visiting Assistant Professor, Ph.D., New York University, 1978.
Johnston, Jan, Assistant Professor, M.F.A., University of Washington, 1990.
Merrill-Fink, Lori, Assistant Professor, M.F.A., University of Arizona, 1988.
Moe, Christian H., Professor, and *Chair*, Ph.D., Cornell University, 1958.
Morris, Mike D., Assistant Professor, M.F.A., Southern Illinois University, 1988.
Naversen, Ronald, Associate Professor, Ph.D., Southern Illinois University, 1990.
Stevens, David, Associate Professor, Ph.D., Bowling Green University, 1973.
Stewart-Harrison, Eelin, Professor, *Emerita*, Ph.D., Louisiana State University, 1968.
Straumanis, Alfreds, Professor, *Emeritus*, Ph.D., Carnegie Institute of Technology, 1966.

Workforce Education and Development (College of Education)

Achelpohl, Marilyn, Lecturer, M.S., Southern Illinois University, 1991.
Allen, Lorie, Assistant Instructor, M.S., Southern Illinois University, 1986.
Anderson-Yates, Marcia, Associate Professor, Ph.D., Southern Illinois University, 1975.
Aydt, Roger, Visiting Assistant Professor, Ph.D., Southern Illinois University, 1987.
Bailey, Larry J., Professor, Ed.D., University of Illinois, 1968.
Baker, Clora Mae, Assistant Professor, Ph.D., Ohio State University, 1989.
Beebe, Thomas, Visiting Assistant Professor, Ph.D., Southern Illinois University, 1982.
Bortz, Richard F., Professor, Ph.D., University of Minnesota, 1967.
Boss, Richard D., Visiting Associate Professor, *Emeritus*, Oregon State University, 1968.
Bourne, Shirley A., Visiting Assistant Professor, Ph.D., Southern Illinois University, 1983.
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.
Carter, Rose Mary, Assistant Professor, Ph.D., Purdue University, 1970.
Cilley, Richard N., Visiting Assistant Professor, Ed.D., Virginia Polytechnic Institute and State University, 1977.
Coleman, Dorothy Z., Visiting Assistant Professor, Ed.D., University of Georgia, 1985.
Cunningham, William J., Visiting Assistant Professor, Ed.D., University of Tennessee, 1976.
DeWulf, Bernard G., Visiting Assistant Professor, *Emeritus*, Washington University (St. Louis), 1962.
Dirksen, Dennis, Visiting Assistant Professor, Ed.D., Utah State University, 1969.
Duree, James F., Visiting Assistant Professor, Ed.D., University of Missouri, 1979.
Flesher, Jeffrey, Visiting Assistant Professor, Ph.D., University of Illinois, 1993.
Gooch, Bill G., Professor, Ed.D., University of Tennessee, 1973.
Hagler, Barbara, Lecturer, M.S., Southern Illinois University, 1977.
Hall, M. Eugene, Visiting Assistant Professor, Ph.D., Ohio State University, 1982.
Harbert, Donald L., Visiting Associate Professor, Ed.D., University of Florida, 1968.
Huck, John F., Associate Professor, Ed.D., University of Illinois, 1973.
Jenkins, James, Professor, *Emeritus*, Pennsylvania State University, 1955.
King, Jacquelyn, Lecturer, Ph.D., Southern Illinois University, 1986.
King, Janice E., Lecturer, M.S., Southern Illinois University, 1978.
Klessinger, Sidney, Visiting Instructor, B.S., Southern Illinois University, 1981.
Legacy, James, Professor, Ph.D., Cornell University, 1976.
Mullen, Paul E., Visiting Assistant Professor, Ph.D., University of Missouri, 1976.
Nervig, Nordale N., Visiting Assistant Professor, *Emeritus*, Ed.D., Utah State University, 1977.
Phipps, Jeffrey R., Visiting Assistant Professor, Ed.D., U.S. International University, 1983.
Quevedo, Vince, Lecturer, M.S., Southern Illinois University, 1989.
Randolph, Billie, Visiting Instructor, B.S., Southern Illinois University, 1985.
Reneau, Fred, Professor, Ed.D., Virginia Polytechnic Institute and State University, 1979.
Ridley, Samantha Sue, Assistant Professor, M.S., Southern Illinois University, 1959.
Rodgers, William L., Visiting Instructor, M.S., Southern Illinois University, 1982.

Shaw, Mari, Visiting Assistant Professor, Ph.D., University of Minnesota, 1984.
Shields, Bill J., Instructor, M.S.Ed., Southern Illinois University, 1963.
Silliman, Roger, Visiting Assistant Professor, Ph.D., University of Southern California, 1981
Smith, William, Visiting Assistant Professor, Ph.D., Southern Illinois University, 1985
Stadt, Ronald W., Professor, Ed.D., University of Illinois, 1962.
Stitt, Thomas R., Professor, Ph.D., Ohio State University, 1967.
Sullivan, James A., Professor, Ed.D., West Virginia University, 1967.
Sutton, W. Clyde, Visiting Instructor, M.S., Murray State University, 1973.
Threw, Janice, Lecturer, M.S.Ed., Southern Illinois University, 1990.
Washburn, John S., Professor and *Chair*, Ed.D., University of Illinois, 1977.
Workman, Jane, Professor, Ph.D., Purdue University, 1982.

Zoology (College of Science)

Anthoney, Terence R., Associate Professor, M.D., Ph.D., University of Chicago, 1968, 1975.
Beatty, Joseph A., Associate Professor, Ph.D., Harvard University, 1969.
Billington, Neil, Assistant Professor, Ph.D., Loughborough University of Technology, England, 1985.
Blackwelder, Richard E., Professor, *Emeritus*, Ph.D., Stanford University, 1934.
Brandon, Ronald A., Professor, Ph.D., University of Illinois, 1962.
Burr, Brooks M., Professor, Ph.D., University of Illinois, 1977.
Drickamer, Lee C., Professor, Ph.D., Michigan State University, 1970.
Dyer, William G., Professor, Ph.D., Colorado State University, 1965.
Englert, DuWayne C., Professor, Ph.D., Purdue University, 1964.
Feldhamer, George A., Associate Professor, Oregon State University, 1977.
Fisher, Harvey I., Professor, *Emeritus*, Ph.D., University of California at Berkeley, 1942.
Garoian, George, Professor, *Emeritus*, Ph.D., University of Illinois, 1956.
Gates, Robert J., Assistant Professor, Ph.D., Southern Illinois University, 1989.
Heidinger, Roy C., Professor and *Chair*, Ph.D., Southern Illinois University, 1970.
King, David, Associate Professor, Ph.D., University of California at San Diego, 1975.
Klimstra, Willard D., Distinguished Professor, *Emeritus*, Ph.D., Iowa State University, 1949.
Kohler, Christopher C., Professor, Ph.D., Virginia Polytechnic Institute and State University, 1980.
Krajewski, Carey, Assistant Professor, Ph.D., University of Wisconsin, 1988.
LeFebvre, Eugene A., Associate Professor, Ph.D., University of Minnesota, 1962.
Lewis, William M., Professor, *Emeritus*, Ph.D., Iowa State University, 1949.
Martan, Jan, Professor, *Emeritus*, Ph.D., University of Oregon, 1963.
McKee, Michael J., Assistant Professor, Ph.D., University of Missouri, 1985.
McPherson, John E., Jr., Professor, Ph.D., Michigan State University, 1968.
Muhlach, William L., Associate Professor, Ph.D., University of Illinois at Chicago, 1986.
Roby, Daniel D., Assistant Professor, Ph.D., University of Pennsylvania, 1986.
Sheehan, Robert J., Associate Professor, Ph.D., Southern Illinois University, 1984.
Shepherd, Benjamin A., Professor, Ph.D., Kansas State University, 1970.
Stahl, John B., Associate Professor, Ph.D., Indiana University, 1958.
Stains, Howard J., Professor, Ph.D., University of Kansas, 1955.
Waring, George H., Professor, Ph.D., Colorado State University, 1966.
Woolf, Alan, Professor, Ph.D., Cornell University, 1972.

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