Undergraduate Catalog

1986-88

University of Wisconsin-Green Bay

How to Use This Catalog

This catalog provides information about academic programs, facilities, services, and campus life at the University of Wisconsin-Green Bay. It describes what the University offers and what the University expects of a student in order to successfully complete an academic program.

The catalog is essential for planning a program of study, but students should not rely entirely on it. After reading appropriate sections of this catalog, students should plan their individual programs with the help of academic advisers and faculty advisers for their majors.

University Policy

The provisions of this catalog are not to be regarded as an irrevocable contract between the student and the University of Wisconsin-Green Bay. All of the information in this book was accurate at the time of its printing, but changes are made from time to time in academic requirements, courses offered, and general regulations. Such changes are made through established procedures which protect the University's integrity and the individual student's interest and welfare. Changes are usually announced in the *Timetable* and in the form of updates mailed with grade reports at the end of each term. When a curriculum or graduation requirement is changed, it is not made retroactive unless the change is to the student's advantage and can be accommodated within the span of years normally required for graduation.

Current Information

Current fee and tuition information is distributed as far in advance of each session as possible through the *Timetable* or a fee information sheet, both published by the Registrar's Office. Fee information appears in the *Timetable* for each fall, spring, January, or summer session if fees have been determined by the Board of Regents before the *Timetable* is printed. If the information is received too late for the *Timetable*, it appears on a fee information sheet which is available to every student and prospective student.

Course schedules for each session are published in the *Timetable*. Changes which take place too late to be included are listed on addenda sheets given to students at the time of registration and posted at the Registrar's Office.

Effective Dates

This catalog is in effect beginning May 1, 1986, and until it is superseded by a new catalog. Policies of the 1984-86 catalog are in effect until April 30, 1986, unless they are changed by official announcements.

For More Information

The University address is:
University of Wisconsin-Green Bay
2420 Nicolet Dr.
Green Bay, Wisconsin 54301-7001

Campus Information Center
414-465-2000

Academic Advice
Office of Academic Advising
414-465-2362

Adult Student Information
Adult Services Office
414-465-2530

Applications, Brochures, Undergraduate Catalogs, Campus Visits, General Information
Office of Admissions
414-465-2111

Career Counseling
Office of Placement and Career Development
414-465-2163

Financial Aid
Office of Financial Aid and Student Employment
414-465-2075

Graduate Studies
Director of Graduate Studies
414-465-2484

Housing off Campus
Dean of Students
414-465-2152

Housing on Campus
University Housing Office
414-465-2040

Lifelong Learning
Office of Outreach
414-465-2102

Personal Counseling and Life Planning
Counseling and Student Development Center
414-465-2343

Student Records, Transcripts, Residency, Credit Evaluation
Office of the Registrar
414-465-2055

Other Publications

Academic Advising Handbook
(available from Office of Academic Advising)
A guide to program planning, registration, and academic requirements.

Course Listing
(available from Admissions Office)
Lists schedule of courses for each spring and fall semester.

Timetable
(available to admitted students from Registrar's Office)
A schedule of courses offered for each term, along with other information on arranging class schedules, descriptions of new courses, tuition and fees information, academic rules and regulations, etc.

Student Handbook
(available from Dean of Students Office)
Information about life on the campus and in the Green Bay community.

Prospective Student Booklet
(available from Admissions Office)
A summary of information for persons interested in exploring the possibilities at UWGB.

Program of Study Flyers
(available from Admissions Office)
Individual flyers with detailed information on each academic program.

Housing Brochure
(available from Admissions Office)
A brochure describing on-campus residence halls and apartments for students.

Extended Degree Program Catalog
(available from Extended Degree Office)
Describes external degree program for adults who want to complete a college degree.

Graduate Studies Catalog
(available from Graduate Studies Office)
A catalog providing information about the University's graduate studies tracks.

Other publications on special programs and services include:

Adult Services publications
Information for International Students Booklet
Scholarships Brochure
Educational Opportunity Program Brochure
Flyers on extracurricular activities, including:
Athletics
Communications
Independent Learning
Music
Student Organizations
Travel

Contents

Academic Year Calendar

Fall Semester

	1986-87	1987-88	1988-89
Registration and new student period (or register by mail earlier)	Aug. 25-29	Aug. 31-Sept. 4	Aug. 29-Sept. 2
Classes begin	Sept. 2	Sept. 8	Sept. 6
Thanksgiving recess begins	Nov. 27	Nov. 26	Nov. 24
Classes resume	Dec. 1	Nov. 30	Nov. 28
Classes end	Dec. 10	Dec. 16	Dec. 14
Study and advising days (closed period)	Dec. 11-12	(none)	Dec. 15-16
Examinations begin (closed period)	Dec. 15	Dec. 17	Dec. 17
Commencement (Sunday)	Dec. 21	Dec. 20	Dec. 18
Examinations end	Dec. 20	Dec. 23	Dec. 23

January Interim Period

Classes begin	Jan. 5	Jan. 4	Jan. 2
Spring registration (or register by mail earlier)	Jan. 27-29	Jan. 26-28	Jan. 24-26
Last day of classes	Jan. 30	Jan. 29	Jan. 27
Winter recess	Jan. 31-Feb. 8	Jan. 30-Feb. 7	Jan. 28-Feb. 5

Spring Semester

Classes begin	Feb. 9	Feb. 8	Feb. 6
Spring recess	April 4	April 2	March 25
Classes resume	April 13	April 11	April 3
Memorial Day recess	May 24-25	(none)	(none)
Examinations begin (closed period)	May 23	May 23	May 22
Examinations end	May 30	May 28	May 27
Commencement (Saturday)	May 30	May 28	May 27

Summer Session (8 Week Session)

Registration	June 11-12	June 9-10	June 8-9
First day of classes	June 15	June 13	June 12
Last day of classes	Aug. 7	Aug. 5	Aug. 4

Please note: These dates may be subject to change. Consult the most recent *Timetable* to confirm dates.

The University

About the University of Wisconsin-Green Bay

Academic Program

The value of an education at the University of Wisconsin-Green Bay is its foundation in the liberal arts. That means that students are introduced to the best of human knowledge in many fields of study and learn how these fields, or disciplines, relate to a single subject. This concept is called interdisciplinarity, *because it draws resources from* two or more disciplines. Interdisciplinarity prepares students for the future in a world of change because it enables them to become learners throughout their lives. That is the goal of a liberal education—to help students gain the ability to think critically and analytically, to assess information, and to make reasoned decisions.

It is a highly practical education. Whatever students' career goals, a broad liberal education will serve them well. So will the University's emphasis throughout the academic program on problem solving. Problem solving provides opportunities to gain practical experience through projects, independent studies, participation in research, internships, and other experiences that enhance students' opportunities in careers and in professional and graduate schools.

Each student at UWGB has an interdisciplinary component to his or her education. Students may choose an interdisciplinary major, such as Humanistic Studies, Business Administration, Science and Environmental Change, or Human Development. Or, students may select a disciplinary major, such as music or chemistry or political science, or managerial accounting, but

students with such a major will also choose an interdisciplinary minor. All students complete a core of courses which introduce them to ways of thinking in the different disciplines. At most universities, students follow prescribed courses of study which allow them little flexibility. But because students at the University of Wisconsin-Green Bay structure their academic programs from a variety of components, they are able to develop highly individual programs of study.

Statewide Mission

The special qualities of the University of Wisconsin-Green Bay academic program reflect its special role in the state. The University operates under a mandate from the University of Wisconsin Board of Regents to carry out a statewide mission to offer a "focused, institutionwide academic program that is substantially unique in both its goals and organization," emphasizing interdisciplinary, problem-centered study of humans and their environments. The mandate includes providing strong programs in the liberal arts as the foundation for all of its degrees, emphasizing teaching excellence, supporting a commitment to the needs of nontraditional students, and serving as a center for applied research on regional problems.

Accreditation

The University is accredited by the North Central Association of Colleges and Secondary Schools for the bachelor's degree, and for graduate work at the master's degree level.

The music program is accredited by the National Association of Schools of Music for undergraduate degrees emphasizing music performance and music education. The chemistry-physics program is accredited by the American Chemical Society, and the nutritional sciences major by the American Dietetic Association. In 1986-87, two other units are seeking special accreditation: the nursing program through the National League of Nursing and the social work program through the Council on Social Work Education.

History

In 1965, when the Wisconsin Legislature authorized a new campus of the University of Wisconsin System for Northeastern Wisconsin, Green Bay was already the home of a two-year University of Wisconsin Center. It was integrated with the new University of Wisconsin-Green Bay in 1968. The following year, fall semester classes opened in the first three buildings of the new campus located east of the city overlooking the waters of Green Bay.

The campus today includes 12 major buildings for instruction and services to students, an arboretum linking natural areas along the campus boundary, a golf course, waterfront recreation area, student apartments and residence halls, and ample open space.

The University offers the Associate of Arts degree, the Bachelor of Science or Bachelor of Arts degree, and the Master of Science or Master of Arts in Environmental Studies.

The campus is one of 13 degree-granting institutions in the University of Wisconsin System.

Students

The University enrolls about 4,600 undergraduates and 530 graduate students (1985-86). The diverse student body includes students from most of Wisconsin's counties, half of the states, and 24 other countries. Of the regularly admitted freshmen in 1985-86, 46 percent ranked in the upper one-fourth of their high school graduating class.

Faculty

Faculty members at UWGB, primarily engaged in teaching, are also recognized for their scholarship and commitment to community concerns. Many are involved in research and consulting work which often provides practical experience opportunities for students. Of the 160 full-time faculty, more than 90 percent have the highest degree or credential available in their fields.

The Campus

The campus is a 10-minute drive from the city center of Green Bay, Wisconsin. The 700-acre site is on gently rolling terrain sloping from a geological formation known as the Niagara Escarpment to the waters of Green Bay. The Cofrin Memorial Arboretum, being developed around the campus periphery, is a resource for instruction and recreation. It has streams, ponds, wooded areas, prairie habitat, and bay shore environment, all accessible by trails. A nine-hole public golf course on campus is maintained in winter for cross-country skiing. Because major buildings are clustered on the University site, much of the rest of the campus is open for recreational use.

The campus has exceptional facilities for learning. Library and computer facilities are excellent and laboratories and studios are well equipped. Facilities are described in more detail in the appropriate program descriptions.

The Community and Region

Green Bay is a manufacturing city and the county seat of Brown County with a metropolitan area population of more than 175,000. Major industries are paper products, food processing, and metal working. The city is the home of the Green Bay Packers professional football team.

Community resources include theater and music organizations, a good public library system, daily and weekly newspapers, several AM and FM commercial radio stations, and five commercial television stations. The region is also served by WPNE-FM of the Wisconsin Public Radio system and WPNE-TV, Channel 38, of the Wisconsin Educational Television Network. WGBW, an FM radio station, broadcasts from the campus. Other schools in the community include St. Norbert College, a private Catholic college in suburban De Pere, and Northeast Wisconsin Technical Institute.

Although many industries are located in Green Bay and the Fox River Valley to the south, most of Northeast Wisconsin is farmland. Green Bay is the gateway to two areas of Wisconsin known for their natural beauty: Door County and the "north woods" country. The Door County peninsula juts into Lake Michigan to create the bay of Green Bay. The landscape is characterized by farms, orchards, small villages with attractive harbors, and miles of shoreline. A vacation area for decades, Door County is a center of summer cultural activities. Northern Wisconsin is known for lakes and forests and the recreational facilities of the Lake Superior region.

Major cities are within easy traveling distance from Green Bay: Milwaukee is 114 miles south; Madison is 132 miles southwest; Chicago is 220 miles south; and Minneapolis-St. Paul is 285 miles west of Green Bay. The city is served by the interstate highway system, several airlines, and two intercity bus lines.

University Resources and Student Life

This section of the catalog describes resources and services relating to students' life outside the classroom and some resources available to support students in their academic work. More detailed information is in the *Student Handbook* and in brochures on specific resources, services, and programs. A list of these publications is printed on page i of this book. All are available on request from the Office of Admissions, University of Wisconsin-Green Bay, 2420 Nicolet Dr., Green Bay, WI 54301-7001; 414-465-2111.

Academic Resources

Academic Advising
Helping a student to plan a program and select courses in keeping with personal goals and University requirements is a major service of the Academic Advising Office. Academic advisers also provide the student with help in decisions on selecting academic majors and minors and make referrals to faculty advisers in the student's area of interest.

Academic Support Program
The Academic Support Program assists students who need to improve reading, composition, mathematics or study skills. The program is described in the academic programs section of this catalog and courses are listed in the course descriptions section.

Adult Services
Through free evening seminars on campus and programs presented in the community, the Adult Services Office provides information about UWGB course offerings and services to prospective adult students. The office helps the older student to enroll in a college program and provides support and encouragement through a variety of services including a weekly on-campus forum for all adult students.

Adult women who enter the University can get advice, support, and help in overcoming personal or academic obstacles at the Office of Women's Educational Programs. The office also provides staff assistance and noncredit programs related to the Women's Studies academic unit.

Veterans of military service and dependents of deceased or disabled veterans can get information on regulations and eligibility as well as help in obtaining benefits from the veterans' coordinator in the Office of the Registrar.

Bookstore
The University-operated Phoenix Book Shop, located in the Instructional Service Building, sells books and supplies for the classroom, clothing, magazines, trade books, gifts, greeting cards, and other items. Special orders may be placed for books which are not ordinarily stocked. The shop is normally open mornings and afternoons, Monday through Friday, while classes are in session. Hours are extended into the evening during the first full week of classes in the fall and spring semesters and the first two days of the summer session.

Computer Center
Computer Center terminals are open to all registered students, whether or not they are enrolled in a computer science course. Student accounts are free, and students are encouraged to use the facilities for their research work as well as course work. During daytime hours, Monday through Friday, consultants are available to help with difficult problems. The center is also open evenings and Saturdays for student use.

The computer system consists of a two multiprocessed Telefile T85 CPU's with four million bytes of memory. The system has two tridensity tape drives, two line printers, a card reader, and 1.5 billion bytes of disk storage located on five removable pack disk drives. Most of the activity on the system comes from the 100 terminals on campus, of which 35 are located in a workroom adjacent to the Computer Center. Also available in the workroom are 18 Apple-compatible microcomputers. There are two computer labs adjacent to the computer system that are used for hands-on instruction. One room contains 12 Apple-compatible units while the other contains 12 Zenith MS-DOS units. These are available to authorized students when not being used by a class. Mainframe software capabilities include an Extended Data Management System (EDMS), graphics, and a variety of computing languages including BASIC, FORTRAN, COBOL, PASCAL, LISP, Assembly, and others. Statistical analysis programs available are BMDP, MINITAB, and SPSS. Graphics capabilities are supported by Tektronic terminals and a Calcomp plotter using Plot10 and Calcomp software. Applications include mapping and statistical software.

Micro software operating systems and languages are Apple DOS 3.3, MS-DOS 2.0, CP/M, Applesoft Basic, Logo and Lisp. Applications include word processing, spreadsheet, filing systems, statistical graphics as well as course-related applications. Word processing is available to all students at a nominal fee.

Educational Opportunity Program
The Educational Opportunity Program admits and assists a limited number of students who do not meet the normal requirements for admission to UWGB (see chapter on admission).

Applicants who qualify for the Educational Opportunity Program are identified through the normal application procedure and are asked to come in for a comprehensive assessment of their academic potential. Students who are accepted receive assistance during the freshman year that is geared toward improving their basic skills and preparing them for successful sophomore, junior and senior years. This assistance includes a complete orientation, prescribed placement in courses, including coursework in basic writing, reading and study skills, and meetings with a counselor. This helps to assure that the academic efforts of the students are as fruitful as possible, and that they are aware of all the resources and academic alternatives available at the University.

Students sign a contract agreeing to the terms of their admission to UWGB through this program. When students in the Educational Opportunity Program have completed 30 credits with a 2.00 grade point average ("C") they may continue as regular University students with sophomore standing.

Handicap Resource Center
Equipment in the library's Handicap Resource Center includes talking calculators, a braille writer, automatic page turner, typewriter, slow-speed cassette recorders, and an extensive tape library. Among services to visually handicapped students are the reading and recording of articles and textbooks, note taking, reading of tests, and assistance in research. A coordinator in the Academic Advising Office arranges for help, when necessary, and contacts professors about the special needs of handicapped students enrolled in their classes.

Library
The Library Learning Center offers resources for students, faculty and community residents. The library is a regional depository for U.S. Government publications and the location of an Area Research Center, part of a network established by the State Historical Society to make municipal and county manuscript records more accessible to people of the area. Present collections include about 262,000 books and bound periodicals, 3,815 different periodical and serial titles, 3,915 linear feet of archival and Area Research Center collections, 332,000 government documents, 44,000 maps, and some 455,000 items in microformat. Among the media holdings are 30,500 slides, sound recordings, films, video and audio tapes. A newly installed computerized catalog allows library users to access information in library collections.

Over 750 user stations are available, including reading carrels, listening carrels, study tables, small private and group study rooms. Equipment for playback and projection of instructional media may be used on the premises or checked out by students and faculty. Micro computers with word processing capability and electric typewriters also are available.

Through interlibrary loan, materials not available in the library may be obtained from other libraries in Northeastern Wisconsin or through the Wisconsin Interlibrary Loan Services (WILS) in Madison. A microfilm copy of the UW-Madison catalog and a copy of the State of Wisconsin Data Base are available for use.

Radio-Television Media
Faculty and students may obtain professional media production services and consultation at the Educational Communications Office, which houses the Center for Television Production and campus radio station WGBW (FM), a 3,000-watt stereo voice to the community which offers students practical experience in broadcasting skills. Students working on academic projects have access to such instructional resources as visual design services, still photography equipment, audio production facilities, and resources which may be combined to produce slide-tape presentations and other relatively complex media projects. Professional specialists staff these facilities.

The Center for Television Production is an award-winning facility which produces public affairs programs, documentaries, performing arts presentations, and instructional series for classroom screening and other uses. College credit television courses produced for UWGB have been used by students nationwide.

Centers and Services

American Intercultural Center
The American Intercultural Center, on the plaza level of the library, is staffed by minority academic staff members who coordinate the Minority Student Services program. The center serves the special interests of American Indian, Black, and Hispanic students and presents campus-wide awareness programs through art exhibits, lectures, films, and social events. Public events bring together members of the University community and townspeople of different backgrounds. Such programs foster understanding and appreciation of the traditions represented by the three student organizations supported through the center: the American Indian Council, the Black Student Union, and the Hispanic Student Organization.

Children's Center
The Children's Center, located on campus, offers a preschool and day care service for University students and faculty members at low cost. The Center is open Monday through Friday, under the supervision of licensed nursery-kindergarten teachers. Care is provided during the academic year for children aged two through six and during the summer session for children two through 10.

Counseling and Student Development
The Counseling and Student Development Center can provide individual counseling, family and couples counseling, growth group and workshop experiences, and consultation to student groups, faculty, and administrative units toward better use of human resources. Through counseling in a confidential setting, students can explore personal concerns and receive help in making decisions affecting educational, vocational, or personal-social development and adjustment. Students who require long-term counseling or those with severe emotional problems are helped to find appropriate community services. Short-term growth groups focus on the improvement of self-awareness, communication, relationship skills and career/life planning.

Dean of Students
The Dean of Students Office staff tries to be aware of student needs and attitudes in order to facilitate the best possible learning environment on campus. Staff members help students accomplish personal goals and solve problems through advice, counsel, referral, and support to assist students in using their own resources and those of the University to solve problems and make changes. Most offices providing student services report to the Dean of Students Office, therefore the office is particularly concerned with the quality of those services. Dean of Students Office staff are resource persons for academic student disciplinary procedures as well as the investigating officers for nonacademic disciplinary matters. They also coordinate a free legal service for students.

Ecumenical Center
Personal counseling, support groups, growth experiences, social activities, music and drama performances, and worship opportunities in Roman Catholic and Protestant traditions are among the services provided by the Ecumenical Center campus ministry. The two campus ministers—one Catholic, one Protestant—can also supervise independent studies and other individualized learning agreements, particularly those in the fields of religion or environmental ethics. Services, programs, and facilities of the Ecumenical Center are open to persons of all faiths or of no religious affiliation. Ecumenical Center support comes from many different denominations.

Employment
The Student Employment office provides information about jobs on and off campus in two categories: college work-study and regular employment. Information on eligibility and conditions of employment appears in the chapter on admissions, costs, and financial aids. Notices of part-time jobs appear in local newspapers.

Handicapped Services
University buildings are designed with barrier-free accessibility for students in wheelchairs. Facilities include reserved parking spaces near buildings, automatic door openers, elevators in all multi-story buildings, nonslip floor tiles and handrails in sloped corridors, some lowered telephones and drinking fountains, and adaptations for wheelchairs in washrooms and in two science laboratories. The Phoenix Sports Center has special shower and dressing room facilities, and the pool has a lift for disabled persons. Visually handicapped students can get raised maps of the campus concourse system and outdoor routes to buildings with accompanying keys, printed in braille or recorded on a cassette. Raised print and braille letters identify washrooms and appear on elevator controls. Textured floor tiles draw attention to wall signs, printed in braille and raised letters, which locate buildings in accordance with the concourse system map. A telephone with special equipment is available for the hearing impaired.

Resources and services related to the academic program are described under the heading Handicap Resources Center.

Health Services
The Health Services Office provides treatment for minor illnesses and injuries, physical assistance to handicapped or temporarily disabled students, information and counseling on health topics, and information on student health insurance. The staff includes three registered nurses and two part-time physicians. The nurses' services are available during daytime hours, Monday through Friday, by appointment or on a walk-in basis to students who have validated IDs and health forms on file. Costs are covered by student fees. Extra fees are charged for physician and laboratory services.

Information Center
Daytimes and evenings, seven days a week, the Information Center can provide answers to questions about campus events, faculty class schedules, city bus service, and a host of other topics. The center has maps of the city and campus, and brochures about University and community services, available on request. Bus tickets and postage stamps are for sale at the counter, and a collection slot is provided for outgoing mail. The University switchboard is located in the Information Center, which is just inside the main entrance to the library on the concourse level.

International Student Center
Students on campus from countries of Central and South America, Asia, Africa and Europe share their cultures with each other and with Americans through International Student Center activities which include the publication of a newsletter. The Center coordinator is available to answer questions, handle problems, and help to organize special events, and the Center's lounge is open during the day for relaxation, conversation, and reading. A small library of foreign language periodicals is maintained.

Placement and Career Development
Staff members in the Placement and Career Development Office can help students to clarify career goals and learn about employment trends. Counselors are available to assist students in making choices about careers as well as helping them as they pursue career goals. The Placement Office maintains an extensive career resource library.

Other services include help in writing resumes and preparing for interviews, distributing job vacancy bulletins, scheduling interviews with prospective employers, and maintaining files of graduates' credentials and placement histories. Students can meet UWGB alumni employed in a variety of fields through the Career Information Network. A computer-assisted career exploration program (SIGI) provides immediate feedback to help students in decision making. Students should explore the resources of the Placement Office early in their college careers.

Security and Safety
Officers are on duty 24 hours a day to provide for the safety and security of people and property on the campus. They are equipped with mobile communication units and are trained to respond quickly to emergencies of any kind. The Security Office also supervises on-campus parking and enforces safety regulations.

Student Life Programs
The Office of Student Life Programs coordinates activities on campus. Students have opportunities to learn valuable life skills through volunteering in student organizations. Professional staff members work with student organizations to provide leadership training and advice.

Student Activities

Art, Music, Theater
All qualified students can participate in courses and programs in the visual and performing arts, regardless of academic major. Choices range from membership in the Art Agency, a group promoting interest in contemporary visual arts, to singing, acting or dancing in the annual campus musical theater production.

Auditions and enrollment in a credit course are required for most music groups—including the Concert Choir, Concert Band, Jazz Ensemble, Show Choir, Wind Ensemble, and Collegium Musicum. Students with appropriate musical skills can audition for the Green Bay Community Chorus, the Green Bay Symphony Orchestra, or the Communiversity Band, and have the experience of performing with musicians of all ages from the wider community.

In the credit theater program, auditions are open for roles in most mainstage productions, and volunteers are welcomed for backstage work. The Alternate Theatre gives students the chance to act, direct, design, or become involved in technical aspects of theater production. Interested students are invited to participate in set construction, scene painting, lighting, costume design, publicity and other tasks.

Media
The *Fourth Estate*, a weekly campus newspaper, keeps students informed of events and issues that affect them and provides experience in practical journalism for members of the staff. Students are responsible for almost every aspect of publication—writing, editing, photography, artwork, layout, and advertising sales. Staff members can earn academic credit for work on the paper.

Student poems, short stories, essays, photographs and other examples of visual art may be submitted for publication in the *Sheepshead Review*, a literary magazine published each year. Student editors, with the help of faculty advisers, select material for each issue on the basis of quality and balanced content. Some of the best student short stories have been selected for publication in a book, *Sheepshead Fiction*.

The University's 3,000-watt FM station, WGBW, presents classical and popular music, news, features, and play-by-play coverage of UWGB soccer and women's basketball in its schedule of "alternative" programming. Students hold all positions except that of station manager.

Organizations
In a typical academic year, about a hundred student clubs and other organizations are active on the campus, representing a wide variety of interests and backgrounds. Organizations linked to academic, cultural and professional interests include the Accounting Club, History Club, Earth Science Club, Philosophy Forum, and the campus chapter of the Music Educators National Conference. The American Indian Council, Black Student Union and Hispanic Student Organization serve students with common ethnic backgrounds. The Chess Club and Film Guild are examples of groups whose members share a leisure-time interest. A complete listing of active student organizations is available from the Office of Student Life.

Student Governance
Students share in University governance through the Student Association and its component groups, whose activities are coordinated by the Association's executive board.

Student Senate comprises elected representatives of all academic majors. The Senate appoints members to all-University committees dealing with such concerns as services to the handicapped, health services, academic actions, intercollegiate athletics, parking regulations, awards and recognitions. The Senate helps to make

and review policies concerning student life, and participates with other students in advocating student interests on the local, state and national level.

Another elected group, the 15-member Segregated University Fee Allocation Committee (SUFAC), manages the allocation and expenditure of student fees in support of student organizations, programs, athletics, and other activities.

The Student Union Policy Board helps to create and review policies, programs, operations, and contracted services affecting students through the Student Union.

Housing Council serves residents who live in apartments and residence halls on campus. The Council organizes events for on-campus residents and works with University administrators to develop policies affecting campus housing. Good Times Programming Board schedules social, cultural, recreational, and educational programs for the entire campus community.

Living Arrangements

Housing
Students who do not live at home may choose to live in residence halls or furnished apartments on campus, or in an apartment or house off campus. Most of the University Village Apartments are designed for four students and include a living room, kitchen, dining area, two bedrooms, and bathroom. A few two-person and one-person units are available. Residence hall rooms are designed for two students and each room is furnished with beds, study desks, chairs, and bookcases. Each room has its own bathroom.

On-campus housing is assigned on a first-come, first-served basis, with applications for the fall semester accepted after October 1 of the preceding year and applications for the spring semester after November 15 of the preceding year. University housing is usually filled to capacity well before the beginning of each semester.

Resident assistants live in each building. They are selected and trained by the University's housing staff and are familiar with campus and community resources and Red Cross first aid procedures. Resident assistants serve as information resources, help to resolve problems, and coordinate group activities. Housing Council, an elected student group, is the governing, advising, and programming body for on-campus residents.

Students who choose to live off campus in private housing can usually find furnished or unfurnished accommodations at reasonable rents. Lists of apartments, houses, and facilities to share are available from the Housing Office or Dean of Students Office.

Food
During the fall and spring semesters, the Student Union Nicolet Room provides full food service from 7:15 a.m. to 6:30 p.m., Monday through Friday. Hours vary during the January interim and summer session. The Rathskeller, also in the Student Union, serves a grill menu afternoons, evenings and weekends. Delicatessen items can be purchased at the Garden Cafe in the library; sandwiches, snacks and beverages are available at all times from vending machines in four campus locations.

Transportation
Students who drive to the University purchase parking permits for use in any of five campus parking lots. City buses reach and depart from the campus every half hour until 6:15 p.m., Monday through Friday, and once an hour thereafter to 10:15 p.m. Hourly service is provided on Saturday until early evening. City buses do not operate on Sunday. Student-rate bus tickets are on sale at the campus Information Center. Ride-share information is also available at the Information Center.

Recreation and Entertainment
Recreation and entertainment opportunities for every taste are available throughout the year.

Depending on the season, outdoor recreation enthusiasts can hike along arboretum trails, play golf on a nine-hole course, sail on the waters of Green Bay, or go cross-country skiing—all without leaving the campus. For excursions to nearby state parks, or other outdoor recreation areas, students, faculty and staff may rent camping gear from an equipment rental center in the Rathskeller.

The Phoenix Sports Center offers a 60 by 96 foot pool, gymnasium, racquetball courts, and weight rooms. Outdoors nearby are tennis courts, softball diamonds and all-purpose playing fields. Intramural sports and recreation programs are organized in response to student interests. These activities usually include basketball, volleyball, racquetball, and softball.

Men's basketball and soccer and women's basketball and diving are major intercollegiate sports at UWGB. Phoenix men's teams compete in Division I of the NCAA through the recently organized Association of Mid-Continent Universities. Tennis, golf, cross country, wrestling, swimming, and diving are other varsity sports for men, and softball and volleyball for women. Sailing is open to both men and women. Intercollegiate sailing competition and women's basketball is also at the Division I level of the NCAA. Women compete through the NAIA in tennis, swimming and diving, cross country, softball, and volleyball.

Entertainment events and social activities are planned by the Good Times Programming Board, a student group which operates through a number of committees representing different areas of interest. Each semester, Good Times books a full schedule of lectures, popular and international films, coffeehouse entertainment from across the country, and bands playing contemporary music for dancing and listening. Fall homecoming, Spring Week, an annual folk music festival, winter ski trips, and "getaway" excursions to Florida during spring break are among other activities organized with the help of the Office of Student Life Programs.

The Office of Arts and Performances coordinates a Visiting Artists series and performances by campus theater, music and dance ensembles. Student and faculty music recitals, poetry readings, and monthly art shows in the campus gallery are other events on the calendar of entertainment and cultural programs.

Shopping and Services
In downtown Green Bay, three department stores "anchor" an indoor shopping mall which houses numerous specialty shops and eating places. Other shops and banks, the central public library and public museum are located within or near the compact business district. Most retail stores in outlying shopping centers can be reached by city bus.

On-campus services include the Phoenix Book Shop, which stocks clothing, magazines, gifts and greeting cards along with books and other supplies; the University of Wisconsin Credit Union, offering a wide range of financial services to the University community; and the Second Gear resale shop, where students can find clothing and housekeeping equipment at bargain prices. Some postal services are available at the Information Center, where outgoing mail may be deposited for pick-up.

Special Learning Opportunities

Here is an overview of special learning opportunities at the University. More details on some of these opportunities are available in the *Student Handbook*. Complete information is available from the appropriate campus offices listed here:

Academic Support Program—Academic Support Program Office.

Exchange programs in the U.S., Extended Degree program, personal major, Credit for Prior Learning—Individualized Learning Programs Office.

International exchange, January travel abroad—Vice Chancellor for Academic Affairs.

Independent studies, internships, practica, research, senior honors, student-initiated and student-led courses—faculty adviser or Academic Advising Office.

Noncredit courses—Office of Outreach.

Credit by Examination—Extended Degree program.

Advanced placement—Registrar's Office.

Academic Support Program

The Academic Support Program offers nondegree credit courses in reading, writing, study skills, and basic mathematics. Students enrolled in these courses are either referred on the basis of their entrance exams, or they elect the courses to strengthen their basic academic skills. In addition, individual and small-group tutoring is available. Tutoring is scheduled on the initiative and at the convenience of the student.

The program is described more fully in the academic programs section of this catalog.

Specific courses offered in the program are listed in numerical sequence and described in the course descriptions section, under instructional unit numbers 553 and 601.

Exchange Programs

Exchange programs give students the opportunity to incorporate into their undergraduate education a semester or a year of study at another university.

The advantages of exchange and the reasons that students exchange are many and varied. Some do it to experience another geographic location while continuing their education. Others are motivated by specific needs: the opportunity for an earth science student to spend a semester in a place that is geologically different from Wisconsin, for example, or to study with particular faculty members at another university, or to take advantage of special courses or programs. Students from other universities come to UWGB for similar reasons.

National Student Exchange

The University of Wisconsin-Green Bay is one of only three schools in the UW System participating in the National Student Exchange, under which regularly enrolled students may apply for exchange to one of 78 colleges and universities in 37 states, the Virgin Islands, and Puerto Rico. Exchange students from UWGB have recently been enrolled at institutions including the University of South Carolina, University of Idaho, University of Massachusetts-Boston, University of Montana, New Mexico State, California State at Bakersfield, and Oregon State. Men and women from Ft. Hays State in Kansas, the University of Maine, Montana State, State University of New York College at Potsdam, University of Idaho, University of Maryland, and Georgia State are among exchange students who have recently attended UWGB.

To participate in an exchange program, a student should be a sophomore or junior in good academic standing, and have a cumulative grade point average of at least 2.5. An exchange student pays normal fees at the home campus and is responsible for transmitting transcripts back to the home campus at the end of the exchange. In general, exchange students continue to receive any financial aids for which they are eligible from their home institutions.

International Exchange

The University's first international exchange agreement was concluded in 1980 with Linkoping University in Sweden. Programs initiated since then provide for exchange of both students and faculty members with three additional institutions: Aalborg University in Denmark, the University of Kassel, West Germany, and the University of Yucatan, Mexico.

In general, students who participate in an international exchange pay UWGB tuition and continue to receive any financial aid for which they are eligible. They pay for their own travel, room and board, and personal expenses.

Individualized Learning

The Extended Degree Program
(Bachelor of General Studies)
The bachelor of general studies degree incorporates elements of problem solving, communications, a broad range of disciplines, and lifelong learning. Designed particularly for the working adult who is unable to participate in fulltime on-campus study, it is primarily accomplished through independent study. Limited campus-based activities such as weekend seminars and individual appointments with faculty are its cornerstones. Credit toward graduation may also be earned on campus, transferred from other accredited institutions, earned through examination, or through approved on-the-job training programs, military training programs, or a prior learning portfolio.

Independent Studies, Internships, Practica
Independent study permits a student to get credit for a special project or research. To arrange for independent study, a student prepares a proposal that includes a statement of objectives and a list of readings and/or projects that will help to meet these objectives. Then the student must find an instructor who will agree to supervise the study. Once the instructor and the instructional unit head approve the proposal, the student may register for independent study.

An internship for academic credit may be arranged in advance on campus or with an enterprise in the community. It must offer instruction, guidance, experience and evaluation in an appropriate professional context, in keeping with an internship agreement which replaces a syllabus and acts as a job description. Typical on-campus internships have included work in personnel, news writing, graphic design, museum anthropology, and art gallery management.

Off campus, interns have worked in settings of wide diversity: in social services units of hospitals and mental health centers, at daily newspapers and commercial radio and television stations, and in private

and public agencies concerned with recreation, fitness and leisure programs. Interns in public administration have found places in city and county government offices and in nonprofit organizations such as the Red Cross and United Way. Internships completed recently by business students—in marketing research, personnel management, general management and accounting—have been carried out in local firms including a utility company, information systems manufacturer, printing establishment, and food processing firms. In some academic programs, a placement which offers the opportunity for work and/or observation in an appropriate professional setting is called a "practicum" or "field experience."

Personal Major
A personal major is a self-designed program for students who find that their educational objectives and interests do not fit into any of the existing majors. It is an alternative which may be planned around any theme consistent with the University's commitment to an education based upon the interrelatedness of knowledge and which focuses on human beings and their various environments. The personal major is described in more detail in the academic programs section of this book.

Research

Students have frequent opportunities to take part in research—opportunities that can enhance their qualifications for graduate or professional school. Many gain such experience by working with faculty members who are engaged in research. Recent or ongoing projects involving student workers include studies of water quality, marsh ecology, human responses to cold, approach-avoidance conflicts in spatial behavior, PCBs and lactation in rats, thermal and economic evaluation of solar heating systems, the ethno-history of Indian removal, and development of a training program for child day care.

The student who is interested in research may also enroll in research-oriented courses or engage in research through independent study or a senior honors project.

Senior Honors

Eligible students can individualize their academic experiences by choosing an in-depth, significant, senior honors project that can serve as the culmination of an educational program. A senior honors project is one of the requirements for graduation summa cum laude.

Senior honors projects can be as varied as the imagination, energy, and expertise of the students who complete them. Students of the arts can work for honors by giving music recitals, theater performances, or preparing individual shows in the visual arts. Students in other areas can engage in projects that result in written papers and other documentation and in oral or electronic media presentations.

Graduating with honors is explained in more detail in the general academic information in this catalog.

Student-Initiated Courses

The student who wishes to initiate a course must first determine that the topic is not covered in any existing UWGB course. Then the student writes a description of the course, locates a faculty member who is willing to teach it, and determines whether enough students are interested in taking such a course to justify adding it to the course list for a given semester or January interim.

If the course is approved, it will be offered as an experimental course. Such courses are offered once; after that they are subject to review and may become part of the permanent curriculum.

More information on student-initiated courses can be found in the description of courses with variable content in the course descriptions section of this catalog.

Student-Led Courses

Students have the opportunity to develop and lead courses, under sponsorship of an academic unit and with the guidance of a faculty adviser. Such courses are generally on topics of contemporary concern not covered in regular courses.

Student-led courses are listed in the *Timetable* along with regular UWGB courses. More information can be found in the description of courses with variable content in the course descriptions section of this catalog.

Noncredit Study

Noncredit courses, workshops, conferences and seminars, planned by the Office of Outreach and University of Wisconsin-Extension, are scheduled around the year on campus and in several locations in the community. Offerings in a typical semester range from dance and exercise classes to the visual arts, philosophy, computer science, financial planning, bird watching and foreign languages. Courses are usually planned for one to six sessions, meeting weekly in daytime or evening hours.

Outreach also sponsors an annual series of dinner-lectures highlighting the cuisine and cultures of other lands.

Conferences and workshops organized by the Office of Business Outreach are oriented to the needs of regional business and industry, but are also open to students. Topics of the short courses include management techniques, labor relations, business law, finance, and communication skills.

Noncredit programs and enrollment procedures are described in a *Lifelong Learning* catalog published in fall, spring and summer by the Office of Outreach.

Retroactive Credit

Credit by Examination
Students may be interested in credit by examination if they have studied at nonaccredited institutions, pursued special interests independently, or gained experience in the community, in the armed forces, or in paid or unpaid employment that has helped to achieve learning equivalent to that which would be gained in a college course.

The University uses Advanced Placement Program (APP) exams; College Level Examination program (CLEP) general exams in humanities, natural sciences, and social sciences; most CLEP subject exams; and most of the ACT Proficiency Examination Program (PEP) exams. The University also accepts credentials earned through certain other standardized exams, including those of the International Baccalaureate (IB) program, as a basis for granting credit when scores are at an acceptable level. In addition, challenge exams are available for certain courses given at UWGB.

Only matriculated students may receive credit for any examination at UWGB, although once a student is accepted and enrolled as a degree candidate, he or she may pursue many of the credits-by-exam options even during a period of nonenrollment.

Credit for Prior Learning
Learning based on experiences such as employment, volunteer activities, participation in workshops and seminars, hobbies and interests, travel, and publications may be used as the basis for seeking credit, if such experiences are related to courses, disciplines, or programs at UWGB. Students must be prepared to describe the experience in detail, to articulate in writing the skills or learning acquired, and to submit acceptable documentation or verification.

Students who wish to apply for credit for prior learning complete a workshop to learn procedures for preparing a prior learning portfolio and pay a fee for the assessment

process. The fee is applied toward payment of the final fee for credits.

Advanced Placement Credit
Students who enter the University with advanced level preparation in calculus, Spanish, French, or German may receive credit for that preparation by passing an advanced level course with a grade of "C" or better. In mathematics, a student may receive four credits for Mathematics 202 by earning a "C" or better in Mathematics 203.

Students who have taken French, German, or Spanish in high school or who have acquired a knowledge of one of those languages elsewhere may earn up to 16 additional credits for their previous foreign language study by completing a foreign language course beyond the 101 level. With a grade of "B" or better, credit will be given for all foreign language courses preceding the one in which the student is enrolled, to a maximum of 16 credits. With a grade of "BC" or "C," half credit will be given for the courses preceding the one in which the student in enrolled, to a maximum of eight credits. Students seeking retroactive foreign language credit should read the appropriate foreign language description in this catalog.

Travel

Students at UWGB can travel abroad or to other parts of the United States with faculty and other students as part of the educational experience. Through study trips, usually offered during the January interim, students may fulfill part of the all-University requirements or earn credits in other academic areas. In recent years students have traveled in organized trips to locations including England, Germany, Mexico, the American Southwest, and Chicago. When taken as part of an all-University requirements sequence, a trip usually makes up the second half of one of the required two-course sequences and offers a way to apply or investigate in the field what has been learned in the first course. Other opportunities for travel are offered by international exchange programs under which students may spend a semester or a year at a university in another country.

Admission, Costs, Financial Aids

Admission

Although UWGB has basic admission requirements, it is guided by a philosophy of "personalized admission," which means that each application is evaluated on an individual basis. Experiences through and since high school, special circumstances, and socio-economic background are considered. For these reasons, students who do not meet UWGB's basic requirements but feel they meet the spirit of this admission philosophy are encouraged to apply.

Degree-Seeking Students

Freshman Admission Requirements

High school graduates may qualify for admission as degree candidates by completing these requirements. (Fulfillment of these criteria does not guarantee admission, however.)

1. Be a graduate of a recognized high school or equivalent (as defined in UW System policy).

2. Rank in the upper half of the graduating class.

3. Present 12 units of college preparatory or academic coursework, plus 4 units of elective work. Unit distribution must be:

English	minimum of 3 units
Mathematics (algebra and above)	minimum of 1 unit
Science	minimum of 1 unit
Social studies	minimum of 1 unit
Academic electives	minimum of 6 units
From the areas of: English, Speech, Foreign language, Social studies and history, Sciences, Mathematics	
Academic subtotal	12 high school units
Other electives	minimum of 4 units
Academic and elective total	16 high school units

New Requirements
New requirements for the distribution of high school credits will go into effect in 1988. Beginning with the fall 1988 semester, required distribution of high school credits will be:

English	minimum of 3 units
Mathematics (algebra and above)	minimum of 2 units
Science	minimum of 2 units
Social studies	minimum of 2 units
Academic electives	minimum of 4 units
Other electives	minimum of 4 units
Total	16 units

ACT Scores
Students applying for admission must take the American College Test (ACT) and have the scores sent to UWGB. These scores and other test information will be used by advisers and counselors to assist students with course placement, and academic and career planning.

Students not meeting admission requirements may be required to take an on-campus admission qualification test.

Students who hold General Educational Development (GED) diplomas must have an official score report for the GED and a partial transcript from any regular high school attended sent directly to UWGB by the agency or school.

Transfer Admission Requirements

Students who have attended college after high school graduation should fulfill the following requirements:

1. Transfer and advanced standing students should have a 2.0 grade point average (4.0 scale) on at least 15 credits of transferable coursework. (See definition of transferable coursework in section on information for transfer students.) A maximum of four semester credits in physical education may be used in calculating the grade point average for determining admissibility.

2. Students with less than a 2.0 grade point average on transferable coursework may be considered for admission if they would have met UWGB freshman admission requirements, and if they would not have attained a "drop" action had they earned the same academic record at UWGB.

Application Procedures for Degree-Seeking Students

1. Degree-seeking students applying to UWGB should submit the University of Wisconsin undergraduate application. This application is available through counseling offices of Wisconsin high schools, from the Office of Admissions at UWGB, or any of the UW System campuses.

2. Transcripts:

A. A new freshman must request that a copy of the high school transcript be sent directly to the Office of Admissions at UWGB. Many students are admitted to the University on the basis of grades earned through the junior year in high school, plus a listing of subjects carried in the senior year, and therefore may receive a permit to register before high school graduation. Others may be asked to provide grades through the senior year to assist the admissions review committee in making the best possible evaluation of their potential for achievement.

B. Transfer students must request that official transcripts be sent directly to UWGB from all schools attended since high school. Transfer students with fewer than 15 transferable credits or less than a 2.0 grade point average must also have a high school transcript sent directly to UWGB.

C. All students who have attended nursing, business, and vocational and technical schools must submit those transcripts as well. (Transcripts from training schools attended as part of military service are not required.) Students must submit the records whether or not the work was completed and regardless of their desire to request UWGB credit for the courses. Credits earned in a noncollege parallel program at a vocational-technical institute are not transferable to UWGB. Students who took general education and/or liberal arts courses from such institutions are encouraged to seek credit through examination at UWGB.

3. Application dates for admission to UWGB are:
Fall Semester:
October 1 through August 10
January Interim:
October 1 through December 15
Spring Semester:
October 1 through January 10
Summer Session:
October 1 through May 30

4. A non-refundable $10 application fee is required of anyone applying for admission as a new freshman or as a transfer student from an institution outside the University of Wisconsin System. Applicants previously enrolled at a University of Wisconsin System school as nondegree-seeking students must also pay the application fee.

Information for Transfer Students

Credit evaluations. Transfer students will have an official credit evaluation to determine what courses and credits can be accepted to fulfill UWGB requirements. The accreditation status of the previous institution or institutions attended and the quality of a student's achievement are factors for determining course and credit transferability.

Credit evaluations will be started after all transcripts have arrived at UWGB and the student has been admitted. If a student is enrolled at another college when accepted at UWGB, a tentative evaluation will be completed and transmitted; the final evaluation will be held until a final transcript showing grades from the last term is received. Then the evaluation will be completed and mailed directly to the student.

A student who has taken independent study courses at other institutions must supply titles and descriptions for these courses when applying to UWGB so that these can be evaluated.

All-University requirements. A student who transfers to UWGB must satisfy all-University requirements by:

- completing one three-credit course in the senior seminar program;
- meeting the liberal education and distribution requirements of nine credits each in the humanities and fine arts, natural sciences and mathematics, and social sciences. This must include fulfilling at least one six-credit sequence. Courses taken at other colleges that are appropriate to these three domains of knowledge will be identified on both the tentative and final evaluations.

Transfer students will be informed in writing by the Registrar's Office of their exact standing with respect to fulfilling all-University requirements as soon as an evaluation of their completed credits is concluded. Transfer students should read the description of all-University requirements in the section of this catalog on general academic information.

Transferable coursework. Students coming to UWGB from two-year institutions may transfer up to 72 credits of freshman- and sophomore-level coursework only. In order to be credited as transferable coursework these criteria must be met:

1. The course must be compatible with the curriculum offerings at UWGB. For example, courses such as typing and shorthand may be appropriate at a university which prepares teachers for high school business programs, but courses such as this do not fall within the scope of the UWGB curriculum.

2. The course must be successfully completed at a regionally accredited college or university.

3. Each course must have a "D" grade or better if the student is transferring within the UW System; all such courses are granted degree credit.

4. Courses taken at colleges outside of the UW System are accepted as course credit if a grade of "D" or better has been earned; degree credits are calculated by the number of transferable credits which would be covered by a "C" average.

5. UWGB policies applying to currently enrolled students are also applied to transfer students. For example, up to four credits of physical education are held in escrow until graduation and are not directly applied to grade point calculations and class standing.

6. Academic status at the time of admission is assigned using normal UWGB academic standards applied to the transfer record.

Transfer students begin with a new grade point average at UWGB.

The academic plan form is an individual's graduation contract at UWGB. It is essential for all junior and senior transfer students to complete this form as soon as possible. The completed form specifies courses a student must take to satisfy graduation requirements at UWGB. The form is available from the Academic Advising Office.

Other requirements. Transfer students must meet residence requirements described in the section of this book on academic programs and in the current *Timetable*.

Specific questions on transfer credit evaluation may be directed to the Registrar's Office. Incoming transfer students should meet with an adviser in the office of Academic Advising to learn about general requirements for a degree. The office can refer students to faculty advisers in their areas of academic interest.

Special Students

(Students Not Seeking Degrees)

Students who want to take selected courses for credit but do not have the immediate intention of earning a degree at UWGB may enroll as special students. A special student is identified as a nonmatriculated student but he or she may earn regular credit which is permanently recorded for possible future use. Special students should be prudent in their course selections and the number of credits accumulated. For example, an excessive number of electives may not apply to degree requirements if the student decides to change to degree-seeking status in the future. Certain opportunities, such as financial aids, for which degree-seeking students may be eligible, are available only on a limited basis to special students. Special students are subject to all normal academic regulations and Regent's policies.

Normally, a student must have graduated from high school at least two years prior to the semester for which he or she is seeking special student admission. Exceptions are described in the categories below.

A student who has been denied degree-seeking status for a given semester at UWGB may not enroll as a special student for that semester.

Special student categories include:

Special (SPL): Students who have graduated from high school or earned a General Educational Development (GED) diploma at least two years prior to the term they wish to enroll at UWGB.

Post Baccalaureate (PBS) or Graduate (GSP) Special: Students who have already earned a baccalaureate degree (or higher) and are enrolled in undergraduate-level (PBS) or graduate-level (GSP) coursework but are not pursuing a degree at UWGB.

High School (HSO, HSP, HSS) Special: Superior high school students may enroll for UWGB coursework while attending high school or during the summer. High school specials must normally be seniors or juniors in high school and must rank in the upper half of their respective classes. Enrollment in UWGB courses requires the approval of the high school. Credits earned by students before graduation from high school will be held in escrow.

Summer Session Only (SSO): Students enrolled at another college or university and current year high school graduates who have been admitted to another college or university for the fall session may apply for Summer Session Only admission. Such admission carries no commitment for permission to register for the regular UWGB academic year. Students from other colleges or universities must be eligible to continue work at their respective institutions and are responsible for determining if their institutions will accept credits earned at UWGB.

Application Procedures for Special Students

1. Nondegree-seeking students applying for admission should submit a Special Student Application, available from the Office of Admissions at UWGB. Usually this is the only information required, however some individuals may be asked to submit additional records based upon individual circumstances.

2. High School Special students must submit the following materials in addition to the application:
A. an official high school transcript.
B. the high school special student statement form, and
C. the principal/counselor recommendation form.
(Forms "B" and "C" are available from the Office of Admissions.)

3. Summer Session Only students must submit an official high school transcript if they are current year high school graduates.

4. No application fee is required of special students.

Admissions Appeals
A student who has been denied admission may appeal that decision by appearing in person before the Admissions Appeals Committee. This committee meets approximately two weeks before the beginning of each semester. Students may contact the Office of Admissions for exact dates and times.

Other Admission Possibilities

Adult Students and Veterans
UWGB provides many opportunities for adults who have never pursued higher education and for those who interrupted their education to work, raise a family, or fulfill a military obligation. These opportunities can sometimes be provided for adults who do not meet all of the standard admission requirements. Prospective adult students are urged to write or call the UWGB Admissions Office or the Adult Services Office.

Educational Opportunity Program
A limited number of students who do not meet normal entrance requirements may be admitted to the University under the Educational Opportunity Program (EOP). Such students must show good potential for academic success. Early application is essential.

A primary goal of EOP is to assure that students admitted under the program as freshmen will be able to complete their sophomore, junior and senior years. EOP is described in more detail elsewhere in this catalog.

Non-Native English Speakers
All applicants whose native language is not English must submit proof of their English language proficiency; this normally consists of a TOEFL (Test of English as a Foreign Language) score. Although the University prefers the student submit the TOEFL score, Michigan Test of English Language proficiency scores will be accepted with prior approval of the international student services coordinator. Admitted students must also take the University's English-as-a-second-language proficiency test prior to their registration and

abide by those placement results. Information about these tests is available from the coordinator of International Student Services.

International Student Admission
UWGB enrolls students from more than 30 countries and actively seeks the cultural diversification that international students contribute to the campus.

Admission for international students is based upon scholastic achievement, ability to use the English language, and ability to finance an education.

An international student must have a recognized certificate of completion from a good secondary school and proof of being a very good student. Since all UWGB coursework is conducted in English, an applicant from abroad must take the Test of English as a Foreign Language (TOEFL), administered by the Educational Testing Service, Princeton, New Jersey. The test is given several times each year in many major cities of the world. Information about it is usually available at American embassies and consulates, offices of the U.S. Information Service, at U.S. educational commissions and foundations abroad, and other locations.

International students must be prepared to finance their educations. Only a limited number of partial tuition remission scholarships exist. In addition, it is difficult to gain permission from the U.S. Immigration and Naturalization Service to work off campus, so international students should not anticipate financing an education by income from employment.

UWGB has an office for international student services which notifies international applicants when they have been accepted and issues the necessary Certificate of Eligibility (U.S. Department of Justice, Immigration and Naturalization Service, Form I-20) to admitted students.

Further information on international student admission is available in the brochure, Information for International Students.

Graduate Program Admission
The basic policy of personalized admission applies to the graduate as well as the undergraduate program. The applicant's total experience is always considered. Entry as a provisional student is possible for those not meeting the minimum requirements. Evidence of success as a provisional student will gain admission to degree candidate status. Minimum requirements for entry into the degree program are:

1. A baccalaureate degree.

2. A 3.0 grade point in the major field of study, measured on a four-point scale.

Candidates for entry must submit:

1. A completed application form, including a statement of the student's intended area of study and educational objectives.

2. A transcript of grades for all previous undergraduate and graduate work.

3. Three letters of recommendation.

4. An application fee of $20.

5. Scores from a recent Graduate Record Examination: General Test.

6. Non-native English speakers must submit a TOEFL score.

7. International applicants must submit proof of financial support.

The graduate program is summarized in the section of this catalog on academic programs. A separate catalog is available describing the program in detail.

Costs

Semester Fees and Tuition

Legal residents of Wisconsin as defined in state statute 36.27, with certain exceptions, are charged fees only. Nonresidents are charged a combination of fees and tuition. A reciprocal fee remission agreement between the states of Wisconsin and Minnesota permits legal Minnesota residents to attend UWGB at special rates. (Application to the Minnesota Higher Education Coordinating Committee must be made in order to receive this special rate.) The following tentative fee and tuition schedule is subject to change by the University of Wisconsin Board of Regents and the Wisconsin Legislature. Up-to-date fee information is available in the *Timetable* or a fee information sheet for the current semester.

Fees for UWGB students are determined by an undergraduate- and graduate-level fee schedule and by state residency classification as determined by the Registrar's Office. A part-time undergraduate student registers for 11 credits or fewer on a per credit basis. A part-time graduate student registers for 8 credits or fewer on a per credit basis. In 1985-86, Wisconsin undergraduate students paid $54.00 and graduate students paid $93.25 per credit. Nonresident undergraduate students paid $163.50 and graduate students paid $265.25 per credit for part-time enrollment. Minnesota undergraduate students paid $64.00 per credit and graduate level students paid $91.50 per credit. The actual costs for each academic year are announced in advance and are available on request from the Office of the Registrar.

1985-86 Semester Fees for Full-Time Students

Level	Wis Res	Non Res	Minn Res
Undergraduate	$637.00	$1,953.50	$756.50
Graduate	$826.00	$2,373.50	$805.50

All fees and tuition are due at the time of registration and for regular semesters must be paid on or before the Friday of the first week of classes to avoid late payment penalties. Information about fees, including late payment penalties and the refund schedule for official withdrawal or reduction of credits, is contained in the *Timetable*.

January Interim

Students enrolling for the January interim do not pay additional fees if they are registered full time in the preceeding or following semester. If enrolled for less than full time, fees are assessed at the regular per-credit rate.

Summer Session Fees

Fees for summer session are based on the number of credits elected and are subject to change without notice by the University of Wisconsin Board of Regents. Summer fee schedules are announced in the *Timetable* or a separate fee information sheet.

Financial Aids

The primary objective of the Student Financial Aids Office is to assure that no academically qualified student is denied an education for lack of financial resources. Financial assistance in a variety of forms is available to students who have financial need. By completing the necessary applications, students are automatically considered for scholarships, grants, loans, or work-study for which they may qualify. The Financial Aids Office can provide detailed information about aid programs and scholarships.

A Typical Budget

A single student who attends UWGB for the full academic year—covering the fall and spring semesters and the January Interim period—can expect approximately the following expenses in addition to the fees or tuition listed previously.

Estimated Expenses for Academic Year

	Commuter Student Living at Home	Resident Student Living On or Off Campus
Books & Supplies	$ 350	$ 350
Room & Board	1,250	2,350
Travel, Personal, & Misc.	1,150	1,150
Total costs to be added to tuition	2,750	3,850

The "living at home" budget shows the actual costs of supporting a student in college, including the cost of food, miscellaneous expenses, and travel. Commuters and their parents should keep in mind that they are already paying these items. The only additional costs are for fees and books, a total of about $1,650. Transportation costs depend on whether the student lives in Green Bay or commutes from a more distant residence.

Financial Aid Application Procedures

Forms. The aid application process basically requires the completion of the application for admission to UWGB and the Financial Aid Form.

1. For new, transfer or re-entry students an application for financial aid is initiated by completing the Financial Aid section on the UW admission application available from most state high school guidance offices or from the UWGB Admissions Office.

2. The financial need analysis document is the Financial Aid Form (FAF), processed by College Scholarship Service. All aid applicants must complete and submit this form as part of the aid process. The information from the FAF is used to determine eligibility for the Wisconsin Higher Education Grant, the federal Pell Grant and for aid administered by the University Financial Aid Office.

Students who file the FAF and request Pell Grant consideration will receive a Student Aid Report (SAR) from the Pell Grant processor which must be sent by the student to the University in order to receive the grant.

3. In addition to these forms, all transfer students must submit a financial aid transcript from each institution previously attended in order to notify the University of the types and amounts of aid received.

Additional forms may be requested of certain students such as re-entry applicants. The necessary forms will be sent to students.

Students who submit applications are considered for all types of financial aid for which they are eligible. An application for aid may be filed before the University issues a permit to register, but a student must be admitted before UWGB can make an offer of aid.

Deadlines. The application priority date for all financial aid is April 15. Students whose aid files are complete by the priority date are generally notified between May 1 and June 15 of their aid award or denial.

The University cannot guarantee grant, loan, or job assistance to those applying after the priority date. Late applications will be accepted and awards will be made as long as funds are available and if there is reasonable time before the end of the school term. Students applying after the priority date will be notified of awards as soon as they can be processed.

Determination of Financial Need. To help judge student need and award aid fairly, the University asks self-supporting students and parents of dependent students to fill out a confidential statement called the Financial Aid Form (FAF). The FAF is first analyzed by the College Scholarship Service and then reviewed by a counselor in the Financial Aid Office. On the basis of this financial statement, the University can determine the difference between what the parent and student can provide and what the cost of education will be.

As part of the determination of financial need, students are expected to commit a substantial amount of their own resources toward their education expenses. Also, students are expected to earn and save some funds ($700 to $900) from employment.

Aid Awards. Rarely can students meet all their expenses through one type of financial aid. Also, very few loan or grant programs for undergraduate students can pay the total educational bill. This means that assistance generally must come from a combination of sources. A student may be selected to receive a loan and grant, a scholarship and a loan, a loan and a job, or other combination. A student need not accept the whole package to receive part of it.

Awards are based on the total cost of supporting a student for an academic year. Assistance given beyond costs for fees and books should go toward meeting board and miscellaneous expenses.

Eligibility. In addition to demonstrated financial need, the student must meet certain other eligibility requirements to qualify for various types of financial aid. In most cases the student must be a citizen or permanent resident of the United States, must be enrolled at least half time, and must maintain satisfactory academic progress. To be eligible for Wisconsin loans and grants, the student must also be a resident of Wisconsin. Also, a student must not be in default on any education loan, owe a refund, or show unwillingness to repay any educational loan.

Standards of Academic Progress. The individual student is responsible for being aware of the academic standards of progress required in order to continue eligibility for financial aid at the University. Eligibility is based upon a total number of semesters for which students may receive aid and on successfully completing a minimum number of credit hours within a given time span. A complete description of the University's policy and scales showing the number of credits required to continue eligibility for aid are located in the Appendix to this catalog.

Student Responsibility. By accepting the University's offer of financial aid, a student assumes responsibility for the use of those funds. A student who signs the award offer agrees to use the funds provided for education-related costs when attending the University. If a student's enrollment status changes during the refund and repayment period, it is that person's responsibility to repay aid funds received which cannot reasonably be attributed to meeting educational costs at UWGB. Students receiving aid who are considering withdrawing from classes should see the refund and repayment schedules in the Appendix to this book.

Types of Financial Aid. In general, financial aid can be divided into three main categories: scholarships and grants, student loans, and employment.

Scholarships

UWGB Merit and Talent Scholarships

These awards, not based on financial need, are awarded to students on a competitive basis. In general, the criteria depend upon the purpose of the scholarships.

but may consist of:
—academic ability
—leadership and activities
—special skills or talents
—enrollment in a specific program or activity at UWGB
—recommendations or auditions
—special needs
—completion of a separate application

Following are the main scholarship programs available at UWGB. Information and application forms are available through the Financial Aids Office or the sponsoring department.

Founders Association Leadership and Academic Excellence Scholarship. Awards of $600 to $950 based on academic excellence and service activities. For new students.

Science and Mathematics Scholarship. Up to $300 per year for majors in the field with records of academic excellence. For new students.

Theater Scholarships. Awards of up to $400 per year, based on academic excellence and recommendations. For new and continuing students.

Music Scholarships. Up to $500 awarded to music majors enrolled in specific performance courses. For new and continuing students.

Business Scholarships. Up to $400 for women business majors with records of academic or other achievement. For new students.

Athletics Scholarships. Available for men in basketball and soccer and for women in basketball and swimming/diving. For new and continuing students.

Alumni Association Scholarships. Up to $500 to an applicant selected from the Leadership and Academic Excellence Awards. For new students.

University League Scholarships. Awards of $400 based on scholastic record and financial need. For new and continuing students.

***Founders Association* Scholarships for Adult Learners.** Awards of $200 for students over age 25, based on need. For new and continuing students.

ROTC Scholarships. Awards of tuition and books and $100 per month. For second or third year students.

Wisconsin Rural Rehabilitation Corporation Scholarships. Awards of $500 for students from operating farm families who are enrolled in UWGB-Bellin College nursing program. For new students

First Northern Corporation Scholarships. Award of $500 for business major with preference for emphasis in finance. May include internship. Usually given to junior or senior.

Arlene B. Walter Scholarships. Awards of $500 for students with leadership qualities and good grade point average. For continuing students.

Herbert Fisk Johnson Awards for Excellence. Grants of $400 for undergraduate research project related to academic emphasis. For continuing students only.

Graduate Assistantships. These awards may cover tuition, fees, and provide stipend for teaching. For new and continuing graduate students.

UWGB Nonresident Fee Remission Scholarship. This award provides partial or total remission of the nonresident portion of fees at the University. The recipient's nonresident tuition charge is reduced by the value of this award. Eligibility is determined by scholastic ability and financial need. The number of such scholarships is limited by legislation. Students must apply for financial aid to be considered.

UWGB International Student Fee Remission Scholarship. Partial or total remission of the nonresident portion of fees. Awarded to international students selected on the basis of academic excellence and financial need.

Grants

Grants, like scholarships, consist of gift aid, which is not repaid. The main criteria for grants is financial need.

Pell Grant (PELL). Federally funded grants to needy students range from $200 to $2,100 (determined by a federal schedule). Students who wish to apply for any financial aid are required to apply for these grants by checking a section of the FAF application.

Supplemental Educational Opportunity Grants (SEOG). Federally funded grants to students who have exceptional financial need. SEOG awards may not exceed $2,000 in one year of a total of $6,000 for undergraduate education.

Wisconsin Higher Education Grants. State-appropriated grants awarded by the Higher Education Aids Board. Awards range from $200 to $1,800.

Wisconsin Indian Student Assistance Grant. Grants of up to $1,800 per year awarded to students of at least one-fourth Native American descent who are residents of Wisconsin. Amount of the grant is based upon financial need. Additional funds on a matching basis are available to most Indian students from the U.S. Bureau of Indian Affairs or individual tribes. The grant may be received for up to five years of study.

Wisconsin Minority Undergraduate Grants. This grant, available to sophomore, junior, or senior Black, Hispanic, or Native American students, has an annual maximum of $2,000 and a cumulative maximum of $8,000. The award is based on need and is intended to help reduce student indebtedness. The minority affairs coordinator assists in identifying eligible students.

Wisconsin Talent Incentive Grants. A limited number of need-based awards determined by the Wisconsin Education Opportunity Center may be used for up to two years by students who are considered nontraditional or disadvantaged. Students must be clients of the Wisconsin Education Opportunity Center.

Minnesota-Wisconsin Compact Fee Remission. Nonresident fee remission for any Minnesota resident attending a Wisconsin public university. Students from Minnesota need pay only a special fee amount. Students must apply directly to the Minnesota Higher Education Coordinating Commission, Suite 901, Capitol Square, 500 Cedar Street, St. Paul, MN 55101

Viet Nam Era Veterans Grant. Made available to eligible Wisconsin veterans who served in the armed forces between August 5, 1964 and July 1, 1975. The yearly grant of up to $200 for single and $400 for married veterans is determined by a special application form.

Vocational Rehabilitation Grant. This aid covering tuition and books is provided to students with some disability as determined by the Department of Vocational Rehabilitation. The amount is generally included with other financial aid. Students with disabilities should contact their regional Department of Vocational Rehabilitation.

Loans

In order to meet the full financial need, students may wish to borrow funds for their educational expenses and repay these loans with future earnings. In general, student loans are interest-free while the student is enrolled at least half time. Repayment of the loan and interest begin six months after the student ceases to be enrolled at least half time. A promissory note containing specific information must be signed when the loan is received.

National Direct Student Loan Program (NDSL). Loans are made up to $3,000 for the first two years with a $6,000 cumulative undergraduate maximum. Interest is currently five percent and both interest and payments are deferred until six months after the student leaves school.

A borrower has up to 10 years after he or she ceases to be at least a half-time student to repay the loan.

Cancellation of all or a portion of the principal borrowed is available under certain circumstances. Cancellation is limited to teachers of the handicapped and mentally retarded, teachers employed in schools in low-income areas, and preschool teachers in Head Start programs. Deferments of up to three years may be obtained while serving as a Peace Corps/Vista volunteer or on active duty in the Armed Forces of the United States. NDSL program regulations may be changed by Congress.

Wisconsin State Student Loans. Wisconsin residents with financial need may be eligible to borrow fromn this program. Wisconsin residents who have previously borrowed fron the Wisconsin State Loan Program may continue to do so. However, at this time, the state is not accepting any new applicants into the state program. Transfer students, who have had a Wisconsin State Loan from another school, must provide a letter of denial from a commercial lender before a Wisconsin State Loan can be processed through UWGB.

Undergraduates may borrow up to $2,500 per fiscal year with a maximum accumulation of $12,500. For freshmen the amount cannot exceed one-half of the cost of education. There is no interest as long as the student is in school on at least a half-time basis. Six months after the student ceases to attend school, repayment and eight percent interest begin.

The student has up to 10 years from this date to repay the loan depending upon the total amount outstanding. The state bills on a monthly basis and requires a minimum yearly repayment of $600 plus interest. Deferments of up to three years may be obtained for active duty service with the Armed Forces or as a Peace Corps/Vista volunteer.

Guaranteed Student Loan Programs. Students may borrow under this program from participating private lending institutions, such as banks, savings and loan associations, and credit unions. The program is administered jointly by the private lending institutions, the student's home state higher education agency and the University

Depending upon the total amount borrowed, the student has up to 10 years to repay the loan at a present rate of eight percent interest, after he/she has permanently left school. The undergraduate may borrow up to $2,500 per fiscal year with a maximum accumulation of $12,500.

University Short-Term Loans. Loans from funds established by gifts to the University are generally granted in amounts up to $250 per academic year. Repayment usually is expected within the same semester that the loan is acquired. The loans are generally interest free and are made only for emergency situations. Students must have a definite source of repayment.

Emergency loan funds are provided from the following memorials and donations: Ben J. Rosenberg Student Loan Fund, Robert P. Brebner Memorial Student Loan Fund, L.G. Wood Memorial Student Loan Fund, The Honorable William J. Duffy Student Loan Fund, UWGB Alumni Association Student Loan Fund, UWGB Faculty-Staff Student Loan Fund, UWGB University League-Thelma DuChaine Student Loan Fund.

Plus Loans. Plus loans are meant to provide additional funds for education expenses. Parents and independent students may borrow through this program administered by private lenders. Interest of 12 percent and repayment begins within 60 days. Parents may borrow up to $3,000 per year and independent students may borrow up to $2,500. Students should contact a lender for application forms.

Student Employment

Enrolled students may use the employment services of the office of Student Financial Aids. Students may apply any time during the year but they cannot be referred to job openings until they have registered for classes. Student employment openings are generally categorized under two programs: college work-study and regular employment.

College Work-Study. As a part of the financial aid award, work-study is based upon financial need. Wages are paid partly by the employer and partly by the federal government. Total earnings are limited to the amount of financial need. Once the student earns the allowable amount, employment must cease or be switched to regular part-time employment.

Regular Employment. Students may apply and be employed on campus as jobs are available. However, students whose financial need has been met by aid programs may not earn additional funds on campus without an adjustment to their financial aid award. Off-campus jobs are listed on the bulletin board outside the Financial Aids Office.

The rate of pay for student jobs on and off campus generally ranges form $3.35 to $6 an hour. The exact rate depends on the complexity of the job. The chart below shows possible expected earnings (before taxes and other deductions) in a school year of about 34 weeks:

Hours worked weekly at $3.35/hour:

10 hours	$1,139
12 hours	$1,366
15 hours	$1,708

Veterans Educational Assistance Program. The primary source of information for programs administered by the Veterans Administration or the Wisconsin Department of Veterans' Affairs is the veterans' service officer of the county from which the veteran departed for service, or where he/she now claims residence. The veteran may also seek assistance from the veterans' officer on campus.

Veterans should submit the Certificate of Eligibility to the Office of the Registrar for enrollment certification and transmittal to the Veterans Administration regional office. A special section on the final registration form must be completed to be certified for benefits for the ensuing term.

War Orphans Educational Assistance. The War Orphans Educational Assistance Act provides educational benefits for children of permanently disabled or deceased veterans. The veteran must have died or become disabled as a result of service in the Armed Forces during the Spanish-American War, World War I, or since September 15, 1950.

Financial Aid for Graduate Students. Financial aid in the form of teaching assistantships, which carry a stipend of about $5,000 and provide eligibility for waiver of out-of-state tuition, are available to graduate students by applying directly to the Office of Graduate Studies. Work-study, regular employment and student loans are also available to graduate students by means of the regular financial aid application process.

Advanced Opportunity Grant. The Advanced Opportunity Grant is available to graduate minority or disadvantaged students who have financial need. The amount of the grant varies.

Financial Aid Counseling

Counseling is available before and after admission to students applying for financial assistance. Students who have special problems or questions concerning financial aids are encouraged to make use of this service. Call 414/465-2075 for an appointment.

The Academic Program

General Information

Degrees Offered

UWGB offers a Bachelor of Arts (B.A.) or Bachelor of Science (B.S.) degree, a Bachelor of Social Work (B.S.W.), Bachelor of Science Nursing (B.S.N.), Bachelor of General Studies (B.G.S.), a two-year Associate of Arts (A.A.) degree, and a graduate program leading to a Master of Science (M.S.) or Master of Arts (M.A.) in Environmental Studies.

The bachelor's degree requires a minimum of 124 semester hours of degree credit and a cumulative grade point average of at least 2.0.

Associate of arts degree and master's degree requirements are included in the descriptions of those particular programs in this catalog.

Grading System

Grade point averages are determined on a 4.0 basis. Students with a cumulative 2.0 grade point average ("C" average) or better are in good standing if they are fulfilling standards of progress requirements. Those falling below a 2.0 average or failing to meet standards of progress are placed on probation. The "pass" grade of courses taken on a pass-no credit basis does not count in grade point averages, nor do grades from other institutions. The grading system and academic standing are explained in greater detail in the section on academic rules and regulations in the appendix to this book.

Academic Regulations

Academic policies, rules, and regulations, and definitions of academic terms as they are used at UWGB are explained in greater detail in the appendix of this book. They also are published in the *Timetable*, circulated each semester, January interim, and summer session by the Registrar's Office and in the *Academic Advising Handbook*. The *Timetable* also contains information about registration procedures, graduation requirements, listing of courses offered during that particular session, and other information. Each student receives a copy of the *Timetable* when he or she begins the registration process for a particular time period.

Honors List

UWGB recognizes high scholastic achievement for full-time undergraduate students each semester by compiling an honors list based on a minimum of 12 credits taken for a regular grade. A minimum of a 3.50 grade point average indicates honors and a minimum of 3.75, high honors. A 4.0 average gains highest honors. These averages are computed every semester. Grades for the January interim period are combined with those of the fall semester.

Graduating with Honors

The senior honors program identifies students who have achieved a consistently high level of excellence in the course of their academic careers. A student with a cumulative grade point average between 3.5 and 3.749 is graduated cum laude; 3.75 or higher magna cum laude or summa cum laude. All honors requirements are based on a minimum of 60 credits of regular graded work in residence at UWGB.

For the summa distinction, completion of a senior honors project is required. This project can be a thesis, special research, or creative work. It is normally completed in the semester preceding the last semester of the student's career and is related to his or her interdisciplinary major or minor. Eligible students should consult their interdisciplinary program adviser for more information.

Academic Calendar

The University operates on a 4-1-4 semester plan, with the fall semester beginning in early September and ending in mid-December and the spring semester running from early February to the end of May. An interim period is held during January. An eight-week summer session also is offered, along with special summer workshops and other academic programs of varying lengths.

The 4-1-4 plan offers the opportunity to graduate in less than the standard four years, if desired. This can be done by taking full credit loads during each fall and spring semester, plus attending the interim period each January and the eight-week summer session. By attending each semester and January period, a student can easily graduate in three and one-half years. The student who prefers to graduate in four years can take slightly lighter credit loads during the regular semesters.

January Interim Period

UWGB's 4-1-4 calendar includes January as a month in which students can concentrate on a single course in a traditional topic or take advantage of a course focused on a practical application.

January courses carry from one to four credits. No additional fees for continuing full-time students or for new full-time second semester registrants are charged. Any student registering only for January credit is charged the regular per credit fees. Students are expected to pay their own expenses for off-campus programs. Some financial aids may be available for these programs.

January course offerings include:

- developmental or extra elementary level work—especially in mathematics, English, and foreign languages, and particularly for freshmen and sophomores;
- independent study—individualized instruction, study or research (in courses numbered 298, 498, and 798) under faculty supervision;
- intensive on-campus courses—providing total immersion learning experiences, such as in foreign language speaking skills;
- internships—actual on-the-job experience for credit (in courses numbered 497);
- other-culture experiences—study or research in a community observation situation, or in national and international study tours;
- practica—small group programs (in courses numbered 195, 295, 395 and 495) focused on special problems and the practical application of skill and knowledge;
- special courses—innovative courses (numbered 283X, 483X and 795) designed by faculty and students around a variety of themes from interdisciplinary perspectives.

Summer Session

UWGB's summer session has its own set of course offerings. In addition to regular academic courses, some programs are designed to meet the educational needs of special groups. These include special courses, workshops, short courses, clinics, conferences, and inservice programs. Both undergraduate and graduate courses are offered during the summer.

Summer programs serve the educational needs of UWGB's own students, undergraduates regularly enrolled at other institutions, selected high school students, post-graduate students, adults, professionals, and others who may not be conventionally thought of as "students." Qualified high school students may enroll in appropriate courses and leave their college credits "in escrow" for later use. Recent high school graduates may enroll as special students and, if their work is of sufficient quality, be considered for regular admission.

Summer session courses are scheduled flexibly to allow students to work full time and earn college credit at the same time. Many are offered in late afternoon and evening hours, and most on a two-days-a-week basis. Most courses run for the full eight-week period, but others last from two to six weeks, depending on the subject, the number of credits and the nature of the course involved. Noncredit programs as well as credit courses are available.

Summer housing is available in either the University housing on campus, or in nearby off-campus locations.

During the summer a number of noncredit camps and workshops are offered for junior high and high school students and include such activities as art, music, dance, basic college skills, computer science, basketball, volleyball, soccer, and swimming. Many students commute to these clinics and workshops, but University housing is available to those from greater distances.

Summer session fees and admission procedures are described in another section of this catalog. Since all fees are determined annually, they are subject to change without notice.

Complete information on specific summer programs is available from the Registrar's Office. Publications and announcements about the coming summer's programs are available in advance.

Planning a Program

Goals of the Academic Plan

All programs of study at UWGB are treated as liberal arts programs; they are aimed at providing students with a broad and comprehensive education. Two essential elements are:
1. fulfillment of general education through all-University requirements, and
2. an interdisciplinary, problem-focused component.
These are the distinctive elements of our academic plan.

Undergraduates, in most universities, master a discipline such as history or mathematics; or achieve a high degree of competence in a professional program such as managerial accounting; or prepare themselves for further study in law or medicine. All these things can be done at UWGB. In addition, however, students must learn how to effectively apply the knowledge so gained, and this opportunity is what sets UWGB apart. Effective application of knowledge is the purpose of our general education requirements, problem focus, and interdisciplinarity. These elements allow students to apply what they are learning to "real" issues and enable them to see how all knowledge is interrelated.

Choosing a Major

It is not necessary to choose a major before coming to college; the freshman year is best spent in general education anyway. Students will have to satisfy a requirement in writing and perhaps also in mathematics, and they will have to choose three three-credit courses each in the humanities and fine arts, the social sciences, and the natural sciences. These courses are specifically identified as all-University requirements courses. In the senior year, students will complete the general education requirement by taking a three-credit senior seminar, which is a small, discussion course where students bring all of their education to bear on a single problem.

At UWGB, students can choose an interdisciplinary major such as Business Administration, Science and Environmental Change, Human Development, or Humanistic Studies. There are 13 such majors, each drawing from many disciplines. Or, students can choose a disciplinary major —English, mathematics, or sociology, for example. There are 21 of these majors. In either case, students will have to take at least 30 credits in their chosen major, of which 24 must be at the junior or senior level. Additionally, students who choose a disciplinary major must select an interdisciplinary minor of 18 credits, 12 of which must be taken at the junior-senior level. Of course, many majors impose prerequisites beyond these minimum requirements, so students should see an adviser early.

Finally, some students may want to pursue professional preparation. Those who want to be certified in Education will take a course of study appropriate to their chosen certification. There also are programs leading to a bachelor of social work degree, and students who already have an R.N. qualification can pursue a degree completion program in nursing. Students who want to prepare for law or medicine will need to consult advisers in these areas early, to ensure that they choose appropriate undergraduate courses. The same is true for preparation for graduate or professional schools in other fields.

Components of a Degree

Component I	**All-University Requirements**
30 credits	27 credits of distribution consisting of: 9 credits of Humanities and Fine Arts 9 credits of Social Sciences 9 credits of Natural Sciences and Mathematics 3 credits of Senior Seminar
Component II	**Supporting Courses**
credits vary with major	Preparatory and methods courses appropriate to the major (usually lower-level courses).
Component III	**Major**
30-48 credits minimum	The major is flexible; students choose: 1. Interdisciplinary major (minimum of 30 credits in the major; 24 of these credits must be at the junior-senior level) **OR** 2. Disciplinary major (minimum of 30 credits in the major; 24 of these credits must be at the junior-senior level) **PLUS** Interdisciplinary minor (minimum of 18 credits; 12 of these credits must be at the junior-senior level)
Component IV	**Other Options**
credits vary	Courses to bring total credits to minimum of 124 degree credits required for graduation such as: 1. Minor or additional minor in disciplinary or interdisciplinary program. 2. Teaching certification program. 3. Other specific professional program. 4. Electives. 5. Other possibilities to be designed with an adviser.
Total	124 credits (minimum requirement)

Programs of Study

● Disciplinary Majors and Minors

Humanities and Fine Arts
Art
Communication Processes
(mass communication, photography, speech, linguistics)
History
Literature-Language: English
Literature-Language: French
Literature-Language: German
Literature-Language: Spanish
Music
Philosophy
Theater

Natural Sciences and Mathematics
Biology
Chemistry
Earth Science
Mathematics
Physics

Social Sciences
Anthropology (minor only)
Economics
Geography
Political Science
Psychology
Sociology

Professional Studies
Managerial Accounting

● Interdisciplinary Majors and Minors

(Students who take a disciplinary major must take an 18-credit minor in one of these.)

Humanities and Fine Arts
Communication and the Arts
Humanistic Studies

Natural Sciences
Human Adaptability
Nutritional Science
Science and Environmental Change

Social Sciences
Human Development
Regional Analysis
Social Change and Development
Urban Studies

Professional Studies
Business Administration
Public and Environmental Administration

● Interdepartmental Majors and Minors

Environmental Planning
Information and Computing Science
(major only)
International Studies (minor only)
Women's Studies (minor only)

● Areas of Emphasis

By choosing areas of emphasis offered through several of the interdisciplinary and disciplinary majors, students can develop significant components of their education in areas such as computer science, social gerontology, science communication, environmental design, energy science and technology, regional planning, and many others. Students can learn about these emphases by reading descriptions in this catalog of the major and minor programs in their interest area and by consulting advisers.

● Personal Major

Students whose goals are not met by any of the University's majors, may, with the help of advisers, design a personal major. This is a rigorous process, described in more detail elsewhere in this catalog.

● Professional Studies

These are specific career preparation programs taken in addition to the major. Professional programs at UWGB are:
Education (teaching certification)
Military Science
Nursing
Social Work and Social Services

● Preprofessional Programs

Such programs are prepared for through UWGB majors and minors either by completing a four-year degree in preparation for entering a professional school, or by completing two or three years of preparatory work at UWGB and transferring to a professional school. Examples of preprofessional programs include:
Agriculture
Architecture
City Planning and Community Development
Dentistry
Engineering
Journalism
Law
Medicine
Nursing
Pharmacy
Social Work
Theology
Veterinary Medicine

● Other Options

External Degree Programs
Students unable to complete a degree through a regular on-campus program, or persons who already have some college credits, may wish to explore the University Without Walls program or the Extended Degree in General Studies. Both are described elsewhere in this catalog.

Associate of Arts Degree
A two-year program of study leading to an Associate of Arts degree may be completed at UWGB. Interested students should read the description in this catalog and consult an adviser.

Graduate Studies
Students may continue their studies at UWGB beyond the bachelor's degree in specific master's degree tracks. These are described briefly in this catalog; a graduate studies catalog is available.

Academic Advice

The best advice is to get advice. Students should see an academic adviser early, and as soon as they have chosen a major, they should see the faculty adviser for that major. (Faculty advisers for the academic areas are listed in each fall and spring semester *Timetable*.) Students who seek advice will be surprised how quickly all the elements of their degree fall together in a coherent pattern. Advisers also will help in making particular decisions, such as whether or not to pursue a double major, what supporting courses are needed to prepare for a major, and what special opportunities exist to enable students to pursue their own interests.

For students transferring into UWGB from another university, it is doubly important to see an adviser. Most, if not all, of their credits will count toward a UWGB degree. To avoid duplication, it is important that transfer students understand which requirements their previous courses fulfill.

Requirements

Residence Requirement

To graduate from UWGB, at least one year of residence work (31 credits) at the junior or senior level is required, including at least half the advanced work in the student's major. Students who choose minors must also complete half of the advanced work in the minor at UWGB. The senior seminar all-University requirement must be completed in residence.

The residence requirement does not mean that a student must live in Green Bay or carry a full-time schedule of courses. A student can commute and carry only a part-time load and still meet the residence requirement.

A student who has completed the junior year and who meets the residence requirement, but who cannot complete the senior year in residence for reasons of employment transfer, marriage, or whatever cause, can graduate from UWGB. Appropriate courses taken at another university as a substitute for senior year residence at UWGB can be selected with an adviser and must be approved by the chairperson of the student's major and, if necessary, by the director of general education.

A transfer student must complete the 30-credit all-University requirements but the portion of that requirement that must be completed in residence will be modified according to the number of degree credits and types of courses accepted at the time of transfer. In situations where in-residence requirements are reduced, students must have completed appropriate equivalent courses at their previous college or university; transfer students should contact the Academic Advising Office as early as possible for help in planning their programs to assure that they fulfill all UWGB requirements.

English Proficiency Requirement

All students must demonstrate mastery of basic writing skills by either achieving a specified minimum score on the ACT (freshmen) or on the UWGB English Placement Test (other entering students). Performance on one of these tests is used to place students in one of four categories:

- In need of substantial development—Student must complete 553-093, Fundamentals of Writing, which is a noncredit course, and then successfully complete 552-100, College Writing, a credit course.
- *In need of further development*—Student takes 552-100, College Writing, or 246-100, Writing Skills Laboratory, or other alternative courses which may be developed and designated in subsequent *Timetables*, during one of the first two semesters at UWGB.
- Adequate—Student is not required to take a writing course, but is encouraged to continue to develop writing ability, perhaps by taking 552-105, Expository Writing.
- Quite good—No writing courses required, but such students also are encouraged to continue developing their abilities by taking Expository Writing or one of the more advanced writing courses.

International, Extended Degree, special, and graduate students, and students transferring approved writing course credits into UWGB are exempted from the ACT or the UWGB English Placement Test. For more information about the English proficiency requirement, contact the Educational Testing Center.

All-University Requirements

All-University requirements total 30 credit hours in a two-part program: general education and distribution (27 credits), and a senior seminar (3 credits).

All-University requirements complement a student's education by:

- introducing them to different ways of arriving at knowledge in the various academic areas;
- examining applications of the knowledge or technique within these areas;
- helping students to see relationships among major areas of knowledge;
- strengthening and supporting more specialized studies through a liberal education;
- helping students to be more reflective and self-critical of the positions they choose to affirm.

Transfer Students

Transfer students' standing with regard to all-University requirements is based on equivalent courses completed at the time of their transfer to UWGB from another institution of higher education.

All transfer students must complete a three-credit senior seminar at UWGB. They may satisfy the 27-credit general education and distribution requirements by either transferring or completing nine credits each in the humanities and fine arts, social sciences, and natural sciences. Advance planning and selection of specific applicable courses before transfer is helpful in fulfilling the general education requirement.

Specific requirements for transfer students are explained in the chapter on Admission, Expenses, and Financial Aids. Transfer students will be informed in writing by the Registrar's Office of their standing in regard to fulfilling all-University requirements as soon as their credit evaluation is completed.

General Education and Distribution

The general education and distribution requirement gives students opportunities to learn the distinctive approaches or procedures of each broad area of knowledge —humanities and fine arts, social sciences, and natural sciences—and to become more aware of the values which shape individual and social experience. The 27 credits of general education and distribution will most likely be taken in the freshman and sophomore years. The requirement includes nine credits each in the humanities and fine arts, social sciences, and natural sciences.

Students choose the first three-credit course in each area of knowledge from a list of courses which provide both an overview and a foundation for a deeper examination of values and particular fields of study within that area of knowledge. Students then select the second three-credit course from an approved list of courses which focus in greater depth on the problems and value issues raised by the subject matter of the foundation course. The last three-credit course in each area is a distribution course, again from an approved list, which provides the student with another perspective and methodology from a different discipline within that particular area of knowledge.

There is a time limit policy for fulfilling general degree requirements including the 27-credit general education requirement and the English proficiency requirement. Students must complete these requirements within five years from the date they enroll as matriculated degree candidates. Students who filed their academic plans before June 1, 1985, must complete these requirements by 1989.

Following are some examples of combinations of courses which may be taken to meet general education requirements. These are by no means the only possibilities. Students should consult the *Academic Advising Handbook*, the *Timetable* and other registration information to find current all-University requirement course offerings. Some sample all-University requirements course combinations are:

Humanities and Fine Arts

Example 1:
242-261 Foundations of Aesthetic Experience
AND
493-340 Perspectives on Human Values: Classical
AND
552-214 Introduction to English Literature

Example 2:
448-208 Development of Modern Science in Western Society
AND
493-333 Utopia and Anti-Utopia
AND
242-160 Introduction to Language

Example 3:
493-101 Foundations of Western Culture I
AND
552-206 Women in Literature
AND
242-121 Masters and Masterpieces of Music

Example 4:
552-106 Great Books
AND
736-104 Freedom and Individuality
AND
246-102 Introduction to Mass Communication

Natural Sciences

Example 1:
478-102 Introduction to Human Biology
AND
478-206 Fertility, Reproduction and Family Planning
AND
862-102 Introduction to Environmental Sciences

Example 2:
754-103 Fundamentals of Physics I
AND
862-162 Technology and Society
AND
156-110 Introduction to Physical Anthropology

Example 3:
862-102 Introduction to Environmental Science
AND
862-286 Forest Vegetation of Wisconsin
AND
204-202 Principles of Biology I

Example 4:
204-202 Principles of Biology I
AND
479-250 World Food and Population Issues
AND
296-202 The Earth's Physical Environment

Social Sciences

Example 1:
156-100 Varieties of World Culture
AND
875-203 Prejudice and the Human Condition
AND
834-220 Introduction to Regional Analysis

Example 2:
[illegible]6-202 Macro Economic Analysis
AND
875-270 Third World: Development or Despair
AND
944-200 Introduction to Urban Studies

Example 3:
481-210 Introduction to Human Development
AND
875-235 Sex and Society
AND
778-100 Introduction to Political Science

Example 4:
900-202 Introduction to Sociology
AND
156-220 Myth, Ritual and Religion
AND
875-241 Women and Changing Values

Senior Seminars

The senior seminars are the culmination of a student's interdisciplinary liberal education. In these seminars, students are encouraged to extend knowledge gained in their disciplinary and interdisciplinary courses to the broad fundamental concepts and issues that make up the basic social and intellectual concerns of our time. The seminars are designed to enlarge perspective, analytical ability, and interest in the enduring problems of self and society as they relate to contemporary environmental, cultural, ethical, scientific, and political concerns.

Senior seminars differ from other courses in that they bring together advanced students from a variety of majors in an atmosphere that encourages them to deepen and broaden the base of knowledge they bring into the course while engaging them personally and intellectually in some of the most important and interesting contemporary issues. The seminars place considerable emphasis on exploring such concepts as freedom, progress, imagination, myth, ecological systems, various educational and intellectual theories, and the like.

Humanities and Fine Arts

Art

Associate Professors: Ronald Baba, design methodology, environmental design; **David Damkoehler**, design methodology, drawing, design, sculpture, environmental design, American culture; **Jerry Dell**, *photography*; ***Curt Heuer*** (chairperson), ceramics, design, drawing, oriental art; **Robert Pum**, art metals, drawing, art education, aesthetic awareness; **Thomas Tasch**, sculpture, drawing, contemporary arts; **Karon Winzenz** (curator of art), textile *arts, painting, mixed media*, contemporary arts.

Assistant Professors: Elizabeth Jones, art history, film; **Evelyn Teikari**, graphic communication, graphic history.

Academic Staff: Marjorie Mau (assistant to the curator), gallery management; **Robert Ratajczak**, art specialist.

The visual arts are important creative and expressive components of human experience. They provide a means of involvement with life by sensitizing individuals to the processes of seeing, feeling, making, and thinking in terms of visual systems.

Course work in the art studios provides the opportunity to develop technical skills and knowledge about diverse art media as well as an understanding of the historical heritage of the contemporary artist. Emphasis in the disciplinary program is placed on both the conceptual and perceptual aspects of artistic activities in two- and three-dimensional media.

Requirements for the Major

The major in art may be taken with one of three possible emphases: studio, art management or art education, each with slightly different requirements.

Major With Studio Emphasis

Supporting Courses

Nine credits required:
242-102 History of Visual Arts I: Ancient to Medieval
242-103 History of Visual Arts II: Renaissance to French Revolution
242-202 *Issues and Concepts in Modern Art*

Freshman-Sophomore-Level Requirements

Design Core (9 credits required):
168-105 Drawing
168-106 Design Methods
168-107 Two-Dimensional Design

Introductory Studios
(6 credits required from the two-dimensional group and 6 credits required from the three-dimensional group; 12 credits total required):

Two-dimensional introductory studios:
168-200 Introduction to Mixed Media on Paper
168-210 Introduction to Painting
168-243 Introduction to Photography

Three-dimensional introductory studios:
168-220 Introduction to Sculpture
168-230 Introduction to Ceramics
168-250 Introduction to Experimental Textiles
168-260 Introduction to Art Metals

A sample schedule for freshman and sophomore years would include:

Freshman Year:
6 credits supportive background courses
6 credits design core
15-18 credits all-University requirements and interdisciplinary minor coursework

Sophomore Year:
3 credits supportive background courses
3 credits design core
6 credits introductory studios
15-18 credits all-University requirements and interdisciplinary coursework

Junior-Senior-Level Requirements

Students majoring in art are required to complete a minimum of 24 credits of junior-senior-level coursework distributed as follows:

Art History (6 credits required):
168-390 19th and 20th Century Art
168-490 Contemporary Art: 1945-present

Studio (18 credits minimum required):
Eighteen junior-senior-level studio credits in one or two studio areas, but no fewer than nine credits nor more than 12 credits in any one studio area. Students seeking careers in art or preparing for graduate study are advised to take as many and as varied art courses as possible. Juniors will complete an academic plan with an art adviser and select upper-level studio courses to meet requirements and individual interests. The following are sample 18-credit *course groups for individual fields of study*.

Sample Fields of Study

Painting:
168-301 Life Drawing and Anatomy
168-311 Intermediate Painting
168-314 Watercolor Painting
168-343 Photography II
168-401 Advanced Life Drawing
168-410 Advanced Painting

Drawing:
168-301 Life Drawing and Anatomy
168-311 Intermediate Painting
168-373 Intaglio Printing
168-377 Lithography
168-401 Advanced Life Drawing (6 credits)

Sculpture:
168-301 Life Drawing and Anatomy
168-321 Intermediate Sculpture
168-332 Intermediate Ceramics: Moldwork
168-364 Art Metals: Casting
168-421 Advanced Sculpture (6 credits)

Ceramics:
168-301 Life Drawing and Anatomy
168-321 Intermediate Sculpture
168-331 Intermediate Ceramics
168-332 Intermediate Ceramics: Moldwork
168-343 Photography II
168-431 Advanced Ceramics

Photography:
168-301 Life Drawing and Anatomy
168-311 Intermediate Painting
168-343 Photography II
168-344 Photography III
168-375 Screen Printing
168-443 Advanced Problems in Photography

Art Metals:
168-301 Life Drawing and Anatomy
168-321 Intermediate Sculpture
168-343 Photography II
168-364 Art Metals: Casting
168-463 Advanced Art Metals (6 credits)

Fiber/Textile:
168-301 Life Drawing and Anatomy
168-311 Intermediate Painting
168-343 Photography II
168-353 Intermediate Textiles: Fiber
168-355 Intermediate Textiles: Papermaking
168-453 Advanced Textiles

Printmaking:
168-301 Life Drawing and Anatomy
168-311 Intermediate Painting

168-373 Intaglio
OR
168-375 Screen Printing

168-377 Lithography
168-401 Advanced Life Drawing and Anatomy
One advanced studio
(Relief printing, intaglio, screen printing, or lithography)

Major With Art Management Emphasis

Students majoring in art may elect to complete an emphasis in art management.

Supporting Courses

Nine credits required:
242-102 History of Visual Arts I: Ancient to Medieval
242-103 History of Visual Arts II: Renaissance to French Revolution
242-202 Issues and Concepts in Modern Art

Freshman-Sophomore-Level Requirements

Design Core (9 credits required):
168-105 Drawing
168-106 Design Methods
168-107 Two-Dimensional Design

Introductory Studios
(6 credits required from the two-dimensional group and 6 credits required from the three-dimensional group; 12 credits total required):

Two-dimensional introductory studios:
168-200 Introduction to Mixed Media on Paper
168-210 Introduction to Painting
168-243 Introduction to Photography

Three-dimensional introductory studios:
168-220 Introduction to Sculpture
168-230 Introduction to Ceramics
168-250 Introduction to Experimental Textiles
168-260 Introduction to Art Metals

A sample schedule for freshman and sophomore years would be the same as the major with studio emphasis.

Junior-Senior-Level Requirements

Students majoring in art with an emphasis in art management are required to complete a minimum of 27 credits of junior-senior-level course work distributed in this way:

Art History (6 credits required):
168-390 19th and 20th Century Art
168-490 Contemporary Art: 1945-present

Studio
(12 credits required with no more than 9 credits from any one studio area)

Arts Management Core
(9 credits required):
168-395 Exhibition Design and Development, 2 cr.
168-396 Gallery Practicum, 1-3 cr. (may be repeated twice up to a maximum of 9 credits)
168-497 Internships in Arts Management, 3-9 cr.

Recommended Supporting Electives
(9 credits recommended, 3 credits from each of the following areas):

Communication skills:
246-133 Fundamentals of Public Address
552-105 Introduction to Expository Writing
552-304 Advanced Expository Writing

Anthropology
156-210 Introduction to Cultural Anthropology (all-University requirement credit)
156-330 Aesthetic Anthropology

Management:
575-395 Management of the Nonprofit Organization

Major With Art Education Emphasis

Students majoring in art may elect to complete an emphasis in art education, leading to teacher certification by the Wisconsin Department of Public Instruction.

Students must meet specific requirements for admission to the program in Education. Information on these requirements is available from the Education office. Requirements for teacher certification as established by the Wisconsin Department of Public Instruction include:

Human Relations Requirements

Advising guides are available from the UWGB Education Office which explain these requirements and lists courses approved to meet them.

Professional Education Requirements
(22 credits minimum)

Educational psychology:
• Option 1
820-315 Educational Psychology
AND
481-210 Introduction to Human Development (recommended)
OR
820-315 Introduction to Psychology

• Option 2
(Special permission of Education adviser and certification officer required)
481-332 Human Development II: Middle Childhood and Adolescence
AND
302-406 Evaluation and Testing in Education
OR
481-431 Cognitive Development

Other professional courses:
302-301 Introduction to Education and Teaching, 3 cr.
302-303 Principles and Methods of Teaching Art in Elementary School, 2 cr. (required for elementary school level certification)
302-316 Principles and Methods of Teaching Secondary School Art, 3 cr. (required for secondary school level certification)
302-318 Reading and Study Skills in the Secondary School, 2 cr.
302-402 Student Teaching or Internship at the Elementary School in Art, 6-12 cr.*
302-403 Student Teaching or Internship at the Secondary School in Art, 6-12 cr.*
302-410 Introduction to Education of Exceptional Children, 3 cr.

*A minimum of 8 credits of student teaching in art is required if certification is only at one level, e.g., elementary or secondary. Students who are being certified in grades K-12 must take a minimum of six credits of student teaching at each level.

Art Course Requirements

To satisfy requirements for the major with art education emphasis a minimum of 54 art credits to include the following competencies:

Required supporting courses (6 credits):
242-102 History of Visual Arts I: Ancient to Medieval
242-103 History of Visual Arts II: Renaissance to French Revolution

Art history (a minimum of 2 semesters required):
168-390 19th and 20th Century Art, 3 cr.
168-490 Contemporary Art (1945-present), 3 cr.

Basic design studios (a minimum of 3 semesters of introduction and fundamentals required):
168-105 Drawing, 3 cr.
168-106 Design Methods, 3 cr.
168-107 Two-Dimensional Design, 3 cr.

Photography (a minimum of 1 semester required):
168-243 Introduction to Photography, 3 cr.

Studios in two-dimensional media
(a minimum of 3 semesters required):
168-210 Introduction to Painting, 3 cr. (required)
One course in printmaking required, 3 cr.
(957-375 Screen Printing, recommended)

Plus one additional course selected from the following list:
168-310 Life Drawing and Anatomy, 3 cr.
168-311 Intermediate Painting, 3 cr.
168-314 Watercolor Painting, 3 cr.
168-371 Relief Printing: Reductive, 3 cr.
168-373 Intaglio, 3 cr.
168-375 Screen Printing, 3 cr.
168-377 Lithography, 3 cr.
168-401 Advanced Life Drawing, 3 cr.
168-414 Advanced Watercolor, 3 cr.
168-471 Advanced Relief Printing: Additive, 3 cr.
168-473 Advanced Intaglio, 3 cr.
168-475 Advanced Screen Printing, 3 cr.
168-477 Advanced Lithography, 3 cr.

Studio in three-dimensional media
(a minimum of 3 semesters required from the following list):
168-220 Introduction to Sculpture, 3 cr.
168-230 Introduction to Ceramics, 3 cr.
168-250 Introduction to Experimental Textiles, 3 cr.
168-260 Introduction to Art Metals, 3 cr.

Four additional courses in art studio minimum, selected from the following list:
168-321 Intermediate Sculpture, 3 cr.
168-331 Intermediate Ceramics, 3 cr.
168-332 Intermediate Ceramics: Moldwork, 3 cr.
168-353 Intermediate Textiles: Fiber, 3 cr.
168-355 Intermediate Textiles: Papermaking, 3 cr.
168-364 Art Metals: Casting, 3 cr.
168-421 Advanced Sculpture, 3 cr.
168-431 Advanced Ceramics, 3 cr.
168-453 Advanced Textiles, 3 cr.
168-463 Advanced Art Metals, 3 cr.
OR
From junior-senior-level art studios listed under studios in two-dimensional media above.

Art and Other Programs

Students majoring in art will find their strongest ties with interdisciplinary minors in Communication and the Arts (particularly graphic communication, aesthetic awareness, and environmental design) and Humanistic Studies, but others may be equally appropriate for students preparing for specialized career fields. For example, Urban Studies for students interested in architecture and planning, Science and Environmental Change for students interested in architecture and alternate energy sources, or Human Biology for students interested in medical illustration.

Careers and Advanced Study

Students completing the major in art might choose to go on to graduate studies in art studio (any medium), art education, architecture, urban planning, design, illustration or art history as a possible focus.

Students not seeking advanced study find employment in graphic design, display designs, public and private art teaching, independent studio work and art-related retailing. Students with an emphasis in art management find management and curatorial positions in museums, art centers, galleries, and nonprofit art organizations.

Requirements for the Minor

The minor in art serves three types of students. First, those fulfilling a personal interest in art without professional aspirations. Second, those seeking to add the visual skills of a disciplinary minor in art to their career preparations, such as interdisciplinary majors in Communication and the Arts (particularly graphic communications, aesthetic awareness and environmental design), Humanistic Studies, Urban Studies and Environmental Planning. Third, those who intend the minor as a component of their professional studies, most particularly Education, but also business (advertising and marketing) and nursing.

Students in any field may find the visual skills of the art minor an appropriate supplement to their academic preparation in the context of our visually oriented, media-driven culture.

Employment fields in which the art minor would be appropriate include education, communications, marketing, advertising, publishing and journalism, retailing and therapy.

Minor With Two-Dimensional Emphasis

Freshman-Sophomore-Level Requirements

Background Course (3 credits required):
242-202 Issues and Concepts in Modern Arts

Design Core (6 credits required):
168-105 Drawing
168-107 Two-Dimensional Design

Introductory Studios (6 credits required, selected from the following group):
168-200 Introduction to Mixed Media on Paper
168-210 Introduction to Painting
168-243 Introduction to Photography

Junior-Senior-Level Requirements

Select 6 credits, for which the student has the appropriate prerequisite, from the following group:
168-300 Interrmediate Drawing
168-301,401 Life Drawing and Anatomy/ Advanced Life Drawing
168-311,411 Intermediate Painting/ Advanced Painting
168-314,414 Watercolor Painting/ Advanced Watercolor Painting
168-343 Photography II
168-344 Photography III
168-371,471 Relief Printing/Advanced Relief Printing
168-373,473 Intaglio/Advanced Intaglio
168-375,475 Screen Printing/Advanced Screen Printing
168-377,477 Lithography/Advanced Lithography
168-443 Advanced Problems in Photography
168-444 Time Duration Visual Media

Minor With Three-Dimensional Emphasis

Freshman-Sophomore-Level Requirements

Background Course (3 credits required):
242-202 Issues and Concepts in Modern Art

Design Core (6 credits required):
168-105 Drawing
168-106 Design Methods

Introductory Studios (6 credits required, selected from the following group):
168-220 Introduction to Sculpture
168-230 Introduction to Ceramics
168-250 Introduction to Experimental Textiles
168-260 Introduction to Art Metals

Junior-Senior-Level Requirements

Select 6 credits, for which the student has appropriate prerequisites, from the following group):
168-321,421 Intermediate/Advanced Sculpture
168-331,332 Intermediate Ceramics/ Ceramic Moldwork
168-353 Intermediate Textiles: Fiber
168-355 Intermediate Textiles: Papermaking
168-364 Art Metals: Casting
168-431 Advanced Ceramics
168-453 Advanced Textiles
168-463 Advanced Art Metals

Minor With Art History Emphasis

Freshman-Sophomore-Level Requirements

Fifteen credits required:
168-105 Drawing
168-107 Two-Dimensional Design
242-102 History of Visual Arts: Ancient to Medieval
242-103 History of Visual Arts: Renaissance to French Revolution
242-202 Issues and Concepts in Modern Art

Junior-Senior-Level Requirements

Six credits required:
168-390 19th and 20th Century Art
168-490 Contemporary Art: 1945-Present

Communication and the Arts

Professors: Robert Bauer, director of bands, flute, music education; **Trinidad Chavez**, director of choral activities, voice, choir and vocal ensembles, conducting, music education; **Arthur Cohrs** (chairperson), keyboard, music theory, aesthetic awareness; **Jack Frisch**, interpersonal communication, theater history, directing; **Donald Larmouth**, linguistics; **Timothy Meyer**, electronic media; **Richard Sherrell**, theater history and criticism, aesthetic awareness.

Associate Professors: Clifford Abbott, linguistics; **Jerome Abraham**, low brass, music appreciation; **Margaret Charnon**, keyboard, piano pedagogy; **David Damkoehler**, environmental design, drawing and design, graphics, sculpture; **Jerry Dell**, photography, graphics, electronic media; **Curtis Heuer**, ceramics, drawing and design, aesthetic awareness; **Lovell Ives**, jazz studies, arranging, trumpet; **Wayne Jaeckel**, jazz studies, woodwinds; **Charles Matter**, aesthetic perception, human information processing, cognitive psychology; **Dean O'Brien**, journalism, mass media; **Terence O'Grady**, music theory and history; **Robert Pum**, art metal, jewelry design, drawing, art education, aesthetic awareness; **Patricia Ridge**, acting, directing, stage movement; **Karon Winzenz** (curator of art), textile arts, painting, drawing.

Assistant Professors: Phillip Clampitt, communication theory, organizational communication, public address; **Jeffrey Entwistle**, technical theater, stage and lighting design; **Mark Fonder**, low brass, ensembles, music education; **Raymond Gabica**, technical theater, costume design; **Patricia Johnson**, linguistics, English as a second language; **Elizabeth Jones**, art history, film; **Susan Matthews**, voice, vocal ensembles, women and minorities in music; **Evelyn Teikari**, graphic communication.

Lecturer: Michael Mills, technical theater.

Communication and the Arts is concerned with the structure, roles and social and aesthetic consequences of all forms of communication, particularly language, mass media, graphics, art, music, theater, and creative writing.

The curriculum is organized into several emphases which can be pursued as interdisciplinary majors or minors, often in combination with disciplinary programs such as art, music, theater, and communication processes, among others.

Requirements for the Major and Minor

The Major. An interdisciplinary major in Communication and the Arts requires a minimum of 12 credits at the freshman-sophomore level and a minimum of 24 credits at the junior-senior level. In some programs the minimum requirements will be higher. The major is offered with an emphasis in aesthetic awareness or in broadfield communication, along with programs in environmental design, science communication and women's studies, offered in association with other concentrations at UWGB.

The Minor. An interdisciplinary minor in Communication and the Arts is combined with another major, usually a disciplinary program such as art, theater, music or communication processes. There is a nine credit freshman-sophomore requirement and a 12 credit junior-senior minimum requirement. The minor is offered in four programs of emphasis, including aesthetic awareness, graphic communication, broadfield communication and arts awareness.

Aesthetic Awareness

The emphasis in aesthetic awareness seeks to cultivate general aesthetic sensibilities and resources among artists, actors, writers, musicians, and others concerned with the arts. It includes core courses in aesthetic perception, expression, and response which are designed to develop broadly integrative views of the arts, along with related courses in styles of expression, art history, popular culture, theater history, and other expressive modes.

The emphasis in aesthetic awareness focuses on a broad understanding and appreciation of art and aesthetic perception. It may be combined with one or two minor programs, especially those in art disciplines. The major requires a minimum of 12 credits at the freshman-sophomore level and 24 credits at the junior-senior level. Up to six credits at the lower level, and nine credits at the upper level may be chosen from related disciplines, but the credits can not be simultaneously applied to a major or minor program in that discipline.

Freshman-Sophomore Courses
242-261 Aesthetic Awareness: Foundations (required)
242-102 History of the Visual Arts: Ancient to Medieval
242-103 History of the Visual Arts: Renaissance to French Revolution
242-121 Masters and Masterpieces of Music
242-141 Introduction to the Performing Arts: Theater and Music
242-142 Performing Arts Perspectives: Experience and Evaluation
242-202 Concepts and Issues of Modern Art
242-210 Film and Society
242-221 Popular Music Since 1955
242-222 The Arts in the U.S.
242-272 Women in the Visual and Performing Arts

Junior-Senior Courses
Four of the following courses are required in the program:
242-361 Aesthetic Awareness: Interpretation
242-362 Aesthetic Awareness: Psychology of Aesthetic Perception
242-364 Aesthetic Awareness: Creation
242-462 Aesthetic Awareness: Research
242-463 Aesthetic Awareness: Evaluation

The remaining courses may be chosen from the following:
242-310 Criticism of the Performing Arts
242-329 Expressive Traditions (American Show Music, Ethnomusicology, Jazz History, or Art of India and Japan)
242-370 Modern American Culture
242-372 Aesthetic Awareness: Traditional Art Styles
242-373 Aesthetic Awareness: Avant-garde Art Styles
242-380 The Arts: London
242-430 Mass Media and Society
242-477 Women as Creative Agents

The minor in aesthetic awareness requires a minimum of nine credits at the freshman-sophomore level (including the Foundations course), and a minimum of 12 credits

at the junior-senior level. At least six credits of the lower level courses must be in areas of study outside the student's disciplinary focus to ensure that all students have a general exposure to the arts and the background necessary to complete the core courses in aesthetic awareness successfully. At the upper level, at least two courses must be taken from the core courses.

Broadfield Communication

The concentration program in broadfield communication integrates several different dimensions, depending upon the individual student's academic direction. It includes coursework in graphics, mass media, language, popular culture, and design. Most students electing this program associate it with a four-year disciplinary program in communication processes, literature and language, psychology, or mathematics, among others.

Many different professional directions are possible within this program, some of which require additional study in a professional program. Students seeking teacher certification in English-communication arts or English as a second language enroll a professional program in Education while students planning careers in mass media, graphics, public relations, communications management, etcetera, are well advised to include a professional program in business management or public administration. Students with an emphasis in linguistics should plan on graduate study in such areas as linguistic theory, information science, cognitive science, language variation, psycholinguistics, or English as a second language.

The major in broadfield communication, usually combined with one or two disciplinary minors, requires a minimum of 12 credits at the freshman-sophomore level and 24 credits at the junior-senior level, of which 12 credits must be taken from the core courses.

Freshman-Sophomore Courses
242-160 Introduction to Language (required)
242-210 Film and Society
242-221 Popular Music Since 1955
242-243 Native American Cultures: Film and Performance I
242-244 Native American Cultures: Film and Performance II
242-331 Introduction to Graphic Communication
246-102 Introduction to Mass Communication

Junior-Senior Core Courses
242-323 Language and Human Conflict
242-370 Modern American Culture
242-375 Communication Skills: The Language of Metaphor
242-430 Mass Media and Society
242-450 Construction of Public Images

Other Junior-Senior Courses
242-329 Expressive Traditions (Jazz History, or American Show Music)
242-331 Graphic Communication Studio I
242-332 Graphic Communication Studio II
242-362 Aesthetic Awareness: Psychology of Aesthetic Perception
242-483 Communications: London

The minor in broadfield communication, combined with a disciplinary major, requires a minimum of nine credits at the freshman-sophomore level (including the Introduction to Language course), and 12 credits at the junior-senior level. At least six credits at the upper level must be taken from the core courses.

Graphic Communication

An interdisciplinary minor course of study in graphic communication is available in association with disciplinary programs in communication processes, art, or chemistry. A professional program in business also is recommended. This program prepares students for careers in graphic design, technology, and management, editorial and publications work, television graphics, and others related to print media.

Graphic communication is a very useful area for students in business administration to pursue as an outside minor area of study.

All students in the graphic communication emphasis must complete a minimum of nine credits at the freshman-sophomore level, of which six credits must be in areas of study outside the student's disciplinary focus. A minimum of 12 credits must be taken at the junior-senior level, including at least six credits from the core courses.

Freshman-Sophomore Courses
242-231 Introduction to Graphic Communication (required)
242-102, 103 History of the Visual Arts I, II
242-160 Introduction to Language
246-102 Introduction to Mass Communication
552-105 Introduction to Expository Writing

Students coming from business or chemistry are advised to enroll 242-231, 246-102, and 246-243 Introduction to Photography, and 168-106 Design Methods, for their lower level courses.

Junior-Senior Core Courses
242-331 Graphic Communication Studio I
242-332 Graphic Communication Studio II
242-432 Graphic Communication Workshop

Other Junior-Senior Courses
242-370 Modern American Culture
242-430 Mass Media and Society
242-483X History of Graphic Communication
246-346 Photographic Design for Print Media

All students pursuing a program in graphic communication are advised to enroll additional coursework in computer science and chemistry.

Arts Awareness

An interdisciplinary minor program in arts awareness is available to students desiring a broad exposure to the arts. For students pursuing a major in an arts discipline, this program provides a comparative, historical and critical study of all the arts, to help them place their discipline in better focus. For students majoring in areas outside the arts, this curriculum provides a breadth of approach for proper appreciation of the arts, without requiring the technical or artistic ability necessary in the specific disciplines.

There is a nine credit freshman-sophomore requirement and a 12 credit junior-senior requirement, which includes at least six credits chosen from among the core courses. The remaining six credits may be chosen from related upper level courses in consultation with a concentration adviser.

Freshman-Sophomore Courses
242-261 Aesthetic Awareness: Foundations (required)
242-102, 103 History of the Visual Arts I, II
242-121 Masters and Masterpieces of Music
242-141 Introduction to the Performing Arts: Theater and Music
242-142 Performing Arts Perspectives: Experience and Evaluation
242-202 Concepts and Issues of Modern Art
242-210 Film and Society
242-221 Popular Music Since 1955
242-222 The Arts in the U.S.

Junior-Senior Courses
242-310 Criticism of the Performing Arts
242-329 Expressive Traditions (American Show Music, Ethnomusicology, or Jazz History, Art of India and Japan)
242-372 Aesthetic Awareness: Traditional Art Styles
242-373 Aesthetic Awareness: Avant-garde Art Styles

Environmental Design

Design Processes and Environmental Problems is an interdisciplinary program involving students and faculty in design, urban planning, social psychology, engineering, and public administration. The purpose of the program is to prepare students for careers in fields such as architecture, interior design, urban design, industrial design, and urban planning.

A variety of background courses are suggested which provide the student with skills in drawing, design, and communication. These lead to advanced coursework in urban planning, urban technological design, environmental psychology, and communication. At the core of the program are four workshop courses which function as interdisciplinary design teams. The student design teams accept design projects from the surrounding community ranging in scale from the needs of the individual to those of whole communities.

The program is cosponsored by the concentrations in Urban Studies and Communication and the Arts, and students complete a program in environmental design within one of these concentrations. The description here emphasizes preparation in design principles and communication; an alternative program is located in the Urban Studies program description. The program in Communication and the Arts is:

Freshman-Sophomore Courses
(12 credits minimum)
168-105 Drawing
168-106 Design Methods (required)
242-231 Introduction to Graphic Communication
862-102 Elements of Descriptive Geometry
944-210 Drawing Systems for the Designer

Junior-Senior Courses
(21 credits minimum)
242-331 Graphic Communication Studio I
242-332 Graphic Communication Studio II
242-405 Urban Technological Design
246-335 Organizational Communication
834-325 Behavior in Designed Environments I
834-326 Behavior in Designed Environments II
944-421 Urban Planning I
944-430 Urban Aesthetics

Workshops (9 credits minimum)
944-401 Environmental Design Workshop I (individual scale)
242-471 Environmental Design Workshop II (small-group scale)
944-402 Environmental Design Workshop III (community scale)
242-472 Environmental Design Workshop IV (senior project)

Science Communication

In cooperation with the concentration in Science and Environmental Change, Communication and the Arts has articulated a program in science communication which prepares students for careers in environmental journalism, scientific and technical communication, and environmental interpretation. This program combines a solid program in environmental sciences with preparation in graphics, photography, mass media, journalism, and public address. The description here emphasizes preparation in communication; an alternative science communication program with an emphasis on science is described under Science and Environmental Change. The basic outline of this program is:

Freshman-Sophomore Courses

Requirements in communication courses (15 credits minimum):
242-231 Introduction to Graphic Communication
246-102 Introduction to Mass Communication
246-133 Fundamentals of Public Address
246-200 Communication Processes: An Introduction
246-243 Introduction to Photography
552-105 Expository Writing

Requirements in basic sciences (22-24 credits minimum) including at least three of the following sequences:

Biology:
204-202, 203 Principles of Biology I, II

Chemistry:
225-211, 212 Principles of Chemistry I, II

Physics:
754-103, 104 Fundamentals of Physics I, II

Earth Science:
296-202 Earth's Physical Environment
Plus one of the following:
296-222 The Ocean of Air
296-302 Geologic Evolution of the Earth
296-350 Geological Field Methods
862-320 Soil Environment
862-342 Environmental Geology

Mathematics
(choose one of three combinations):
600-202, 203 Calculus and Analytic Geometry I, II
OR
600-260 Elementary Statistics
AND
One of the following:
600-364 Biometrics
600-465 Business and Industrial Statistics
OR
600-155 Computers and Microcomputers
AND
600-256 Introduction to Computer Science I

Junior-Senior Courses
(30 credits minimum)

Requirements in communication courses (18 credits minimum):
242-331 Graphic Communication Studio I
242-332 Graphic Communication Studio II
242-430 Mass Media and Society
246-303 Feature Writing
246-305 Elements of Electronic Media
246-306 Radio Broadcast Practicum
246-333 Argumentation and Persuasion
246-335 Organizational Communication
246-343 Photography II
246-345 Designing Multi-Media Applications of Photography
246-346 Photographic Design for Print Media
246-380 Communication Law
246-390 Scientific and Technical Communication
246-497 Internship in Communication Processes
575-425 Promotional Strategy

Requirements in environmental science courses (12 credits minimum):

Ecology (3 credits minimum):
862-302 Principles of Ecology

Resource Management
(3 credits minimum):
862-303 Conservation of Natural Resources
862-334 Solid Waste Management
862-335 Water and Waste Water Treatment
862-460 Resource Management Strategy
862-466 Vegetation Management

Field Speciality (2 courses minimum)

There are several possible field specializations within this program including aquatic studies, solid waste management, air quality, natural resources, and land use, among others. What follows is a sample field speciality.

Solid Waste Management
Two courses from the following:
204-302 Principles of Microbiology
204-405 Microbial Physiology
225-311 Analytical Chemistry
862-320 The Soil Environment
862-330 Descriptive Hydrology
862-342 Environmental Geology
862-434 Water Chemistry

To summarize, students in the science communication program complete an interdisciplinary major in Communication and the Arts comprised of 37-39 credits in freshman-sophomore supporting courses and 30 credits of upper-level course work, of which 18 credits are in advanced communication courses and 12 credits are in advanced environmental science courses. Course work in scientific and technical writing is a vital part of this curriculum.

Students completing this program can

choose from a variety of professional opportunities, including professional communication work within the scientific community and environmental journalism for more general audiences, both in the private and public sector, with a range of visual and verbal communications including scientific research reports, public information programs, reports from governmental agencies, documentaries, features, and the like.

Women's Studies

Communication and the Arts is one of four concentrations supporting an area of emphasis in women's studies which permits students either to focus their major program upon the accomplishments and capabilities of women or to complement disciplinary studies in several fields with a background in this important area—particularly important for professional work in teaching, community service, social action, or professional positions established to rectify past discrimination, or to prepare women for leadership roles in a variety of traditional and nontraditional fields. Upon graduation, the final transcript of students meeting the requirements will indicate completion of a major program of studies in the women's studies area.

Interdisciplinary Major With Women's Studies Emphasis

Freshman-Sophomore Courses
(12 credits minimum):
242-272 Women in the Visual and Performing Arts (required)
875-241 Women and Changing Values (required)
242-102, 103 History of the Visual Arts I, II
242-121 Masters and Masterpieces of Music
242-141 Introduction to the Performing Arts: Theater and Music
242-142 Performing Arts Perspectives: Experience and Evaluation
242-210 Film and Society
242-231 Introduction to Graphic Communication

Junior-Senior Core Courses
(15 credits minimum):
242-477 Women as Creative Agents (required)
875-345 Women in Cross-Cultural Perspective (required)
944-345 Women in American Perspective (required)
242-395 Images of Women in Contemporary Arts
481-336 Sex Role Development in Contemporary Society
552-333 Women in 19th and 20th Century French Literature
875-340 Woman as Worker
875-342 Women, Myth and Identity
875-348 Women and the Law
875-440 Women in Religion
944-375 Women: Strategies for Change

Junior-Senior Related Courses
(12 credits minimum):
242-361 Aesthetic Awareness: Interpretation
242-364 Aesthetic Awareness: Creation
242-372 Aesthetic Awareness: Traditional Art Styles
242-373 Aesthetic Awareness: Avant-garde Art Styles
242-463 Aesthetic Awareness: Evaluation

Interdisciplinary Minor

Students wishing a minor program in women's studies should consult one of the advisers for that program. A description of the program is provided in the section on Interdepartmental Programs.

Communication Processes

Professors: Jack Frisch, interpersonal communication, theater history, directing; **Donald Larmouth** (chairperson), linguistics, scientific and technical communication; **Timothy Meyer**, electronic media.

***Associate Professors:* Clifford Abbott**, linguistics; **Jerry Dell**, photography, graphics, electronic media; **Charles Matter**, perceptual and cognitive psychology, aesthetic perception; **Dean O'Brien**, journalism, public relations.

Assistant Professors: Phillip Clampitt, communication theory, organizational communication, public address; **Patricia Johnson**, applied linguistics, English as a second language.

Sending and receiving messages are essential parts of everyone's life. The disciplinary program in Communication Processes seeks to strengthen both of these abilities in students, but more than that, it offers students ways of understanding how communication happens; how messages are put into codes visual and verbal; how they are filtered through various media; how they are interpreted in different social contexts; and in fact how they construct those social contexts.

Students make use of the course work in this program in several ways:
- to complete a major or minor in Communication Processes as part of their academic and professional preparation, usually including work in journalism, electronic media, language, information processing and retrieval, photography, organizational communication, and communication theory.

- *to satisfy requirements* set by other University programs in basic skills areas such as public speaking, writing, interpersonal communication, photography, or information storage and retrieval.

- to satisfy requirements in combined program areas such as public relations (with the business administration major in Managerial Systems), Information and Computing Science (with programs in mathematics, Science and Environmental Change, Regional Analysis, and others), graphic communication (with Communication and the Arts), science communication (with Science and Environmental Change), language development (with Human Development), or broad-field communication (with Communication and the Arts).

- to satisfy requirements for teacher certification in English-communication arts, journalism/mass media, speech/organizational communication, and English as a second language (with the professional program in Education). Students seeking teacher certification should consult with the Communication Processes adviser and an adviser in Education early in their studies to insure that their programs meet all of the specific requirements for certification of the Wisconsin Department of Public Instruction.

Careers and Advanced Study

Graduates from the program in Communication Processes have entered a wide variety of academic and professional areas: news reporting, photojournalism, broadcast journalism, television production, printing and publications, advertising and marketing, management consulting, teaching English as a second language in public schools and universities, technical writing and editing, public relations, and government service, as well as graduate study in photography, linguistics, information science, library science, and English as a second language.

Requirements for the Major and Minor

The major and minor in Communication Processes are designed to integrate a comprehensive range of coursework in various communications media—print journalism, photography, language, electronic media, and organizational communication—while also providing the opportunity to emphasize a particular field of study. This design is consistent with the goals of

liberal education as well as the best academic and professional preparation because overly narrow specializations are often less marketable in the long run.

Accordingly, students with a major in Communication Processes will complete a minimum of 15 credits in freshman-sophomore-level courses designed to acquaint them with both the unity and diversity of the various forms of communication. Communication Processes majors will choose in addition an interdisciplinary minor appropriate to their particular emphasis.

Students with a minor in Communication Processes also require sufficient breadth of preparation and must complete a minimum of 12 credits in freshman-sophomore-level courses. (Note that students with an emphasis in linguistics or public relations must meet additional requirements at the freshman-sophomore level, as indicated in the sample programs below.) These requirements are met from the following courses (but note that courses from Communication and the Arts and other programs cannot be double-counted; for example, if 242-231 is included as part of the major in Communication Processes, it cannot also be included as part of an interdisciplinary minor in Communication and the Arts).

Freshman-Sophomore Courses
168-105 Two-Dimensional Design
168-106 Design Methods
242-160 Introduction to Language
242-231 Introduction to Graphic Communication
246-102 Introduction to Mass Communication
246-133 Fundamentals of Public Address
246-166 Fundamentals of Interpersonal Communication
246-200 Communication Processes: An Introduction (required)
246-201 Human Information Processing (required for majors)
246-203 Newswriting Laboratory
246-205 Intercultural Communication
246-220 Bibliographic Organization and Control of Information
246-243 Introduction to Photography
246-253 Practicum in Print Journalism I
552-105 Expository Writing

Students in Communication Processes are strongly encouraged to enroll coursework in computer science because of its many applications in communications. Foreign language background is required in linguistics and English as a second language. Statistics is important for students in organizational communication, while a good background in the social sciences is essential for students with an emphasis in journalism. Students in photography should have a good background in design and art history. Regardless of their special interests, all students in Communication Processes must be proficient in writing and editing.

A major in Communication Processes also requires successful completion of at least 24 junior- and senior-level credits. (Students in public relations must complete a minimum of 30 upper-level credits.) A minor requires a minimum of 12 junior- and senior-level credits. Specific courses to meet these minimum requirements are selected with the help of a faculty adviser.

A major or minor in Communication Processes usually develops an emphasis in one of the following areas: linguistics, English as a second language, electronic media, print journalism, photography, organizational communication, or public relations. Each area of emphasis requires a somewhat different set of junior-senior-level courses, but each is also designed to include sufficient breadth in complementary areas of study.

The sample programs of study presented below are intended to suggest typical course selections for different areas of emphasis, but they are not intended to impose inappropriate limits on the possibilities within the major or minor in Communication Processes, because the field is very diverse and offers many different opportunities for professional careers or advanced study.

Print Journalism

Students pursuing an emphasis in print journalism will probably do less work in traditional journalism courses than they would in conventional journalism programs and more work in related areas such as electronic media, graphics, publications management, and public relations. A strong liberal education, achieved through wise choice of electives, is essential preparation for professional work or advanced study. Practical experience is available to students in print journalism through a student newspaper and a professional internship program which places selected students with area newspapers, publications, marketing agencies, etc.

Experience, writing ability, the will and skill to "dig," a concern for people, knowledge of public affairs, and the fresh perception that comes with rigorous interdisciplinary studies—these are the qualifications of a good journalist, and these are the goals of the program in Communication Processes. The sample program shows a typical array of upper-level courses for an emphasis in print journalism.

Students pursuing this kind of program are likely to enroll the broad-field communication curriculum in Communication and the Arts, although some may enroll the graphic communication curriculum instead. Other good choices for interdisciplinary programs are Humanistic Studies, Urban Studies, and Social Change and Development, all of which enhance their preparation for professional careers in journalism. Managerial Systems also offers some good possibilities, especially marketing, and the program in Public and Environmental Administration is another good choice for students with a strong interest in public affairs reporting. Students interested in certifying as teachers in English and communication arts or journalism/mass media must complete an additional program in Education and will need further course work in literature and linguistics.

Sample Program in Print Journalism
(† = required for majors and minors;
* = required for majors)
246-102 Introduction to Mass Communication*
246-200 Communication Processes: An Introduction†
246-201 Human Information Processing†
246-203 Newswriting Laboratory†
246-243 Introduction to Photography
246-253 Practicum in Print Journalism I
246-303 Feature Writing†
246-305 Elements of Electronic Media
246-343 Photography II
246-344 Photography III
246-353 Practicum in Print Journalism II*
246-380 Communication Law†
246-390 Scientific and Technical Communication
246-403 Advanced Reporting
246-445 Human Communication Theory
246-460 Publications Management
246-497 Internship in Communication Processes

Electronic Media

Students pursuing an emphasis in electronic media will enroll courses across a broad spectrum of systems and applications, rather than narrowly specializing in studio production. Professional work in electronic media involves much more than a "talking head" role: professional advancement requires skill in writing, editing, advertising and promotion, market research, audience analysis; it also requires understanding of new communication systems and technologies and their impact on society as well as the cultural context for their images. The scope of the program in electronic media is reflected in the sample program below.

As in print journalism, students pursuing an electronic media emphasis are likely to enroll the broad-field communication curriculum in Communication and the Arts or the

interdisciplinary programs in Humanistic Studies or Social Change and Development.

Students with an interest in the advertising and marketing aspects of electronic media should consider a minor in business administration, and those interested in teaching in the public schools will need a professional program in Education as well as further course work in linguistics and literature.

Sample Program in Electronic Media
(† = required for majors and minors;
* = required for majors)
246-102 Introduction to Mass Communication†
246-133 Fundamentals of Public Address
246-200 Communication Processes: An Introduction†
246-201 Human Information Processing*
246-203 Newswriting Laboratory*
246-243 Introduction to Photography
246-305 Elements of Electronic Media†
246-306 Radio Broadcast Practicum
246-307 Television Production Techniques†
246-308 Telecommunications Delivery Systems: Cable and Satellite*
246-309 Electronic Media Commercial Campaigns*
246-380 Communication Law†
246-403 Advanced Reporting
246-444 Time Duration Visual Media
246-445 Human Communication Theory*
246-497 Internship in Communication Processes

Photography

The photography emphasis includes course work in photography and related studies to prepare students for diverse applications of photographic skills. Graduates have found positions in newspapers, commercial studios, advertising, marketing, public information, television and graphics; several have gone on to graduate programs and to teach in universities and work with galleries and museums.

Photographers should understand small and large format camera work, printing, lighting, and portfolio preparation, and the practices of exhibition, journalism, publishing, graphics, film, and video. Contemporary photographers provide more than photographs; they find photographic solutions to problems and use knowledge from many disciplines in the process. Emphasizing theoretical concepts and practical experience, Communication Processes attempts to provide a program suitable for contemporary work in photography.

Students pursuing an emphasis in photography have a wide range of choices for interdisciplinary studies. In Communication and the Arts, students with a fine art photography orientation will probably enroll courses in the aesthetic awareness curriculum, while students interested in photojournalism or publications will enroll courses in graphic communication and/or broad-field communication courses in Communication and the Arts. But some students have combined a program in photography with course work in Science and Environmental Change, while others have enrolled photography courses in conjunction with a program in Regional Analysis.

Sample Program in Photography
(† = required for majors and minors;
* = required for majors)
168-105 Two-Dimensional Design
168-106 Design Methods
246-102 Introduction to Mass Communication
246-200 Communication Processes: An Introduction*
246-201 Human Information Processing*
246-203 Newswriting Laboratory†
246-243 Introduction to Photography†
246-253 Practicum in Print Journalism I
246-305 Elements of Electronic Media
246-307 Television Production Techniques
246-308 Telecommunications Delivery Systems: Cable and Satellite
246-343 Photography II†
246-344 Photography III†
246-345 Designing Multiple Media Applications of Photography
246-346 Photographic Design for Print Media
246-353 Practicum in Print Journalism II
246-443 Advanced Problems in Photography†
246-444 Time Duration Visual Media
246-445 Human Communication Theory*
246-460 Publications Management
246-497 Internship in Communication Processes

Organizational Communication

An emphasis in organizational communication involves a broad range of skills, including interviewing, small group communication, communication audits, persuasion, and management. Many students will enroll courses in management, personnel management and labor relations, organizational psychology, statistics, communication theory, or computer science; some will need further work at the graduate level.

Students in this area of Communication Processes have conducted studies for area business organizations to evaluate communication effectiveness and make recommendations for better communication practices and systems, and graduates have gone on to careers in management, personnel, private consulting firms, nonprofit organizations, and government agencies; some are working on company publications. This kind of program is much more comprehensive than traditional speech or public address curricula and offers many more opportunities for professional careers.

Students pursuing an emphasis in organizational communication are very likely to enroll management courses and a broad-field business administration curriculum in Managerial Systems. Those interested in government organizations enroll the program in Public and Environmental Administration. The broad-field communication curriculum in Communication and the Arts is another frequent choice for students who are more interested in mass media, language, and communication theory. Students who are interested in the teacher certification program in speech/organizational communication will enroll a professional program in Education.

Sample Program in Organizational Communication
(† = required for majors and minors;
* = required for majors)
246-102 Introduction to Mass Communication
246-133 Fundamentals of Public Address†
246-166 Fundamentals of Interpersonal Communication
246-200 Communication Processes: An Introduction†
246-201 Human Information Processing*
246-203 Newswriting Laboratory†
246-205 Intercultural Communication
246-243 Introduction to Photography
246-305 Elements of Electronic Media*
246-308 Telecommunications Delivery Systems: Cable and Satellite
246-333 Persuasion and Argumentation*
246-335 Organizational Communication†
246-336 Theories of the Interview†
246-337 Small Group Communication
246-445 Human Communication Theory*
246-460 Publications Management
246-487 Communication Audits*
246-497 Internship in Communication Processes

Linguistics/Teaching English as a Second Language

An emphasis in linguistics includes course work in linguistics as well as related courses in foreign language, anthropology, logic, psychology, human development, mathematics, and computer science. The program is designed to prepare students for graduate study in linguistics and/or for work in English as a second language, as well as providing a linguistics component for teacher certification programs in foreign languages and English-communication arts.

Linguistics is a highly diversified, interdisciplinary field, as it seeks to understand the structure, history, and use of language by drawing upon the resources of many other

disciplines as well as its own theoretical models and analytical techniques. Foreign language proficiency is important and two years of college-level study of at least one language is considered minimal.

Students intending to certify as teachers of English as a second language will concentrate more heavily upon linguistics courses and related courses in education, while students preparing for graduate study will pursue a more diversified curriculum to develop the broad background necessary for advanced work. Students in linguistics are also likely to do extensive work in information sciences and communication theory.

Linguistics is related to many other areas of study, and this is reflected in the wide variety of interdisciplinary programs chosen by students in linguistics or English as a second language. A frequent choice is the broad-field communication curriculum in Communication and the Arts, with courses in language and social policy and the language of metaphor, but other students enroll an interdisciplinary curriculum in Humanistic Studies. Those interested in language development in children will probably enroll interdisciplinary programs in Human Adaptability or Human Development, while those interested in language and social problems look to the program in Social Change and Development. Students interested in teacher certification in English-communication arts or English as a second language will be obliged to take an additional minor in Education.

Sample Program in Linguistics/ESL
(† = required for majors and minors; * = required for major; • = required for ESL emphasis)
246-200 Communication Processes: An Introduction†
246-201 Human Information Processing*
246-205 Intercultural Communication*
First-year French/German/Spanish or other approved foreign language†
Second-year French/German/Spanish or other approved foreign language†
246-320 History of the English Language
246-321 Sociolinguistics†
246-322 Modern Linguistics†
246-324 Psycholinguistics
246-325 Applied Linguistics*
246-326 Modern Semantics
246-327 Contrastive Linguistics and Error Analysis•
246-445 Human Communication Theory*
246-497 Internship in Communication Processes
242-301 Oneida Language Project
302-315 Principles and Methods in Teaching English as a Second Language•
481-431 Cognitive Development
481-495 Language Acquisition in Childhood
820-417 Psychology of Cognitive Processes

Public Relations

Students pursuing an emphasis in public relations soon discover that this area requires a very broad range of competence; indeed, it is because of this that the faculty in Communication Processes require a larger number of credits to complete a major in this program (21 credits of freshman-sophomore-level courses; 30 credits of junior-senior-level courses), including courses in print media, graphics, electronic media, persuasion and argumentation, marketing and market research, etc.

The minor in public relations requires 15 credits of freshman-sophomore-level courses and 12 credits of junior-senior-level courses. Students completing a program of this kind are prepared for a wide range of career opportunities in business, nonprofit organizations, advertising and public relations agencies, public information, promotion, and the like. Both visual and verbal proficiency are essential in public relations—graphic design, public speaking and small group communication, writing and editing, electronic media.

Students with a public relations emphasis frequently enroll an interdisciplinary program in Managerial Systems (usually with an emphasis in marketing), but those interested in public information in government agencies should consider the program in Public and Environmental Administration. The broad-field communication curriculum offered by Communication and the Arts is another frequent choice, combining some courses in graphic communication, language, and mass media and society.

Sample Program in Public Relations
(† = required for majors and minors; * = required for majors; • = required for majors but cannot be double-counted with a minor in business administration)
246-102 Introduction to Mass Communication†
246-133 Fundamentals of Public Address†
246-166 Fundamentals of Interpersonal Communication
246-200 Communication Processes: An Introduction
246-201 Human Information Processing*
246-203 Newswriting Laboratory†
246-205 Intercultural Communication
246-243 Introduction to Photography†
246-253 Practicum in Print Journalism†
246-303 Feature Writing†
246-305 Elements of Electronic Media†
246-309 Electronic Media Commercial Campaigns
246-333 Persuasion and Argumentation
246-335 Organizational Communication
246-336 Theories of the Interview
246-337 Small Group Communication
246-343 Photography II
246-353 Practicum in Print Journalism II
246-380 Communication Law
246-390 Scientific and Technical Communication
246-403 Advanced Reporting
246-444 Time Duration Visual Media
246-445 Human Communication Theory
246-460 Publications Management
246-497 Internship in Communication Processes
242-450 Construction of Public Images
575-325 Public Relations• (prerequisite 575-322 Basic Marketing)
575-424 Marketing Research (prerequisite 575-322 Basic Marketing)
575-425 Promotional Strategy• (prerequisite 575-322 Basic Marketing)

History

Professors: James A. Clifton, cultural anthropology, ethno-history; **Martin H. Greenberg**, international and regional politics, contemporary history; **Anthony M. Galt**, social anthropology, Italian history.

Associate Professors: Paul P. Abrahams, U.S. history, economic history; **David H. Galaty**, history of science; **Norbert H. Gaworek**, modern Europe, Central and East Europe; **Harvey J. Kaye**, Latin America, modern Britain, historical social change; **Peter J. Kellogg**, U.S. history; **Craig A. Lockard**, Southeast Asia, East Asia, Africa, modern and comparative world history; **Jerrold C. Rodesch**, U.S. history; **Joyce E. Salisbury**, western civilization, ancient and medieval history.

Community Lecturers: Ross Fullam, American studies; **James McHale**, U.S. history, U.S. economic and foreign policy; **Ronald A. Pascale**, ancient near Eastern civilization and history, Hellenistic civilization.

History is a method of inquiry and a body of knowledge. It systematically studies the cultural, social, and political aspirations, achievements and failures of humanity. Through history we enhance our understanding of the changes that have occurred in peoples and societies. History helps us appreciate the commonality and diversity of cultures and societies and leads us to greater awareness of the complexities of our heritage. Our judgments in the present and our plans for the future are invariably based on our understanding of the past.

History students pursuing a liberal arts education are expected to develop an awareness of the social and cultural differences in their own and other countries; to recognize how problems are defined and how their solutions emerge from the context of culture and society; to improve their

oral and written communication, and to become skilled in research and analysis.

Careers and Advanced Study

Knowledge of history is not only an attribute of the educated individual; it is a practical necessity for many professions, particularly education, law, journalism, communications, theology, politics, government, and business and social services, indeed in all areas in which social and humanistic research and analysis are important. History provides the indispensable core for many areas of study, particularly in the humanities and social sciences. History is valuable to students who plan to continue their education in graduate school in a broad variety of professional studies.

Special Opportunities

Special resources of the history disciplinary program at UWGB include internships for credit at libraries, museums, historical parks and historical publications so that students can gain practical experience. The history faculty and the Brown County Historical Society cooperate in publishing a twice yearly historical review, *Voyageur*. History students may join the History Club which sponsors a variety of activities in cooperation with the Student Council for the Humanities; they also publish the *Shantytown Chronicle*.

Requirements for the Major

The history program consists of core courses and several areas of advanced studies, providing students alternatives to fit their major to other academic interests, professional programs, and areas of concentration. Students should consult with a faculty adviser to work out an appropriate program of study.

For a major each student must take a minimum of 36 credits—12 credits from the freshman-sophomore core, and the remaining 24 credits from junior-senior-level courses. All history majors must enroll in the history seminar (448-480).

Supporting Subjects

Verbal and written analysis and presentation are fundamental to historical study.

Students are required to complete the following study or present evidence of equivalent competencies:
552-105 Expository Writing
Study of a foreign language through the fourth semester (202 level course)

Other tools and methodologies are needed by students who have special interests that require, for example, numerical analysis and presentation. Such students may be advised to take in place of or in addition to foreign language study, Social Science Statistics (255-205) or Foundations of Social Research (255-301). Others might have a particular interest in the creative interpretation of the past through historical fiction or drama and would take creative writing courses. Similar kinds of preparation would be essential for students interested in the historical application of photography, cartography, anthropology, et cetera.

In addition to tool subjects, a student's program may require specialized background study in subject matters such as economics, political science, and others.

Distribution of Credits

History majors are required to take three credits in each of three area tracks and at least three credits in each thematic track. Students seeking teacher certification in history must include course work in ancient, medieval and modern European history (nine credits minimum), non-Western history (six credits minimum), and U.S. history (nine credits minimum). The courses selected must be approved by the history adviser as well as by the social studies education adviser.

The Core Program

Freshman and sophomore courses
(12 credits):
At least 6 of the 12 credits must be taken from the following:
448-100 History of the Modern World
448-205,206 History of the United States

493-101, 102 Foundations of Western Culture I and II
OR
448-203, 204 History of Europe, I and II

Other appropriate courses include:
448-201 Ancient Civilization
448-202 The Middle Ages
448-207 Roots of Black America
448-208 The Development of Modern Science in Western Society
448-250 Traditional Asian Civilization
448-251 Modern Asian Civilization
493-250 European Economy and Society
493-251 Business and American Life
875-270 Third World: Development or Despair?
493-274 Red Man in White America

Upper Level Program

Students must consult an adviser to determine which courses best serve their interests and professional plans.

U.S.A. Area Track

Socio-Political Thematic Track:
448-310 American Colonial History
448-311 History of Wisconsin
448-320 U.S. Military History
448-322 Economic and Business History of the United States from 1876 to the Present
448-324 History of American Foreign Relations, 1865 to the Present
448-367 World Wars I and II
448-375 Great Decisions: Issues and Options in International Affairs
448-403 Political and Social History of Modern America

Cultural-Intellectual Thematic Track:
448-302, 303 History of American Thought and Culture I, II
448-309 History of Science in Modern Times
448-343 America's Urban Past
448-405 History of Technological Change

Europe Area Track

Socio-Political Thematic Track:
448-314 History of the Russian Empire
448-315 The Soviet Union from 1917 to the Present
448-325 History of Modern Germany
448-350 Social History of Europe
448-367 World Wars I and II
448-375 Great Decisions: Issues and Options in International Affairs
448-404 Political and Social History of Modern Europe

Cultural-Intellectual Thematic Track:
448-306, 307 History of European Thought and Culture I, II
448-309 History of Science in Modern Times
448-405 History of Technological Change

Comparative Area Track

Socio-Political Thematic Track:
448-314 History of the Russian Empire
448-315 The Soviet Union from 1917 to the Present

448-352 History of Modern China
448-354 History of Modern Southeast Asia
448-356 History of Africa
448-358 Aspects of Latin American History
448-375 Great Decisions: Issues and Options in International Affairs

Other junior and senior courses appropriate for the major:
493-332 Art and Social Thought
493-341 Perspectives on Human Values: The Medieval World
493-374 Wisconsin's Indians
778-360 International Politics
834-368 Geopolitics of World Regions
875-320 Constitutional Law
875-333 Social Change in a Selected Area
875-361 Historical Perspectives of Social Change
944-313 The City Through Space and Time
944-345 Women in American Perspective

All majors must take the History Seminar, 448-480.

Requirements for the Minor

Because the history minor will be supplementary to or integrated with a student's major program, the basic requirements for the student's work will be defined by the major. The mix of history courses to make a history minor should be determined in consultation with the history program adviser and will vary considerably among students. In all cases it will consist of a minimum of 21 credits, of which at least 12 must be chosen from the list of junior and senior courses. No more than two courses (six credits) should be selected from courses that do not carry the 448 prefix. The History Seminar is not required for minors. Students seeking teacher certification with a minor in history will have to meet additional requirements; they should consult with the history and social studies advisers.

Academic Preparation

The history program seeks to attract students who value participation in a variety of activities in which they can gain experiences not offered in classes and to which they can contribute.

Students in history should have a strong academic high school preparation, including four years of English and Social Studies and at least two years of a foreign language. Students coming to UWGB without these high school credits or equivalent proficiency should make sure that their program of study here includes at least six credits of social science outside history, three credits of literature as well as Introduction to Expository Writing (552-105), and two years of foreign language (Spanish, French or German). It is possible to get college credits for some high school foreign language work. Students should see an adviser regarding this possibility.

History and Other Programs

Students majoring in history will also choose an interdisciplinary minor. Several of UWGB's interdisciplinary concentrations provide logical support for a program in history. Depending on their future goals, a student might choose an interdisciplinary program in Humanistic Studies, Social Change and Development, Urban Studies, Regional Analysis, or Communication and the Arts. Business Administration might also be a useful combination.

Students combining the study of history with other programs should plan their studies with the help of advisers from the appropriate programs. Those seeking teacher certification should consult with the history adviser and an adviser in the Education professional program early in their studies to insure that their programs meet all of the specific requirements for certification of the Wisconsin Department of Public Instruction.

Humanistic Studies

Professors: James Clifton, cultural anthropology, ethno-history, North American Indians, personality and culture, religion, myth and folklore; **Elmer Havens**, American literature, English novel, religious studies; **Frederick Kersten**, humanities, phenomenology, value theory, ontology; **Raquel Kersten**, Spanish and Latin American literature, language, and culture; **Estella Lauter**, British and American literature, literary criticism, aesthetic awareness, women and the arts; **Werner Prange**, German language, literature, and culture; **Irwin Sonenfield**, music theory, history, and composition, musical aesthetics, interdisciplinary approaches to the humanities: music, art, film and literature; **E. Michael Thron**, Shakespeare, 19th century English literature, the arts in society; **Louise Witherell**, French language, literature, and culture.

Associate Professors: Paul Abrahams, United States history: diplomatic, 20th century, economic; **Thomas Churchill**, creative writing: fiction, literature; **Orville Clark**, philosophy of art, aesthetics, American Indian art; **Kenneth Fleurant** (chairperson), French language, literature, and culture, French-Canadian studies, comparative literature; **David Galaty**, history of science and technology, epistemology, African science, social services; **Norbert Gaworek**, modern European history, central and eastern Europe, Russia and the Soviet Union, Soviet-Western relations; **Gary Greif**, social and political philosophy; **Walter Herrscher**, American literature, expository writing, American short story, American nature writing; **Peter Kellogg**, modern U.S. history, Afro-American history, urban history, social and political history of the U.S.; **Michael Murphy**, modern English, Irish, and American literature; **Gilbert Null**, history of philosophy, philosophy of the sciences, phenomenology, existentialism; **Jerrold Rodesch**, American history, intellectual and cultural history, history of Wisconsin, the arts and social thought; **Joyce Salisbury**, ancient, medieval and religious history; **Peter Stambler**, creative writing: poetry, English Renaissance literature, playwriting, and theater literature; **Thomas Tasch**, visual arts, sculpture, drawing; **Martha Wallach**, German language, literature, and culture, Polish language.

The humanities are concerned with personal and social values. They seek a deeper understanding of the ideas that shape our lives as they have shaped the lives of people thoughout recorded history. The interdisciplinary program in Humanistic Studies is based on the conviction that contemporary society needs people who are well-versed in the major intellectual and imaginative achievements of western society, who are sensitive to other cultures and who possess the skills to think and express themselves clearly. Both analytical skills and imaginative creativity contribute to the quality of life for individuals and society.

The faculty in Humanistic Studies represent the traditional academic areas of the humanities: history, literature, philosophy, modern languages, creative writing and the fine arts in addition to several areas of the social sciences. The interdisciplinary program they have developed views knowledge not in terms of separate disciplines but rather in terms of essential connections and interrelationships, and it applies an interdisciplinary perspective to problems of society and individuals.

Both major and minor programs in Humanistic Studies emphasize the importance of breadth of knowledge and depth of perspective. Students are expected to develop the intellectual skills needed to carefully analyze and articulate a point of view, since ability to write, speak and analyze are hallmarks of a well-educated person as well as critical skills for a successful career in practically every professional field.

Careers and Advanced Study

Humanistic Studies is an ideal liberal arts major and, in combination with another academic area, is an excellent preprofessional minor. The following possibilities are examples based on actual programs of students with a Humanistic Studies minor; other combinations make equally good sense:

- with history, English, modern languages or philosophy for teaching, *research*, religion, library science, public service or the media;
- with political science or history for prelaw;
- with business administration for management and international business;
- with sociology or anthropology for human service positions;
- with an appropriate scientific discipline for the health professions, including medical school.

Humanistic Studies and Other Programs

Either as a major or as a minor program, Humanistic Studies fulfills the UWGB graduation requirement for an interdisciplinary program. Students choosing to major in Humanistic Studies do not need to have any other major or minor. Students choosing to minor in Humanistic Studies also need a major in a complementary discipline such as in the examples listed in the preceding section. A Humanistic Studies adviser should be consulted as early as possible to assure that any specialized needs or interests are taken into consideration in the actual application of the following requirements.

Requirements for the Major

Background Expectations

Because of the importance of communication skills, students pursuing the interdisciplinary major in Humanistic Studies are expected to have completed four years of English in high school and three years of foreign language study. Deficiencies in these areas can be made up through the following courses:
552-105 Expository Writing, 3 cr.
Foreign language through the 201 level, 4-12 credits

Freshman-Sophomore-Level Requirements

Twelve credits are required. Either A or B will provide adequate background for upper-division humanities courses.

Alternative A—12 credits consisting of the following courses:
493-101,102 Foundations of Western Culture I,II, 6 cr.

493-201 Introduction to Humanities I, 3 cr.
OR
493-295 Art and Ideas in Western Civilization

493-202 Introduction to Humanities II, 3 cr.
OR
Any history, literature, philosophy, or Humanistic Studies course

Alternative B—12 credits distributed among at least three of the following areas: history, literature, philosophy, Humanistic Studies, fine arts.

Students who choose option B must include four of the following courses in their upper-level programs:
493-340 Perspectives on Human Values: The Classical World
493-341 Perspectives on Human Values: The Medieval World
493-342 Perspectives on Human Values: Renaissance to Rationalism
493-343 Perspectives on Human Values: Romanticism to Naturalism
493-344 Perspectives on Human Values: The Modern World

By either route (A or B) students will receive an appropriate introduction to the humanities and an overall view of the major ideas, events and creative accomplishments in the history of western civilization.

Junior-Senior-Level Requirements

Thirty credits of course work are required on the junior-senior level in Humanistic Studies and in related disciplines (literature, language, history, philosophy).

A minimum of 15 upper-level credits must be in Humanistic Studies. This means that up to 15 credits from related humanities disciplines such as history, English, languages or philosophy may apply toward the major. This allows students, with the help of the adviser, to develop a meaningful and coherent program of courses to match their interests. Six of the Humanistic Studies credits must be from the Perspectives on Human Values series (493-340 to 344). In the senior year, all majors take 493-480, the Seminar in Humanistic Studies (three credits).

The other Humanistic Studies courses (minimum six credits) are taken from the following list, which is divided into the four general areas of study represented by the concentration. Although courses may be selected from throughout this list, students are encouraged to develop a strong, integrated focus on one or two of the four areas:

Continuity and Change in Values
493-302 Human Identity
493-305 Value Theory and the Humanities
493-332 Art and Social Thought
493-333 *Utopia and Anti-Utopia*
493-340 Perspectives on Human Values: The Classical World
493-341 Perspectives on Human Values: The Medieval World
493-342 Perspectives on Human Values: Renaissance to Rationalism
493-343 Perspectives on Human Values: Romanticism to Naturalism
493-344 Perspectives on Human Values: The Modern World

Other Culture Studies
493-354 France Today
493-356 Contemporary German Culture
493-358 Latin America Today
493-359 The Americas Look at Each Other
493-361 January Abroad: German Culture
493-363 January Abroad: Mexico
493-365 January Abroad: England and its Heritage
493-374 Wisconsin Indians: Historical and Cultural Perspectives
493-376 Cultural Conflict in French Canada

Religious Studies
493-323 *The Literature of the Old Testament*
493-324 The Writings of the New Testament
493-325 Judaism, Christianity, and Islam
493-326 Non-Western Religions: Hinduism and Buddhism
493-364 Women and Religion

Art and Society
493-305 Value Theory and the Humanities
493-310 Criticism of the Performing Arts
493-315 Theories of Creativity
493-332 Art and Social Thought
493-371 *American* Indian Art and Artists

Requirements for the Minor

Students choosing to minor in Humanistic Studies may select one of four areas of emphasis. The first, Perspectives on Human Values, is the principal minor program, provides a broad survey of the humanities, and is intended to serve all students. *The second program*, The History and Foundations of Science, is designed for students majoring in the natural or social sciences who wish to complement their disciplinary major with a broad-based

study of science as a historical and cultural phenomenon of society. The third and fourth minor programs are designed exclusively for students majoring in business.

Background Expectations

Students pursuing the interdisciplinary minor in Humanistic Studies are expected to have completed four years of English and (with the exception of the Business Executive area of emphasis) three years of foreign language study in high school. Students who are deficient in these areas are expected to make up the deficiency through the following course work:

Foreign language through the 201 level, 4-12 cr.
552-105 Expository Writing, 3 cr.

Perspectives on Human Values, Area of Emphasis I

Freshman-Sophomore Requirements (12 credits):
A minimum of 9 credits from the following courses:
493-101 Foundations of Western Culture I: Origins to 1700
493-102 Foundations of Western Culture II: 1700 to the Present
493-201 Introduction to Humanities I: Art and Music
493-202 Introduction to Humanities II: Literature, History, Philosophy
493-295 Art and Ideas in Western Culture

Three additional credits are required in literature or history or philosophy or art history or music history or theater history.

Junior-Senior Requirements (12 credits):
A minimum of 6 credits from the following courses:
493-340 Perspectives on Human Values: The Classical World
493-341 Perspectives on Human Values: The Medieval World
493-342 Perspectives on Human Values: Renaissance to Rationalism
493-343 Perspectives on Human Values: Romanticism to Naturalism
493-344 Perspectives on Human Values: The Modern World

The remaining 6 credits may be selected from the list above or from the following courses, arranged to show their relationship.

Perspectives on Continuity and Change in Values:
493-302 Human Identity
493-305 Value Theory and the Humanities
493-315 Theories of Creativity
493-322 Art and Social Thought
493-333 Utopia and Anti-Utopia
493-480 Humanities Seminar

Perspectives on Other Cultures:
493-354 France Today
493-356 Contemporary German Culture
493-358 Latin America Today
493-359 The Americas Look at Each Other
493-361 January Abroad: German Culture
493-363 January Abroad: Mexico
493-365 January Abroad: England and its Heritage
493-371 American Indian Art and Artists
493-374 Wisconsin Indians: Historical and Cultural Perspectives
493-376 Cultural Conflict in French Canada

Perspectives on Religion:
493-323 The Literature of the Old Testament
493-324 The Writings of the New Testament
493-325 Judaism, Christianity and Islam
493-326 Non-Western Religions: Hinduism and Buddhism
493-364 Women and Religion

History and Foundations of Science, Area of Emphasis II

Freshman-Sophomore Requirements:
Twelve credits comprised of the following four courses:
493-101,102 Foundations of Western Culture I,II
493-208 The Development of Modern Science in Western Society
736-208 Science and Human Values

NOTE: Certain upper-level history and philosophy courses may be used as a substitute for 493-101 or 493-102 in consultation with the program adviser.

Junior-Senior Requirements:
Twelve credits comprised of:
448-309 History of Modern Science
736-406 Philosophical Problems in the Sciences

Plus two courses from the following list:
448-405 History of Technological Change
493-344 Perspectives on Human Values: The Modern World
493-480 Humanities Seminar: Models of Reality
736-314 History of Philosophy II

Business Executive Area of Emphasis III

Freshman-Sophomore Requirements (12 credits):
493-102 Foundations of Western Culture II
493-201 Introduction to Humanities I: Art and Music
493-202 Introduction to Humanities II: Literature, History and Philosophy

493-251 Business and American Life
OR
493-250 European Economy and Society

Junior-Senior Requirements (12 credits):
493-344 Perspectives on Human Values: The Modern World
One other course from the Perspectives on Human Values series I
Two other upper-level humanities courses chosen in consultation with the Humanistic Studies adviser.

International Business Area of Emphasis IV

Freshman-Sophomore Requirements (12-28 credits):
493-102 Foundations of Western Culture II
493-201 Introduction to Humanities I: Art and Music
493-202 Introduction to Humanities II: Literature, History and Philosophy
A language through the 5th college semester (French/German/Spanish 225)

Junior-Senior Requirements (12 credits):
A course dealing with other cultures
A course in the history or literature of another region
One course from the Perspectives on Human Values series
One other humanities course chosen in consultation with the adviser.

Literature and Language

Programs in English, French, German, Spanish

Professors: Elmer Havens, American Literature, English prose fiction; **Raquel Kersten**, Spanish and Latin American literature, language, and culture; **Estella Lauter**, literary theory, criticism, modern and contemporary poetry, women and the arts; **Werner Prange**, German language and literature; **E. Michael Thron**, English literature, Shakespeare; **Louise Witherell**, French language and literature.

Associate Professors: Sidney Bremer, American literature, women in literature, urban studies; **Julie Brickley**, mythology, contemporary novel, women writers; **Tom Churchill**, creative writing, fiction; **Ken Fleurant**, French language and literature, Canadian studies; **Walter Herrscher** (chairperson), American literature, the short story; **Michael Murphy**, English literature, Irish literature; **Peter Stambler**, creative writing, poetry, Shakespeare, British literature; **Martha Wallach**, German language and literature.

The literature and language disciplinary program offers majors and minors in English, French, German and Spanish.

English

Courses offered in English are intended to develop students' understanding of important works of American and English literature, to give them an awareness of—and appreciation for—our literary heritage, to provide them with a historical perspective from which to evaluate works written in their own time, and to deepen their insight into their own experience. Inherent in the achievement of these aims is the development of the students' ability to express their ideas orally and in writing.

Although students frequently choose to study English primarily for personal growth and intellectual enrichment, the program is intended to prepare students for graduate work, teaching, and professional training as well as for a variety of occupations in business, industry, and government. Graduates in English have found satisfying careers in personnel work, public relations, business management, journalism, politics, free-lance writing, publishing, and other fields requiring communication skills combined with a broad humanities background.

Students majoring in English will also choose an interdisciplinary component. The English program may be combined with any interdisciplinary program. Students interested in the humanities usually choose the interdisciplinary program in Humanistic Studies; students interested in fine arts or the performing arts usually choose Communication and the Arts. Depending on their personal preferences and career goals, students may find other interdisciplinary programs appropriate, such as Human Development or Social Change and Development.

Students desiring teaching certification in English must combine their program of English with a professional program in Education in addition to their interdisciplinary program. Such students should consult with the literature and language adviser and an adviser in Education early in their studies to insure that their programs meet all of the specific requirements for certification of the Wisconsin Department of Public Instruction.

Requirements for the Major

Freshman-Sophomore-Level Requirements (9-12 credits)
552-105 Expository Writing
(waived for qualified students)

A *minimum* of 9 credits from the following courses:
552-104 Introduction to Literature

552-212 Introduction to Creative Writing: Fiction
OR
552-213 Introduction to Creative Writing: Poetry

552-214 Introduction to English Literature I
552-215 Introduction to English Literature II
552-216 Introduction to American Literature I
552-217 Introduction to American Literature II

Junior-Senior-Level Requirements
(24 credits in upper division literature, language, or writing courses distributed this way):

Required courses, 6 credits:
552-323 Approaches to Literature
552-431 Shakespeare

A minimum of 3 credits in pre-1800 literature, chosen from courses such as these:
552-310 Major English Drama (before 1800)
552-315 The English Novel from 1700 to 1860
552-335 Literary Eras: The Renaissance in England

A minimum of 3 credits in literature in translation, chosen from courses such as these:
552-350 Major French Drama
552-351 Major German Prose Fiction
552-438 Major Spanish Writer

Electives courses in literature, language, or writing, totaling 12 credits, such as these:
246-320 History of the English Language
552-302 Fiction Writing Workshop
552-304 Advanced Expository Writing
552-316 English Novel: 1850-Present
552-331 Major American Prose Fiction
552-333 Literary Themes
552-490 Seminar in Literature
552-498 Poetry: Advanced Tutorial

Creative Writing

Students interested in creative writing may count 12 credits of writing courses towards their English major. The creative writing workshops (such as 552-302, Fiction Writing Workshop), may be taken twice for credit towards the major. Here is a sample program for students interested in an English major with a creative writing emphasis:

552-212 Introduction to Creative Writing: Fiction
552-213 Introduction to Creative Writing: Poetry
552-214 Introduction to English Literature I
552-217 Introduction to American Literature II
552-302 Fiction Writing Workshop (may be repeated once)
552-310 Major British Drama
552-323 Approaches to Literature
552-351 Major Foreign Fiction
552-431 Shakespeare
552-498 Poetry Writing
552-498 Playwriting

Requirements for the Minor

Freshman-Sophomore-Level Requirements (9-12 credits)
552-105 Expository Writing
(waived for qualified students)

A minimum of 9 credits from the following literature courses:
552-212 Introduction to Creative Writing: Fiction
OR
552-213 Introduction to Creative Writing: Poetry

552-214 *Introduction to* English Literature I
552-215 Introduction to English Literature II
552-216 Introduction to American Literature I
552-217 Introduction to American Literature II

Junior-Senior-Level Requirements
(12 credits of upper division literature, language, or writing courses distributed this way)
552-431 Shakespeare, 3 cr. (required)

A *minimum of* 3 credits in pre-1800 literature, chosen from courses such as these:
552-310 Major English Drama (before 1800)
552-315 The English Novel from 1700 to 1860
552-335 Literary Eras: The Renaissance in England

Electives in literature, language or writing, totaling 6 credits, such as these:
246-320 History of the English Language
552-302 Fiction Writing Workshop
552-304 Advanced Expository Writing
552-316 The English Novel: 1850 to Present
552-331 Major American Prose Fiction
552-333 Literary Themes
552-490 Seminar in Literature

The English adviser can provide further information about all aspects of the program, as well as personal assistance in helping students plan programs to meet their individual needs and interests.

French/German/Spanish Language, Literature and Culture

Language Courses for Students in All Academic Areas

A proficiency in a foreign languageand an understanding of other cultures are essential to the well-being of contemporary society. Numerous professional organizational and governmental agencies recommend that foreign language study be a part of every student's program. While studying a foreign language, even at the elementary level, we already begin to communicate with others and understand their culture in ways that are not possible in translation.

Knowledge of a second language and the cultural sensitivity that accompanies it are also of great value in many academic fields such as linguistics, communications, music, art, history, anthropology, international business, sociology, political science, law and theology. In addition, studies have shown that English skills are often enhanced by the study of a foreign language.

All foreign language courses at UWGB stress the development of practical communication skills and students are encouraged to achieve the highest level of proficiency they can. Opportunities are available for travel and study abroad (see following sections for individual languages) and advanced work in literature and cultural studies is offered for all students whether or not they actually specialize in the language program.

Students who begin their study of French, German or Spanish at UWGB should enroll in introductory courses numbered 554-101 for French, 556-101 for German, and 558-101 for Spanish. The sequence of general language courses is:
101 Introduction to French, German, or Spanish I
102 Introduction to French, German, or Spanish II
201 Intermediate French, German, or Spanish I
202 Intermediate French, German, or Spanish II
225 French, German, or Spanish Conversation and Composition
325 Advanced Oral and Written Conversation and Composition

Students who have studied a language in high school should select courses appropriate to their abilities by counting a year of high school work as roughly equivalent to a semester of college work. Retroactive credit is available for previous language study.

Retroactive Credit for Previous Language Study

Students who have taken French, German, or Spanish in high school or who have acquired a knowledge of one of those languages elsewhere may earn up to 16 additional credits for their previous foreign language study by completing a foreign language course beyond the 101 level. With a grade of "B" or better, credit will be given for all foreign language courses preceding the one in which the student has enrolled, to a maximum of 16 credits; with a grade of "BC" or "C," half credit will be given for the courses preceding the one in which the student has enrolled, to a maximum of eight credits. For example, students who have taken four years of French in high school who complete 556-225 French Conversation and Composition with a grade of "B" will receive 16 retroactive credits for French 101, 102, 201, and 202 in addition to the three credits for French 225; students who complete the course with a "C" will receive eight retroactive credits in addition to the three credits for the course.

French

The program in French provides students with the opportunity to develop practical communication skills in French along with an understanding of and appreciation for the literature, culture and people of France and the rest of the French-speaking world. The major and minor programs differ in the number of junior-senior-level credits required.

In addition to regularly scheduled courses in French language, literature and culture, the French program provides opportunities for students to study with their professors individually or in small groups, and to participate in a semester in France sponsored each spring by the University of Wisconsin Urban Corridor Universities (Green Bay, Milwaukee, Oshkosh, Parkside). Credit for summer study in France and Canada is also possible.

Students who major in French will also choose interdisciplinary studies and may select any interdisciplinary minor to complement their programs. Students interested in the humanities most frequently minor in Humanistic Studies. Depending on personal interests and goals, other disciplinary minors may be appropriate, such as Human Development, Communication and the Arts, Social Change and Development, Regional Analysis or Business Administration. Students interested in teaching French should contact the Education Office early in their studies for information about teacher certification requirements.

Requirements for the Major

Freshman-Sophomore-Level Requirements (7 credits)
Retroactive credit available; see policy above.
554-202 Intermediate French II, 4 cr.
554-225 French Conversation and Composition, 3 cr.

Junior-Senior-Level Requirements (24 credits)
Required courses, 9 credits:
554-325 Advanced Oral and Written Expression in French
554-354 France Today
493-376 Cultural Conflict in French Canada

A minimum of 6 credits from the following French literature courses:
554-329 Representative French Authors
554-333 French Literary Themes
554-335 French Literary Eras
554-350 Major French Drama
554-351 Major French Fiction

A minimum of 9 credits from the following courses:
448-356 History of Africa*
493-342 Perspectives on Human Values: Renaissance to Rationalism*
493-343 Perspectives on Human Values: Romanticism to Naturalism*
552-323 Approaches to Literature
554-329 Representative French Authors
554-333 French Literary Themes
554-335 French Literary Eras
554-350 Major French Drama
554-351 Major French Fiction
554-498 French Phonetics (required for teacher certification)
554-498 Business French
554-498 Conversational French Practicum
554-498 Readings in French Literature
554-498 Topics in French Literature

*NOTE: Course content varies; approval of adviser is required to count these courses for the French major.

Requirements for the Minor

A minor in French provides practical language skills and an introduction to French culture. It is thus an effective way to expand future career possibilities as well as a source of personal growth and satisfaction.

Freshman-Sophomore-Level Requirements (7 credits)
554-204 Intermediate French II, 4 cr.
554-225 Conversation and Composition, 3 cr.

Junior-Senior-Level Requirements (12 credits)
Required courses, 6 credits:
554-325 Advanced Oral and Written Expression in French
554-329 Representative French Authors

A minimum of 6 credits from the following courses:
493-376 Cultural Conflict in French Canada (required for certification)
554-333 French Literary Themes
554-335 French Literary Eras
554-350 French Drama
554-351 Major French Fiction
554-354 France Today (required for teacher certification)
554-498 French Phonetics (required for teacher certification)
554-498 Readings in French Literature
554-498 Topics in French Literature

The French adviser can provide further information about all aspects of the French program as well as personal assistance in helping students plan programs to meet their individual needs and interests.

German

The German literature and language program provides students with communication skills in both written and spoken German and with an understanding of and appreciation for German literature and culture. Graduates in German have found satisfying careers in international business, translating and interpreting, teaching, government service, and other fields in which a knowledge of German is useful or essential. German may also be used as a preprofessional major, providing students with a sound liberal arts background for further study in graduate school or for professional training.

In addition to regularly scheduled courses in German language and literature, the German program offers students the opportunity to study with their professors individually or in small groups. Students are also encouraged to enroll in January Abroad: Germany, which provides four weeks of travel and instruction in Germany during the interim period, and to spend a semester or a year in Germany as exchange students at the University of Kassel.

Students beginning the study of German may enroll in the Intensive German workshop offered during the fall semester. The aim of the workshop is to develop German communication competency in one semester; completing the workshop is equivalent to completing 16 credits in introductory and intermediate German language courses. The workshop meets six hours a day, four days a week for 15 weeks. Students who complete the workshop in fall are encouraged to take the January trip to Germany and to spend the spring semester as exchange students at the University of Kassel to refine their language skills.

Students who major in German will also choose an interdisciplinary program. They may select any interdisciplinary minor to complement their program. Students interested in the humanities usually minor in Humanistic Studies; students interested in international studies frequently minor in Social Change and Development. Students interested in teaching German must combine their German program with a professional program in Education in addition to their interdisciplinary program. Such students should consult an Education adviser early in their studies to insure that their programs meet certification requirements.

Requirements for the Major

Freshman-Sophomore Requirements (7 credits)
556-202 Intermediate German II, 4 cr.
OR
556-289 Intensive German Workshop, 16 cr. (see above)

556-225 German Composition and Conversation, 3 cr.

Junior-Senior Requirements (24 credits)
Required course, 3 credits:
556-325 Advanced Written and Oral Expression in German

A minimum of 6 credits from the following courses:
448-325 History of Modern Germany
493-361 January Abroad: German Culture (meets teacher certification requirements)
556-356 Contemporary German Culture (meets teacher certification requirements)

A minimum of 6 credits from the following courses:
556-329 Representative German Authors
556-333 German Literary Themes
556-335 German Literary Eras
556-350 Major German Drama
556-351 Major German Fiction
556-352 Major German Poetry

A minimum of 9 credits from the following courses:
493-343 Perspectives of Human Values: Romanticism to Naturalism*
552-323 Approaches to Literature
556-329 Representative German Authors
556-333 German Literary Themes
556-335 German Literary Eras
556-350 Major German Drama
556-351 Major German Fiction
556-352 Major German Poetry
556-498 German Phonetics (required for teacher certification)
556-498 Business German
556-498 Scientific German
556-498 200 Years of German Culture

*NOTE: Course content is variable; approval of adviser is required to count these courses towards the German major.

Requirements for the Minor

A minor in German provides practical language skills and an introduction to German culture. It is thus an effective way to expand future career possibilities as well as a source of personal growth and satisfaction.

Freshman-Sophomore-Level Requirements (7 credits)
556-202 Intermediate German II, 4 cr.
OR
556-289 Intensive German Workshop, 16 cr. (see above)

556-225 German Composition and Conversation, 3 cr.

Junior-Senior-Level Requirements (12 credits)
Required courses, 6 credits:
556-325 Advanced Written and Oral Expression in German
556-329 Representative German Authors

A minimum of 6 credits from the following courses:
493-361 January Abroad: German Culture (meets teacher certification requirement)
556-333 German Literary Themes
556-335 German Literary Eras
556-350 Major German Drama
556-351 Major German Fiction
556-352 Major German Poetry
556-356 Contemporary German Culture (meets teacher certification requirement)

The German adviser can provide further information about all aspects of the German program, as well as personal assistance in helping students plan programs to meet their individual needs and interests.

Spanish

The Spanish literature and language program provides students with communication skills in both written and spoken Spanish and with an understanding of and appreciation for Spanish literature and culture. The growing number of Spanish-speaking people in the U.S. has significantly increased the need for teachers and speakers of Spanish. Graduates in Spanish have found satisfying careers in teaching international business, translating and interpreting, personnel work, public relations, business management, social work, government service, and other fields in which a knowledge of Spanish is useful or essential. Spanish may also be used as a preprofessional major, providing students with a sound liberal arts background for further study in graduate school or for professional training.

In addition to regularly scheduled courses

in Spanish language and literature, the Spanish program offers students the opportunity to study with their professors individually or in small groups. Students are also encouraged to enroll in the January Abroad: Mexico course, which provides four weeks of travel and instruction in Yucatan during the interim period, and to take advantage of specially-arranged plans which allow students to spend a semester or year at a university in Spain or Mexico as exchange students.

Students who major in Spanish will also choose an interdisciplinary component and may select any interdisciplinary concentration to complement their program. Students interested in the humanities usually choose the Humanistic Studies interdisciplinary program; students interested in international studies frequently minor in Social Change and Development. Students desiring teaching certification in Spanish must combine their Spanish program with a professional program in Education in addition to their interdisciplinary program. They should consult an Education adviser early in their studies to make sure their programs meet all certification requirements.

Requirements for the Major

Freshman-Sophomore-Level Requirements (7 credits)
558-202 Intermediate Spanish II, 4 cr.
558-225 Spanish Composition and Conversation, 3 cr.

Junior-Senior-Level Requirements
(24 credits)
Required courses, 15 credits:
558-325 Advanced Written and Oral Expression in Spanish
558-351 Major Spanish Fiction: The Narrative Art in Latin America
558-358 Latin America Today
558-359 The Americas Look at Each Other
558-438 Major Spanish Writer: Cervantes

A minimum of 9 credits from the following courses:
448-358 Aspects of Latin American History*
558-350 Major Spanish Drama
558-352 Major Spanish Poetry
558-363 January Abroad: Mexico
558-498 Spanish Phonetics (required for teacher certification)
558-498 Advanced Spanish Grammar
558-498 Business Spanish
558-498 Writers of the Hispanic World
558-498 The Adolescent in Hispanic Literature
875-333 Social Change in a Selected Area*

*NOTE: Course content varies; approval of the adviser is required to count these courses towards a Spanish major.

Requirements for the Minor

Freshman-Sophomore-Level Requirements (7 credits)
558-202 Intermediate Spanish II, 4 cr.
558-225 Spanish Composition and Conversation, 3 cr.

Junior-Senior-Level Requirements
(12 credits)
Required courses, 6 credits:
558-325 Advanced Written and Oral Expression in Spanish
558-358 Latin America Today

A minimum of 6 credits from the following courses:
558-352 Major Spanish Fiction: Narrative Art in Latin America
558-359 The Americas Look at Each Other
558-363 January Abroad: Yucatan
558-438 Major Spanish Writer: Cervantes

The Spanish adviser can provide further information about all aspects of the Spanish program, as well as personal assistance in helping students plan programs to meet their individual needs and interests.

Other Literature and Language Programs

Qualified students may develop individual programs through literature and language to meet specific needs and interests. For example, by combining courses in several literatures, it is possible to develop a program with strong emphasis on world or comparative literature. Twenty-four upper-level credits are required in the literature and language program divided among at least two national literatures (English/American, French, German, Spanish). Students are normally expected to show proficiency in at least one foreign language and take appropriate introductory courses. A sample program might include:
552-105 Expository Writing
552-323 Approaches to Literature
554-325 Advanced Written and Oral Expression in French
552-335 Literary Eras (British)
554-335 Literary Eras (French)
554-351 Major French Prose Fiction
552-431 Shakespeare

Although it is recommended that work for some upper-level courses be done in the original language, these courses are available in translation under the 552 number. Similar programs can be created emphasizing any combination of language and literature courses.

Music

Professors: Robert Bauer, flute, director of bands, music education; **Trinidad Chavez**, director of choral activities, music education, voice, conducting; **Arthur Cohrs**, piano theory; **Irwin Sonenfield**, theory, composition.

Associate Professors: Jerome Abraham (chairperson), theory, history; **Margaret Charnon**, piano, accompanying, theory; **Lovell Ives**, jazz, trumpet, arranging; **Wayne Jaeckel**, woodwinds, music history, jazz; **Terence O'Grady**, theory, history, New Music Ensemble, Collegium Musicum.

Assistant Professors: Mark Fonder, assistant director of bands, low brass, music education; **Susan Matthews**, voice, vocal ensemble.

Lecturers: Michael Arendt, horn; **Nancy Gloeckler**, flute; **Cheryl Grosso**, percussion; **Lois Hahn**, strings; **Linda Halloin**, piano; **Scott Hunsberger**, voice; **John Kolar**, guitar; **Vadim Mazo**, strings; **Jackie Marin**, voice; **Judy Poh**, piano; **Ruth Tweeten**, organ; **Donald Westby**, tuba.

The disciplinary program in music is accredited by the National Association of Schools of Music (NASM) and offers a major with an emphasis in applied performance or music education leading to instrumental, choral and general music certification, as well as a minor in music. The program emphasizes quality training in vocal and instrumental music combined with a broadly based general education.

Applied instruction is available in four year sequences in piano, organ, voice, flute, oboe, clarinet, saxophone, bassoon, horn, trumpet, trombone, euphonium, tuba, percussion, guitar, violin, viola, cello, and string bass. Junior and senior recitals are required of applied performance majors. Junior recitals are required of music education majors.

The music student has many opportunities for solo and group performance both on campus and in the community. Ensembles providing opportunities include Marching Band, Concert Band, Wind Ensemble, Concert Choir, Oratorio Chorus, Jazz Ensemble, Show/Jazz Choir, New Music Ensemble, Vocal Ensemble, Collegium Musicum as well as ensembles for woodwinds, brass, string and percussion. UWGB string students may also receive credit for performing with the Green Bay Symphony Orchestra. There is the opportunity for students to be involved with music, dance and drama in musical theater.

Programs for the four areas of emphasis for

music majors (applied performance, instrumental education, choral education and general music education) and the minor in music are described in detail in the music discipline *Advising Guide* available from the music faculty adviser. Special requirements for certification in music education are available from UWGB's Education Office. Music students should meet with a music faculty adviser to design their specific program.

Program Entry

Students who wish to major in music take a placement exam in basic musicianship covering musical notation and fundamental skills of constructing and aurally identifying scales, intervals and chords. Students who do not demonstrate the necessary skills are advised to take 705-101, Basic Musicianship, before enrolling in the music theory/literature sequence. Students also audition for placement in applied instruction and the keyboard musicianship sequence.

Music and Other Programs

Aside from course work in the music discipline, music majors select a minor in an interdisciplinary concentration and take courses from the all-University requirements sequence to complete the degree program leading to a bachelor of arts or bachelor of science in music. Students should plan their coursework with a concentration adviser.

Music majors usually choose an interdisciplinary minor in Communication and the Arts. To complete the interdisciplinary minor students must take 21 credits in one of four emphases:

Aesthetic awareness
Graphic communication
Broadfield communication
Arts awareness

Upon choosing an area of emphasis, students take nine credits of freshman-sophomore concentration courses and 12 credits of junior-senior concentration courses. The lower division requirement includes three credits of a selected core course and six credits of related courses. The upper division requirements include six credits of core courses and six credits of related courses.

Careers and Advanced Study

Since 1971, nearly 100 percent of UWGB's graduates in music have been placed in public education, music business, or graduate study. The music discipline has one of the finest placement records in the University.

Requirements for the Major

Freshman-Sophomore-Level Courses

(required of all music majors)
242-121 Masters and Masterpieces of Music
705-115,116 Ear Training and Sight Singing I,II
705-151,152 Materials and Values in Music I,II
705-251,252 Literature and Styles in Music I,II
707-100,200 Applied Lessons

Ensemble requirements:
Concurrent enrollment in a major ensemble (directly related to the area of applied lessons) is mandatory when studying at the 100- and 200-level of applied lessons.

Major ensembles:
707-151 Orchestra (strings only)
707-161 Concert Choir
707-162 Oratorio Choir
707-241 Concert Band
707-242 Marching Band

Keyboard musicianship requirement:
1-4 semesters depending on placement auditions.

Junior-Senior-Level Courses

(required of all music majors)
705-316 Instrumental Arranging (keyboard, wind and percussion majors only)
705-351,352 Literature and Styles III, IV

705-331 Choral Conducting
OR
705-332 Instrumental Conducting

Applied Emphasis

707-300,400 Applied Lessons

Ensemble requirements:
Concurrent enrollment in a major ensemble is mandatory when studying at the 300-level of applied lessons. Students may elect to fulfill the requirement for the 400-level with a major or minor ensemble. See listing of upper level major ensembles and minor ensembles below.

A minimum of six credits from the following is required:
705-325 Diction for the Voice: German
705-326 Diction for the Voice: French
705-327 Diction for the Voice: Italian
705-411,412 Composition I, II
705-423 Seminar in Music Literature
705-498 Independent Study

Choral Music Education Emphasis

705-318 Choral Literature
705-344 Choral Techniques
705-346,347 Keyboard Accompanying I, II
707-300 Applied Lessons-(wind, keyboard, string and percussion may be used as major instrument only if choral certification is being sought in conjunction with instrumental or general certification).

Ensemble requirements:
Concurrent enrollment in a major ensemble is required when studying at the 300-level of applied lessons. If student's major instrument is wind, keyboard, string or percussion, then a minimum of four semesters of choral performing groups *are required*, two of which must be major ensembles:

707-362 Oratorio Choir
707-461 Concert Choir

Electives:
Two semesters of enrollment in a minor ensemble are recommended. See list of minor ensembles below. If major instrument is not voice then two semesters of applied voice are required.

Education requirements:
See below.

Instrumental Music Education Emphasis

705-316 Instrumental Arranging
705-341 Woodwind Techniques
705-342 Brass Techniques
705-343 String Techniques

705-345 Percussion Techniques
707-300 Applied Lessons (keyboard or voice may be used as the major instrument only if instrumental certification is being sought in conjunction with choral or general music certification).

Ensemble requirements:
Two semesters of concurrent enrollment with the 300-level of applied study is required. If the major instrument is keyboard or voice, a minimum of four semesters of instrumental performing groups are required, two of which must be major ensembles:

707-351 Orchestra (strings only)

707-441 Concert Band
OR
707-442 Marching Band

See list of minor ensembles below.

Electives:
If major instrument is voice or keyboard then two semesters of applied study in wind, string or percussion is required.

Education requirements:
See below.

General Music Education Emphasis

705-316 Instrumental Arranging (recommended but not required)
705-346/347 Keyboard Accompanying I and II
707-300 Applied Lessons

Ensemble requirements:
Two semesters of concurrent enrollment in a major ensemble when studying at the 300-level of applied lessons is required. See list of upper-division major ensembles below.

Electives:
Two semesters of a minor ensemble are recommended. See list of minor ensembles below. If major instrument is wind, string, keyboard or percussion, then voice proficiency through 046 level of applied music is required. One semester of applied voice (707-105) is recommended.

Major ensembles: upper division
707-351 Orchestra (strings only)
707-362 Oratorio Choir
707-441 Concert Choir
707-442 Marching Band
707-461 Concert Choir

Minor ensembles:
707-143,343 Jazz Ensemble
707-144,344 Woodwind Ensemble
707-145,345 Brass Ensemble
707-146,346 Percussion Ensemble
707-148,348 Collegium Musicum
707-150,350 New Music Ensemble
707-153,353 String Ensemble
707-163,363 Vocal Ensemble
707-164,364 University Singers

Education Requirements

Courses required of all music education majors: Human relations requirement information for teacher certification available from the Office of Education.

Professional Education Requirements

Educational psychology:
• Option 1
820-315 Educational Psychology
AND
481-210 Introduction to Human Development
OR
820-102 Introduction to Psychology

• Option 2
(special permission of Education adviser and certification officer required)
481-332 Human Development II: Middle Childhood and Adolescence
AND
302-406 Evaluation and Testing in Education
OR
481-431 Cognitive Development

Other Education Courses
302-301 Introduction to Education and Teaching
302-318 Reading and Study Skills in the Secondary School
302-410 Introduction to the Education of Exceptional Children

Courses required for choral certification only:
302-317 Principles and Methods of Teaching Instrumental or Choral Music
302-403 Student Teaching or Internship at the Secondary School in Music

Courses required for instrumental certification only:
302-317 Principles and Methods of Teaching Instrumental or Choral Music
302-402 Student Teaching or Internship at the Elementary School in Music (required for certification below grade 7)
302-403 Student Teaching or Internship at the Secondary School in Music

Courses required for general certification only:
302-334 Principles and Methods of Teaching General Music in the Elementary School (for certification grades K-8)
302-335 Principles and Methods of Teaching General Music in the Secondary School (for certification grades 7-12)
302-402 Student Teaching or Internship at the Elementary School in Music (for certification grades K-8)
302-403 Student Teaching or Internship at the Secondary School in Music (for certification grades 7-12)

Requirements for the Minor

Freshman-Sophomore-Level Requirements

242-121 Masters and Masterpieces in Music
705-115,116 Ear Training and Sight Singing I, II
705-151,152 Materials and Values in Music I, II
707-100 Applied lessons (two semesters)

Ensemble requirements:
Concurrent enrollment in a major ensemble is required when studying applied lessons.

Major ensembles:
707-151 Orchestra (strings only)
707-162 Oratorio Choir
707-241 Concert Band
707-242 Marching Band (two semesters)
707-261 Concert Choir

Keyboard requirement:
1-2 semesters depending on placement audition.

Junior-Senior-Level Requirements

705-331 or 332 Choral or Instrumental Conducting

Cross-cultural requirement (one of the following):
242-329 Ethnomusicology
242-329 American Show Music
242-329 Jazz History

Philosophy

Professor: Frederick Kersten, phenomenology, ontology, value theory, aesthetics, foundational problems in the social and natural sciences, the philosophy of Husserl.

Associate Professors: Orville Clark, aesthetics, philosophy of the arts, German 19th century philosophy, 20th century thought in relation to ecological crises, Native American culture, Indian view of nature; **Gary Greif**, foundations of value formations; general theory of culture, philosophical foundations of psychology; **Gilbert Null** (chairperson), history of western philosophy, logic, ontology, epistemology, Husserlian phenomenology, philosophy of science and mathematics.

Philosophy students deal with issues such as what knowledge is and under what conditions knowledge is valid or invalid, what value is and how value can be examined and established, what it means to be human and to have a history, culture, and society. Courses in philosophy thus address basic concerns with the natural and social environments. These concerns form the core of the interdisciplinary contributions by the disciplinary program in philosophy to the programs in Humanistic Studies as well as programs that deal with social and political issues. Likewise the courses in philosophy dealing with aesthetics contribute to other programs which focus on the fine arts and communications. Courses in philosophy dealing with knowledge and learning in the sciences contribute to other programs emphasizing psychology and the natural sciences.

Careers and Advanced Study

The undergraduate study of philosophy is valuable as preparation for a wide range of postgraduate endeavors, including law, business and graduate study in disciplines other than philosophy. For example, in 1981-82, philosophy students scored 8.7 percent above the mean on the Law School Admissions Test, 11 percent above the mean on the Graduate Management Admission Test, 7.6 percent above the mean on the verbal portion, and 4.6 percent above the mean on the quantitative portion of the Graduate Record Examination.

Requirements for the Major

The principal areas of study offered are aesthetics, social and political philosophy, history of philosophy, epistemology and metaphysics, logic, ontology, and value theory. These areas are studied in interdisciplinary applications such as the philosophy of science; of mathematics; of history; of politics; of law; of literature; of art; and the like. The disciplinary major in philosophy requires 30 credits.

Freshman-Sophomore-Level Requirements

A minimum of 6 credits from the following courses:
736-101 Introduction to Philosophy
736-102 Problems in Ethics
736-111 Elementary Logic
736-201 Language and Consciousness
736-208 Science and Human Values
736-210 Civilization and Culture
736-211 The Arts and Human Existence

Junior-Senior-Level Requirements (24 credits)

736-302 History of Philosophy I
736-314 History of Philosophy II
736-404 Major Philosophical Figure*

A minimum of 6 credits from the following courses:
736-405 Major Philosophical Issues*
736-406 Philosophical Problems in the Sciences*

A minimum of 6 credits from the following courses:
736-304 American Philosophy
736-324 Contemporary Philosophical Movements*
736-325 Marxist Humanism

A minimum of 3 credits from the following courses:
736-301 Criticism of Values
736-315 Philosophy of Work and Leisure
736-322 Aesthetics
736-326 Philosophy, Politics and Law

*Courses which have variable content, and which may be repeated (with different content) for credit.

Requirements for the Minor

Freshman-Sophomore Requirements (6 credits)

736-101 Introduction to Philosophy
736-102 Problems in Ethics
736-104 Freedom and Individuality
736-106 Pacifism and Violence
736-111 Elementary Logic
736-201 Language and Consciousness
736-208 Science and Human Values
736-210 Civilization and Culture
736-211 The Arts and Human Existence

Junior-Senior Requirements (12 credits):

736-302 History of Philosophy I
736-314 History of Philosophy II
736-404 Major Philosophical Figures*

A minimum of 3 credits from the following courses:
736-301 Criticism of Values
736-304 American Philosophy
736-315 Philosophy of Work and Leisure
736-322 Aesthetics
736-324 Contemporary Philosophical Movements*
736-326 Philosophy, Politics and Law

*Courses which have variable content, and which may be repeated (with different content) for credit.

Philosophy and Other Programs

Students majoring in philosophy will also choose an interdisciplinary program. Philosophy is inherently interdisciplinary, and will work well in conjunction with several interdisciplinary minors depending upon an individual student's goals. Especially appropriate interdisciplinary programs include Humanistic Studies, Science and Environmental Change, Communication and the Arts, Human Development, Social Change and Development, or others chosen with the help of the philosophy adviser to meet special needs.

Theater

Professors: Jack Frisch, directing, criticism; **Richard Sherrell**, theater, history, directing.

Associate Professor: Patricia Lin Ridge (chairperson), acting, directing.

Assistant Professors: Jeffrey Entwistle, scenic and lighting design; **Raymond Gabica**, costume design.

Lecturers: Carol Hoehn, dance; **Michael Mills**, technical director.

The theater discipline prepares students to be competent in the whole realm of theater arts by developing critical and philosophical facilities as well as expanding student capabilities for artistic expression. There are opportunities for taking either a major or minor in theater.

The theater program provides a rigorous artistic/academic environment for the study

and production of all forms of theater. A balanced approach to classical, modern and experimental theater allows students to keep in touch with the traditions of the past while looking to the future for new theater forms.

University Theatre faculty members believe that the best way to learn theater is to do theater. Students are encouraged to take advantage of the four mainstage productions offered each year and to become a part of the student Alternate Theatre organization that also produces several productions each year.

Facilities available are the 485-seat University Theatre, the smaller Experimental Theatre, the acting studio, dance studio and scene and costume shops. All facilities are well equipped for production. Casting is open and by audition. No previous experience is required in order to be considered for any roles. Many opportunities exist for backstage work. Credit can be earned for participating in productions in any capacity. Involvement in the many opportunities to experience theater will enrich students' understanding of theater and help to fully develop their own creative processes.

Careers and Advanced Study

UWGB theater graduates typically go on to accomplish distinction in graduate programs in various theater studies and activities. Students are also finding gainful employment in professional theater by working in resident theater companies, children's theater, community theater, film companies and summer stock theaters.

Theater and Other Programs

Students majoring in theater will also select an interdisciplinary program. Typically, theater students choose the interdisciplinary program in Communication and the Arts, although other concentrations may be appropriate, depending upon a particular student's goals. Students seeking teacher certification should consult with the theater program adviser and an adviser in the Education professional program early in their studies to insure that their programs meet all of the specific requirements for certification of the Wisconsin Department of Public Instruction.

Requirements for the Major

Students majoring in theater are required to complete 31 credits at the freshman-sophomore level and a minimum of 30 credits at the junior-senior level. All students are required to pass the lower-division play reading comprehensive examination by spring semester of their sophomore year, and to pass the upper-division play reading comprehensive examination by spring semester of their senior year.

Performance Emphasis

Supporting Courses (6 credits required)
242-141 Introduction to Performing Arts
242-142 Performing Arts Perspectives

Freshman-Sophomore-Level Requirements

Acting core (15 credits):
709-131, 132 Beginning Acting I, II
709-231, 232 Intermediate Acting I, II
709-235 Theater Performance in the Community (acting)

Technical theater core (6 credits):
709-221 Theater Production Techniques I: Stagecraft
709-222 Theater Production Techniques II: Costume/Make-up

Dance core (4 credits required):
709-128 Beginning Jazz Dance
709-137 Beginning Ballet
709-141 Movement for Theater
709-145 Beginning Modern Dance

Electives (to strengthen lower-division preparation):
709-233, 234 Voice for the Actor I, II

Junior-Senior-Level Requirements

History/criticism (6 credits required):
709-309, 310 Theater History I, II

Acting/directing (15 credits required):
709-331, 332 Advanced Acting I, II
709-351, 352 Directing I, II
709-335 Theater Performance in the Community (acting or directing)

Design (9 credits required):
709-321 Scene Design
709-322 Costume Design
709-323 Lighting Design

Electives (to strengthen upper-division preparation):
709-403, 404 Seminar in Theater Arts (selected subjects)
709-498 Independent Study

Design/Technical Theater Emphasis

Supporting Courses (6 credits required)
242-141 Introduction to the Performing Arts
242-142 Performing Arts Perspectives

Freshman-Sophomore-Level Requirements:

Design/technical theater core (15 credits):
709-220 Stage Management
709-221 Theater Production Techniques I: Stagecraft
709-222 Theater Production Techniques II: Costume/Make-Up
709-235 Theater Performance in the Community (technical theater)

168-105 Drawing
OR
168-106 Design Methods

Acting core (6 credits required):
709-131, 132 Beginning Acting I, II

Dance core (4 credits required):
709-128 Beginning Jazz Dance
709-137 Beginning Ballet
709-141 Movement for Theater
709-145 Beginning Modern Dance

Junior-Senior-Level Requirements

History/criticism (6 credits required):
709-309, 310 Theater History I, II

Design/technical theater courses (12 credits required):
709-321 Scene Design
709-322 Costume Design
709-323 Lighting Design
709-351 Directing I

Electives (an additional 12 credits are required from the following courses):
168-301 Life Drawing and Anatomy
709-325 Three Dimensional Stage Makeup
709-403, 404 Seminar in Theater Arts I, II
709-405 Theater Management
709-423 Advanced Stage Lighting
709-424 Advanced Technical Practices
709-498 Independent Study

Requirements for the Minor

Students taking a minor are required to complete a total of 21 credits in theater. These are specifically designated courses which will provide basic skills in a particular area of theater study and activity.

All students take:
709-131 Beginning Acting I, 3 cr. (required)

Other requirements for the minor are completed through either program A or program B below:

Program A

For students choosing to minor in theater history, performance or design, the following coursework is required.

Freshman-Sophomore-Level Requirements (12 credits required)
709-132 Beginning Acting II
709-221 Theater Production Techniques I: Stagecraft
709-222 Theater Production Techniques II: Costume/Makeup
709-235 Theater Performance in the Community

Junior-Senior-Level Requirements
Six credits chosen from one of the following areas:
Performance
709-351 Directing I
709-352 Directing II

History/criticism
709-309 Theater History I
709-310 Theater History II

Design/technical theater
709-321 Scene Design

709-322 Costume Design
OR
709-323 Lighting Design

Program B

For students choosing to minor in theater/dance.

Freshman-Sophomore Requirements
(12 credits required)
709-128 Beginning Jazz Dance
OR
709-145 Beginning Modern Dance

709-137 Beginning Ballet (2 semesters)
709-141 Movement for Theater

709-228 Intermediate Jazz Dance
OR
709-245 Intermediate Modern Dance

709-237 Intermediate Ballet

Junior-Senior Requirements
(6 credits required)
709-335 Theater Performance in the Community (dance)
709-340 Dance Techniques
709-440 Choreography

Natural Sciences and Mathematics

Biology

Professors: Harry G. Guilford, parasitology, anatomy; **Hallett J. Harris**, animal ecology; **William Kaufman**, human physiology; **Elaine McIntosh**, nutrition, community health; **V.M.G. Nair**, plant-forest pathology, mycology; **Paul Sager**, limnology, aquatic biology; ***Leander Schwartz***, *microbiology, plant physiology*; **Keith White** (chairperson), plant ecology.

Associate Professors: Alice Goldsby, microbiology, parasitology; **Charles Ihrke**, genetics; **Michael Morgan**, plant ecology, plant physiology; **Dorothea Sager**, reproductive biology, embryology; **Richard Stevens**, human neurophysiology.

Assistant Professor: Robert Howe, *vertebrate zoology, ornithology, mammalogy.*

The biology disciplinary program prepares students for careers in traditional areas such as ecology, field biology, genetics, microbiology and physiology. Students can select biology coursework that will prepare them for medical, dental, veterinary, or other professional schools. Another alternative is a program of study preparing students for careers in applied areas including aquatic studies, biological resource management, environmental health, human adaptability, nutritional sciences, solid waste management, and science communications (technical writing, journalism, and nature interpretation).

Facilities

Facilities in biology include well-equipped teaching laboratories and numerous small laboratories designed for student-faculty research projects. Some major equipment and facilities include: natural areas for teaching and research (Cofrin Arboretum, Toft Point, Peninsula Sanctuary, and others), Carl Richter Natural History Collection (emphasizing ornithology), small animal facilities, herbarium, greenhouse, plant growth chambers, fungal collection, human physiology laboratory including environmental chambers, microclimatological equipment, boats and other aquatic studies equipment, instrumental and organic chemistry laboratories, and computer facilities.

Requirements for the Major

Two introductory courses totaling eight credits are required for the major: Principles of Biology I (204-202) and Principles of Biology II (204-203). Students who have a background equivalent to these courses, can, upon successful completion of a challenge exam, receive credit for them.

Beyond the introductory level, biology majors take a minimum of 24 credits in junior- and senior-level courses. All students are required to take a common core of upper division coursework in microbiology, genetics, physiology, and ecology.

These core courses are:
204-302 Microbiology
204-303 Genetics

204-311 Plant Physiology
OR
204-346 Comparative Physiology

862-302 Principles of Ecology
OR
862-472,473 Ecosystems Analysis I, II

To complete the biology major requirement of a minimum of 32 credits, the remaining credits can be elected from courses in one of the following emphasis areas. Career goals and other interests will influence which emphasis area students select. For teacher certification in the biology major, the minimum number of credits is 34. In consultation with a biology adviser, students may choose more than one emphasis area to complete the 34 credits.

Emphasis Areas

Botany
204-305 Biological Microtechnique
204-310 Plant Taxonomy
204-312 Mycology
204-315 Biology of Lower Green Plants
204-317 Structure of Seed Plants
204-320 Field Botany
479-401 Agricultural Genetics
862-363 Forest and Plant Pathology

Zoology
204-305 Biological Microtechnique
204-340 Comparative Anatomy of Vertebrates
204-341 Ichthyology
204-342 Ornithology
204-343 Mammalogy
204-345 Animal Behavior
204-347 Developmental Biology
204-355 Principles of Entomology
478-312 Evolutionary Processes
478-318 Mammalian Reproduction
478-404 Animal Physiology Laboratory
478-412 Parasitology
478-413 Neurophysiology

Field Biology and Ecology
204-310 Plant Taxonomy
204-320 Field Botany
204-341 Ichthyology
204-342 Ornithology
204-343 Mammalogy
204-355 Principles of Entomology
204-363 Forest and Plant Pathology
862-401 Stream Ecology
862-403 Limnology

Organismal Biology
204-304 Genetics Laboratory
204-317 Structure of Seed Plants
204-340 Comparative Anatomy of Vertebrates
204-345 Animal Behavior
204-347 Developmental Biology
478-318 Mammalian Reproduction
478-402 Human Physiology
478-404 Animal Physiology Laboratory
478-413 Neurophysiology
478-448 Human Histology

Microbiology
204-312 Mycology
204-315 Biology of Lower Green Plants
204-402 Advanced Microbiology
204-405 Microbial Physiology
478-412 Parasitology
862-363 Forest and Plant Pathology

Supporting Courses

Biology majors also are required to take supporting coursework in chemistry, mathematics, and composition. These supporting course requirements are:

225-211,212 Principles of Chemistry I, II
600-260 Introductory Statistics

A minimum of three additional credits of mathematics from the following courses:
600-155 Computers and Microcomputers
600-202 Calculus and Analytic Geometry I
600-242 Discrete Mathematics
600-255 FORTRAN
600-256 Introduction to Computer Science I

Three credits of writing from one of the following:
246-390 Scientific and Technical Communications
478-370 Scientific Writing and Discourse
552-105 Expository Writing

Students are also strongly advised to take either Organic Chemistry (225-302,303, 304,305) or Bio-organic Chemistry (225-300,301). One year of physics (754-103,104 or 754-201,202) is also strongly recommended, especially for students planning to pursue graduate and professional studies.

Special Opportunities

In addition to formally scheduled biology courses, students have opportunities to work with individual faculty members on an independent study basis. This is an excellent chance to probe more deeply into areas of special interest. There also are opportunities for students to work in intern training programs with private, state, and national agencies, and in industry. Credit for these experiences is available by special arrangement. Students are encouraged to explore opportunities available in the National Student Exchange Program; through this program, students can study for one or two semesters at one of over 70 universities.

Biology and Other Programs

A biology major combines disciplinary work with an interdisciplinary minor. Biology students interested in such areas as aquatic studies, biological resource management, solid waste management, or science communication will normally take an interdisciplinary minor in Science and Environmental Change.

Human Biology is usually the interdisciplinary minor selected by biology majors with an interest in human adaptability or nutritional sciences. Biology students with an interest in land use planning may select an interdisciplinary minor in Regional Analysis. A growing area of interaction is between biology and psychology; biology students with such an interest may select an interdisciplinary minor in Human Development.

As an alternative to a disciplinary major in biology, some students with an interest in biology may choose to develop an interdisciplinary major in areas such as Human Biology, Science and Environmental Change, or Regional Analysis. These 30-credit majors focus on a problem area by drawing together coursework from several disciplines. For example, a student interested in aquatic studies can select a program that includes courses from biology, chemistry, hydrology, and resource management.

Careers and Advanced Study

UWGB biology graduates are employed in industry, in government agencies (Environmental Protection Agency, Food and Drug Administration, National Park Service, U.S. Fish and Wildlife Service, U.S. Forest Service, U.S. Bureau of Land Management, Wisconsin Department of Natural Resources, and others), by environmental consulting firms, and are teaching in primary and secondary schools and universities. Each year approximately 40 percent of the biology graduates pursue advanced degrees in graduate and professional schools.

For students interested in education, teacher certification in biology or broad field sciences can be obtained by combining a program in professional education with the appropriate science courses. Those seeking teacher certification should consult with the biology adviser and an adviser in the Education professional program early in their studies to insure that their programs meet all of the specific requirements for certification of the Wisconsin Department of Public Instruction. Students aiming for biology-related administrative positions may prepare by combining coursework in biology with a minor either in Business Administration or Public and Environmental Administration.

Requirements for the Minor

Students with an interdisciplinary major in Regional Analysis, Public and Environmental Administration, or Business Administration may wish to broaden and strengthen their academic background by earning a minor in biology. Likewise some students with a major in such disciplines as chemistry or earth science will find it valuable to obtain a minor in biology. The biology minor requires 21 credits of coursework. For teacher certification in the biology minor, the minimum number of credits is 22.

Freshman-Sophomore-Level Requirements (8 credits)

204-202 Principles of Biology I
204-203 Principles of Biology II

Junior-Senior-Level Requirements (13-19 credits)

204-302 Microbiology
204-303 Genetics

204-311 Plant Physiology
OR
204-346 Comparative Physiology

862-302 Principles of Ecology
OR
862-472/473 Ecosystems Analysis I, II

Chemistry

Associate Professors: Dawson Deese, biochemistry; **Jack C. Norman**, physical chemistry and radiochemistry; **Ronald Starkey**, organic chemistry and chemical ecology; **Thomas E. Van Koevering**, general chemistry and inorganic chemistry; **James Wiersma**, analytical chemistry and water chemistry.

Assistant Professor: Donna Randall, general chemistry.

Chemistry has been called the central science because of its position relative to the other sciences. Chemistry provides the link between the fundamental structure of matter and the functioning of living organisms. Since chemistry is the investigation of the structure and behavior of matter, it makes major contributions to many other areas of scientific study. Chemistry provides a significant bridge between the biological and the physical/mathematical sciences.

Special Opportunities

The University of Wisconsin-Green Bay offers a traditional chemistry disciplinary major with added breadth available in some currently relevant areas related to chemistry. The program is accredited by the American Chemical Society (ACS). Chemistry students have the opportunity to select either a UWGB chemistry major, or a sequence of courses that lead to an American Chemical Society certified chemistry major. The certified major requires a more rigorous program of study and is particularly appropriate for those who wish to pursue post graduate studies in chemistry.

Careers and Advanced Study

An individual can design a chemistry program to meet several different goals. Included among them are preparation for graduate study in chemistry; immediate employment in industry, governmental agencies, or secondary education. A chemistry major can also serve as a base for professional study in medicine, dentistry, pharmacology, or veterinary medicine. Chemistry provides an excellent background for the environmental sciences.

Facilities

In addition to the regular classrooms and laboratories, chemistry facilities include several small laboratories suitable for student research projects. Major equipment used in both regular class and independent study include: infrared spectrophotometer, visible-ultraviolet spectrophotometer, atomic absorption spectrometer, nuclear magnetic resonance spectrometer, X-ray diffraction spectrometer, liquid scintillation counter, high pressure liquid chromatographs, gas chromatographs, X-ray fluorescence spectrometer, gamma ray spectrometer, voltametric analyzers, and automatic analyzers.

Chemistry and Other Programs

Many chemistry majors find complimentary interdisciplinary minors in Science and Environmental Change (Environmental Science), Human Adaptability, or Nutritional Science. Others have combined chemistry with the professional program in Education to prepare for teacher certification in chemistry.

Students combining the study of chemistry with other programs should plan their studies with the help of advisers from the appropriate programs. Those seeking teacher certification should consult with the chemistry adviser and an adviser in the Education professional program early in their studies to insure that their programs meet all of the specific requirements for certification of the Wisconsin Department of Public Instruction.

Requirements for the Major

The two programs of study leading to a major, as well as a chemistry minor program, are outlined below.

The UWGB Major

Supporting Courses
Math
- 600-202 Calculus and Analytic Geometry I
- 600-203 Calculus and Analytic Geometry II

Physics
- 754-201 Principles of Physics I
- 754-202 Principles of Physics II

Freshman-Sophomore-Level Requirements
Introductory Chemistry
- 225-211 Principles of Chemistry I
- 225-212 Principles of Chemistry II

Junior-Senior-Level Requirements
Organic Chemistry
- 225-302 Organic Chemistry I
- 225-304 Organic Chemistry Lab I
- 225-303 Organic Chemistry II
- 225-305 Organic Chemistry Lab II

Analytical Chemistry
- 225-311 Analytical Chemistry

Physical Chemistry
- 225-320 Thermodynamics and Kinetics
- 225-322 Thermodynamics and Kinetics Lab
- 225-321 Structure of Matter
- 225-323 Structure of Matter Lab

Additional Courses
(A minimum of 4 credits from the following)
225-330 Biochemistry, 3 cr.
225-331 Biochemistry Lab, I cr.
225-402 Advanced Organic Chemistry, 3 cr.
225-403 Advanced Organic Chemistry Lab, I cr.
225-410 Inorganic Chemistry, 3 cr.
225-413 Instrumental Analysis, 4 cr.
225-417 Nuclear Physics and Radiochemistry, 3 cr.
225-418 Nuclear Physics and Radiochemistry Lab, I cr.

The ACS-Certified Major

Supporting Courses
Math and Computer Science
600-202 Calculus and Analytic Geometry I
600-203 Calculus and Analytic Geometry II
600-305 Differential Equations
600-255 FORTRAN: Scientific Programming Language*

*Another computer language may be substituted for FORTRAN.

Physics
754-201 Principles of Physics I
754-202 Principles of Physics II

Freshman-Sophomore-Level Requirements
Introductory Chemistry
225-211 Principles of Chemistry I
225-212 Principles of Chemistry II

Junior-Senior-Level Requirements
Organic Chemistry
225-302 Organic Chemistry I
225-304 Organic Chemistry Lab I
225-303 Organic Chemistry II
225-305 Organic Chemistry Lab II
Analytical Chemistry
225-311 Analytical Chemistry
225-413 Instrumental Analysis
Physical Chemistry
225-320 Thermodynamics and Kinetics
225-322 Thermodynamics and Kinetics Lab
225-321 Structure of Matter
225-323 Structure of Matter Lab
Inorganic Chemistry
225-410 Inorganic Chemistry

Additional Courses
A minimum of 8 credits including at least one laboratory course from the following:
225-330 Biochemistry, 3 cr.
225-331 Biochemistry Lab, 1 cr.
225-402 Advanced Organic Chemistry, 3 cr.
225-403 Advanced Organic Chemistry Lab, 1 cr.
225-417 Nuclear Physics and Radiochemistry, 3 cr.
225-418 Nuclear Physics and Radiochemistry Lab, 1 cr.

Chemistry Research Project
225-498 Directed Study

Requirements for the Minor

Freshman-Sophomore Level Requirements
Introductory Chemistry
225-211 Principles of Chemistry I
225-212 Principles of Chemistry II

Junior-Senior-Level Requirements
Organic Chemistry
225-300 Bio-organic Chemistry
225-301 Bio-organic Chemistry Lab

The organic chemistry requirement may also be satisfied by the following courses:
225-302 Organic Chemistry I
225-304 Organic Chemistry Lab I
225-303 Organic Chemistry II
225-305 Organic Chemistry Lab II

Analytical Chemistry
225-311 Analytical Chemistry

Additional Courses
(A minimum of 4 credits from the following)
225-320 Thermodynamics and Kinetics, 3 cr.
225-322 Thermodynamics and Kinetics Lab, 1 cr.
225-321 Structure of Matter, 3 cr.
225-323 Structure of Matter Lab, 1 cr.
225-330 Biochemistry, 3 cr.
225-331 Biochemistry Lab, 1 cr.
225-410 Inorganic Chemistry, 3 cr.
225-413 Instrumental Analysis, 4 cr.
479-321 Physiological Chemistry, 3 cr.
479-409 Chemical Analysis of Food, 2 cr.
479-485 Advanced Human Nutrition, 3 cr.
862-318 Industrial Pollution Control Techniques, 2 cr.
862-378 Chemical Ecology, 2 cr.
862-419 Industrial Chemistry, 3 cr.
862-424 Environmental Biogeochemistry, 3 cr.
862-434 Water Chemistry, 4 cr.

Earth Science

Professors: H.J. Day, hydrology, watershed management, water supply, pollution control; **Thomas H. McIntosh**, soils, agricultural land management, remote sensing, biogeochemistry; **Joseph M. Moran**, climatic change, Quaternary climatology and geology.

Associate Professors: Steven I. Dutch, structural geology, pre-Cambrian geology, tectonics; **Ronald D. Stieglitz** (chairperson), sedimentary geology, Quaternary geology, applications of geology to land use problems.

Earth science is the study of materials such as air, water, soil and rocks, forces and processes such as volcanic action and weather that shape the earth, and the impacts that these physical elements have upon living organisms. Earth science is an integrative science that requires a solid foundation in the basic sciences and mathematics.

Facilities

Facilities available to the earth science disciplinary program include well equipped teaching laboratories, the University weather station, extensive collections of high quality rock, mineral, and fossil specimens, and field equipment for surveying and mapping.

Careers

There are many career opportunities for earth scientists. Emerging awareness of the need to use natural resources wisely is increasing demand for knowledgeable earth scientists in industry and a variety of government agencies that deal with land use decisions. Petroleum companies and metallic mineral industries continue to hire earth scientists. People who know something about the finiteness of earth's resources and who can convey the need for a new conservation ethic are needed at all levels of formal education. Similarly, resource conservation agencies need people who can bridge the gap between the scientific aspect of wise land use and public awareness and understanding of issues involved. Waste disposal, water quality, and soil erosion are examples of areas to which earth scientists can contribute invaluable assistance.

Earth Science and Other Programs

Earth science students interested in regional planning, resource management or land management typically select interdisciplinary minors in Science and Environmental Change or Regional Analysis, and to a lesser degree, Environmental Planning or Public and Environmental Administration.

For those interested in business, earth science may be combined with courses in Business Administration. A career in earth science communications may be pursued through a major linking earth science with Communication and the Arts.

Additional programs are also in place for students who want to couple some earth science training with detailed work in another area. Teacher certification can be obtained with both the earth science major and minor. Students seeking teacher certification should consult with the earth science adviser and an adviser in the Education professional program early in their studies to insure that their programs meet all of the specific requirements of the Wisconsin Department of Public Instruction. An Associate of Arts degree requiring 16 credits of earth science and 18-21 supporting mathematics, science and skills credits is also available.

Requirements for the Major

Students majoring in earth science have usually followed one of two separate paths: 1) those who are preparing for scientific and technical careers requiring advanced work at the graduate level, and, 2) those who plan to obtain the major to support another area of study or simply for personal satisfaction. Therefore, two areas of emphasis are provided for earth science students.

Pre-Graduate Emphasis

Professional earth scientists must become familiar with a wide variety of subjects during their training. A thorough understanding of mathematics, physics, and chemistry are essential. Calculus, basic inorganic chemistry, and basic physics are as important as courses in geology, meteorology, hydrology, or soil science. Advanced courses in mathematics, computer science, physics, and chemistry are desirable. In some areas of earth science, advanced training in biology is required.

Earth scientists must be able to communicate with others, many of whom lack scientific training. Language skills enhance the chances for a successful career. Knowledge of foreign languages, history, and cultures provides access to foreign technical literature and makes it easier to work in other regions. In addition, other technical skills such as air photo interpretation, drafting, or a knowledge of remote sensing methods are invaluable tools for the professional earth scientist.

The pregraduate major requires 43-48 credits of course work in supporting areas of science, mathematics and communication skills. In addition the student is required to select an area of emphasis (atmospheric science, geology, soil and land resources, or water resources) in which a specific set of courses must be completed. This focused major better prepares the student for graduate school.

Supporting Courses (43-48 credits)
Students are encouraged to take as many supporting courses as possible during the freshman and sophomore years.
Mathematics
600-202 Calculus I

600-203 Calculus II
AND
8 credits of some combination of 200-level or above mathematics, statistics, or computer science.

Basic Science
204-202 Principles of Biology I
225-211 Principles of Chemistry I
225-212 Principles of Chemistry II
754-201 Principles of Physics I
754-202 Principles of Physics II
Communication skills (one of the following)
246-133 Fundamentals of Public Address
246-390 Scientific and Technical Communication

552-105 Expository Writing
OR
Equivalent communications course with adviser's consent
OR
One year of a foreign language

Earth Science Courses
(32 credits required)
Core Courses:
296-202 Earth's Physical Environment
296-302 Geological Evolution of the Earth
296-303 Geological Evolution Laboratory

Area Courses:
Earth science majors preparing for professional careers or graduate school must select one of the following areas of study: atmospheric science, geology, soil and land resources, or water resources to emphasize in their program. This is intended to provide a focus for the students' study and to insure a basic orientation in a specific area of earth science in preparation for work at the graduate level. Area emphases are:

Atmospheric science
862-350 Meteorology
416-325 Regional Climatology

Geology
296-350 Geologic Field Methods
296-366 Structural Geology
296-402 Stratigraphy and Sedimentation
296-441 Mineralogy

Soil and land resources
862-320 Soil Environment
862-321 Soil Environment Lab

862-382 River Basins in Transition
OR
862-460 Resource Management Strategy

Water resources
862-382 River Basins in Transition
862-430 Quantitative Hydrology
862-460 Resource Management Strategy

Earth Science Electives:
Students must select additional courses from the lists below to reach the minimum number of credits required for the earth science major.

Techniques Courses (1 required):
(Students emphasizing geology in their program must select a course in addition to 296-350, Geologic Field Methods)
296-350 Geologic Field Methods
416-351 *Elements of Cartography*
416-353 Air Photo Interpretation
416-451 Computer Cartography
862-454 Remote Sensing of the Environment by Satellite

Plus, general earth science electives at the 300 level or above.

General Emphasis

Students following the general emphasis of the earth science major might combine their major with and/or pursue advanced study in planning, resource management, business, communication, education, or other fields. Such students need science, mathematics, and technical skills but do not require the depth of background in those areas that a professional scientist does. The general emphasis degree is designed to serve students who do not intend to become scientists or to seek advanced training in any field.

The general emphasis major, while requiring less supporting work in mathematics and science (27-37 credits), still provides a firm grounding in related fields. The advanced requirements are less focused than the pregraduate major. Nine to 10 of the 24 advanced credits required must be selected from a set list of courses. The remaining required credits can be chosen from any earth science area.

Supporting Courses (25-37 credits)
Mathematics
600-104 Algebra and Trigonometry
AND
600-155 Computers and Microcomputers
OR
600-260 Introductory Statistics
OR
3 credits mathematics, computer science, or statistics at the 200 level or above
Basic science
225-108 General Chemistry
OR
225-211,225-212 Principles of Chemistry I,II

204-202 Principles of Biology I
754-103 Fundamentals of Physics I
754-104 Fundamentals of Physics II
Communication skills (one of the following)
246-133 Fundamentals of Public Address
246-390 Scientific and Technical Communication

552-105 Expository Writing
OR
One year of a foreign language

Earth Science Courses (32-33 credits)
Core Courses:
296-202 Earth's Physical Environment
296-302 Geological Evolution of the Earth
296-303 Geological Evolution Laboratory
Electives:
Advanced courses (2 required):
296-340 Rock and Mineral Resources
416-375 Regional Climatology
862-320 The Soil Environment
862-330 Descriptive Hydrology
862-341 Intermediate Astronomy
862-342 Environmental Geology

Techniques Courses (1 required):
296-350 Geological Field Methods
416-351 Elements of Cartography
416-353 Air Photo Interpretation
416-451 Computer Cartography
862-454 Remote Sensing of the Environment by Satellite

Plus, general electives from the earth science course list at the 300 level or above to total at least 15 credits.

Requirements for the Minor

An appreciation of the earth's physical systems is applicable to many fields and essential to an informed citizenry. The earth science minor provides an introduction to the scientific investigation of the earth for students majoring in other fields. An earth science minor can be profitably combined with another science such as chemistry, physics, and biology or with a wide range of nonscientific majors. Students in the arts, communication, prelaw, economics, and many other areas may be well served by including an earth science minor in their career preparation.

Supporting Courses (10 credits)
600-104 Algebra and Trigonometry

225-108 General Chemistry
OR
A 1-year (2-semester) sequence of courses in biology, chemistry or physics

416-250 Displays of Geographic Information
OR
A course in communication, remote sensing, cartography or mathematics to include statistics and computer science (approved by an earth science adviser).

Earth Science Courses (22 credits)

Freshman-sophomore-level requirements (4 credits):
296-202 Earth's Physical Environment
Up to 6 additional credits may be taken at the 100 and 200 level.

Junior-senior-level requirements (12 credits):
296-302 Geologic Evolution of the Earth
OR
296-340 Rock and Mineral Resources
Additional earth sciences electives to total 22 earth science credits at the lower- and upper-division levels.

Courses appropriate for the earth science program are listed by area:

General earth science:
296-110 Dinosaurs: Rise to Ruin
296-200 Basic Earth Science
296-202 Earth's Physical Environment
296-230 Geology of Wisconsin
296-302 Geologic Evolution of the Earth
296-303 Geologic Evolution of the Earth Laboratory
862-141 Elementary Astronomy
862-341 Intermediate Astronomy
862-422 Environmental Biogeochemistry

Geology:
296-306 Drifting Continents
296-310 Paleobiology
296-340 Rock and Mineral Resources
296-350 Geologic Field Methods
296-366 Structural Geology
296-380 Geomorphic Processes
296-402 Stratigraphy and Sedimentation
296-441 Mineralogy
296-442 Petrology
296-470 Glacial Environment and Chronology
862-342 Environmental Geology
862-345 Geology of Energy Resources

Soil and land resources:
296-420 Soil Classification and Geography
416-250 Displays of Geographic Information
416-320 Landform Geography: Topics and Regions
416-351 Elements of Cartography
416-353 Air Photo Interpretation
416-451 Computer Cartography
416-453 Advanced Air Photo Interpretation
834-356 Environmental Impact Analysis
862-284 Husbandry of the Land
862-320 Soil Environment
862-321 Soil Environment Laboratory
862-421 Soils of Wisconsin Field Trip
862-454 Remote Sensing by Satellite
862-460 Resource Management Strategy
009-741 Land Use, Institutions and Policy

Water resources:
862-330 Descriptive Hydrology
862-331 Oceanography
862-335 Water and Waste Water Treatment
862-382 River Basins in Transition
862-383 River Basins in Other Regions
862-403 Limnology
862-430 Quantitative Hydrology
862-434 Water Chemistry
008-759 Coastal Zone Management

Atmospheric science:
296-222 The Ocean of Air: An Introduction to Weather and Climate
462-325 Regional Climatology
862-350 Meteorology
862-351 Synoptic Meteorology Laboratory
862-450 Air Pollution Chemistry and Meteorology
008-776 Bioclimatology

Human Biology

Programs in Human Adaptability and Nutritional Sciences

Professors: Harry G. Guilford, vertebrate anatomy, parasitology; **William C. Kaufman,** human physiology, general physiology, temperature and circulatory physiology; **Elaine N. McIntosh,** community nutrition, dietetics, nutrition education.

Associate Professors: Dawson C. Deese, food science, physiological aspects of nutrition, biochemistry; **Charles A. Ihrke** (chairperson), genetics; **Dorothea B. Sager,** reproductive physiology, developmental biology; **Richard J. Stevens,** neurophysiology, human physiology.

Assistant Professors: Joseph A. Mannino, physical anthropology, ethology; **Donna Z. Randall,** general chemistry.

The human biology interdisciplinary program provides a curriculum emphasizing the study of the human as a biological organism in a cultural/social/physical environment. The curriculum focuses on genetics, evolution, and variability of the human species, on structure and function, reproduction and development of the human organism, on nutrition and health, and on the ability of humans to adapt physiologically and behaviorally to environmental stresses.

The curriculum provides students with a knowledge of human biology and a preparation for decision making that applies biological knowledge to biosocial issues. It offers professional preparation for careers such as dietetics, food sciences, secondary school teaching, and preprofessional preparation for careers in medicine, dentistry, public health, genetic counseling, and health service administration; and it offers a foundation for advanced study in the biological sciences.

Programs of Study

Human Biology offers two interdisciplinary majors, Human Adaptability and Nutritional Sciences.

1. A student may select an interdisciplinary major of 30 upper-level credits in Human Adaptability or Nutritional Science.
OR
2. A student may select a minor combining a core of no less than 12 upper-level credits in either Human Adaptability or Nutritional Sciences with a disciplinary major in such areas as biology, chemistry, psychology, anthropology, or others.

Each student in Human Biology prepares for the interdisciplinary or disciplinary major by completing introductory courses in basic biology as well as supporting courses in other areas such as chemistry. Each student must take a core consisting of Principles of Biology I and Principles of Biology II or Principles of Biology I and Anatomy and Physiology I and II, and one upper-level course in three of the following four areas: evolution, genetics, nutrition, human structure/function. Minimum supporting courses required of each student are Statistics, Expository Writing, and a course in either oral communication, literature, or a foreign language. The remainder of the program is defined by the major selected by the student and by the area of emphasis selected within that major.

For students who decide to major in Human Adaptability, there are two emphases, *health science and general human adaptation*. If students choose to major in Nutritional Sciences, the areas of emphasis are community nutrition and food science.

Students may elect to combine either Human Adaptability or Nutritional Sciences with a disciplinary major or minor or with another interdisciplinary program. Human Biology may also be combined with a professional program in Public and Environmental Administration, Business Administration, or Education.

The Human Adaptability Major

Majors in Human Adaptability study the biological, physiological, anthropological, and behavioral bases of the human organism's ability to adapt and survive. The Human Adaptability major, therefore, gives special emphasis to an understanding of normal growth and development, structure and function, and behavior of the human as it exists today and in relation to humans' biological ancestry. It also focuses on an understanding of the adaptive responses exhibited by humans to stresses such as disease, climate, exertion, toxic substances, and to psychological pressures. Study of the structure, development, physiology and behavior in various animals is included to aid in the understanding of the human organism.

Human Adaptability is an appropriate major for students interested in the health sciences, medicine, dentistry, public health, pharmacology, physiology, and graduate education in biology. It is also a sound major for students interested in health services administration, anthropology, psychology or chemistry.

With the help of an adviser, students majoring in Human Adaptability may develop a course of study to meet their individual needs.

Health Science Emphasis

Health science emphasizes the fundamental physiological, structural, and genetic bases for the functioning of the human organism and related psychological factors. This emphasis is appropriate for students interested in preparing for specific health professions such as medicine, dentistry, environmental health, or for graduate study in such fields as physiology and public health.

Sample Program

Supporting courses:
204-202 Principles of Biology I
204-203 Principles of Biology II
225-211 Principles of Chemistry I
225-212 Principles of Chemistry II
225-302 Organic Chemistry I
225-303 Organic Chemistry II
225-311 Analytical Chemistry*
552-105 Expository Writing
600-104 Elementary Functions: Algebra and Trigonometry
600-202 Calculus and Analytic Geometry
600-260 Introductory Statistics
754-103 Principles of Physics I
754-104 Principles of Physics II
One course in speech or literature or foreign language.
*Recommended

Core:
Genetics
204-303 Genetics
Evolution
478-342 Human Evolution
OR
478-312 Evolutionary Processes
Structure/Function
478-402 Human Physiology
Nutrition
Optional

Focus:
156-303 Cultural Ecology
204-302 Principles of Microbiology
204-340 Comparative Anatomy of Vertebrates
204-347 Developmental Biology
478-318 Mammalian Reproduction
478-364 Human Variability
478-413 Neurophysiology
481-331 Human Development I: Infancy and Early Childhood
481-332 Human Development II: Middle Childhood and Adolescence
481-433 Human Development III: Adulthood and Aging

General Human Biology Emphasis

The general human biology program emphasizes a breadth of understanding of the human organism. Courses in human genetics, reproduction and development, nutrition and evolution explore the biological heritage of humans while courses in human physiology, behavior and human variability explore the interrelationship of humans with their physical and cultural environments. The track is appropriate for application in secondary education, and in health-related fields such as administration of health services, public health, and fitness. It also is appropriate for students with general interests in human biology. Three sample programs from this track follow; the first focuses on evolution, the second on genetics and reproduction, and the third on fitness.

Supporting courses:
204-202 Principles of Biology I
204-203 Principles of Biology II
225-211 Principles of Chemistry I*
225-212 Principles of Chemistry II*
552-105 Expository Writing
600-101 Intermediate Algebra
600-260 Statistics
754-103 Fundamentals of Physics I*
754-104 Fundamentals of Physics II*
A course in speech or literature or foreign language.
*Recommended

Sample Program
Evolution Focus

Core:
Genetics
204-303 Genetics
OR
478-310 Human Genetics
Evolution
478-342 Human Evolution
Structure/Function
478-320 Biology of Human Development and Senescence
Nutrition
479-302 Nutrition and Culture

Focus:
156-303 Cultural Ecology
204-340 Comparative Anatomy
204-345 Animal Behavior
478-312 Evolutionary Processes
478-364 Human Variability
478-402 Human Physiology
481-331 Human Development I: Infancy and Early Childhood
481-332 Human Development II: Middle Childhood and Adolescence

Sample Program
Genetics and Reproduction Focus

Core:
Genetics
204-303 Genetics
204-304 Genetics Laboratory
Evolution
478-312 Evolutionary Processes
Structure/Function
478-318 Mammalian Reproduction
Nutrition
Optional

Focus:
204-302 Principles of Microbiology
204-347 Developmental Biology
478-310 Human Genetics
478-331 Human Development I: Infancy and Early Childhood
478-364 Human Variability
478-402 Human Physiology
478-412 Principles of Parasitology

Sample Program
Adult Fitness Focus

Supporting courses:
204-202 Principles of Biology
225-108 General Chemistry
478-203,204 Anatomy and Physiology
478-250 Introduction to Adult Fitness

Core:
Genetics
478-310 Human Genetics
Evolution
478-342 Human Evolution
Structure/Function
478-320 Biology of Human Development and Senescence
Nutrition
479-300 Nutritional Significance of Food

Focus:
478-350 Introduction to Exercise Physiology
478-351 Kinesiology
478-333 Introduction to Sports Physiology
481-331 Human Development I: Infancy and Early Childhood
481-332 Human Development II: Middle Childhood and Adolescence

Nutritional Science Major

Nutritional Science majors study human nutritional needs, nutrient functions, food quality, food supply, food preservation and food preparation. Nutritional science is an interdisciplinary problem-centered study of the facts which affect the nutritional quality of life as related to the quality, quantity, availability and utilization of food.

Students in Nutritional Science may select an area of emphasis in either community nutrition or food science. Community nutrition (which may include dietetics) provides appropriate training in nutrition and related natural and social sciences and in communication skills preparing students for employment as nutritionists or dietitians in hospitals or other health agencies at local, state, federal, or international levels. Food science emphasizes the fundamentals of food composition and analysis, food resources, utilization, distribution, and food safety. It prepares students to work as technicians or scientists in areas of food processing or research. When combined with professional courses in education, nutritional science is an appropriate major for students who are preparing to teach in primary or secondary schools.

A Nutritional Science major may also prepare students for industrial careers in consumer relations, food evaluation, and in product promotion when the nutrition major is combined with appropriate courses in communications and social sciences. This emphasis can fulfill requirements for entrance to graduate programs and also provide a valuable background for professional schools of medicine, dentistry, and pharmacy.

Nutritional Sciences can be combined with other academic programs to meet students' individual career goals. Appropriate combinations include chemistry, biology, business management, or communications, including art.

The Nutritional Science major must take appropriate courses to develop skills in gathering and interpreting data and in effective communication. The requirement includes a course in statistics, and one or more courses in communication processes. Students who wish to attend graduate school are advised to take calculus and a foreign language.

Sample programs for community nutrition and food science are given below as guidelines. These programs are only examples; each student should develop an individualized program with the help of faculty advisers. All-University requirements, electives, and special emphases such as education or communication are not shown in these examples.

Community Nutrition Emphasis

Sample Program

Supporting courses:
204-202 Principles of Biology I
204-203 Principles of Biology II
225-108 General Chemistry
225-300 Bio-Organic Chemistry
225-301 Bio-Organic Chemistry Laboratory

246-133 Principles of Public Address
OR
892-255 Interviewing Skills

552-105 Expository Writing
600-101 Intermediate Algebra
600-260 Introductory Statistics
820-102 Introduction to Psychology
900-202 Introduction to Sociology

Core:
Genetics
204-203 Genetics
Evolution
478-342 Human Evolution
Nutrition
479-300 Nutritional Significance of Food
Structure/Function
Optional

Focus:
204-302 Microbiology
225-330 Biochemistry
225-331 Biochemistry Laboratory
479-302 Nutrition and Culture
479-321 Physiological Chemistry
479-421 Community Nutrition I
479-422 Community Nutrition II
479-485 Advanced Human Nutrition
479-488 Nutrition in Disease*
575-382 Principles of Management*
820-338 Psychology of Learning*
900-302 Social Stratification
*Recommended

Sample Program
Community Nutrition (Dietetics)

Supporting courses:
204-202 Principles of Biology I

225-108 General Chemistry
OR
225-211 Principles of Chemistry I

225-212 Principles of Chemistry II
225-300 Bio-Organic Chemistry

225-301 Bio-Organic Chemistry Laboratory
OR
225-302 Organic Chemistry I

225-304 Organic Chemistry Laboratory I
225-303 Organic Chemistry II
225-305 Organic Chemistry Laboratory II

246-133 Principles of Public Address
OR
892-255 Interviewing Skills

298-202 Macroeconomic Analysis
478-203 Anatomy and Physiology I
478-204 Anatomy and Physiology II
479-212 Food Preparation
552-105 Expository Writing
600-101 Intermediate Algebra
600-260 Statistics
820-102 Introduction to Psychology
900-202 Introduction to Sociology

Core:
Genetics
204-303 Genetics
Evolution
478-342 Human Evolution
Nutrition
479-300 Nutritional Significance of Food
Structure/Function
Optional

Focus:
204-302 Microbiology
225-330 Biochemistry
225-331 Biochemistry Laboratory
479-312 Quantity Food Production and Service
479-485 Advanced Human Nutrition
479-488 Nutrition in Disease
479-421 Community Nutrition I
479-422 Community Nutrition II
820-338 Psychology of Learning
875-383 Principles of Management

Food Science Emphasis

Sample Program

Supporting courses:
204-202 Principles of Biology I
204-203 Principles of Biology II
225-211 Principles of Chemistry I
225-212 Principles of Chemistry II
225-302 Organic Chemistry I
225-304 Organic Chemistry Laboratory I
225-303 Organic Chemistry II
225-305 Organic Chemistry Laboratory II
246-133 Principles of Public Address
552-105 Expository Writing
600-104 Elementary Functions: Algebra and Trigonometry
754-103 Fundamentals of Physics I
754-104 Fundamentals of Physics II

Core:
Genetics
204-303 Genetics
Structure/Function
478-402 Human Physiology
Nutrition
479-300 Nutritional Significance of Food
Evolution
Optional

Focus:
204-302 Principles of Microbiology
225-311 Analytical Chemistry
225-330 Biochemistry
225-331 Biochemistry Laboratory
225-413 Instrumental Analysis*
479-302 Nutrition and Culture
479-321 Physiological Chemistry
479-404 Food Science
479-409 Analysis of Food and Food Products
479-485 Advanced Human Nutrition
*Recommended

The Minor in Human Adaptability

The interdisciplinary minor in Human Adaptability provides an understanding of the basic anatomical, biological, physiological and cultural factors of human adaptations. Both the minor and the required courses contain aspects of human ecological implications of genetics, evolution, physiology and the biology of development and reproduction or nutrition: 1) genetics courses have biotechnical implications; 2) anthropology courses present physical and cultural aspects of human beings; 3) physiology courses incorporate the appropriate chemistry, physics and mathematics and, finally, 4) a course in human biological development or in reproduction or in nutrition has cultural as well as scientific implications in today's world.

Students will have a balance between laboratory and lecture courses and interdisciplinary material to assure academic depth and breadth, especially when taken with an appropriate disciplinary major such as chemistry, physics, psychology or biology or an interdisciplinary major such as Human Development.

Supporting courses
(8-10 credits required):
204-202 Principles of Biology I
204-203 Principles of Biology II
OR
478-203 Anatomy and Physiology I
478-204 Anatomy and Physiology II

Junior-senior-level requirements
(One course from each of the following categories):

Category I:
204-303 Genetics
204-304 Genetics Laboratory
OR
478-310 Human Genetics

Category II:
478-310 Evolutionary Processes
OR
478-330 Human Evolution
OR
478-364 Human Variability

Category III:
478-350 Exercise Physiology
OR
478-402 Human Physiology

Category IV:
478-318 Mammalian Reproduction
OR
478-320 Biology of Human Development and Senescence
OR
479-300 Nutritional Significance of Food

Adult Fitness Emphasis

The adult fitness area of emphasis in the interdisciplinary minor in Human Adaptability stresses a basic knowledge of human biological principles, and is designed to provide a focus on adult fitness and fitness management. It is interdisciplinary because it encompasses physiology of the human along with administration and management of fitness programs. Students will learn the skills of measuring individual responses to exercises, and will develop understanding of the physical stresses on the circulatory, respiratory and musculo-skeletal system in order to assess benefits and liabilities of various types of exercise.

This minor is intended to be combined with a major in social science or science. It is compatible with the Human Development major, where a student would acquire a knowledge of developmental psychology and also have professional expertise in adult fitness and fitness management. This can be a demanding minor which will produce qualified personnel to work in quality fitness programs.

Supporting courses (required):
204-202 Principles of Biology I
225-108 General Chemistry
478-203 Anatomy and Physiology I
478-204 Anatomy and Physiology II

Freshman-sophomore-level requirements:
478-250 Introduction to Adult Fitness

Junior-senior-level requirements:
478-350 Introduction to Exercise Physiology
479-300 Nutritional Significance of Food

Two of the following courses:
478-333 Introduction to Sports Physiology
478-351 Kinesiology
820-311 Psychology of Sports and Exercise

The Minor in Nutritional Sciences

The interdisciplinary minor in Nutritional Sciences provides an understanding of the biochemical and physiological bases of human nutrition as well as an appreciation of many ecological factors such as the economic, cultural and educational forces which influence eating habits and consequently nutrition. The problems and methods of achieving and maintaining good nutritional status in health and disease are addressed. The factors leading to safe and adequate food are presented as a problem focused study. To achieve these goals, the diverse fields as biology, chemistry and microbiology, with the cultural implications of food use is incorporated in this minor. This training provides the student with an understanding of human nutritional needs, nutrient functions, food habits, food quality and food safety.

Supporting courses
(9-14 credits required):
204-202 Principles of Biology
225-108 General Chemistry
OR
225-111 Principles of Chemistry I
225-112 Principles of Chemistry II

Junior-senior-level requirements:
479-300 Nutritional Significance of Foods
204-302 Microbiology
225-300 Bio-Organic Chemistry
225-301 Bio-Organic Chemistry Laboratory
OR
479-404,604 Food Science

479-302 Nutrition and Culture
OR
479-485 Advanced Human Nutrition

Human Biology and Other Programs

Human Biology and a Disciplinary Major

Students may select a disciplinary major with a Human Biology minor. The major provides a depth of knowledge in a disciplinary field which complements the interdisciplinary focus of human biology. Human biology students often select biology, chemistry or psychology majors, but have the option of selecting mathematics, economics, anthropology, geography, sociology, earth science, or other appropriate disciplines that integrate with human biology. Faculty advisers help students select courses to meet their objectives.

Human Biology and a Minor in Business Administration

Students in Human Biology may pursue a minor in Business Administration in order to gain a basic understanding of administrative processes. Knowledge of Nutritional Science or Human Adaptability combined with the skills of Business Administration allows students to apply the specialized knowledge of their concentration in a business organization, for example, the food industry, food service industry, or an industrial laboratory. For detailed information concerning this minor, see the description of the Business Administration major.

Human Biology and Teacher Certification

The major in Human Biology combined with a comajor such as biology or chemistry fulfills requirements for teacher certification as approved by the Wisconsin Department of Public Instruction, through the professional program in Education. The programs in Education and teacher certification are explained elsewhere in this book and in an available brochure.

Human Biology and Public and Environmental Administration

Students may also combine Human Biology with the professional program in Public and Environmental Administration. Students with majors in Human Biology and Public and Environmental Administration are prepared for administrative positions in the health sciences and social services. Programs in Public and Environmental Administration are explained more fully in another chapter.

Mathematics, Computer Science, Statistics

Professors: David Jowett, statistical computing, experimental design, multivariate statistical analysis; **Robert B. Wenger** (chairperson), mathematical optimization, analysis, operations research.

Associate Professors: William C. Conley, computer science, algebra; **Dennis M. Girard,** biometrics, multivariate statistical analysis, statistical computing, analysis, discrete mathematics; **Bruce W. Mielke,** computer science, algebra; **Nikitas L. Petrakopoulos,** applied mathematics, analysis, mathematical physics; **William A. Shay,** computer science, numerical analysis, algebra, topology.

Assistant Professors: Forrest B. Baulieu, computer science, lattice theory, cluster analysis, geometry; **Debra A. Diny,** graph theory, discrete mathematics, **Mary K. Prisco,** algebra, linear algebra, discrete mathematics.

Lecturers: Linda Curl, computer science; **Bruce O'Neill,** complex analysis, functional analysis; **Gary G. Wardall,** numerical analysis, statistics.

Mathematics is a classical field of study which has formed an important part of our intellectual heritage for centuries. Two intertwining threads run throughout much of this time period: a curiosity about mathematics for its own sake—pure mathematics—and an interest in mathematics as a tool for analyzing and solving real world problems—applied mathematics. Mathematics is applied in fields as diverse as business, engineering, physical and life sciences, social sciences, computer science and statistics.

The mathematics disciplinary program at UWGB is designed to provide opportunities for study in both the pure and applied aspects of mathematics. Depending upon educational goals and career objectives, students majoring in mathematics can select a program of study in one of five areas of emphasis: pure mathematics, applied mathematics, computer science, statistics, and mathematics education. A minor in mathematics is also available to interested students.

In the **pure mathematics** emphasis area students select courses which develop a sense of the aesthetic qualities in mathematics, an appreciation of the logical clarity and structure of mathematics, and an understanding of the scope and development of mathematical ideas. Students also are encouraged to gain some experience with applications that inspire the development of the discipline.

The student who selects **applied mathematics** as an emphasis area studies mathematical methods and techniques for analyzing or solving problems which may exist in almost any field of endeavor. In earlier times applied mathematics referred almost exclusively to problems of physics or engineering but more recently, mathematical techniques have been employed in the social, industrial, and management realms.

as well. The common characteristic of applied mathematics is the construction of a mathematical model, a mathematical system which attempts to abstract a portion of the real world situation under study. Mathematical conclusions are then drawn from the system and interpreted in the real world context.

The field of **computer science** has undergone great change in the past few years and will continue to experience significant growth as technology advances and educational philosophies evolve. The objective of the computer science program is to provide students with a basic knowledge of this dynamic field and a foundation upon which they may continue to grow within the profession. To achieve this objective, the computer science program is designed not only to provide background in areas such as software and language design, database management, artificial intelligence, mathematical applications, but also to create problem solving environments in which the student can be independently creative without losing sight of both the need to communicate effectively and to adhere to the rigid requirements of a problem.

The study of **statistics** includes three main parts: designing the appropriate protocols for the collection of data; organizing, summarizing, and presenting data; and drawing conclusions or interpreting numerical information. Courses in the statistics emphasis area include mathematical statistics, probability, experimental design, continuous and discrete multivariate statistical analysis, and business and industrial statistics. Persons trained as statisticians find employment in business, industry, and government.

The emphasis area in **mathematics education** provides a program of study which, when combined with appropriate course work in professional education, is designed to meet certification requirements for teaching mathematics at the secondary level. Courses in pure mathematics are emphasized.

Mathematics and Other Programs

Depending upon their individual interests and goals, students majoring in mathematics might find one of several programs appropriate for completing the interdisciplinary minor. For example, those interested in science and environmental problems would select Science and Environmental Change as a minor and those interested in business would select Business Administration. A student interested in the humanities could minor in Humanistic Studies.

Facilities

The mathematics program is supported by excellent computing facilities on the UWGB campus. Most of the computing power is supplied by two Telefile T-85 central processor units connected in an anonymous multiprocessing mode. This system is capable of supporting 100 on-line terminals and has access to four million bytes of MOS memory. Other hardware features include a disk storage capacity of 1.5 billion bytes, two tri-density tape drives, two line printers, graphics terminals, and a Telebeam projector available as an instructional tool.

In addition, the computer center has a microcomputer laboratory consisting of 44 microcomputers. These microcomputers support either Apple, IBM or CPM software. Several of the microcomputers are networked with a Corvus Omninet system. There is also a DEC PDP 11/03 MINC laboratory computer used in the science laboratories and in processing data from the campus weather station. Software capabilities include the following languages: PASCAL, FORTRAN, COBOL, LISP, SNOBOL, APL, assembly language, LOGO, and BASIC. Statistical packages for the social, biological and mathematical sciences include SSPS, BMDP and MINITAB.

The University has also made a major commitment to computer graphics by establishing a computer cartography laboratory, which is equipped with a Magnavox ORION plasma terminal, TALOS digitizer, CALCOMP incremental plotter, Tektronix graphic terminal and a Printonix electrostatic printer. Much of this development was supported by a National Science Foundation CAUSE grant (Comprehensive Assistance to Undergraduate Science Education).

Special Opportunities

Students who demonstrate superior aptitude for mathematics, statistics, or computer science may find employment opportunities on- or off-campus in capacities such as: classroom assistant, paper checker, tutor, laboratory supervisor, computer programmer/consultant, research assistant, statistics assistant, or internships. Such part-time work reinforces ideas and techniques learned in courses, provides opportunity to discover new applications, and gives experience which will be helpful in obtaining full-time employment upon graduation.

Careers and Advanced Study

Numerous career opportunities are available for persons with academic degrees in mathematics. In recent years the world has rediscovered the value of mathematical training. Those interested in using mathematics to solve on-going problems find employment in industry, government and business. In addition to mathematician, specific job titles which are frequently used in this setting are systems analyst, programmer/analyst, statistician, operations researcher, applied mathematician, information scientist, and actuary. The mathematics major may also pursue graduate study in areas such as mathematics, computer science, information systems, or statistics.

Many who call themselves mathematicians are teachers by profession. There are essentially three different types of mathematics teaching: elementary and secondary school teaching, junior or community college teaching, and college or university teaching. Those who are interested in elementary or secondary teaching combine undergraduate study in mathematics with education courses which are designed to meet accreditation requirements. Students seeking teacher certification should consult with the mathematics adviser and an adviser in the Education professional program early in their studies to insure that their programs meet all of the specific requirements for certification of the Wisconsin Department of Public Instruction. Teaching at the junior or community college level usually requires a master's degree and at the college or university level a Ph.D. degree.

Program Admission

Mathematics placement examinations are used to advise entering freshmen about the level at which they should enter university courses. There are four levels:

Level 1. Assumes mastery of first year high school algebra; student may enter 600-101; performance below this level results in recommendation to enter 601-094.

Level 2. Assumes mastery of first two years of high school algebra; student may enter 600-104, 151, 155, 281, 256, 260, 281; performance below this level results in recommendation to enter 600-101.

Level 3. Assumes mastery of first two years of high school algebra and grade 12 course on functions, or mathematical analysis, including trigonometry, student may enter 600-202 or any course cited under level two except 600-104; performance below this level results in recommendation to enter 600-104.

Level 4. Assumes student has been accelerated and has mastery of high school calculus; placement exam not required; with this level and advice of faculty, student may enter 600-203 or any course cited under level three; upon earning a "C" or better in 600-203, an additional four credits for 600-202 are granted.

Requirements for the Major

General Requirements

All students majoring in mathematics, regardless of emphasis area, must take:
600-202, 203 Calculus and Analytic Geometry I, II
600-320 Linear Algebra I

Emphasis Requirements

Remaining requirements, depending upon the emphasis area selected and subject to approval of an adviser, are:

Pure Mathematics Emphasis
600-209 Multivariate Calculus
600-305 Ordinary Differential Equations
600-321 Linear Algebra II
600-328 Introduction to Algebraic Structures
600-385 Foundations of Geometry

At least six credits from the following:
600-311 Advanced Calculus
600-312 Real Analysis
600-410 Complex Analysis

At least three credits to be chosen from mathematics courses at the 300 level or above.

Applied Mathematics Emphasis
600-209 Multivariate Calculus
600-305 Ordinary Differential Equations
600-321 Linear Algebra I

An additional 15 credits at the 300 level or above will be chosen in consultation with an adviser. For example, if a student is interested in mathematical optimization the following would be an appropriate selection of courses:
600-311 Advanced Calculus
600-312 Real Analysis
600-350 Numerical Analysis
600-355 Applied Mathematical Optimization
600-450 Theory of Algorithms
008-764 Mathematics of Operations Research and Management Science

Statistics Emphasis
600-209 Multivariate Calculus
600-321 Linear Algebra II
600-360 Theory of Probability
600-361 Mathematical Statistics

At least one course from the following:
600-364 Biometrics
600-465 Business and Industrial Statistics

At least one course from the following:
008-704 Discrete Multivariate Statistical Analysis
008-767 Statistical Design and Analysis of Experiments
008-768 Multivariate Statistical Analysis

Additional courses must be selected from the above two lists so that the total number of credits at the 300 level or above is at least 24.

Computer Science Emphasis
600-242 Discrete Mathematics
600-256 Introduction to Computer Science I
600-257 Introduction to Computer Science II
600-351 Data Structures, Storage and Retrieval
600-353 Computer Organization and Programming
600-357 Theory of Programming Languages

An additional 15 credits to be chosen from one or two of the following areas of interest:

Mathematical applications:
600-350 Numerical Analysis
600-355 Applied Mathematical Optimization
600-450 Theory of Algorithms

Interfacing and hardware applications:
600-352 Computer Graphics
600-455 Microprocessors and Microcomputer Systems
600-456 Advanced Topics in Microcomputing

Language design:
600-352 Computer Graphics
600-454 Artificial Intelligence
600-457 Compiler Theory

Business applications:
600-352 Computer Graphics
600-355 Applied Mathematical Optimization
600-450 Theory of Algorithms
600-451 Data Base Management
600-452 Operating Systems

Software design:
600-451 Data Base Management Systems
600-452 Operating Systems
600-457 Compiler Theory

Artificial intelligence:
600-352 Computer Graphics
600-451 Data Base Management Systems
600-454 Artifical Intelligence

Mathematics Education Emphasis
600-209 Multivariate Calculus
600-256 Introduction to Computer Science I
600-260 Introductory Statistics
600-328 Introduction to Algebraic Structures
600-385 Foundations of Geometry

A minimum of 15 additional credits selected from 600-305, 309, 311, 312, 321, 328, 350, 355, 360, 361, 364, 395, 410, 416, 450, 465, 492.

Requirements for the Minor

A student choosing a minor in mathematics may select a particular area of emphasis: pure or applied mathematics, statistics, computer science or computer science education, or mathematics education. The requirements for each emphasis area are listed below:

Pure or Applied Mathematics Emphasis
600-202 Calculus and Analytic Geometry I
600-203 Calculus and Analytic Geometry II
600-320 Linear Algebra I

Nine additional credits selected from the following:
600-305, 309, 311, 312, 321, 328, 350, 355, 360, 361, 385, 410, 416, 492.

Statistics Emphasis
600-202 Calculus and Analytic Geometry I
600-203 Calculus and Analytic Geometry II
600-260 Introductory Statistics

Twelve additional credits selected from the following:
600-360, 361, 364, 365; 008-704, 767, 768.

Computer Science or Computer Science Education Emphasis
600-242 Discrete Mathematics
600-256 Introduction to Computer Science I
600-257 Introduction to Computer Science II

Two courses from the following:
600-351 Data Structures, Storage and Retrieval
600-353 Computer Organization and Programming
600-357 Theory of Programming Languages

Six additional credits from the following:
600-350, 352, 355, 450, 451, 452, 454, 455, 456, 457, or remaining course from above list.

Mathematics Education Emphasis
600-202 Calculus and Analytic Geometry I
600-203 Calculus and Analytic Geometry II
600-256 Introduction to Computer Science I

600-260 Introductory Statistics
600-320 Linear Algebra I
600-385 Foundations of Geometry

Six additional credits from the following: 600-305, 309, 311, 312, 321, 328, 350, 355, 360, 361, 364, 395, 410, 416, 450, 465, 492.

Physics

Professors: Anjani K. Mehra, solid state physics, solar energy; **George T. O'Hearn**, science education; **Charles R. Rhyner** (chairperson), radiological physics, electronics; **Nancy J. Sell**, solid state physics, pulp and paper engineering.

Associate Professors: James W. Busch, science education; **Fritz A. Fischbach**, biophysics, environmental health; **Robert W. Lanz**, engineering physics, energy technologies.

Physics is concerned with the properties of matter and energy and the laws which describe their behavior. It is a science of measurement, experimentation, and systemization of the results of experiments. Physicists contribute to an understanding of the basic properties of nature.

Careers and Advanced Study

The physics disciplinary program provides a scientific base for many possible career opportunities. With a bachelor's degree, graduates are equipped for technical work in industrial or government laboratories, or teaching in a secondary school. A degree in physics also provides preparation for graduate study in physics and other fields such as meteorology, mathematics, computer science, and most fields in engineering.

Facilities

In addition to well-equipped classrooms and laboratories, facilities at UWGB include laboratories designed for faculty-student research projects. Those laboratories are served by a computer terminal linked to a Telefile 85 mainframe. Major equipment available for classes and independent study include: EAI Miniac analog computer, X-ray and laser diffraction units, multichannel analyzer, liquid scintillation counter, neutron source, oscilloscopes, noise and vibration meters, infrared, ultraviolet and visible spectrophotometers.

Physics and Other Programs

A physics major combines disciplinary work with an interdisciplinary minor. Minors in Science and Environmental Change (Environmental Sciences) and Human Adaptability are particularly useful to the physics major. Physics students can gain additional career preparation through professional programs. Students who wish to work in administrative positions can combine a physics major with a professional program in either Public and Environmental Administration or Managerial Systems. The professional program in Education prepares students for teaching certification in physics.

Students combining the study of physics with other programs should plan their studies with the help of advisers from the appropriate programs. Those seeking teacher certification should consult with the physics adviser and an adviser in the Education professional program early in their studies to insure that their programs meet all of the specific requirements for certification of the Wisconsin Department of Public Instruction.

Requirements for the Major

Physics majors take a minimum of 34 credits. Entrance to the program begins with two introductory courses (10 credits):
754-201 Principles of Physics I
754-202 Principles of Physics II

Beyond the introductory level, a minimum of 24 credits is required at the 300-400 level including at least three laboratory credits.

Core courses (required for all physics majors):
754-315 Classical Mechanics
754-317 Electromagnetic Radiation
754-321 Structure of Matter
754-404 Electricity and Magnetism
754-417 Nuclear Physics and Radiochemistry

A minimum of 9 credits are selected from the following list and must include at least 3 junior-senior-level laboratory credits:
754-306 Biophysics
754-320 Thermodynamics and Kinetics
754-322 Thermodynamics and Kinetics Laboratory
754-323 Structure of Matter Laboratory
754-341 Intermediate Astronomy
754-350 Meteorology
754-414 Conventional Energy Technology
754-415 Solar and Alternate Energy Systems
754-418 Nuclear Physics and Radiochemistry Laboratory
754-455 Microprocessors and Microcomputer Systems

Physics majors are also required to take supporting coursework in chemistry and mathematics. The course requirements are:
225-211 Principles of Chemistry I
225-212 Principles of Chemistry II
600-202 Calculus and Analytic Geometry I
600-203 Calculus and Analytic Geometry II
600-305 Ordinary Differential Equations

Plus, at least 4 additional credits in mathematics at the 200 level or above.

Each student is strongly encouraged to take additional courses in mathematics, computer science, and statistics.

Sample Program

A sample program which a physics major might follow is given below. All-University requirements, the interdisciplinary minor, and electives are not included.

Freshman Year
225-211 Principles of Chemistry I
225-212 Principles of Chemistry II
600-202 Calculus and Analytic Geometry I
600-203 Calculus and Analytic Geometry II

Sophomore Year
600-209 Multivariate Calculus
600-255 FORTRAN: A Scientific Programming Language
600-320 Linear Algebra I
754-201 Principles of Physics I
754-202 Principles of Physics II

Junior Year
600-305 Ordinary Differential Equations
600-309 Systems of Ordinary Differential Equations
754-320 Thermodynamics and Kinetics
754-321, 323 Structure of Matter and Laboratory
754-322 Thermodynamics and Kinetics Laboratory
754-417, 418 Nuclear Physics and Radiochemistry and laboratory
754-315 Classical Mechanics
754-317 Electromagnetic Radiation

Senior Year
754-306 Biophysics
754-350 Meteorology
754-404 Electricity and Magnetism
754-405 Electronics for Scientists
754-414 Conventional Energy Technology

Requirements for the Minor

Freshman-Sophomore-Level Requirements
600-202 Calculus and Analytical Geometry I
600-203 Calculus and Analytical Geometry II
754-201 Principles of Physics I
754-202 Principles of Physics II

Junior-Senior-Level Core Requirements
754-315 Classical Mechanics
754-321 Structure of Matter
754-323 Structure of Matter Laboratory

A minimum of 5 additional credits from the following courses:
(For teacher certification in physics, 754-404 or 754-405 is required.)
754-306 Biophysics
754-317 Electromagnetic Radiation
754-320 Thermodynamics and Kinetics
754-322 Thermodynamics and Kinetics Laboratory
754-341 Intermediate Astronomy
754-404 Electricity and Magnetism
754-405 Electronics for Scientists
754-417 Nuclear Physics and Radiochemistry
754-418 Nuclear Physics and Radiochemistry Laboratory

Science and Environmental Change

Professors: H.J. Day, hydrology, water resource management; **Hallett J. Harris**, animal and wetland ecology; **David Jowett**, biometrics, biomathematics, ecosystems modeling; **Thomas H. McIntosh**, soils, agriculture, remote sensing, biogeochemistry; **Anjani K. Mehra**, solar and alternate energy technologies; **Joseph M. Moran** (chairperson), meteorology, climatology, air pollution; **V.M.G. Nair**, plant and forest pathology, mycology; **Charles R. Rhyner**, solid waste management, microcomputer based instrumentation; **Paul E. Sager**, limnology, aquatic biology; **Leander J. Schwartz**, microbiology, resource recovery; **Nancy J. Sell**, industrial resource recovery; **Robert B. Wenger**, solid waste management and mathematical optimization; **Keith L. White**, ecology and resource management.

Associate Professors: Steven I. Dutch, structural geology, mineral resources; **Fritz A. Fischbach**, biophysics, environmental health, aeroallergens; **Dennis M. Girard**, statistics, mathematics; **Alice I. Goldsby**, microbiology; **Robert W. Lanz**, mechanical engineering, waste heat recovery methods, conventional and alternate energy technologies; **Bruce Mielke**, mathematics and computer science; **Michael D. Morgan**, botany, ecology; **Jack C. Norman**, radiochemistry, alternate energy sources; **Nikitas L. Petrakopoulos**, applied mathematics, theoretical physics; **William A. Shay**, mathematics and computer science; **Ronald H. Starkey**, organic chemistry and air chemistry; **Ronald D. Stieglitz**, sedimentary geology, land use and ground water resources; **Thomas E. Van Koevering**, secondary school education, chemistry; **James H. Wiersma**, water chemistry, analytical chemistry and ground water resources.

Adjunct Associate Professor: Lynn L. Frederick, water resources.

Assistant Professors: Forrest B. Baulieu, mathematics, lattice theory, and cluster analysis; **Debra A. Diny**, mathematics, graph theory; **Robert W. Howe**, vertebrate zoology, ornithology, and mammalogy; **Mary K. Prisco**, mathematics, abstract and linear algebra.

Lecturers: Linda A. Curl, mathematics; **Lee C. Hansen**, horticulture; **Bruce E. O'Neill**, mathematics; **Gary G. Wardall**, mathematics.

Science and Environmental Change (SEC) is an interdisciplinary program of study in the natural sciences which offers students the opportunity to acquire a sound understanding of the scientific principles that govern natural processes. Through coursework, independent study, and research activities, the SEC student develops a realistic awareness of the interdependency of the various components of the environment and the nature of environmental change. SEC is structured so that students develop their analytical skills and acquire a broad base of knowledge in the biological, physical, and mathematical sciences. SEC students build on this scientific base by completing upper-level courses in ecology and resource management.

Students who major in SEC select a particular interdisciplinary problem area as a focus for their studies. These areas include:
Aquatic studies
Biological resources management
Energy science and technology
Science communications
Waste management and resource recovery

Students who have interests in other areas of the environmental sciences can design, in consultation with an SEC adviser, programs of study based upon those interests. All study programs have in common a fundamental grounding in the natural sciences and yet, each is designed to fulfill specific concerns that cross traditional disciplinary boundaries.

SEC has a formal advising program to guide students in designing all aspects of their academic programs and in making career choices. Faculty advisers represent the wide range of scientific and mathematical specialties housed within SEC and they are present in the concentration advising office on a regularly scheduled basis.

Careers and Advanced Study

SEC provides preprofessional training in agriculture, dentistry, engineering, medicine, pharmacy, and veterinary studies. Further, SEC majors may fulfill requirements for teacher certification in several areas including biology, chemistry, computer science, earth science, mathematics, physics, and broad-field science. SEC majors may also take course work in other professional areas such as Business Administration and Public and Environmental Administration.

Students planning to enter graduate or professional programs in engineering, medicine or the natural sciences are strongly advised to take calculus and calculus-based physics. Entrance into and success in these postgraduate programs will depend in part on a solid preparation in mathematics and physics.

SEC and Other Programs

Students who major in biology, chemistry, earth science, mathematics, or physics typically minor in SEC. The SEC minor, described later in this section, provides students who major in those disciplines with an interdisciplinary perspective on the physical and biological sciences and their application to environmental problem solving.

Requirements for the Major

Basic Science and Mathematics Courses
(41-43 credits)

Biology (8 credits)
204-202 Principles of Biology I
204-203 Principles of Biology II

Chemistry (10 credits)
225-211 Principles of Chemistry I
225-212 Principles of Chemistry II

Earth Science (4 credits)
296-202 Earth's Physical Environment

Mathematics (9-11 credits at 200 level or above selected with the assistance of an adviser)
It is strongly suggested that students select at least two courses in one area to gain sufficient skills and confidence. Three areas in which the student can develop depth are:

Calculus and Linear Algebra:
- 600-202 Calculus and Analytic Geometry I
- 600-203 Calculus and Analytic Geometry II
- 600-320 Linear Algebra I

Computer Science:
- 600-255 FORTRAN, A Scientific Programming Language
- 600-256 Introduction to Computer Science I
- 600-257 Introduction to Computer Science II

Statistics:
- 600-260 Elementary Statistics
- 600-364 Biometrics

Additional courses are:
- 600-209 Multivariate Calculus
- 600-242 Discrete Mathematics
- 600-305 Ordinary Differential Equations

Physics (10 credits)
754-103 Fundamentals of Physics I
754-104 Fundamentals of Physics II
OR
754-201 Principles of Physics I (calculus-based)
754-202 Principles of Physics II (calculus-based)

Note that some interdisciplinary problem areas specify certain requirements in the basic science and mathematics course list.

Upper-Level Courses in Ecology and Resource Management (12 credits)

Ecology (3 or 8 credits)
862-302 Principles of Ecology
OR
862-472,473 Ecosystems Analysis I, II

Choose the remaining credits from the courses listed under biological resources, physical resources, or some combination of the two.

Biological Resources (8 credit maximum)
862-303 Conservation of Natural Resources
862-307 Ecology of Fire
862-309 Ecology and Management of Endangered Species
862-366 Integrated Pest Management
862-384 Environment's Response to Human Settlement
862-466 Vegetation Management

Physical Resources
600-355 Applied Mathematical Optimization
862-318 Industrial Pollution Control Techniques
862-319 Industrial Pollution Control Field Trips
862-327 Urban Technological Design
862-334 Solid Waste Management
862-342 Environmental Geology
862-382 River Basins in Transition
862-383 River Basins in Other Regions
862-414 Conventional Energy Technology
862-415 Solar and Alternative Energy Systems
862-460 Resource Management Strategy

Note that some interdisciplinary problem areas specify certain requirements in the ecology and resource management course lists.

Junior-Senior Level Courses for the Problem Area Focus (18 credits)

See descriptions of interdisciplinary problem areas following.

All-University Requirements (21 credits)

Note that courses for the SEC major will satisfy the 9-credit all-University requirements in the natural sciences.

Electives (30-32 credits)

Interdisciplinary Problem Areas

(Basic science and mathematics courses [41-43 credits] are required for all problem areas.)

Aquatic Studies

Aquatic studies is concerned with problems related to the supply and quality of surface waters and ground water. Programs of study may be designed to emphasize the biological, chemical, geological or resource management aspects of aquatic problems. Students completing the aquatic studies program may find job opportunities with consulting engineering firms, state departments of natural resources, the federal Environmental Protection Agency, firms conducting environmental impact assessments, water dependent industries, or water pollution abatement equipment manufacturers. The program provides excellent background for graduate study in several areas of aquatic and marine ecology.

Ecology and Resource Management Requirements
862-302 Principles of Ecology, 3 cr.
OR
862-472,473 Ecosystems Analysis I,II, 8 cr.

Choose a minimum of 12 credits from the following course list:
600-355 Applied Mathematical Optimization
862-303 Conservation of Natural Resources
862-318 Industrial Pollution Control Techniques
862-319 Industrial Pollution Control Field Trips
862-334 Solid Waste Management
862-342 Environmental Geology
862-382 River Basins in Transition
862-383 River Basins in Other Regions
862-460 Resource Management Strategy

Required Courses
225-311 Analytical Chemistry
600-364 Biometrics
862-403 Limnology
862-434 Water Chemistry

862-330 Descriptive Hydrology
OR
862-430 Quantitative Hydrology

Other Courses
Also, select 9 credits from the courses listed below:

Biological Sciences:
204-302 Principles of Microbiology
204-315 Biology of Lower Green Plants
204-341 Ichthyology
862-401 Stream Ecology

Chemical and Physical Sciences:
225-300,301 Bio-Organic Chemistry with Laboratory
OR
225-302,303,304,305 Organic Chemistry I,II with laboratories

225-413 Instrumental Analysis
862-320 The Soil Environment
862-331 Oceanography
862-342 Environmental Geology
862-454 Remote Sensing of the Environment by Satellite

Management of Aquatic Resources:
350-301 Environmental Politics and Administration
350-305 Regulatory Policy and Administration
834-356 Environmental Impact Analysis
862-335 Water and Waste Water Treatment

Sample Program: Aquatic Studies
Freshman Year:
204-202 Principles of Biology I
204-203 Principles of Biology II
225-211 Principles of Chemistry I
225-212 Principles of Chemistry II
600-202 Calculus I
600-203 Calculus II

Sophomore Year:
296-202 Earth's Physical Environment
600-255 FORTRAN
600-260 Elementary Statistics
754-201 Principles of Physics I
754-202 Principles of Physics II

Junior Year:
204-341 Ichthyology
225-311 Analytical Chemistry
600-364 Biometrics
862-382 River Basins in Transition
862-403 Limnology
862-430 Quantitative Hydrology

Senior Year:
862-331 Oceanography
862-401 Stream Ecology
862-434 Water Chemistry
862-460 Resource Management Strategy
862-472,473 Ecosystems Analysis I,II

Biological Resources Management

This program provides career-oriented education in the ecological aspects of biological resources management and the interactions with economic and political institutions. Based on a broad background in the sciences and using an ecosystem approach, students become familiar with the problems and potential of biological resources protection, manipulation and use consistent with environmental quality needs. Graduates are prepared for employment with biological resource management agencies and land use planning agencies, as environmental impact analysts for government agencies and industry, and as biological resource specialists with private environmental groups. Graduates acquire an excellent background for advanced study of biological resources, regional planning, biological resources administration, or biological resources economic analysis.

Ecology and Resource Management Requirements
862-302 Principles of Ecology, 3 cr.
OR
862-462,473 Ecosystems Analysis I,II, 8 cr.

Select three of the following courses:
862-307 Ecology of Fire
862-309 Ecology and Management of Endangered Species
862-366 Integrated Pest Management
862-466 Vegetation Management
008-749 Wetlands Ecology and Management

Required Biology Courses
204-320 Field Botany

204-342 Ornithology
OR
204-343 Mammalogy
OR
204-355 Entomology

Other Courses
Select one of the following analytical skills courses:
416-351 Elements of Cartography
416-353 Air Photo Interpretation
416-451 Computer Cartography
862-454 Remote Sensing of the Environment by Satellite

Choose three of the following economics, political science, and social science courses:
298-402 Resource Economic Policy
350-301 Environmental Politics and Administration
350-305 Regulatory Policy and Administration
350-400 Environmental Law
778-312 Community Politics
778-368 Geopolitics of World Regions
778-410 Intergovernmental Relations
834-322 Regional Planning
834-340 Economics of Land Use
834-356 Environmental Impact Analysis

Sample Program: Biological Resources Management
Freshman Year:
204-202 Principles of Biology I
204-203 Principles of Biology II
225-211 Principles of Chemistry I
225-212 Principles of Chemistry II
296-202 Earth's Physical Environment
600-260 Elementary Statistics

Sophomore Year:
204-320 Field Botany
350-301 Environmental Politics and Administration
600-364 Biometrics
754-103 Fundamentals of Physics I
754-104 Fundamentals of Physics II

Junior Year:
204-302 Ornithology
600-255 FORTRAN
834-340 Economics of Land Use
834-356 Environmental Impact Analysis
862-307 Ecology of Fire
862-466 Vegetation Management

Senior Year:
350-400 Environmental Law
862-454 Remote Sensing of the Environment by Satellite
862-472,473 Ecosystems Analysis I,II
008-749 Wetlands Ecology and Management

Energy Science and Technology

The goal of this program is to provide students with an understanding of the scientific principles underlying energy production and utilization. The energy supply problem is examined through courses in alternate energy systems, energy conservation, conventional energy systems, and energy education. Emphasis is also given to the economic and management aspects of the energy problem. There are opportunities for independent study in solar energy systems. Present interests of the faculty members lie in the areas of solar and wind energy, energy conservation, biofuels and energy education. Some of the vocational opportunities for students are preparation for engineering schools, design and construction of alternate energy systems, energy education at the vocational and secondary school level, local, state and federal government jobs and international opportunities in the developing countries in alternate energy systems and appropriate technology.

Ecology and Resource Management Requirements
862-302 Principles of Ecology, 3 cr.
OR
862-472,473 Ecosystems Analysis I,II, 8 cr.

862-327 Urban Technological Design
862-414 Conventional Energy Technology
862-415 Solar and Alternate Energy Systems
862-460 Resource Management Strategy

Required Courses
754-320,322 Thermodynamics and Kinetics plus Laboratory
862-345 Geology of Energy Resources

Select at least two courses from the following:
204-302 Principles of Microbiology
298-402 Resource Economic Analysis
754-317 Electromagnetic Radiation
754-321,323 Structure of Matter plus Laboratory
754-404 Electricity and Magnetism
754-405 Electronics for Scientists
754-417,418 Nuclear Physics and Radiochemistry plus Laboratory

225-300,301 Bio-organic Chemistry plus Laboratory
OR
225-302,303,304,305 Organic Chemistry I,II plus Laboratories

Sample Program: Energy Science and Technology
Freshman Year:
204-202 Principles of Biology I
204-203 Principles of Biology II
225-211 Principles of Chemistry I
225-212 Principles of Chemistry II
600-202 Calculus I
600-203 Calculus II

Sophomore Year:
296-202 Earth's Physical Environment
600-255 FORTRAN
754-201 Principles of Physics I
754-202 Principles of Physics II
862-327 Urban Technological Design

Junior Year:
754-317 Electromagnetic Radiation
862-414 Conventional Energy Technology
862-415 Solar and Alternate Energy Systems
862-460 Resource Management Strategy

Senior Year:
757-317 Electromagnetic Radiation
862-414 Conventional Energy Technology
862-415 Solar and Alternate Energy Systems
862-460 Resource Management Strategy

Science Communication

In our technological age, there is increasing need for individuals who can effectively communicate science and scientific advances to science as well as to nonscience audiences. Recognizing the range of occupations in science communications (public information officers, science journalism, environmental interpretation, reporters and weathercasters for radio/television, and technical writing), it is important to offer at least two programs in science communications. Hence, for those students who wish to place particular emphasis on the sciences, a program in Science and Environmental Change: Science Communications is available. For those students whose primary interest is communications, a program in Communication and the Arts: Science Communications is available. That program is described in the section on Communication and the Arts.

Freshman-Sophomore-Level Requirements in Communications
Select 4 courses:
242-231 Introduction to Graphic Communication
246-102 Introduction to Mass Communication
246-133 Fundamentals of Public Address
246-200 Communication Processes: An Introduction
246-243 Introduction to Photography
552-105 Expository Writing

Ecology and Resource Management *Requirements*
862-302 Principles of Ecology

Select one course from the following:
862-303 Conservation of Natural Resources
862-334 Solid Waste Management
862-382 River Basins in Transition
862-460 Resource Management Strategy

Field Specialty in SEC
There are several field specializations within SEC including aquatic studies, biological resource management, energy science and technology, and solid waste management and resource recovery. The following sample field specialty is for aquatic studies.

Select 4 courses:
204-315 Biology of Lower Green Plants
204-341 Ichthyology
225-311 Analytical Chemistry
862-330 Descriptive Hydrology
862-331 Oceanography
862-401 Stream Ecology
862-403 Limnology
862-434 Water Chemistry

Required Junior-Senior-Level Courses in Communications
Select 4 courses:
242-331 Graphic Communication Studio I
242-332 Graphic Communication Studio II
242-430 Mass Media and Society
246-303 Feature Writing
246-305 Elements of Electronic Media
246-306 Radio Broadcast Practicum
246-335 Organizational Communication
246-343 Photography II
246-344 Photography III
246-345 Designing Multiple Media Applications of Photography
246-380 Communication Law
246-390 Scientific and Technical Communication
246-497 Internship in Communications
575-425 Promotional Strategy

Sample Program: Science Communications
Freshman Year:
204-202 Principles of Biology I
204-203 Principles of Biology II
225-211 Principles of Chemistry I
225-212 Principles of Chemistry II
246-200 Communication Processes: An Introduction
552-105 Expository Writing
600-260 Elementary Statistics

Sophomore Year:
242-231 Introduction to Graphic Communication
246-133 Fundamentals of Public Address
296-202 Earth's Physical Environment
600-255 FORTRAN
600-364 Biometrics
862-303 Conservation of Natural Resources

Junior Year:
242-331 Graphic Communication Studio
246-303 Feature Writing
754-103 Fundamentals of Physics I
754-104 Fundamentals of Physics II
862-302 Principles of Ecology
862-401 Stream Ecology

Senior Year:
246-305 Elements of Electronic Media
246-390 Scientific and Technical Communication
862-330 Descriptive Hydrology
862-331 Oceanography
862-403 Limnology

Waste Management and Resource Recovery

One of the problems faced by modern society is the management of large quantities of solid and liquid wastes. The challenge is to recover useful materials or energy products from wastes and to dispose of the remainder in an environmentally acceptable and economically efficient manner. Meeting this challenge requires significant levels of scientific and management expertise. The waste management/resource recovery program is designed to develop scientific and management skills and prepare the student for professional opportunities in the field. Opportunities are also available for further study at the graduate level. The required courses provide a foundation in resource management and waste management and resource recovery. The optional courses, to be chosen in consultation with an adviser, enable a student to complete the program based on his or her specialized interests.

Ecology and Resource Management *Requirements*
862-302 Principles of Ecology, 3 cr.
OR
862-472,473 Ecosystems Analysis I,II

862-318 Industrial Pollution Control Techniques
862-319 Industrial Pollution Control Field Trips
862-334 Solid Waste Management
862-335 Water and Wastewater Treatment
862-460 Resource Management Strategy

Required Courses
Select 15 credits from the courses listed below:

Earth Science:
296-420 Soil Classification and Geography
862-320,321 The Soil Environment and Laboratory
862-342 Environmental Geology

862-330 Descriptive Hydrology
OR
862-340 Quantitative Hydrology

Chemistry:
225-311 Analytical Chemistry
225-413 Instrumental Analysis
862-422 Environmental Biogeochemistry
862-434 Water Chemistry

Biology:
204-302 Principles of Microbiology
204-402 Advanced Microbiology
204-404 Microbial Physiology

Waste Management:
008-724 Hazardous and Toxic Materials
008-766 Waste Management/Resource Recovery Seminar

Policy and Administration:*
350-301 Environmental Politics and Administration
350-315 Planning and Management of Public Systems
350-400 Environmental Law
350-415 Public and Nonprofit Budgeting
350-460 Public Policy Analysis
*Students with a strong interest in policy and administration are encouraged to select a minor in Public and Environmental Administration.

Management:
575-305 Business Law I
575-343 Corporation Finance
575-382 Introductory Management
600-355 Applied Mathematical Optimization

Recommended Courses
Students are encouraged to take the following courses:
298-203 Micro Economic Analysis
350-102 Public Policy and Administration
778-101 American Government and Politics

552-105 Expository Writing
OR
246-390 Scientific and Technical Communication

Sample Program: Waste Management and Resource Recovery
Freshman Year:
204-202 Principles of Biology I
204-203 Principles of Biology II
225-211 Principles of Chemistry I
225-212 Principles of Chemistry II
600-202 Calculus I
600-203 Calculus II

Sophomore Year:
225-311 Analytical Chemistry
296-202 Earth's Physical Environment
600-255 FORTRAN
754-201 Principles of Physics I
754-202 Principles of Physics II

Junior Year:
862-318,319 Industrial Pollution Control Techniques with Field Trips
862-320,321 The Soil Environment with Laboratory

862-334 Solid Waste Management
862-342 Environmental Geology
862-434 Water Chemistry

Senior Year:
862-302 Principles of Ecology
862-335 Water and Wastewater Treatment
862-430 Quantitative Hydrology
862-460 Resource Management Strategy

Requirements for the Minor

Required Freshman-Sophomore-Level Courses

1. Mathematics competency equivalent to 600-104, Elementary Functions: Algebra and Trigonometry. Satisfactory score on the mathematics placement test will be accepted in lieu of 600-104.
2. Principles of Biology I and II (204-202 and 204-203).
3. Earth's Physical Environment (296-202).
4. A minimum of 6 credits chosen from offerings in two of the following curricular areas:
Chemistry (225)
Physics (754)
Mathematics (600) at 200 or higher level

Junior-Senior-Level Requirements

Courses selected must total at least 12 credits and include at least one course in ecology. Note that some of these courses have prerequisites that must be completed prior to registration.

Ecology (3 or 8 credits):
862-302 Principles of Ecology
OR
862-472,473 Ecosystems Analysis I,II

Choose the remaining credits from the courses listed under biological resources, physical resources, or some combination of the two.

Biological Resources (8 credit maximum):
862-303 Conservation of Natural Resources
862-307 Ecology of Fire
862-309 Ecology and Management of Endangered Species
862-366 Integrated Pest Management
862-384 Environment's Response to Human Settlement
862-466 Vegetation Management

Physical Resources:
600-355 Applied Mathematical Optimization
862-318 Industrial Pollution Control Techniques
862-319 Industrial Pollution Control Field Trips
862-327 Urban Technological Design
862-334 Solid Waste Management
862-342 Environmental Geology
862-382 River Basins in Transition
862-383 River Basins in Other Regions
862-414 Conventional Energy Technology
862-415 Solar and Alternative Energy Systems
862-460 Resource Management Strategy

Junior-senior-level courses for the interdisciplinary minor cannot also count for the disciplinary major upper-division requirement.

Social Sciences

Anthropology

Professors: James Clifton, applied anthropology, Native American studies, religion, ethnohistory; **Anthony Galt**, cultural anthropology, cultural ecology, Italy, European Mediterranean.

Associate Professors: Richard Logan, culture and personality, psychological anthropology, Africa; **Lynn Walter** (chairperson and adviser), cultural anthropology, women's studies, Ecuador, South America.

Assistant Professor: Joseph Mannino, physical anthropology, human variability, medical anthropology.

The anthropology disciplinary minor is designed for the student whose intellectual and professional goals are furthered by familiarity with cross-cultural and international perspectives on the human condition. The anthropology program offers no major.

Anthropology is the comprehensive study of humans. It encompasses both the biology of human populations past and present and the study of culture and cultural development. It is an area with much intrinsic fascination, a broad perspective on the nature of human life, and many applied uses.

Anthropology and Other Programs

Because of the broad scope of the field, which ranges from the study of aesthetic systems to the study of human genetics, a program in anthropology combines readily with most of the interdisciplinary programs; for example, Human Development, Humanistic Studies, Human Biology, Communication and the Arts, Regional Analysis, Social Change and Development, or Urban Studies.

Students combining the study of anthropology with other programs should plan their studies with the help of advisers from the appropriate programs. Those seeking teacher certification should consult with the anthropology adviser and an adviser in the Education professional program early in their studies to insure that their programs meet all of the specific requirements for certification of the Wisconsin Department of Public Instruction.

Careers and Advanced Study

Skills and special perceptions gained through the study of anthropology can be applied to a variety of vocational and professional interests, including government work, social service and health-related professions, museum and field work, environmental impact analysis and cultural resource management, education, and advanced graduate study. More than ever, anthropology is expanding its professional horizons in the direction of applied areas, and excellent opportunities for graduate study in fields such as medical anthropology, cultural resource management, educational anthropology, and urban anthropology now exist around the United States. The adviser can offer suggestions about career oriented programs to combine with anthropology.

Requirements for the Minor

Students intending to minor in anthropology should see the chairperson/adviser early in their college careers. Generally an anthropology minor includes the following freshman-sophomore-level courses:

156-100 Varieties of World Culture
OR
156-210 Introduction to Cultural Anthropology

156-110 Introduction to Physical Anthropology

The 15 junior-senior-level anthropology credits required for an anthropology minor are drawn from both anthropology listings and courses taught in other departments. A minor in anthropology includes the following upper division courses:

156-303 Cultural Ecology
156-304 Family, Kin, and Community

156-342 Human Evolution
OR
156-364 Human Variability

246-322 Modern Linguistics
And 3 credits of upper division electives for a total of 21 credits.

Special Opportunities

Anthropology students are encouraged to take part in archaeological and ethnographic field schools offered during the summer by many colleges and universities both within the United States and abroad. Transfer credit is granted for such activities. Independent study can be arranged for students whose interests fall outside the range of UWGB anthropology course offerings.

The anthropology program also sponsors an internship in museum anthropology at Green Bay's Neville Public Museum which allows hands-on experience in various aspects of museum work.

Economics

Professor: James M. Murray, regional economics, managerial economics, public finance, labor economics, and economics of waste and energy and energy systems.

Associate Professors: Kumar Kangayappan (chairperson), economic theory, economic development, land economics, economics of poverty, monetary theory and policy; **Ismail Shariff**, economic development and policy, business cycles, international trade, cooperative economic principles and descriptive methods of regional analysis; **Larry Smith**, population economics, agricultural economics, economic development, economic history and social change, resource economics, technological innovation and adaptation; **Michael D. Troyer**, health economics, management of nonprofit organizations, health planning, business ethics and social responsibility, labor economics, resource economics, and public finance.

Assistant Professor: Gerrit Knaap, urban economics, regional economics, public finance, environmental economics, and land use planning.

Economics is the systematic study of the use of resources and the processes involved in producing, distributing and consuming goods and services. It includes an analysis of how the economy is organized and how it functions. It also includes the study of institutions such as households, business firms, government and money. The study of economics is challenging, for

it deals with vital policy issues such as inflation, unemployment, monopoly, competition, economic growth, poverty, environment, and human values.

The disciplinary program in economics is oriented to analyzing contemporary economic problems and determining alternative approaches to solving these problems.

Careers and Advanced Study

The economics program prepares students for active roles in business, industry, governmental agencies, educational institutions, and a host of community organizations. It also provides appropriate preparation for graduate studies in economics and business as well as law school.

Some of the most common employers of people with specializations in economics are banks and investment firms, government agencies, market research departments and firms, insurance companies, management consulting firms, advertising agencies and departments, labor unions, and business firms.

Graduates in economics often work in related fields such as insurance, real estate, market research and analysis, land use planning, financial planning, credit and collection agencies, advertising management, sales management, statistics, systems analysis, and administration at federal, state, county, and municipal levels.

Requirements for the Major

The program offers a major and a minor in economics. It is strongly recommended that students take Economics 202, Macro Economic Analysis, and 203, Micro Economic Analysis, before enrolling in upper level courses.

The major in economics aims at equipping the student with conceptual and analytical capability focusing on an integrated approach to historical and institutional processes. The analytical methods help the student to recognize relevant components of a particular problem. The historical and institutional processes add a qualitative and intuitive dimension. These methodologies enable the student to understand economic problems and to develop and evaluate alternative solutions. The program in economics attempts to provide an understanding of theory, quantitative techniques and application of these to real world economic situations.

A major in economics requires 30 credits, 24 of which must be at the junior-senior level. Introductory principles and intermediate theory courses count for 12 credits and constitute the core requirement. The remaining 18 credits can be earned by taking courses from the list of electives. The choice of these courses will be determined on the basis of the student's area of emphasis and in consultation with an adviser. The student planning for teacher certification with a major (or minor) in economics must include a minimum of three credits of upper level course work in the area of international economics, in addition to meeting the requirement in the areas of conservation and cooperatives.

A major in economics requires a good grounding in quantitative areas. These include statistics, calculus and computer science. A minimum of nine credits must be earned, in addition to the 30 credits indicated above. In addition, the student is required to fulfill the English proficiency requirement of the University, and to satisfy all of the other general requirements for graduation.

Required Supporting Courses

(9 credits not counted toward major)
600-260 Introductory Statistics
OR
255-205 Social Science Statistics

600-201 Calculus for Management and Social Sciences.
(Other equivalent or higher level calculus course will also fulfill this requirement.)

600-155 Computers and Microcomputers
OR
600-256 Introduction to Computer Science I

Freshman-Sophomore-Level Requirements
(6 credits required)

298-202 Macroeconomic Analysis
298-203 Microeconomic Analysis

Junior-Senior-Level Requirements
(6 credits required)

298-302 Intermediate Macroeconomic Theory
298-303 Intermediate Microeconomic Theory

Electives (18 credits required)

298-301 Economic and Social Security
298-304 Contemporary Labor Markets
298-305 Natural Resource Economic Policy
298-306 Public Finance and Fiscal Policy
298-307 Sources of Contemporary Economic Concepts
298-308 Business Cycles
298-309 Urban Economics
298-330 Money and Banking
298-401 Regional Economic Analysis
298-402 Resource Economic Analysis
298-403 International Trade
298-404 Economics of Developing Areas
298-406 Comparative Economic Systems and Institutions

Requirements for the Minor

The minor in economics aims at providing nonmajors sufficient grounding in the field to understand allocation processes and policy issues. A minor in economics would be especially suitable and appealing to students in Managerial Systems, Public and Environmental Administration, Regional Analysis, Urban Studies, and Social Change and Development. The students from these fields of study could very well add to their knowledge by taking a minor in economics because of the interrelatedness of these areas with economics.

Students taking a minor in economics are required to complete 18 credits of course work, 12 of which must be at the upper level. Economics 202, 203 and Economics 302 or 303 are required totaling nine credits with the remaining nine credits to be drawn from the electives (see list above). In addition, students are required to complete three credits of course work in the quantitative area. (See list of required supporting courses above.)

In addition to the requirement in the quantitative area, students are required to fulfill English proficiency requirements of the University. The credits gained in this area are not counted toward the minor in economics.

Economics and Other Programs

Students planning a program in economics may take courses in other disciplines or concentrations for economics credit. A faculty adviser may approve such an arrangements. Particularly relevant courses may be found in history, the social sciences, or in several of the concentrations. Students combining economics with other

programs should plan their studies with the help of advisers from the appropriate programs.

Students who major in the economics discipline also choose an interdisciplinary program appropriate to their goals. Those seeking teacher certification should consult with the economics adviser and an adviser in the Education professional program early in their studies to insure that their programs meet all of the specific requirements for certification of the Wisconsin Department of Public Instruction.

Geography

Professors: Donald Gandre, transportation systems, regional geography (United States and Great Lakes areas of the United States and Canada); **William Kuepper**, regional geography (Africa), climatology, settlements.

Associate Professor: William Laatsch (chairperson), cultural geography, northern lands, settlements.

Instructor: Kurt Schroeder, cartography, geographic information systems, simulation, location theory.

Geography is the systematic study of the location, variations, and interrelations of natural and cultural features of the earth. Since UWGB has as its special mission an institution-wide focus emphasizing "interdisciplinary, problem-centered study of humans and their environment," the study of geography is particularly appropriate, for it is one of the disciplines that can effectively examine the world and its problems with a view to comprehensive understanding.

Careers and Advanced Study

A major in the geography discipline provides students with part of a broad science and cultural background in liberal arts education; background for advanced work in business, economics, history, political science, or in the biological and earth sciences; preparation for teaching geography in the elementary or secondary schools; technical training for those wishing to work as professional geographers in government or industry; and preparation for graduate study in geography and closely allied fields.

Facilities

The geography laboratory houses computing, digitizing, and plotting equipment as well as advanced field cartographic, and interpretation devices.

Requirements for the Major

The geography major is designed to provide students with a high quality program stressing basic concepts and skills and with some opportunity for specialization in physical, cultural, or regional geography, and geographic techniques. The program requires a total of 34 credits with 10 credits at the lower level and 24 credits of junior- or senior-level courses. General requirements are:

Freshman-Sophomore-Level Courses

416-120 Survey of Physical Geography, 4 cr.
416-250 Displays of Geographic Information, 3 cr.

416-102 Introduction to Geography, 3 cr.
OR
416-202 Introduction to Cultural Geography
OR
416-215 Economic Geography

Junior-Senior-Level Requirements

3 credits in physical geography
3 credits in cultural geography
3 credits in regional geography
6 credits in geographic techniques
6 credits of electives from any above area
416-465 Colloquium for Geography Majors, 3 cr.

Requirements for the Minor

The minor in geography requires the same 10 credits at the freshman-sophomore level that the major demands. An additional 12 credits at the junior- or senior-level must be selected from two of the following areas: physical geography, cultural geography, regional geography, geographic techniques, and/or Colloquium for Geography Majors. The minor is especially attractive to students in business as well as majors in Regional Analysis, Urban Studies, Social Change and Development, Science and Environmental Change, and Humanistic Studies.

Other Requirements

All geography students are expected to be competent in a number of skill areas. These include: public address, statistics, expository writing, computer science, cartography, air photo interpretation, field methods, and remote sensing.

Geography and Other Programs

Geography students combine their geography studies with an interdisciplinary program. For example, physical geography students would likely choose Science and Environmental Change for the interdisciplinary work. Students emphasizing regional or cultural geography would probably choose Regional Analysis, Urban Studies, Social Change and Development, or Humanistic Studies. Prospective geography students should refer also to the descriptions of those concentrations. Each student will plan a program of study appropriate to his or her needs with the help of faculty advisers. Students seeking teacher certification should consult with the geography adviser and an adviser in the Education professional program early in their studies to insure that their programs meet all of the specific requirements for certification of the Wisconsin Department of Public Instruction.

Human Development

Professors: Nancy Datan, adult life transitions, myth, folk, and fairy tale, women's studies, cross-cultural perspectives; **Richard D. Logan** (chairperson), middle childhood and adolescence, personality theory, cross-cultural human development, psychology of adaptation, coping, survival, and historical psychology.

Associate Professors: Fergus Hughes, life-span cognitive development, adult learning, perceptual development, children's play; **Lloyd Noppe**, cognitive styles, creative thought, formal operations, life-span human development.

Assistant Professors: Iliene Noppe, infant development, parent-child relationships, cognitive development, gender roles, death and dying; **Dean Rodeheaver**, social gerontology, cognitive development in adulthood and old age, gender roles.

The Human Development concentration is concerned with the study of human development from conception to death. It pro-

vides basic understanding of changes, tasks, and crises that occur throughout the normal life span as well as examination of factors that promote both normal development and deviations from normal development. It is an interdisciplinary program in that it examines the contributions to our understanding of developmental processes which have been made by psychologists, sociologists, biologists, and anthropologists.

Students who plan careers working with people major or minor in Human Development in order to acquire broad background knowledge about human development and behavior. Students whose ultimate goals are to provide educational, guidance, or other social services to persons of various ages, who are planning careers in health-related fields, or who are planning academic careers in human development or psychology, frequently choose a Human Development major.

Areas of Emphasis

Numerous areas can be emphasized within Human Development. These include: general child development, child development and family studies, adolescence and youth, adulthood and aging, biological development, and cross-cultural comparative studies. Students interested in an in-depth examination of the functioning of the older adult in our society or interested in pursuing a career in gerontology might choose an emphasis in gerontology, for example. In addition, Human Development may be combined with Education, with the Social Services professional program (or as a minor with the Social Work degree program), with communication processes (linguistics), with physical education and recreation, and with psychology, anthropology, or sociology. Advisers can provide information on these programs, and will discuss other possibilities not covered here.

Careers and Advanced Study

For students planning careers in early childhood, elementary, or secondary education, for example, Human Development provides a preprofessional program of courses that covers fundamentals of child development, cognitive development, play and creativity, observation of behavior, and developmental deviations. Students who desire Wisconsin certification in early childhood education will take in addition a sequence of methods and student teaching courses in early childhood education within the Education professional program. Students wishing elementary or secondary education certification will also fulfill professional course requirements through the Education program. All students desiring certification should obtain the *Handbook of Teacher Certification* through an Education adviser, which gives requirements of the State Department of Public Instruction for certification.

Students preparing for graduate study in psychology can take either a Human Development major with a minor in psychology, or a major in psychology with a minor in Human Development. Graduate programs expect:

- a firm and general foundation in the range of basic subject matter of the field;
- some exposure through courses or other experiences in the specialty (experimental, cognitive, clinical, developmental, etc.) the student will enter;
- a strong background in the methods and tools of the field.

The particular course program a student selects will depend on the desired area of graduate specialty. Students planning for graduate education should consult early in their undergraduate career with a concentration adviser so that courses, course sequences, and field or research experiences (independent studies) may be planned.

Typically, UWGB students who enter Ph.D. programs in psychology have taken experimental psychology and statistics early in their programs, have had research experiences, independent studies, or senior distinction projects, and have taken the Graduate Record Examination during their junior or senior years.

Requirements for the Major

Supporting Courses

All Human Development majors must take one course from each of the following three pairs of background courses for a total of nine credits:

481-210 Introduction to Human Development
OR
820-102 Introduction to Psychology

478-102 Introduction to Human Biology
OR
156-110 Introduction to Physical Anthropology

255-205 Social Science Statistics
OR
600-260 Introductory Statistics

In addition to the above, the courses required for a major in Human Development depend on the career goals of the individual student. Certain courses may be particularly appropriate for a student depending on his/her overall academic program and career goals (e.g., psychology, social work, education, gerontology). Since programs will vary depending on the individual student's need, students interested in Human Development should consult an adviser as early as possible in their college careers.

Junior-Senior-Level Courses

481-331 Human Development I: Infancy and Early Childhood
481-332 Human Development II: Middle Childhood and Adolescence
481-433 Human Development III: Adulthood and Aging
481/820-435 Abnormal Behavior
AND
Six elective courses chosen after consultation with a Human Development adviser. These will frequently come from the following list, but they might also include appropriate courses from other units.

481-333 Observation and Interpretation of Child Behavior
481-334 Play and Creative Activities in Childhood
481-336 Sex Role Development in Contemporary Society
481-339 Woman in the Life Cycle
481-342 Cross-Cultural Human Development
481/820-420 Tests and Measurements
481/820-429 Theories of Personality
481-431 Cognitive Development
481-436 Counseling with Children and Adolescents
481-437 Counseling with Adults and the Aged
481-439 The Social, Behavioral, and Biological Implications of Aging
481-441 History, Philosophy, and Current Programs in Early Childhood Education
481-452 Social Gerontology
481-495 Language Acquisition in Childhood

Sample Programs

Human Development Major With Social Services Professional Program
481-331 Human Development I: Infancy and Early Childhood
481-332 Human Development II: Middle Childhood and Adolescence
481-342 Cross-Cultural Human Development
481/820-429 Theories of Personality
481-433 Human Development III: Adulthood and Aging

481/820-435 Abnormal Behavior

481-436 Counseling with Children and Adolescents
AND/OR
481-437 Counseling with Adults and the Aged

Plus two or three junior-senior-level courses in Human Development or other related field (to be selected in consultation with a concentration adviser).

Plus 18-21 required credits in the professional program in Social Services, chosen with advice of that faculty.

Human Development Major With Elementary Education Professional Program

481-331 Human Development I: Infancy and Early Childhood
481-332 Human Development II: Middle Childhood and Adolescence

481-431 Cognitive Development
OR
820-315 Educational Psychology

481-433 Human Development III: Adulthood and Aging
481/820-435 Abnormal Behavior

Five electives chosen from:
481-334 Play and Creative Activities in Childhood
481-336 Sex Role Development in Contemporary Society
481-342 Cross-Cultural Human Development
481/820-429 Theories of Personality
481-436 Counseling with Children and Adolescents
481-437 Counseling with Adults and the Aged

Plus related upper division courses in psychology, sociology, education, or anthropology, approved as appropriate by adviser.

Plus courses required for certification by the professional program in Education. (See Education program adviser).

Human Development Major With Gerontology Emphasis

This program provides students with a concentrated study of individual development in later adulthood. The program focuses predominantly on the socio-psychological development of the individual 65 years of age and older, but physical and biological development is also studied. It is primarily designed for students who are interested in an in-depth examination of the functioning of the older adult in our society and who possibly are interested in pursuing a career in some area of gerontology (e.g., federal, state or local aging agency; involvement in long-term care institution; research or graduate work).

The three core courses (481-331, 481-332, 481-433)
481/478-320 Biology of Human Development and Senescence
481-437 Counseling with Adults and the Aged
481-439 The Social, Behavioral, and Biological Implications of Aging
481-452 Social Gerontology

Plus one or two other upper division courses approved as appropriate by adviser.

Human Development Major With Early Childhood Education Certification

Required Concentration Courses:
481-331 Human Development I: Infancy and Early Childhood*
481-332 Human Development II: Middle Childhood and Adolescence*
481-333 Observation and Interpretation of Child Behavior*
481-334 Play and Creative Activities in Childhood*
481-433 Human Development III: Adulthood and Aging

481-431 Cognitive Development*
OR
820-315 Educational Psychology*

*Required for Department of Public Instruction teaching certification

Recommended Concentration Courses:
481-342 Cross-Cultural Human Development
481/820-429 Theories of Personality
481/820-435 Abnormal Behavior
481-436 Counseling with Children and Adolescents

Professional Courses:
(Required for DPI Certification)
302-402 Advanced Experience with Young Children (student teaching)
302-410 Introduction to the Education of Exceptional Children
302-421 Reading Readiness and Language Development
302/481-441 History, Philosophy and Current Programs in Early Childhood Education
302-442 Curriculum and Program Development in Early Childhood Education
302-445 Early Childhood Center Administration and Community Resource Utilization
481-335 Introduction to Experience with Young Children, 1 cr.
OR
Supervised experience with a group of young children
A standard first aid certificate is required.

Requirements for the Minor

The minor in Human Development provides students with an overview of the field of human development, with particular attention to:
• the necessity of a complete life-span emphasis, and
• the value of interdisciplinarity in studying the human life cycle.
A total of 18 credits are required, 12 of which must be at the junior-senior level. Specific requirements follow:

Any two of the following courses:
156-100 Varieties of World Culture
478-102 Introduction to Human Biology
481-210 Introduction to Human Development
820-102 Introduction to Psychology
900-202 Introduction to Sociology

Four of the following five courses:
481/478-320 Biology of Human Development and Senescence
481-331 Infancy and Early Childhood
481-332 Middle Childhood and Adolescence
481-342 Cross-Cultural Human Development
481-433 Adulthood and Aging

Political Science

Professors: Martin H. Greenberg, international politics, foreign military policies, comparative politics, Middle East; **Michael E. Kraft**, American politics, Congress, public policy analysis, environmental politics; **Edward W. Weidner** (chancellor), problem-oriented higher education, development administration.

Associate Professors: Bruce B. Clary, public policy, urban policy and management, administrative theory, social science theory and methods; **David M. Littig**, urban politics, transportation policy, political behavior, comparative politics.

Assistant Professor: Mary T. Bailey, public management and budgeting, organization theory and decision making, environmental policy, energy management, regulation and administrative law.

Political science is concerned with the systematic study of political behavior, political processes, governmental institutions, and public policies. The program at UWGB gives special attention to governmental activities directed at a wide range of contemporary public problems, from urban transportation to international conflict.

Courses deal with specific problems, public policy, or political processes and behavior affecting resolution of public problems. Some courses stress the structure, function, and operation of governmental institutions, including formulation and implementation of public policies in local, state, national, and international political systems. Others examine the cultural, social, economic, and ideological contexts of political systems in an effort to understand political behavior and decision making in government.

One set of courses focuses on politics and political behavior, including the nature and role of public opinion, interest groups, political parties, and elections. Another is concerned primarily with the history of political ideas and how they relate to modern political issues. A third emphasizes methods of inquiry and analysis used in the study of government, politics, political behavior, and public policy.

Requirements for the Major

A major in political science consists of 24 credits of junior-senior-level courses and six credits of freshman-sophomore-level courses. Many courses are acceptable for political science credit, including those preceded by the disciplinary number (778) and the others designated by the faculty as acceptable.

Each major must include at least one course in each of four subfields of the discipline: American government and politics (which includes public policy and public law); political theory; comparative government and politics; and international politics. Up to six credits of directed study may be applied toward the minimum requirements for the major. Transfer students completing a major in political science must take a minimum of 12 of the 24 upper-division credits at UWGB.

Freshman-Sophomore-Level Requirements

A minimum of 6 credits from the following courses:
350-102 Introduction to Public Policy
778-100 Introduction to Political Science
778-101 American Government and Politics
778-215 Understanding Presidential Elections
778-218 Political Behavior

Junior-Senior-Level Requirements (24 credits)

American Government and Public Policy (minimum of 3 credits):
778-310 The American Presidency
778-312 Community Politics
778-320 Constitutional Law
778-330 Law and the Judicial Process
778-410 Intergovernmental Relations
778-412 Political Parties and Pressure Groups
778-416 American Legislative Process
350-301 Environmental Politics and Policy
350-305 Regulatory Policy and Administration
350-400 Environmental Law
350-410 Administration of Local Government
350-460 Public Policy Analysis
944-305 Urban Politics and Policy
944-314 Administrative Law
944-351 Transportation and the City

Comparative Politics (minimum of 3 credits):
778-351 Comparative Political Systems
778-353 Politics of Developing Areas
416-378 Geography of Conflict Areas
448-352 History of Modern China
448-354 History of Modern Southeast Asia

Political Theory (minimum of 3 credits):
778-340 Political Theory
736-326 Philosophy, Politics, and Law
736-404 Major Philosophical Figures
736-405 Major Philosophical Issues

International Politics (minimum of 3 credits):
416-378 Geography of Conflict Areas*
778-360 International Politics
778-368 Geopolitics of World Regions
778-460 American Foreign and Defense Policy

*Can be taken for credit in either comparative or international politics subfields, but not both.

Requirements for the Minor

A total of 18 credits are required for the minor of which 12 credits must be at the upper division level.

Freshman-Sophomore-Level Requirements

A minimum of 6 credits from the following courses:
778-100 Introduction to Political Science
778-101 American Government and Politics
778-215 Understanding Presidential Elections
778-218 Political Behavior

Junior-Senior-Level Requirements (12 credits)

Twelve credits of courses drawn from the list of upper-division courses for the major as given above.

Political Science and Other Programs

Students majoring in political science will also select an interdisciplinary program and may add studies in a professional program if such a plan meets their goals. The political science program complements a variety of concentrations and professional programs at UWGB, especially those in the social sciences and in administration: Urban Studies, Social Change and Development, Regional Analysis, Public and Environmental Administration, and the Business Administration major.

Students combining the study of political science with other programs should plan their studies with the help of advisers from the appropriate programs. Those seeking teacher certification should consult with the political science adviser and an adviser in the Education professional program early in their studies to insure that their programs meet all of the specific requirements for certification of the Wisconsin Department of Public Instruction.

Careers and Advanced Study

With its emphasis on understanding public problems and the role of government and politics, political science is particularly useful for students planning careers in journalism, law, planning, education, business, foreign service, politics, and public service positions with private and public agencies at the local, state, regional, and federal level. It also serves as an excellent preparation for graduate study in political science, law, public administration, and related fields.

Psychology

Professors: Nancy Datan, transitions of adulthood (myth, folk and fairy tales), psychology of women; **Nicholas Pollis**, group dynamics, intergroup relations, organizational development, human rights; **William Smith** (chairperson), environmental psychology, group processes.

Associate Professors: Bela Baker, motivation, personal values, processes of social change; **Fergus Hughes**, developmental psychology and aging; **Per Johnsen**, architectural, urban, and sports psychology; **Charles Matter**, cognitive processes, perception, aesthetic perception, behavioral toxicology; **Robert Mendelsohn**, community, clinical, social and cognitive psychology; **Lloyd Noppe**, life-span human development, cognitive styles, creative thought, formal operations.

Assistant Professors: Illene Noppe, parent infant interaction, formal operations, Piagetian theory; **Dean Rodeheaver**, adult development, sex role socialization.

Psychology is the systematic and scientific study of behavior and experience. It seeks to explain the physiological, personal, social, and environmental conditions that influence thought and action. Research with humans and animals aims at understanding, predicting, and influencing behavior. In the past 100 years, psychology has moved from being a branch of philosophy to being both an experimental science and an active helping profession.

Careers and Advanced Study

The psychology disciplinary program provides solid undergraduate training in all areas of psychology. Graduates have found careers and have been admitted to postgraduate education in all branches of psychology. The program at UWGB is particularly strong in social, developmental, community, environmental, and architectural psychology. Course offerings, facilities, and experiences in these areas allow advanced and specialized training. Students have opportunities for practical experiences in a variety of community agencies, computer facilities, an animal research laboratory, a human research laboratory, and various child care facilities.

Psychology helps to deepen understanding of individual and social behavior and provides a strong general background for many careers. Psychology graduates are employed in a variety of positions with social and community service agencies, businesses, research institutes, and governmental agencies. Preparation for specialized professional work such as testing, counseling, university teaching, and many research activities usually requires a postgraduate degree (master's or doctorate). Preparation for postgraduate education should combine a broad program in liberal arts with a sound background in the physical and biological sciences and should emphasize research skills and experiences.

Many graduates continue their professional training in such fields as social work, education, medicine, and business as well as psychology. Students considering postgraduate education should meet with the chairperson or a member of the faculty early in their undergraduate career so that an appropriate course of study and experiences can be planned. Students seeking teacher certification should consult with the psychology adviser and an adviser in the Education professional program early in their studies to insure that their programs meet all of the specific requirements for certification of the Wisconsin Department of Public Instruction.

Psychology and Other Programs

Students majoring in psychology will also choose an interdisciplinary program. The study of psychology can be combined with any of the interdisciplinary concentrations in the University, depending on the student's particular focus and areas of emphasis. Students should examine opportunities offered by each of the concentrations and should consult with a faculty member in psychology. Often, interdisciplinary programs in the social sciences are selected by students interested in social, environmental, clinical, developmental, or general psychology; those in the humanities are selected by students interested in philosophical and aesthetic psychology; those in the life sciences are selected by students interested in physiological, population, and biological psychology; and those in the physical sciences are selected by students interested in quantitative or mathematical psychology.

Combining psychology with one of the professional and preprofessional programs, such as Environmental Design, the Business Administration major, Education, Public and Environmental Administration, or Social Work, can strengthen knowledge or career orientation in that particular area.

Requirements for the Major

Students desiring a major in psychology must meet the following minimum requirements.

Freshman-Sophomore-Level Requirements (6 credits)

820-102 Introduction to Psychology

255-205 Social Science Statistics
OR
600-260 Introductory Statistics

Required supporting courses (3 credits):
478-102 Introduction to Human Biology
OR
478-313 Brain Functions

Junior-Senior-Level Requirements

(28 credits, of which 25 credits must be at the 300- or 400-level)
820-300 Experimental Psychology, 4 cr. (required)

Group 1 (minimum of 3 credits):
820-306 Psychology of Perception
820-309 Psychology of Motivation
820-338 Psychology of Learning
820-417 Psychology of Cognitive Processes
820-483 Educational Psychology

Group 2 (minimum of 3 credits):
820-202 Introduction to Social Psychology
820-335 Psychology of Attitudes and Public Opinion
820-337 Social Behavior Dynamics
820-416 Psychology of Intergroup Relations

Group 3 (minimum of 3 credits):
481-210 Introduction to Human Development
481-331 Human Development I: Infancy and Early Childhood
481-332 Human Development II: Middle Childhood and Adolescence
481-433 Human Development III: Adulthood and Later Maturity

Group 4 (minimum of 3 credits):
820-429 Theories of Personality
820-435 Abnormal Behavior

Group 5 (minimum of 12 credits):
820-290 Environmental Psychology
820-306 Psychology of Perception
820-309 Psychology of Motivation
820-335 Psychology of Attitudes and Public Opinion
820-337 Social Behavior Dynamics
820-338 Psychology of Learning
820-415 Organizational Psychology
820-417 Psychology of Cognitive Processes
820-420 Tests and Measurements
820-429 Theories of Personality
820-435 Abnormal Behavior
820-438 Group Dynamics
820-450 Psychological Stress and Adaptation

820-466 Clinical and Community Psychology
820-490 Problems in Environmental Psychology
820-497 Internship in Psychology
820-498 Directed Study
481-431 Cognitive Development
481-436 Counseling with Children and Adolescents
481-437 Counseling with Adults and the Aged
600-364 Biometrics
736-406 Philosophical Problems in the Sciences: Psychology
834-325 Behavior in the Designed Environment I
834-326 Behavior in the Designed Environment II
875-311 Role of Punishment in Society
875-371 Motivation and Social Change

Requirements for the Minor

Freshman-Sophomore-Level Requirements (6 credits)

820-102 Introduction to Psychology

255-205 Social Science Statistics
OR
600-260 Introductory Statistics

Junior-Senior-Level Requirements (15 credits)

Three credits in each of the five groups of courses listed under upper-division requirements for the major.

NOTE: 820-300 Experimental Psychology, is not required for the psychology minor.

Regional Analysis

Professors: Donald Gandre, transportation systems, regional geography (United States and Great Lakes areas of the United States and Canada); **Martin Greenberg**, international and regional politics, middle east and third world politics, political violence, alternative political futures; **William Kuepper**, regional geography (Africa), climatology, settlements; **James Murray**, regional economics, economic development, quantitative methods; **William Smith**, environmental psychology, social psychology, polar regions, environmental design program.

Associate Professors: Kumar Kangayappan, economic development, economic theory, comparative economic systems; **William Laatsch** (chairperson), cultural geography, northern lands, settlements; **Ismail Shariff**, economic theory, economic development, international trade.

Assistant Professor: William Niedzwiedz, planning, remote sensing, environmental impact analysis.

Instructor: Kurt Schroeder, cartography, geographic information systems, simulation, location theory.

The Regional Analysis interdisciplinary program provides students with the opportunity to apply basic skills from several disciplines or subjects to understanding the human and physical characteristics of various regions of the earth. These characteristics are studied with particular regard to their interrelationships and arrangements within a given area. The focus is reflected in the several programs within Regional Analysis.

Requirements for Majors and Minors

Programs within Regional Analysis fall into three categories: students may choose a general program, an area program, or applied programs with emphases on regional planning, regional economic development, transportation, and applied and analytical techniques. Each program requires six credits at the freshman-sophomore level with 24 credits of junior- or senior-level courses.

Requirements common to all programs are:
834-220 Introduction to Regional Analysis, 3 cr.
416-250 Displays of Geographic Information, 3 cr.
Area Courses, 6 cr.
(Courses dealing with a specific area of the earth)
Concept Courses, 9 cr.
(Courses dealing with a specific topic or theme)
Selected electives, 6 cr.
834-472 Senior Seminar in Regional Analysis, 3 cr.

Of 30 credits total, 6 must be at the 200-level; 24 at the 300-400-level.

The minor in Regional Analysis has similar areas of emphasis with programs in regional planning, regional development, regional transportation systems and regional perspectives. These interdisciplinary minors can be effectively combined with disciplinary majors in earth science, economics, geography, history, mathematics, political science, and sociology. Each minor program requires six credits at the lower level with 12 credits of junior- or senior-level courses.

All students are encouraged to enhance their programs with upper-level techniques courses in regional economic analysis, statistics, cartography, remote sensing, and computer science.

General Program

With an emphasis on exposing students to a breadth of material, the general program helps to develop problem solving in the liberal arts context. The student, with a Regional Analysis adviser, selects an appropriate set of courses to meet individual needs. Experience in foreign countries or other regions of the United States is encouraged.

Area Programs

Area tracks offer students opportunities to focus majors on a particular area of the earth. Regions appropriate for an area emphasis vary in size and uniformity but all allow course work in a variety of concentrations and disciplinary programs. While an interested student may suggest any region for a possible emphasis, several are particularly appropriate for study based on resources available in Regional Analysis and in other academic departments at the University.

Applied Programs

Geared to the student who may have a particular career orientation, these programs allow specialization in land use analysis and planning, transportation analysis, regional economic development, and applied and analytical techniques. Applied programs include:

Regional Planning
Students completing this program will have a basic knowledge of the components of land use and their relationships; land analysis and classification; research techniques, and presentation formats. Students also will be able to appreciate and understand land use and related problems at local, regional, national, and international scales. Land use planning is a likely career field. Graduate school is another possibility.

Transportation Analysis
This program provides an understanding of the character of existing transportation systems, along with their development, change, and future prospects. In addition, the relationship and influence of transportation to or on other environmental components and economic activities is considered in a number of courses. Students completing the program will have acquired some basic knowledge about employment opportunities in: transportation planning with governmental agencies at the regional,

state, or federal level; transportation planning with private consulting firms, and transportation operations with industrial firms or carriers.

Regional Economic Development
This track provides a good background on how our economy works. It also includes courses which prepare students for some practical applications of this knowledge. In addition to offering insights into the system and all of its problems, it provides an intellectual and technical base for people who want to help improve the quality of life in the locales where most people function —communities and regions. Students pursuing this program qualify for employment as economic development specialists for regional planning commissions; in federal, state, and local government departments of economic and industrial development; industrial development units of major transportation and manufacturing firms; economic development positions in government and business. It also is suitable undergraduate preparation for a graduate degree in economics, regional science, or planning.

Applied and Analytical Techniques
The program on techniques provides an opportunity to gain quantitative and analytical capabilities in a broad spectrum of the social sciences, natural and physical sciences, and the arts. The emphasis is on demonstrating and applying various theories and quantitative techniques in an empirical setting to real-world problems and issues. By taking the appropriate combination of courses and undertaking research projects, students are able to gain an in-depth understanding and knowledge in applying these techniques to the issues and problems of local, regional, national and international character.

This program qualifies graduates for positions in government, universities, community organizations, and industry as researchers and policy analysts. Examples of such positions include university extension assignments, neighborhood associations, community development corporations, marketing groups, planning agencies, and research organizations. The track also serves as suitable preparation for graduate work in economics, regional science, environmental studies, and planning.

Social Change and Development

Professor: Anthony H. Galt (adviser), social anthropology, social change, Mediterranean societies.

Associate Professors: Bela O. Baker, social psychology, social change, motivation, thinking; **Julie R. Brickley**, mythology, literature, women's studies, social change; **Harvey J. Kaye** (chairperson), political economy, historical sociology, Latin America, Britain, sociology of culture and ideology; **Craig A. Lockard**, social history, Southeast and East Asia, revolutionary change; **Carol A. Pollis**, social theory, families, intimacy and sexuality, sociology of education; **Larry Smith**, economics, social and economic development in U.S. and foreign third sector communities; **Lynn E. Walter**, cultural anthropology, Latin America, Scandinavia, women's studies, ethnicity.

Assistant Professor: Walter Groves, criminology, criminal justice, social change, and social theory.

Social change is a dominant feature of life in the 20th century, and it promises to retain its central importance in the 21st century given the rapid growth of information processing technologies. Majors and minors in the Social Change and Development interdisciplinary program provide students with the kind of global perspective necessary for understanding social change processes and the social problems, costs, and opportunities generated by them.

Program faculty represent a number of disciplines as indicated above. Many have had significant international experience which adds depth to their area specialties. They share an intellectual framework which emphasizes historical, comparative, and critical analysis and stresses the interdependence of systems and subsystems within a society as well as interdependence between societies. For example, the extent and types of poverty in a society are often closely related to its social and economic practices or to those practices in other societies. Solutions to poverty will not succeed unless they take account of and act on its systemic nature. Such a framework emphasizes a solid understanding of the past as necessary to astute analysis of the present and future and seeks to enable the student to develop a macro or "large picture" perspective. This kind of analytical skill is very useful in a world characterized by vast amounts of information.

Careers and Advanced Study

Social Change and Development is an appropriate choice of program for individuals interested in graduate work in the social sciences, law school, and a variety of human service careers relating to women's issues, community development, social activism, criminal justice or development programs and, international relations.

Requirements for the Major

The major consists of the following core requirement, which provides a common, integrated intellectual framework for the study of social change processes, plus additional coursework in one of the program tracks as specified below. It requires a minimum of 24 credits of junior-senior-level courses and six to nine credits of freshman-sophomore-level courses.

Freshman-sophomore-level requirements (6 credits)

156-100 Varieties of World Culture
OR
900-202 Introduction to Sociology
AND
448-100 History of the Modern World

Required Supporting Courses

(6 credits of methods courses or minimum competency in a foreign language)
255-202 Social Science Statistics
OR
600-260 Introductory Statistics
AND
255-301 Foundations of Social Research
OR
Two years of a foreign language up through the 202 level. Note that students with some language skills may receive up to 16 retroactive credits.

Junior-senior-level core course requirements (12 credits):

875-333 Social Change in a Selected Area (the specific region of the world changes each time the course is offered.)
875-360 Models and Social Change
875-361 Historical Perspectives on Social Change
875-470 Senior Seminar in Social Change and Development (the theme of the seminar varies from semester to semester although emphasis is always put on a research project of the students' choice.)

Track Programs

In addition to the core, the student majoring in Social Change and Development must choose coursework in one of the following tracks (6 credits of each track must be in Social Change and Development (875) coursework).

Criminal Justice Track
The track in criminal justice will provide excellent preparation for careers in law enforcement and corrections and will assist students preparing themselves for law school or graduate training in criminal justice. Required courses in this track, Criminal Justice Process and Criminology, familiarize students with the operation of the criminal justice system and theoretical approaches to crime causation. Additional courses—The Role of Punishment in Society, Freedom and Social Control, Deviance, Sex and Society—focus on broader issues of social change as they bear on the creation and definition of "deviant" behaviors. Discussions of law and morality as forms of social control and the processing and punishment of law and/or norm violators are also included.

Freshman-sophomore-level courses:
(None are required but two electives which may be taken to contribute to the track are:)
875-204 Freedom and Social Control
875-235 Sex and Society

Junior-senior-level courses
(12 credits required):
875-303 Criminal Justice Process (required)
875-311 Role of Punishment in Society
875-315 Law in Society
875-330 Law and The Judicial Process
900-304 Deviant Behavior
900-404 Criminology (required)

Law and Social Change Track
The track in law and social change is appropriate for students interested in seeking admittance to law school as well as those interested in law related careers which do not require a law degree. The spectrum of such careers runs from elective politics to positions in public and private management, research, paralegals, and legal administration. It is also appropriate for a variety of social change related careers, such as those in community organizing or advocacy programs, which require a knowledge of law and social process, an understanding of the law as a social institution, and the potential use of law as a tool for bringing about social change.

Freshman-sophomore-level courses:
(None required but the following might be taken as appropriate electives.)
736-100 Ethics
736-111 Elementary Logic
875-206 Law and the Individual

Junior-senior-level courses:
(12 credits from the following, selected in consultation with the adviser.)
778-410 Intergovernmental Relations
875-300 Community Organizing: Strategies and Techniques
875-320 Constitutional Law
875-325 Law in Society
875-330 Law and the Judicial Process
875-348 Women and the Law
875-400 Environmental Law
944-314 Administrative Law

International and Development Studies Track
The international and development studies track provides a broad background for understanding relationships between and within nations at the international level. Its particular focus is on the Third World and problems of development. It can be combined with the International Studies program or taken alone as a track for the concentration major. Students following this track could direct themselves toward vocations in the U.S. foreign service, international development agencies, international business (in combination with a business minor), the military, or various programs of further study at the graduate level.

At the lower level, foreign language study is highly recommended to meet the supporting course requirement.

Freshman-sophomore-level course (required):
875-270 Third World: Development or Despair

Junior-senior-level courses (12 credits):
156-303 Cultural Ecology
298-404 Economics of Developing Areas
448-350 History of Africa
448-358 Aspects of Latin American History
875-345 Women in Cross-Cultural Perspective
875-365 Human Resources and Economic Growth
875-371 Motivation and Social Change

Women's Studies Track
The women's studies track in Social Change and Development analyzes women in society and culture. Its focus is on gender as a basis for concepts of masculinity and femininity, status and role, and stratification and hierarchy. This course of study includes historical and comparative approaches to such issues as the position of women in the labor force, the influence of myth and religion on women's identity and position in society, women's roles in the family, relationships between women and men, and strategies for social change.

The track would be especially useful to students planning careers in social services, education, counseling and therapy, personnel management, community organizing, politics, labor relations, public administration, religious service, or any other careers in which issues of gender identity and roles are central ones. (For students who want to pursue further coursework in Women's Studies leading to an official Women's Studies transcript designation, the Women's Studies program offers an area of emphasis and minor in Women's Studies. Contact any Women's Studies adviser for more information.)

Freshman-sophomore-level course (required):
875-241 Women and Changing Values

Junior-senior-level courses (12 credits):
875-340 Woman as Worker
875-342 Women, Myth and Identity
875-345 Women in Cross-Cultural Perspective (required)
875-440 Women and Religion
875-497 Internship
875-498 Independent Study
944-345 Women in American Perspective (required)

Individualized Social Change and Development Track
Students sometimes have very specific interests or just desire a more general liberal arts education. The Social Change and Development adviser helps such students work out an individualized program. In all cases a minimum of 12 credits of upper-division coursework is required in addition to the core. Students who are considering a major in Social Change and Development should discuss their backgrounds and interests with the program adviser as early as possible. The adviser can provide further information on career alternatives related to social change and on ways to tailor an academic plan to meet individual needs.

Requirements for the Minor

The minor consists of the following core requirement. It would be appropriate for students majoring in a variety of disciplines from communication processes to art to political science, although it fits especially well with social science disciplines. It would also be a good choice of minor for Business Administration majors.

Freshman-sophomore-level requirements (6 credits)

156-100 Varieties of World Culture
OR
900-202 Introduction to Sociology
AND
448-100 History of the Modern World

Required supporting courses:
(6 credits of methods courses or minimum competency in a foreign language)
255-202 Social Science Statistics
OR
600-260 Introductory Statistics
AND
255-301 Foundations of Social Research
OR
Two years of a foreign language up through the 202 level. It should be noted that students with some language skills may receive up to 16 retroactive credits.

Junior-senior-level core course requirements (12 credits)

875-333 Social Change in a Selected Area (specific region of the world changes each time the course is offered.)
875-360 Models and Social Change
875-361 Historical Perspectives on Social Change
875-470 Senior Seminar in Social Change and Development (The theme varies from semester to semester although emphasis is always put on a research project of the students' choice.)

Sociology

Associate Professors: Harvey J. Kaye, historical and comparative sociology, political economy and inequality, political sociology and social movements, social theory and criticism; **Carol Pollis**, sociology of families, intimacy and sexuality, education, social change and societal development, social theory.

Assistant Professors: Walter Groves, criminology, deviance, punishment and social control, social philosophy and theory; **Ray Hutchison** (acting chairperson), urban sociology, race and ethnicity, minority groups, social research methods.

The disciplinary program in sociology is designed to provide understanding of the variety of sociological approaches used in studying both large scale and small scale patterns of social relationships and processes by which these patterns change over time. On the one hand, sociology involves the scientific study of social behavior and social systems. But sociology is also a humanistic discipline concerned with values, social problems, social conflict, and planned change. It seeks to engage students in a critical analysis of ideas of current social concern from sociological perspectives.

Careers and Advanced Study

Sociology is often seen as more of a liberal arts field than a specific vocational one. People with an undergraduate major in the field, therefore, have career opportunities among the many employers seeking people with liberal arts backgrounds.

Careers may be found in adoption and child care agencies, schools, community and service organizations, recreation programs, courts and correctional institutions, government agencies, hospitals, labor unions, personnel departments and many other organizations. The kinds of careers available to students with sociology majors might include working with programs dealing with housing, child care, or nutrition; working as counselors in the areas of guidance, rehabilitation, and vocational selection; working in research organizations as interviewers or statisticians; and teaching.

Students who want more specific career preparation may combine sociology with one of the professional programs in Business, Education, Public and Environmental Administration, or Social Services, or with a preprofessional program in prelaw, city planning, or community development.

Sociology and Other Programs

Students majoring in sociology will also select an interdisciplinary program. Sociology combines well with any interdisciplinary concentration though students will probably find it most compatible with Social Change and Development, Regional Analysis, Urban Studies, or Human Development. Ways of combining the major in sociology with a specific concentration or interconcentration program should be discussed with one of the faculty. Students are encouraged to take advantage of internships when they fit with a program and to seek learning experiences which will actively involve them in their own learning.

Students combining the study of sociology with other programs should plan their studies with the help of advisers from the appropriate programs. Those seeking teacher certification should consult with the sociology adviser and an adviser in the Education professional program early in their studies to insure that their programs meet all of the specific requirements for certification of the Wisconsin Department of Public Instruction.

Requirements for the Major

Requirements for a major in sociology are consistent with those of many sociology programs throughout the country. These requirements recognize the need for breadth and specialization of knowledge and the need for understanding theoretical and empirical bases upon which sociological knowledge is built. Students are asked to take courses dealing with major theories and research methods of the discipline and to design a program that aims for some specialization or focus consistent with their interests and concentration program. Some examples of such areas of focus are criminology and delinquency, social equality and inequality, urban sociology, organizations, development sociology, sociology of the family and sexuality, and political sociology.

Freshman-Sophomore-Level Requirements (6 credits)

255-205 Social Science Statistics
900-202 Introduction to Sociology

Junior-Senior-Level Requirements (24 credits)

900/255-301 Foundations of Social Research
900-307 Social Theory

A minimum of 12 credits from the following sociology courses:
900-301 Collective Behavior and Social Movements
900-302 Social Stratification
900-304 Deviant Behavior
900-375 Sociology of Sexuality and Intimate Relations
900-404 Criminology
900-483X Selected Topics (e.g., Race and Ethnicity)
900-498 Directed Study

A maximum of 6 credits from the following, or other courses approved by the chair/adviser:
156-304 Family, Kin, and Community
875-311 Role of Punishment in Society
875-360 Models of Social Change
944-303 Urban Sociology

For teacher certification an additional 4 credits from the above list of approved courses is required.

Requirements for the Minor

The sociology minor requires the same core of courses as the major plus two additional sociology courses chosen by the student.

Freshman-Sophomore-Level Requirements (6 credits)

255-205 Social Science Statistics
900-202 Introduction to Sociology

Junior-Senior-Level Requirements (12 credits)

900/255-301 Foundations of Social Research
900-307 Social Theory
An additional 6 credits of sociology at the upper level.

For teacher certification an additional 4 credits from the above list of approved courses is required.

Students interested in teacher certification in Broad Field Social Studies and/or sociology should contact the Education Office for requirements in addition to the discipline requirements listed here.

Urban Studies

Professor: Nicholas Pollis, social psychology, altruism and helping behavior, organizational behavior, urban stress.

Associate Professors: Ronald Baba (chairperson), social ecology, decision making systems relating to the quality of the urban environment, urban planning, environmental design, impact of the designed environment on human behavior and health, problem solving and creativity systems; **Sidney Bremer**, literature and women's studies, the urban novel and artistic images of the city, fiction by and about women and ethnic figures, stereotypes and minority groups, American cultural and intellectual traditions; **Per K. Johnsen**, psychology, environment and behavior, social and behavioral consequences of design, human spatial behavior, privacy and territorality; **David M. Littig**, urban politics, public policy, urban transportation, Latin American politics; **E. Nelson Swinerton**, political science, public administration, American presidency.

Assistant Professors: Ray Hutchison, urban sociology, ethnic studies, immigration, Hispanics in the U.S., research methods; **Gerrit Knaap**, urban economics, regional economics, public finance, environmental economics, land use planning.

IMPORTANT. At the time of publication of this catalog, plans are underway to merge the Urban Studies concentration with the professional program in Public and Environmental Administration. Students interested in Urban Studies should see also the description of Public and Environmental Administration in this catalog and consult a faculty adviser from one of the programs. An addendum describing the merged programs and outlining requirements will be published as soon as plans are complete.

Ours is a predominantly urban world, and the keys to understanding the dynamic forces that shape its political economy, cultural development and social institutions may be uncovered through the study of urbanization. Particularly in the United States, the major forces shaping our social structure, our central social and environmental problems, and the prospects for our future are directly related to the nature of contemporary urban life. Thus, the study of the city provides a rich context for an interdisciplinary undergraduate education.

An urban focus is an obvious necessity for students who plan careers in design, administration, planning, human services, and related professions; however, because the city is a critical determinant of the nature of modern life, it also serves as a relevant vehicle for disciplinary studies in the social, behavioral, and policy sciences.

Urban Studies is an interdisciplinary concentration that offers students unique opportunities to combine theoretical material from the classroom with practical experience in the community. The Urban Studies faculty plays an active role in the local Planning Commission, the Transit Authority, the Redevelopment Authority, and other policy-making bodies. Other contacts include state and federal agencies, civic, educational, and service institutions. This broad range of contacts is rich with opportunities for field work and internships for students. Moreover, Urban Studies courses often focus on problems and issues important to the community. In many instances, the products of student projects have had significant impacts on local decision making.

Because of the university's location in Green Bay, teaching and research tend to focus on cities which fall into the midrange of population size. These cities exhibit high population growth rates and represent a rapidly expanding source of careers for urban professionals. Thus, the concentration offers students exceptional opportunities to prepare for careers where there is most likely to be a growing demand in coming years.

Requirements for the Major

Background Courses (3 credits required)

All Urban Studies majors must complete:
944-200 Introduction to Urban Studies

Supporting Courses (6 credits required)

In addition, the Urban Studies curriculum includes a 6-credit requirement for supporting courses which focus on specific methodological or quantitative skills. While this requirement is normally fulfilled by the completion of Social Science Statistics and Foundations of Social Research, other courses may be selected after consultation with the Urban Studies adviser.

255-205 Social Science Statistics
OR
600-260 Introductory Statistics

255-301 Foundations of Social Research (required)

Environmental Design students must also complete:
168-106 Design Methods
944-210 Drawing Systems for the Designer

Core Courses
(15 credits required)

The heart of the Urban Studies program is a group of core courses which are carefully designed to give each student a solid foundation in understanding the city and the nature of urban life. These courses have been separated into four groups. Students must complete five core courses including one from each group.

Social and Behavioral Sciences
944-302 Urban Behavior
944-303 Urban Sociology

Policy Sciences
944-305 Urban Politics and Policy
944-309 Urban Economics

Decision Processes
944-307 Urban Public Law
944-421 Urban Planning

Humanities
944-313 The City Through Time and Space
944-430 Urban Aesthetics

Areas of Emphasis

In addition to completing background, supporting, and core requirements, Urban Studies majors choose—in consultation with a faculty adviser—an area of emphasis. Emphases are offered in thematic areas including ethnic studies and women's studies; in professional programs including urban planning, environmental design, environmental planning, and urban administration; and in disciplinary programs including economics, political science, psychology, and sociology. In place of these, students are also welcomed and encouraged to design their own course of study on a particular problem or perspective in urban studies. Upper-level courses that may count toward the area of emphasis include courses in the urban studies core, other upper-level credits offered in the urban studies department, and other courses offered by other concentrations and disciplines that serve to strengthen the program of study.

General Urban Studies
The Urban Studies concentration is uniquely qualified to provide students with one of the finest urban studies majors available at the undergraduate level. Built around the core, students in the general urban studies program pursue more advanced interdisciplinary urban course work related to the core. This program of studies not only develops problem-solving and analytical skills focused on the urban setting, but provides for an integration among the social sciences and humanities. This strong interdisciplinary major is solid preparation for a professional career and graduate studies.

Urban Planning
Urban planning is concerned with the conceptual models, decision-making and problem-solving processes, and evaluation procedures that are appropriate to building and maintaining habitable urban settlements. Because of the complexity of the problems addressed by the field of urban planning, this specialization may be tailored to fit a broad range of student interests and competencies. This program provides indepth technical/professional preparation, as well as a comprehensive foundation for graduate studies in urban studies and urban planning.

Environmental Planning
The environmental planning specialization is for students who want to develop professional knowledge and skills in planning, typically in preparation for employment in public and private organizations concerned with improved planning, design, protection, and management of the human environment. It prepares students to deal with complex problems involving interrelationships among natural, social, economic, and political environments.

Women's Studies
The women's studies specialization provides men and women an opportunity to explore the cultural, racial, and economic diversity of the experiences of women and to examine the common denominators affecting women's lives. Women's studies courses are interdisciplinary, and an urban/women's studies emphasis can easily be designed to complement other work required to complete a Women's Studies Program. The women's studies emphasis is particularly effective for individuals pursuing careers in teaching, community service, social action, or affirmative action.

Disciplines
A disciplinary emphasis within Urban Studies provides students the advantage of developing analytical skills and deepening their understanding in a discipline. Urban life and issues are generally analyzed from the perspectives of the social sciences and humanities. Social science disciplines which illuminate urban life are economics, political science, sociology, and psychology. Literature and history provide specializations in the humanities. A student may choose any one of these for a disciplinary emphasis. They provide students with strong disciplinary bases for graduate studies and preparation for professional careers in the urban setting.

Environmental Design (Pre-architecture)
Environmental design involves exploring and participating in those decision-making processes that result in the shaping of settings in which humans live and act. The student of environmental design studies human environments which range in scale from the small study carrel to the seating of individuals in a public waiting room to the neighborhood or the central business district of a city. Students majoring in Urban Studies will find the track in environmental design an excellent means of preparation for a number of urban-focused professions; these include urban planning, urban design, and architecture.

Urban Administration
Urban administration combines Urban Studies with an emphasis on public administration. Courses in the urban core are supplemented with courses in public policy, problem analysis and decision making, and administration. This is an excellent program for students aspiring for careers in public service at the federal, state, county or local levels of government, as well as with nonprofit and other community organizations.

Ethnic Studies
The United States is a pluralistic society constructed from successive waves of immigration which continue to the present day. This is even more true of our cities, which house the majority of both older and newer immigrant groups. The ethnic studies specialization challenges us to understand who these immigrant groups are, how they are similar/different from the dominant society, and their contributions to American culture. Special topics of study include immigration policy, language patterns, religious traditions, assimilation, intermarriage, ethnic conflict, and colonial societies.

Requirements for the Minor

For an interdisciplinary minor in Urban Studies, students are required to take Introduction to Urban Studies, six credits of supporting subjects, nine credits in Urban Studies core courses (one course from three of the four groupings), and six credits of other urban or approved urban-related courses. A minor in Urban Studies is recommended for students with social science disciplinary majors (economics, political science, sociology, psychology, history), public administration, journalism and communications, and business majors.

Interdepartmental Majors and Minors

Environmental Planning

Professors: Hallett Harris, Science and Environmental Change; **Robert Wenger**, Science and Environmental Change.

Associate Professors: Daniel Alesch, Managerial Systems; **Ronald Baba**, Urban Studies (chairperson); **Bruce Clary**, Public and Environmental Administration; **Harvey Kaye**, Social Change and Development; **William Laatsch**, Regional Analysis; **David Littig**, Urban Studies.

Assistant Professors: Gerrit Knapp, Urban Studies; **William Niedzwiedz**, Regional Analysis.

Environmental Planning is a rigorous interdepartmental major for students who desire to develop professional knowledge and skills in planning, design, protection, and management of the natural and built environment. Most graduates of the program go on to graduate education in planning, architecture, policy science, or management where they report that their undergraduate education prepared them exceptionally well for such graduate study. Other graduates have entered employment in public and private organizations directly upon graduation where they find that the problem-focused approach to the program has prepared them for dealing with complex problems involving interrelationships among natural, social, economic, and political environments.

Environmental Planning is a cooperative program offered through several UWGB concentrations: Managerial Systems, Public and Environmental Administration, Regional Analysis, Science and Environmental Change, Urban Studies, and Social Change and Development.

Requirements for the Major

In addition to the regular requirements of the University, students majoring in Environmental Planning must complete 21 credits of required supporting courses, 30 credits of core courses, and an 18 credit field specialization. A major in Environmental Planning fulfills a student's interdisciplinary requirement at UWGB.

The required supporting courses prepare the student for advanced courses in environmental planning while augmenting the general education requirements of the University to ensure a well-rounded undergraduate education. Although the only mathematics course required is Intermediate Algebra, students are strongly advised to include at least one semester of calculus in their academic plan. The Environmental Planning core consists of studies in planning theory and methods, political and economic systems, and the natural environment. The required field specialization provides students with an in-depth understanding and skills in an area related to environmental planning, such as environmental design, resource management, public policy analysis, systems management, environmental science, or quantitative methods.

Required Supporting Courses

255-205 Social Science Statistics
OR
600-260 Introductory Statistics

255-305 Foundations for Social Research
305-201 Problem Analysis and Decision Making
600-101 Intermediate Algebra (or equivalent)
600-155 Computers and Microcomputers
778-100 Introduction to Political Science
862-102 Introduction to Environmental Science

Junior-Senior-Level Requirements

350-421 Planning Theory and Methods

Three of the following courses:
350-420 Decision Theory and Methods
350-460 Public Policy Analysis
834-322 Regional Planning
834-323 Land Use Controls
834-421 Techniques and Methods of Planning Analysis
944-421 Urban Planning

Two of the following courses:
298-302 Intermediate Macro Economic Theory
298-303 Intermediate Micro Economic Theory
298-306 Public Finance and Fiscal Policy
298-404 Economics of Developing Areas
350-415 Public and Nonprofit Budgeting
350-470 Capital Projects Planning and Programming
834-340 Economics of Land Use

Two of the following courses:
778-305 Urban Politics and Policy
778-312 Community Politics
778-351 Comparative Political Systems
778-353 Politics of Developing Systems
778-410 Intergovernmental Relations
778-416 American Legislative Process
875-333 Social Change in a Selected Area
875-361 Historical Perspectives on Social Change
875-365 People and Development

Two of the following courses:
296-420 Soil Classification and Geography
862-302 Principles of Ecology
862-303 Conservation of Natural Resources
862-327 Urban Technological Design
862-384 The Environment's Response to Human Settlement
862-460 Resource Management Strategy

Field Specialization

The field specialization requirement may be met by: 1) successful completion of a set of courses (consisting of 18 credits, with at least 12 credits of junior-senior courses) individually tailored to meet the student's interests; 2) fulfilling the requirements for an approved second major; or 3) meeting the requirements for an approved minor. The field specialization for each student is approved by the chairperson of Environmental Planning at the time the student's academic plan is prepared. The second major or the minor is typically taken in one of the concentrations that sponsor this interdisciplinary program. Students are strongly encouraged to pursue a second major in order to provide for an even stronger undergraduate background.

Requirements for the Minor

A student may obtain a minor in Environmental Planning by completing successfully a prescribed 18 credit course of study. The minor in Environmental Planning does not fulfill the interdisciplinary requirement. A student with a minor in Environmental

Planning must major in an interdisciplinary concentration.

350-421 Planning Theory and Methods
862-302 Principles of Ecology

Three of the following courses:
350-420 Decision Theory and Methods
350-460 Public Policy Analysis
350-470 Capital Projects Planning and Programming
834-322 Regional Planning
834-421 Techniques and Methods of Planning Analysis
944-421 Urban Planning

One of the following courses:
298-306 Public Finance and Fiscal Policy
298-404 Economics of Developing Areas
350-415 Public and Nonprofit Budgeting
834-323 Land Use Controls
834-340 Economics of Land Use

Information and Computing Science

Professors: Timothy Meyer, electronic media, telecommunications; **Thomas McIntosh**, remote sensing techniques; **Donald Larmouth**, linguistics, scientific and technical communication.

Associate Professors: Clifford Abbott (chairperson), linguistics, semantics; **Dennis Girard**, discrete mathematics, statistics; **John Harris**, management, organizational behavior; **Charles Matter**, cognitive psychology, visual perception; **Bruce Mielke**, computer science, programming languages, data structures; **Gilbert Null**, philosophy, logic; **Charles Rhyner**, microprocessor systems; **William Shay**, computer science, database management systems, systems programming, data structures.

Assistant Professors: Phillip Clampitt, human communication theory, organizational communication.

Instructor: Kurt Schroeder, computer cartography.

Information and Computing Science is an interdepartmental major. The central organizing concept of this new program is information—its structure, storage, retrieval, and communication. The curriculum ranges widely across several disciplines, all of which are represented in the core requirements: computing, linguistics, cognitive psychology, communication theory, mathematics, electronic media and telecommunications, organizational communication and management, logic, and language.

The major in Information and Computing Science satisfies a student's interdisciplinary requirement, but the minor does not. A student minoring in Information and Computing Science must choose an interdisciplinary major or second minor.

Computing is a significant dimension of this major, but human information processing is equally important, because a background in computing alone is not enough to assure the most effective use of machine processing in solving human problems. Students are expected to be thoroughly grounded in human language, cognition, and communication, not merely to avoid narrow technical preparation (and rapid obsolescence), but to make the best, most creative, most accessible and useful applications of machine processing and telecommunications.

The management of information is an area of central concern for practically all aspects of society. There is, accordingly, a need for individuals who are not only technically competent but who also can relate to human needs when they are involved in designing, implementing, and evaluating information systems. Hence, in addition to a core curriculum which includes both machine processing and human communication, students are required to identify an area of application, which may take several different shapes, depending upon the student's academic and professional interests.

The major in Information and Computing Science is thoroughly within the liberal arts tradition, ensuring through its core requirements that students receive a comprehensive, wide ranging educational experience. Such a program is more practical than a narrow, technical specialization, because it is more adaptable to a variety of opportunities and rapidly changing needs and is less likely to become quickly obsolete.

Facilities

UWGB is in a strong position to provide facilities and equipment necessary to support the major. Most of the computing power is supplied by two Telefile T-85 central processor units connected in an anonymous multiprocessing mode. This system is capable of supporting 100 on-line terminals and has access to four million bytes of MOS memory. Other hardware features include a disk storage capacity of 1.5 billion bytes, two tri-density tape drives, two line printers, three graphics terminals, and a projector available as an instructional tool.

In addition, the computer center has microcomputer laboratories containing a total of 44 microcomputers. These microcomputers support either Apple, IBM or CPM software. Several of the microcomputers are networked with a Corvus Omninet system. There is also a DEC PDP 1103 MINC laboratory computer used in the science laboratories and in processing data from the campus weather station. Also, the Laboratory Sciences building has a small microcomputer lab supporting laboratory science classes. Software capabilities include the following languages: PASCAL, FORTRAN, COBOL, LISP, SNOBOL, APL, assembly language, LOGO, and BASIC. Statistical packages for the social, biological and mathematical sciences include SPSS, BMDP and MINITAB.

The University has also made a major commitment to computer graphics by establishing a computer cartography laboratory, which is equipped with a Magnavox ORION plasma terminal, TALOS digitizer, CALCOMP incremental plotter, Tektronix graphic terminal and a Printonix electrostatic printer. These are supported with CALCOMP and PLOT 10 graphics packages as well as many mapping and statistical graphics application programs.

Much of this development was supported by a National Science Foundation CAUSE grant (Comprehensive Assistance to Undergraduate Science Education).

As another special resource, the library provides on-line bibliographic searches for 130 data bases through Lockheed Information Systems. The library also supports up-to-date technical processing systems for conventional bibliographic resources.

Requirements for the Major

The major in Information and Computing Science consists of 71 credits, which are divided into four areas: general requirements (11 credits); foundation courses (24 credits); junior-senior level core courses (27 credits); and area of application (9 credits).

General Requirements

The general requirements are part of the student's liberal education background. Foreign language experience is included because of the unique design of the program and its emphasis upon human information processing as well as computing.

One year foreign language (French/German/Spanish) or advanced placement equivalent, 8 cr.
736-111 Elementary Logic, 3 cr.

Foundation Courses

The following courses are required as background for more advanced study.
242-160 Introduction to Language, 3 cr.
246-200 Communication Processes: An Introduction, 3 cr.
246-201 Human Information Processing, 3 cr.
246-220 Principles of Bibliographic Organization and Control of Information, 3 cr.
416-250 Displays of Geographic Information, 3 cr.
600-241 Discrete Mathematics, 4 cr.
600-256 Introduction to Computer Science I, 3 cr.
600-257 Introduction to Computer Science II, 3 cr.

Junior-Senior-Level Core Courses

The following courses are required for students at the junior and senior level, with some options as noted.
246-322 Modern Linguistics, 3 cr.
246-326 Modern Semantics, 3 cr.
246-335 Organizational Communication, 3 cr.
246-445 Human Communication Theory, 3 cr.
600-351 Data Structures, Storage and Retrieval, 3 cr.
600-352 Computer Graphics, 3 cr.
600-353 Computer Organization and Programming, 3 cr.

One of the following courses:
246-305 Elements of Electronic Media, 3 cr.
246-308 Telecommunications Delivery Systems: Cable and Satellite, 3 cr.

And either the remaining course above or one of the following courses:
600-455 Microprocessors and Microcomputer Systems, 3 cr.
862-454 Remote Sensing of the Environment, 3 cr.

Area of Application

The required area of application must be a cohesive set of courses (minimum nine credits) which affords an opportunity for the student to develop some expertise in a particular dimension of information science. Some typical possibilities are:

Management of Information Resources
600-451 Data Base Management Systems
600-452 Operating Systems
Third course chosen with adviser

Structure and Design of Computer-Based Information Systems
600-451 Data Base Management Systems
600-454 Artificial Intelligence
600-457 Compiler Theory

Computer Cartography and Land-Use Planning
416-451 Computer Cartography
416-483X Advanced Computer Cartography
834-421 Techniques and Methods in Regional Planning

Communications Media
246-308 Telecommunications Delivery Systems: Cable and Satellite
246-444 Time Duration Visual Media

One of the following:
246-390 Scientific and Technical Communication
OR
246-460 Publications Management

Students must complete the all-University requirements in addition to their requirements in Information and Computing Science. However, this would still permit at least 23 credits of elective course work, which could be used to develop a minor (such as Business Administration, one of the natural sciences, mathematics, or one of the social sciences, or a broad-field communication program in Communication and the Arts). These elective credits could also be used to develop considerable depth in computing, languages or communication, beyond the minimum requirements for Information and Computing Science.

Study Plan

Because of the extensive range of course work involved in the major in Information and Computing Science, students will need to plan their studies carefully in consultation with a faculty adviser. A typical four-year plan for students majoring in Information and Computing Science might be as follows:

Freshman Year
242-160 Introduction to Language, 3 cr.
600-256 Introduction Computer Science I, 3 cr.
600-257 Introduction to Computer Science II, 3 cr.
736-111 Elementary Logic, 3 cr.
Foreign Language (two semesters), 8 cr.
All-University requirements courses, 15 cr.
TOTAL, 35 cr.

Sophomore Year
246-200 Communication Processes: An Introduction, 3 cr.
246-201 Human Information Processing, 3 cr.
246-220 Bibliographic Organization and Control of Information, 3 cr.
416-250 Displays of Geographic Information, 3 cr.
600-241 Discrete Mathematics, 4 cr.
600-351 Data Structures, Storage and Retrieval, 3 cr.
600-353 Computer Organization and Programming, 3 cr.
All-University requirements courses, 6 cr.
Electives, 6 cr.
TOTAL, 34 cr.

Junior Year
246-305 Elements of Electronic Media, 3 cr.
246-322 Modern Linguistics, 3 cr.
246-326 Modern Semantics, 3 cr.
246-335 Organizational Communication, 3 cr.
600-352 Computer Graphics, 3 cr.
All-University requirements courses, 6 cr.
Electives, 9 cr.
TOTAL, 30 cr.

Senior Year
246-445 Human Communication Theory, 3 cr.
600-455 Microprocessors and Microcomputer Systems, 3 cr.
600-457 Compiler Theory, 3 cr.*
600-454 Artificial Intelligence, 3 cr.*
600-451 Data Base Management Systems, 3 cr.*
Senior Seminar, 3 cr.
Electives, 9 cr.
TOTAL, 27 cr.

*Courses for required area of application (examples total 9 cr.)
Total Credits, 126

Careers and Advanced Study

Over the past several years, information processing has become the dominant national economic activity. It has been estimated that information-related activities now account for over 46 percent of the gross national product and over 50 percent of all labor income. There are both continuing and long-range demands for graduates of programs in information and computing science. The American Society for Information Sciences lists employment opportunities in four categories. These areas, along with examples of typical position titles, are as follows:

Design of information systems:
Applications or systems programmer
Information systems engineer
Library systems analyst
Management information systems specialist

Management of information systems:
Information/computing center manager
Systems analyst

Research and teaching:
Cryptographer
Information scientist
Programming language designer

Operation of Information Systems:
Abstractor-indexer
Bibliographic searcher
Computer-aided design specialist
Information marketing specialist
Librarian
Media specialist
Satellite communication specialist

While an undergraduate degree in Information and Computing Science opens the way to a number of career opportunities, it is also true that advanced study at the graduate level is important for many professional areas. Several major universities now offer M.A. and Ph.D. programs in information sciences, and related graduate-level studies in linguistics, cognitive science, organizational communication, electronic media, computer science, library science, and others are available at many universities. In planning for graduate studies, students should actively consult a faculty adviser in order to select appropriate undergraduate courses necessary for admission to graduate education.

International Studies

Associate Professor: Craig Lockard (coordinator), history, Asian and African studies, third world societies.

Americans live in an increasingly interdependent, complex, and changing world in which developments overseas affect us directly or indirectly, while American decisions and activities influence other countries. International trade accounts for an increasing proportion of American and world economic activity. The employment market for students with foreign language competence, cross-cultural sensitivity, and knowledge of the world is growing rapidly. Many students will pursue careers with international implications or applications. Furthermore, it is impossible to understand contemporary developments and problems without regard to global dimensions. Students need to gain some familiarity with international developments and with other cultures so as to better comprehend the nature of global change, and the American role in the world.

Several concentrations (Social Change and Development, Humanistic Studies, and Regional Analysis) jointly offer an undergraduate program in International Studies, through which students can elect either a minor field or area of emphasis within these concentrations. The program in International Studies draws upon courses and faculty from a variety of fields, particularly from the social sciences and humanities.

Students in the program are expected to gain an understanding of at least one area of the world outside of the United States, develop a familiarity with several approaches, exhibit competency in at least one foreign language, and, if possible, take advantage of the available study-abroad opportunities. Students working in a variety of fields should find the International Studies program relevant to their needs; some of these fields include education, business, public service, comparative cultural studies, foreign languages, area studies, political science, history, anthropology, sociology, development economics, comparative environmental studies, international relations and diplomacy.

Program of Study

Students interested in International Studies have several options in developing a course of study. Students with majors in Humanistic Studies, Regional Analysis, or Social Change and Development can select International Studies as either a regular minor field or as an area of emphasis within their major program. Students with other interdisciplinary majors, such as Managerial Systems or Urban Studies, can also select International Studies as a regular minor field. Students with disciplinary majors such as history, anthropology, political science, economics, or literature and language, can select International Studies as a second minor alongside a regular concentration minor.

Requirements for the Minor

Freshman-Sophomore-Level Prerequisites

Nine credits required, normally including:
156-100 Varieties of World Culture
416-102 Geography of World Regions
448-100 History of the Modern World
AND
Competency in one foreign language (Generally defined as equivalent to 16 credits or 4 semesters)

Other Requirements

(18 credits minimum; 12 of these credits must be junior-senior-level courses)
448-375 Great Decisions (required)

A minimum of six of the 18 credits must be in area studies focused on a particular region or country of the world, such as China, Mexico, Africa, the Soviet Union, Malaysia, Latin America, Southeast Asia, Britain, or Western Europe.

Remaining courses are chosen from more than 60 with an international, comparative, or cross-cultural focus accepted for International Studies credit.

Some courses which earn all-University requirements credit also meet International Studies requirements.

Specializations

Several possible specializations within the program are available. Students interested in international business could take such courses as International Trade, International Financial Management, Economics of Developing Areas, and Comparative Economic Systems. Students could also combine international business with a particular area focus; for example, a specialization on Latin American business could include courses such as Latin America Today, Aspects of Latin American History, the Americas Look at Each Other, and the January program in Yucatan.

It is possible to put together an area studies program. Students with a particular concern for Asia could take History of Modern China, History of Modern Southeast Asia, Analysis of South Asia, Non-Western Religions, Traditional Asian Civilizations, and Modern Asian Civilizations. Or, a program in German studies could include History of Modern Germany, Contemporary German Culture, German Literature, and perhaps a year on exchange at the University of Kassel in Germany. A student seeking a career in international development could select from such courses as Third World: Development or Despair, Economics of Developing Areas, History of Africa, Women in Cross-Cultural Perspective, and Social Change in a Selected Area. There are also possibilities in diplomacy and international politics; in these fields students can choose from among courses like Political Geography of Tension Areas, International Relations, Geopolitics of World Regions, Comparative Political Systems, U.S. Foreign and Military Policies, The Vietnam War in Historical Perspective, American Foreign Relations, and the Soviet Union Since 1917.

These are just examples; many possibilities can be worked out, depending on student interests and course offerings. Interested students should contact the coordinator for information on the program and for reference to a faculty adviser for their particular area of specialization or emphasis.

Women's Studies

Professors: Nancy Datan (chairperson), Human Development; **Estella Lauter**, Humanistic Studies; **Louise Witherell**, Humanistic Studies.

Associate Professors: Sidney Bremer, Urban Studies; **Julie Brickley**, Social Change and Development; **Lynn Walter**, Social Change and Development.

Assistant Professor: Ilene Noppe, Human Development.

Women's Studies are studies about women —for women and men. The Women's Studies program offers a variety of courses, areas of emphasis within interdisciplinary concentrations, and a minor. It examines the common denominators affecting women's lives. It focuses on the cultural, racial and economic diversity of their experiences. And it explores their past and present contributions to societies as persons, creators and thinkers.

The program draws upon methods and content from a wide range of disciplines, including anthropology, literature and the arts, biology, economics, history, political science, psychology, religion and sociology. It seeks to improve the quality of human life by expanding women's and men's appreciation of women's accomplishments and capabilities, and by enabling students to widen their sphere of development beyond the limits of traditional sex-differentiated roles.

Women's Studies courses are particularly effective for individuals pursuing careers in teaching, community service, social action, or affirmative action. Indeed they provide preparation for any job in which the people served or the coworkers include women. They also open up new ways of thinking about and designing careers. Women seeking leadership roles or professions in fields not traditionally open to women may especially gain much from the study of women's lives and contributions.

Women's Studies courses are emphatically interdisciplinary. The introductory course addresses current issues relating to social and personal values. Upper-division core courses establish other cultural and historical contexts for studying women, and introduce creative models and skills for meeting human needs.

All students are welcome in Women's Studies courses, and any student can pursue a program of Women's Studies courses as an area of emphasis within a cooperating concentration or as an independent minor. The cooperating concentrations are: Communication and the Arts, Humanistic Studies, Social Change and Development, and Urban Studies. Students should develop an academic plan in consultation with a Women's Studies adviser. The Office for Women's Educational Programs can consult with interested students and locate faculty advisers to approve programs of study and describe specific courses.

Requirements for the Minor or Emphasis

Women's Studies requirements include the introductory course, two of the three core courses, and four additional upper-level courses, including three credits of advanced research or theoretic studies for a 21-credit program to be listed on the academic transcript as a minor or as an area of emphasis.

Introductory Course

875-241 Women and Changing Values

Core Courses

242-477 Women as Creative Agents
875-345 Women in Cross-Cultural Perspective
944-345 Women in American Perspective

Other Junior-Senior-Level Courses

242-395 Images of Woman in Contemporary Arts
481-339 Woman in the Life Cycle
554-333 Women in 19th and 20th Century French Literature
875-340 Woman as Worker
875-342 Women, Myth and Identity
875-440 Women and Religion

Other experimental courses may be substituted for one of the above at the discretion of the Women's Studies advisers.

The Women's Studies program also includes several courses that satisfy all-University requirements. In addition to 875-241 Women and Changing Values, these include: 242-272 Women in Visual and Performing Arts, 481-336 Sex Role Development in Contemporary Society, and 493-206 Women in Literature.

Professional Studies

Managerial Systems

Business Administration and Managerial Accounting

Associate Professors: Daniel J. Alesch (chairperson, Business Administration), planning, decision theory, management, management information systems; **Maurice Better**, labor and economics and coordinator, School for Workers; **William Conley**, quantitative methods and computer sciences; **John Harris**, management, organization behavior, organization theory; **Robert Obenberger**, general marketing, promotion, and marketing for nonprofit organizations; **Michael Troyer**, management planning and control, management of service operations, nonprofit organization management and finance, ethics; **Karl M. Zehms** (chairperson, Managerial Accounting), financial accounting, nonprofit accounting.

Assistant Professors: Sam Ghanty, corporate finance, banking, financial institution management, international finance; **Mary Ann Hazen**, management, organization behavior, organization theory; **Patrick Lau**, corporate finance, investments, security analysis and portfolio management; **Jeffrey B. Tollers**, business law and accounting.

Instructor: William Piper, marketing, market research, consumer behavior.

Lecturers: Laurey Berk, corporate finance, investments, personal finance; **Lawrence C. Franke**, financial accounting, managerial accounting; **Larry Kostroski**, general management and small business management, director of Small Business Development Center; **Daniel Spielmann**, law and collective bargaining; **Donald McCartney**, general marketing, selling and sales management, public relations; **Greg Powers**, small business feasibility analysis and staff specialist (financial analysis) for the Small Business Feasibility Center; **Marilyn Sagrillo**, accounting systems, auditing; **Ann Selk**, financial accounting, managerial accounting; **Thomas L. Zeller**, accounting.

Programs in business offered through the Managerial Systems concentration are designed to prepare graduates for success as business professionals. Today's business professional is an analyst, decision maker, organizer and leader who must function effectively within changing economic, social, and political environments. Each student earning a degree will have the opportunity to acquire sound technical knowledge in a field of emphasis, broad preparation in other functional business disciplines, general analytical and decision-making knowledge and skills, and leadership abilities.

Analytical capabilities and superior skills in written and oral communications are especially beneficial for success in business. The program is structured to enhance and develop these skills and abilities.

The advancing business professional is characterized by breadth of perception and an ability to deal with people through understanding and maturity of judgment. These attributes are fostered and developed through the University's interdisciplinary study program in the liberal arts and sciences. An important goal is to prepare students to become business and community leaders of the future.

Students may select a major in managerial accounting or a major in business administration. The business administration or managerial accounting graduate may earn either the bachelor of science or bachelor of arts degree.

The Major in Business Administration

The business administration major offers programs in finance, management, marketing, and nonprofit organization management. Within each of these areas students may pursue a variety of career-directed professional programs. Degree recipients will be prepared for immediate entry into a variety of professional positions in business, human service, public or governmental organizations.

Students pursuing the major must meet an admissions requirement in order to ensure access to advanced courses. Review these requirements on page following the descriptions of the majors and minors.

Requirements for the Major

A major in business administration must complete 36 credits specifically within the business program. It comprises four components:

Pre-Business and Business Foundation Courses: This component provides breadth, perspective, and skills necessary as preparation for the study of business administration.

Business Core Courses: This group of six courses covers the broad functional areas in business providing the student a general business perspective and a firm basis for selecting and developing a field of emphasis.

Business Emphasis Courses: These courses enable students to acquire substantial knowledge in a particular field of business or administration. In this component students select a field of specialty in marketing, finance, management, or nonprofit organization management. Within each emphasis there is a variety of career directions students might pursue. For example, in marketing there are five different career-directed tracks including general marketing/brand management, market research/market analysis, sales and sales management, and nonbusiness marketing.

Minor: Business administration majors also must complete a nonbusiness minor in an interdisciplinary concentration or a discipline. Minors typically consist of an 18 credit minimum. The minor may be chosen from the humanities, fine arts, social sciences, or natural sciences and mathematics.

Specific requirements of each component in the business student's program of study are described in the following section.

Pre-Business and Business Foundation Courses

All-University requirements
(30 credit hours):
All-University requirements are described at the beginning of this section of the catalog.

Foundation requirements
(21 credit hours):
246-133 Fundamentals of Public Address
298-202 Macro Economic Analysis
298-203 Micro Economic Analysis

552-105 Expository Writing
OR
552-304 Advanced Expository Writing: Business Writing

575-217 Quantitative Methods in Administration
600-155 Computers and Microcomputers
600-260 Introductory Statistics

Business Core Courses (21 credits)

575-300 Introductory Accounting
575-302 Accounting for Administrators*
575-305 Business Law I
575-322 Introductory Marketing
575-343 Corporation Finance
575-362 Human Resource Management
575-382 Introductory Management

*Students electing the nonprofit organization management emphasis may substitute 575-316 Governmental and Institutional Accounting.

Business Emphasis Courses (36 credits)

Students who select an emphasis in management, finance, or marketing select five advanced courses beyond the core or introductory courses in their chosen emphasis and select one additional upper level course from each of the two areas not chosen as an emphasis. Thus, a specialty in finance would lead to selecting 15 credits of finance, three credits of marketing, and three credits of management. Students who choose the emphasis in nonprofit organization management must complete designated courses in each of four areas: management, marketing, finance, and accounting (575-385 Management of Nonprofit Organizations; 575-429 Marketing Strategies for Nonbusiness Organizations; 575-448 Financial Management of Nonprofit Organizations; and 575-316 Governmental and Institutional Accounting), and then select nine credits of additional upper-level course work in consultation with the adviser.

Emphases and the tracks within each are:

Finance Emphasis
Corporate financial management
Financial institution management

Marketing Emphasis
Brand management/general marketing/ MBA preparatory
Sales/sales management
Advertising/advertising management
Market research/market analysis
Nonbusiness marketing

Management Emphasis
General management
Personnel management
Small business management

Nonprofit Organization Management Emphasis
This area focuses on the unique administrative characteristics of nonprofit organizations and prepares graduates for further study for employment in health care, educational, social service, religious, charitable, philanthropic, planning, or other community and human service organizations of a public or private nature. The emphasis can readily be linked with a variety of other University programs that provide career preparation, including social work, arts management, public and environmental administration, nursing, and others.

Electives beyond the above requirements are chosen in consultation with a business administration adviser to total 124 degree credits.

Minor for the Business Administration Major (18 credits)

The required nonbusiness minor for business administration majors provides additional interdisciplinary perspective, judgment, and expertise in subject areas which support students' career objectives.

Following are some examples. Students interested in careers in the printing or art industries would select an emphasis in management or marketing and a minor in graphic communication. Students interested in entry-level management positions in the paper industry might complete their minor in chemistry and physics. Students who seek entry into international business might appropriately take a minor that includes foreign languages. A minor including courses in money and banking, regional economics, geography, and regional studies would be appropriate for a student interested in finance and the banking industry. A student with an interest in health care or human services might combine nonprofit organization management with a minor in human development or human biology.

Business advisers help students identify programs consistent with their aptitudes and career objectives.

Business Administration Minor for Non-Business Majors

A minor in business administration for nonbusiness majors consists of 21 credits. Students pursuing the minor must complete a major in an area of study other than business administration such as Science and Environmental Change, Communication and the Arts, Humanistic Studies, Regional Analysis, or other programs, including disciplinary programs.

The minor in business administration is interdisciplinary in character and can be utilized as the required interdisciplinary minor when majoring in a discipline.

The minor in business administration introduces students to a broad understanding of organizations, their management and the problem solving and decision making necessary for their effective and efficient operation. This involves an understanding of the functions of accounting, finance, management and marketing and the internal and external environment in which these functions are carried out. The student, upon graduation, will be more capable of applying his or her major area of expertise in working within an organization. For example, a student with a background in biology might find employment in a laboratory at a local paper company. The student's knowledge of biology coupled with a fundamental awareness of business administration would allow that person to function more effectively within and be more promotable by such an organization.

Almost all graduates in any field of study will eventually be either employed by or closely interact with business, government or nonprofit organizations. This minor is designed to give the student an exposure to the administrative process in order to function and participate more effectively in such a setting.

Required Supporting Courses (9 credits)

298-203 Micro Economic Analysis
552-105 Expository Writing

255-203 Social Science Statistics
OR
600-260 Introductory Statistics

Freshman-Sophomore Requirements (3 credits)

575-202 Business and its Environment

Junior-Senior Requirements (18 credits)

575-300 Introductory Accounting
575-305 Business Law I
575-322 Introductory Marketing
575-343 Corporation Finance

575-382 Introductory Management
AND
One upper division elective

Students pursuing the minor, in order to ensure access to advanced courses, must meet the same admissions criteria as majors. Review these requirements later in this program description.

The Major in Managerial Accounting

The major in managerial accounting is designed for students planning a career in the profession of accountancy. The requirements for the major include a variety of liberal arts and general business courses besides an in-depth exposure to the field of accountancy itself. Upon graduation the student is qualified to write either the Certified Management Accounting (CMA) or Certified Public Accounting (CPA) examinations. Over the past five years approximately 96 percent of the graduates of the program have been successfully placed in accounting-related positions and over 75 percent of the graduates who have written the CPA examination have passed that exam.

Students pursuing the major must meet an admission requirement in order to gain access to advanced courses. Admission requirements are described near the end of this chapter.

Requirements for the Major

Managerial accounting requirements are of four types and include:
Pre-accounting requirements
Foundation requirements
Business and accounting requirements
Requirements for a minor field of study

Pre-Accounting and Accounting Foundation Courses

All-University requirements
(30 credit hours):
These requirements are explained elsewhere in this catalog.

Foundation requirements (27 credit hours):
298-202 Macro Economics
298-303 Micro Economics
575-217 Quantitative Methods in Administration
600-155 Computers and Microcomputers

600-201 Calculus for the Management and Social Sciences
OR
Another calculus course

600-260 Statistics
OR
Equivalent course in Business Statistics

One written communications course:
552-105 Expository Writing
552-304 Advanced Expository Writing: Business Writing
OR
Equivalent course

One oral communications course:
246-133 Fundamentals of Public Address

Business and Accounting Core and Required Courses (65 credit hours)

Business courses:
575-305 Business Law I
575-306 Business Law II
575-322 Introductory Marketing
575-343 Corporation Finance
575-382 Introductory Management
An upper-level course in marketing
An upper-level course in management

Two of the following:
575-345 Risk Management
575-415 Income Taxation II
575-442 Principles of Investment

Accounting courses:
298-330 Money and Banking
575-300 Introductory Accounting
575-301 Intermediate Accounting
575-312 Managerial Accounting
575-313 Financial Accounting: Theory and Practice I
575-314 Financial Accounting: Theory and Practice II
575-316 Governmental and Institutional Accounting
575-410 Income Tax Theory and Practice
575-411 Financial Information Systems
575-412 Auditing Standards and Procedures
575-414 Advanced Managerial Accounting

Minor for the Accounting Major

Since the major in managerial accounting is a disciplinary major, the student must complete a minor in an interdisciplinary program. It should be noted that by completing the following courses (575-300, 575-305, 575-322, 575-343, 575-382, plus an upper-level course in marketing and one in management), the student automatically meets the requirements for the minor in business administration. Students who wish to complete a minor in an interdisciplinary program other than business administration should consult with their adviser.

Managerial Accounting Minor for Non-Accounting Majors

The minor in managerial accounting is designed to provide a reasonable exposure to the field of accountancy. Students pursuing this minor must complete a major in an interdisciplinary program at UWGB. Students completing a major in business administration will find the minor in managerial accounting an excellent means of extending their understanding of the role of accounting in the administrative process.

Nonbusiness majors will also find a managerial accounting minor useful. For example, computer science students will find that an important use of computers in the business world is to accumulate and generate accounting information. Understanding the information to be processed and generated will greatly enhance the computer science student's employment prospects and make that person more valuable within the business organization. Students in other areas will find accounting useful as well, because any individual who hopes to compete or advance in the current business environment must be able to interpret accounting information.

Supporting Courses (12 credits)

298-203 Micro Economics
600-155 Computing and Microcomputers

552-105 Expository Writing
OR
552-304 Advanced Expository Writing: Business Writing

One of the following:
575-305 Business Law I
575-322 Introductory Marketing
575-382 Introductory Management

Foundation Accounting Courses (10 credits)

575-300 Principles of Accounting
575-301 Intermediate Accounting
575-392 Accounting for Administrators

Specialty Accounting Courses (9 credits)

One of the following:
575-312 Managerial Accounting
OR
575-313 Financial Accounting: Theory and Practice I

Two of the following:
575-314 Financial Accounting: Theory and Practice II
575-316 Governmental Accounting
575-410 Income Tax-Theory/Practice
575-411 Financial Information Systems
575-414 Advanced Managerial Accounting

Students pursuing the minor must meet the same admissions criteria as majors, in order to ensure access to advanced courses.

Admission to Majors and Minors in Business Administration and Managerial Accounting

Freshman and sophomore students pursuing a degree in business administration are enrolled in a prebusiness curriculum consisting of all-University requirements courses and freshman-sophomore-level business foundation courses. As a prerequisite to being considered for admission to the business core as a managerial accounting and/or business administration major or minor, students are screened for eligibility during the second semester of their sophomore year. Requirements are summarized below.

Eligibility

To be eligible for admission, the student must possess at least a 2.3 grade point average (GPA) on all college work completed at the time their eligibility is reviewed, with 36 earned credits required as a minimum base for GPA calculation.

Eligibility does not guarantee admission. Only the most qualified applicants based upon GPA will be admitted from the pool of eligible students. The number of students admitted will be determined by availability of faculty, enrollment levels, and other considerations. Refer to the annual announcement of the GPA standard necessary to ensure admission to the program. Announcement of the standard is made twelve months in advance of the fall semester to which it applies.

Access to daytime sections of all 300- and 400-level courses is strictly limited to admitted majors and minors. Admission to the

business administration and managerial accounting majors and minors is not necessary for access to 575-300, Introductory Accounting, and 575-302, Accounting for Administrators. Determination of eligibility to enroll in 300- and 400- level business courses is made at the time of registration.

Transfer students are subject to additional review for purposes of determining admission to the programs in business. Special students who eventually elect to pursue a degree must meet the above eligibility requirements.

Students must be formally admitted to Business Administration or Managerial Accounting in order to major in them. Admission to the major is necessary for enrollment in selected upper division courses.

Business and Other Programs

A number of programs relate closely to or cooperate with the programs in business. They include the business and culture postgraduate study certificate, the business and applied science double major, and minors in Regional Analysis and Humanistic Studies that have been designed to serve the needs and interests of business students (see the appropriate program sections in this catalog or a program adviser for the latter two minors).

The Business and Culture Certificate

College graduates who want to give educational balance to the specialized focus of their previous college work can do so through the certificate in business and culture.

Adults with two different kinds of college backgrounds will benefit from this postgraduate course of study:
- Business professionals who want to broaden their knowledge by studying relevant fields outside business;
- Liberal arts graduates who want to gain increased understanding of the business world.

More information about the program and its requirements is available from the Managerial Systems office.

Business and Applied Science

The program in business and applied science leads to majors in both Business Administration and Science and Environmental Change. Business and applied science is a new program designed to provide opportunities to students interested in industrial careers in the pulp and paper, food processing, and similar industries located in northeastern Wisconsin. It is a blend of three important educational elements: business administration, physical and life sciences with a strong mathematical emphasis, and cooperative education employment with participating corporations.

The program in business and applied science is designed to challenge the best students. Course requirements prepare participants by the end of their junior year of study to be employable by many local and regional manufacturers in the cooperative education employment feature of the program. Students at the end of their sophomore year will have substantial science and mathematics course work but will not have begun work in the area of business. Students choosing this opportunity will extend the time period necessary to complete requirements for graduation to a minimum of five years.

Graduates from the program will complete requirements for pre-engineering as well as for entry to a program leading to the master's degree in business administration. This wide range of options will make a graduate more flexible in career planning than most other conventional science or business administration offerings.

The program in business and applied science is a rigorous one requiring well developed mathematical and analytical skills. Students can expect to be challenged and to have less time than usual for extracurricular activities. Faculty advice in developing appropriate course sequences is necessary early in the freshman year. Students should contact the offices of Managerial Systems or Science and Environmental Change for further information.

Education

Professor: George O'Hearn, science education.

Associate Professors: Lyle Bruss (adjunct) educational planning and educational administration; **Dennis Bryan**, curriculum development and evaluation; **James Busch** (chairperson), science education; **Margaret Laughlin**, curriculum and social studies education; **Richard Presnell**, environmental education; **Philip Thompson**, English, language arts and aesthetic education; **Thomas Van Koevering**, science education and environmental education.

Assistant Professors: Kathryn Koch, reading education.

Lecturer: Joan Thron, children's literature.

The Education professional program can prepare students for the teaching profession and/or for a variety of education-related professional areas. UWGB has certification programs in these subjects and grade levels:

Early childhood education
(nursery and/or kindergarten)
Elementary education
(grades K-6, 1-6, and/or 4-8)
Elementary art teacher
Elementary music teacher
Academic subject areas as listed below
(grades 7-12 unless otherwise indicated):
Anthropology
Art (secondary or K-12)
Athletic coaching
Biology
Chemistry
Communication arts
Computer science
Conservation
Drama
Earth science
Economics
English
English as a second language
(elementary, secondary or K-12)
French (secondary or K-12)
Geography
German (secondary or K-12)
History
Journalism (mass media)
Mathematics
Music—choral
Music—instrumental (secondary or K-12)
Music—general
(elementary, secondary or K-12)
Native American languages: Oneida
(elementary, secondary or K-12)
Physical science
Physics
Political science
Psychology
Science: broad field
Science: grades 7-9
Social Studies: broad field
Social Studies: grades 7-9
Sociology
Spanish (secondary or K-12)
Speech

All of these certification programs are fully approved by the Wisconsin Department of Public Instruction for preparation for licensure as a teacher in Wisconsin. Persons who have completed UWGB's certification programs also qualify for certification in most other states.

For students whose career goals are not the traditional roles of classroom teacher in the formal public or private school context, the education program offers opportunities, too. Such students may pursue noncertification programs which are individually planned to relate to their particular educational needs and career goals. Some examples of such career fields—many of

which are recent developments in our society—include: environmental education and nature center programs, labor education programs, business and industry education programs, educational media, social services agency educational programs, educational advocacy, parent education, education for the elderly, youth and adult community programs, leisure education.

Noncertification programs like these also may be valuable components of an undergraduate program for students who plan to continue their educations in graduate or professional schools, such as law, medicine, and other fields.

The Education program emphasizes integration of theory and practice. As a part of many courses, students have opportunities to work in community schools and agencies to gain practical experience in their selected fields. A student teaching experience lasting from 10 weeks to a full university semester is required for certification. A limited number of paid, semester-long internships are available as alternatives to student teaching for selected students. Also, credit can be arranged for a variety of field experience assignments through independent study and/or the course entitled, Field Experience in Environmental Education (302-451).

Teacher preparation is a cooperative responsibility of the Education faculty and various other departments of the University. While pursuing the degree requirements in their chosen major, students also follow a program to meet requirements of the Wisconsin Department of Public Instruction for teacher certification as approved for UWGB. These include the academic requirements of the selected certification program or programs, professional education requirements, and the preparation in human relations required for teacher certification.

Careers

UWGB graduates with teacher certification have consistently shown an excellent placement record. A follow-up of graduates receiving initial certification in 1983-84 revealed that approximately 90 percent of the respondents were employed in teaching. The others were engaged in other employment, military service, or advanced study. None were unemployed and seeking a teaching position. Employment opportunities do vary depending upon the area of certification.

Students who are interested in a teaching career are strongly advised to consult an education adviser or the UWGB Placement and Career Development office early in their university studies to obtain up-to-date information about job opportunities in education and advice on combinations of fields and grade levels of certification which offer the best prospects for employment.

Many job opportunities outside of education are open to persons with preparation in professional education because of the humanizing aspects of their professional preparation, their experience in working with people, and their training in organization and planning.

Admission to Teacher Education

Admission and program requirements and procedures described below are those in effect at the time this catalog was prepared. At times some changes may be necessitated by new state requirements, so students should contact the Education Office for current requirements which may affect their programs.

Preliminary Admission: When they are admitted to the University, students may choose any certification program in which they expect to complete requirements. Students planning to complete a teacher certification program are urged to confer with the education program adviser before they enroll or during their first semester at UWGB. Any student in good standing may enroll in lower-division courses in education or in an education program not leading to certification.

Final Admission: Students may be admitted to the teacher certification program any time after their third semester or when they have completed 45 credits if they satisfy the following criteria:

A. Admission to UWGB as a matriculated student.

B. A 2.50 cumulative grade point average.

C. Demonstration of competency in basic mathematics by passing the Advanced 2 Level of the Metropolitan Achievement Test in Mathematics with a scaled score of 815 OR by passing Math 104 or a higher level of mathematics course at UWGB with the grade of "B" or better.

D. Demonstration of competency in English/writing by satisfying the UWGB undergraduate English proficiency requirement.

E. Freedom from physical or mental/psychological impairment which would substantially limit a person from performing the essential functions of a teacher candidate or teacher. Such physical or mental/psychological impairment shall not disqualify a person who with reasonable accommodation can perform the essential functions of a teacher. An examination and recommendation by an appropriate medical and/or other professional specialist will be required if deemed necessary.

Admission requirements to teacher education must be met before a student teaching placement will be made.

Students who fail to meet one or more of these criteria may be considered on a special petition basis. Persons deciding to enter the teacher certification program later than the beginning of the junior year, as transfer students or as post graduates for initial certification, must also meet the above criteria.

Continuation in Teacher Education: Students may continue in the education program as long as they continue to meet conditions for final admission specified above and maintain these grade point averages:
—2.5 overall
—2.5 in professional courses
—2.5 in certification major(s) and minor(s) (for certification in academic subject areas)

Program Changes, Time Limits and Reentry Requirements: When a change in requirements for a program is adopted, students who have been admitted to that program may complete either the new requirements or those in effect at the time of their admission to the program, but not a combination of the new and old requirements.

A student who transfers from one program to another, or adds an additional certification program, must meet the requirements in effect for the new program at the time of application for that program.

Any changes in courses to complete an approved program or variations from the requirements for a program must be approved in writing by the student's Education adviser and the Education certification officer. For changes in a discipline major or minor for certification, the approval of the adviser or chair of that discipline is also required.

Students who are dropped from the teacher education program for failure to meet requirements for continuation will be readmitted on the basis of the admission and program requirements in effect at the time of their original admission to the program if they meet the requirements for continuation which were in effect at the date they were dropped and that not more than three years have elapsed since that date. If three or more years have elapsed since the date they were dropped, readmission will be considered on the basis of admission and program requirements in effect at the time of application for readmission.

A student will have seven years from the date of admission to a program to finish

that program provided there is not more than a three year continuous period in which no course work applicable to his or her program is completed. If the program is not completed in the seven year period and/or a period of three or more years has elapsed from the end of the last term in which any course work applicable to his or her program was completed, a student will be required to apply for readmission, on the basis of admission and program requirements in effect at the time of such application for readmission.

If changes are made in state requirements for teacher certification, students who complete a certification program after the effective date of the change will need to meet such new requirements.

Exceptions to any of the above regulations may be considered on the basis of a special petition. Petitions must be submitted to the chair of Education and will be acted upon by the executive committee of Education or a subcommittee appointed by that committee.

Special Students: Students with teacher certification in Wisconsin based on a bachelor's degree or higher can pursue a teacher certification program for extension of their existing certification to additional grade levels or subjects by enrolling as special students. Such students should consult the Education Office for specific requirements and procedures.

Requirements for Certification

A student's program of study in education combines interdisciplinary and/or disciplinary course work in the liberal arts that is related through courses in education to the certification sought or to other educational and career goals.

To be eligible for recommendation for certification as a teacher in the State of Wisconsin, a fully matriculated student at the University of Wisconsin-Green Bay must:

A. be enrolled in the UWGB teacher certification program (see above for requirements and procedures for admission and continuation in the teacher education program);

B. meet competency levels in subject matter areas outlined in the approved certification program;

C. meet competency levels required in the area of human relations as required by the Wisconsin Department of Public Instruction Administrative Code;

D. meet competency levels required in the professional education sequence;

E. complete requirements for and receive the recommendation of appropriate faculty for the bachelor's degree (or hold a bachelor's degree from an accredited university or college); and

F. receive the recommendation of the faculty in Education for teacher certification.

Following is an outline that students may use to plan a program leading to a UWGB bachelor's degree with teacher certification.

All-University Requirements (30 credits): Undergraduate students completing a degree and teacher certification at UWGB must fulfill the all-University requirements described elsewhere in this catalog.

Major/Minor Requirements: Undergraduate students completing a degree and teacher certification at UWGB must complete either an interdisciplinary major (30 credits minimum) or a disciplinary major (30 credits minimum) and an interdisciplinary minor (18 credits minimum). Some programs require substantially more than the minimum requirements. Refer to the descriptions in this catalog of specific major areas in which you are interested, or contact the Education program office for specific requirements for certification programs listed. For students in secondary education, the disciplinary majors require a minimum of 34 credits and must meet the subject area competency requirements of the Department of Public Instruction. A student who completes a certification program based on a major may be recommended for certification in one or more additional areas upon completion of appropriately related approved minors of a minimum of 22 or more credits.

Human Relations Requirements (9 credits): This is required in Wisconsin for all persons receiving teacher certification. It normally consists of nine credits plus a noncredit field experience. This requirement may be met in part by appropriate selection of all-University requirement courses. The UWGB Education program office has the current list of courses which meet this requirement.

Conservation/Environmental Education (5-13 credits): This is required in Wisconsin for all persons receiving certification to teach early childhood, elementary education, science or social studies. To satisfy this requirement students must complete the following course work:

302-203 Introduction to Environmental Education in the Schools, 2 cr.
PLUS Option A, B or C below:

Option A
862-102 Introduction to Environmental Sciences, 3 cr.

Option B
862-302 Principles of Ecology, 3 cr.
AND
862-303 Conservation of Natural Resources, 3 cr.

Option C
862-303 Conservation of Natural Resources, 3 cr.
AND
862-472/473 Ecosystems Analysis I and II, 8 cr.

Requirements for Education Specialties

Early Childhood Certification

Required Childhood Development Courses
481-331 Human Development I: Infancy and Early Childhood
481-333 Observation and Interpretation of Child Behavior
481-334 Play and Creative Activities in Childhood
481-431 Cognitive Development

Required Professional Courses
302-402 Student Teaching (student teaching at both the preschool and kindergarten levels must be completed for certification at both levels.)
302-410 Introduction to the Education of Exceptional Children
302-421 Reading Readiness and Language Development
302/481-441 History, Philosophy, and Current Programs in Early Childhood Education
302-442 Curriculum and Program Development in Early Childhood Education
302-445 Early Childhood Center Administration and Community Resources

481-335 Introduction to Experience with Young Children
OR
Approved supervised experience with a group of young children.

Related Competencies
Conservation/Environmental Education requirements as specified above.

742-116 First Aid and Emergency Care Procedures
OR
A standard first aid certificate is required.

The interdisciplinary major in Human Development is a requirement for all undergraduate students seeking a degree and early childhood certification at UWGB.

Elementary Education (grades K-6, 1-6 or 4-8)

Required Subject Competencies

(May be partially met by appropriate selection of all-University requirement courses.)

Performing and visual arts:
Sensitivity to the creative arts and the ability to encourage students to pursue creativity in music and art are essential competencies for the elementary teacher. Students are advised to pursue the arts as a means of communication, expression of individual and private worlds, social criticism, and cultural expression.

Art: Competency in art as demonstrated by the completion of one studio art course is required.

Music: Competency in musical terminology, basic note reading, rhythm and basic chord structure must be demonstrated by examination as a prerequisite to the elementary school teaching methods course in music, 302-304. Students with an insufficient background in music may develop this competency through 705-101, Basic Musicianship.

Mathematics:
For certification in grades 1-6, the two courses listed below are required. Note that the prerequisite for Mathematics 281 of Mathematics 101 or two years of high school algebra plus a satisfactory score on the mathematics placement examination is enforced.
600-281 Conceptual Foundations of Elementary Mathematics I
600-282 Conceptual Foundations of Elementary Mathematics II

For certification in grades 7 and 8, completion of a minimum of one of the two courses listed below in addition to the above requirement for grades 1-6 is required.
600-104 Elementary Functions: Algebra and Trigonometry
600-201 Calculus for the Management and Social Sciences

Reading and language arts:
Students are advised to develop competencies in the area of reading beyond those provided in the reading methods course. Reading Readiness and Language Development (302-421), is especially recommended for students whose primary interest is teaching in the primary grades. Reading in the Content Areas (302-422), is especially recommended for students whose primary interest is teaching in the intermediate or middle school levels. In addition, students are encouraged to elect work in the areas of communication arts and children's literature.

Science:
Competencies in the natural sciences are essential to teaching in the elementary school. Students seeking certification in K-6 or 1-6 are required to complete one course in each of two of the areas of science listed below, one of which must include laboratory and/or fieldwork. Students seeking certification in grades 4-8 must complete one course in each of the three areas, A, B, and C.

A. Biological Sciences
156/478-110 Introduction to Physical Anthropology
204-202 Principles of Biology I*
478-102 Introduction to Human Biology

B. Earth or Environmental Science
296-202 The Earth's Physical Environment*
862-102 Introduction to Environmental Sciences

C. Physical Sciences
225-108 General Chemistry*
225-211 Principles of Chemistry I*
754-103 Fundamentals of Physics I*

*These courses include laboratory and/or field work.

Social studies:
To teach social studies effectively in the elementary grades the teacher needs a strong academic preparation in the social science disciplines and applications to social problems. As a minimum, students in the elementary certification program are required to complete at least three courses in the social sciences to include one course to develop competency in the area of American studies, one in the area of global studies and one in a different social science discipline from those selected to meet the first two competencies. Election of additional social science courses is highly recommended.

Required Professional Courses
(37 credits minimum)

302-203 Introduction to Environmental Education in the Schools
302-301 Introduction to Education and Teaching
302-302 Principles and Methods of Teaching Social Studies in the Elementary School
302-303 Principles and Methods of Teaching Art in the Elementary School
302-304 Principles and Methods of Teaching Music for the Elementary Teacher
302-305 Principles and Methods of Teaching Mathematics and Science in the Elementary School
302-306 Principles and Methods of Teaching Health and Physical Education in the Elementary School
302-307 Principles and Methods of Teaching Reading in the Elementary School
302-309 Principles and Methods of Teaching Language Arts in the Elementary School
302-402 Student Teaching in the Elementary School
302-410 Introduction to the Education of Exceptional Children
820-315 Educational Psychology*

*With the approval of the education adviser and education certification officer, six credits as follows may be taken in lieu of 820-315:

481-332 Human Development II: Middle Childhood and Adolescence
AND
481-431 Cognitive Development
OR
302-406 Evaluation and Testing in Education

Related Competencies

Conservation/environmental education requirements as specified above must be met.

Additional Courses Required for Kindergarten

302-402 Student Teaching at the Kindergarten Level
302-421 Reading Readiness and Language Development
302-442 Curriculum and Program Development in Early Childhood Education
302/481-441 History, Philosophy and Current Programs in Early Childhood Education

Middle School Certification
Wisconsin currently has no standards for teacher certification that are specific to the middle school, although such standards are under consideration. Persons who hold an elementary education license for grades 4-8 are eligible to teach all general academic subjects in those grades in a middle school. However, it is strongly recommended that students completing the elementary education certification program who wish to teach in a middle school complete the requirements of one or more subject areas certification programs and do some student teaching in a middle school. Programs especially designed for certification in grades 7-9 as an extension of elementary certification are available in English, mathematics, science and social studies.

Persons who complete a secondary certification program are eligible to teach the subject(s) for which they are certified in grades 7 and 8 in a middle school. In some cases an extension of this certification to grades 6 may be obtained. It is strongly recommended that students completing a secondary certification program who wish to teach in a middle school do some student teaching in such a school.

Secondary Education

(Also elementary art or music certification.)
302-301 Introduction to Education and Teaching, 3 cr.

302-318 Reading and Study Skills in the Secondary School, 2 cr.
OR (with adviser's approval)
302-422 Reading in the Content Areas, 3 cr.

302-410 Introduction to the Education of Exceptional Children, 3 cr.
Methods course in subject area, 3 cr.
820-315 Education Psychology, 3 cr. (or alternative courses as indicated in elementary education program above with approval of education adviser and education certification officer)
Student teaching, 8-12 cr.

Noncertification Programs

As previously explained, noncertification programs can be individually planned to relate to a student's educational and career aspirations. A minimum of 18 credits as approved by an education adviser is required.

Military Science

Associate Professor: Tom Hartford, LTC, U.S. Army.

Assistant Professors: Neil B. Hensrud, Major, U.S. Army; **John A. Carlson**, Captain, U.S. Army.

Military Science is concerned primarily with developing leadership competence for success in civilian and military occupations. Students who want to develop such skills will choose studies in military science in addition to their major and minor programs.

The Military Science program of instruction has a core curriculum consisting of military skills and professional knowledge subjects integrated in both the basic and advanced courses. While the ultimate purpose of the program is to provide college-trained officers for the U.S. Army Reserve and the Army National Guard, it supports University goals by emphasizing personal depth and developing qualities necessary for leadership in civilian occupations.

The course of study is conducted by the Reserve Officers Training Corp (ROTC) and is a four-year program consisting of a basic course and an advanced course. Completing the course will provide opportunities for full- or part-time careers as an officer in the U.S. Army, National Guard, or Army Reserve.

Basic Course (Preprofessional)

The basic course is normally taken in the freshman and sophomore years. However, any student may register for any lower-division military science course. No military commitment is incurred and students may withdraw at any time before the end of the second year. The courses introduce students to select military skills and professional subjects. Students attend class two hours every week and may participate in a wide variety of extracurricular activities ranging from social events to rigorous, confidence-building physical activities, such as rappelling, whitewater rafting, and parachute training.

Advanced Course (Professional)

Satisfactory performance in the basic course, demonstrated leadership potential, and recommendations from program instructors make a student eligible to enter the professional program. Instruction includes introduction of military skills that must be developed before attending an Officer Basic Course (OBC). Such skills are fundamental to the military profession and serve as the basis for all future branch-directed specialty training. Professional subjects also are provided. They describe in basic terms what it is that the United States Army does and how it goes about doing it.

A six-week advanced camp is held during the summer between the junior and senior years. This camp permits students to put into practice principles and theories they have acquired in the classroom and exposes them to more military skills. Successful completion of the advanced camp is required prior to receiving a commission.

Two-Year Program

The Military Science program also offers a course of study designed specifically for students who are unable to take ROTC during their first two years of college. Such applicants must successfully complete a six-week basic camp prior to or after their junior year of college. This summer training takes the place of the basic courses of the four-year program and qualifies students to enter the professional courses. Qualified veterans with prior military service and junior ROTC graduates are eligible to enroll in the advanced course without participating in the basic courses.

Simultaneous Membership Program

Under this program, a person may enlist in the Army National Guard or Army Reserve, attend basic training during the summer and be qualified to enroll in the advanced course in the sophomore year in college. Upon successful completion of the advanced course, the cadet could receive an early commission and serve as a second lieutenant with the Army National Guard or Reserve while completing a baccalaureate degree.

ROTC Scholarship Program

Army ROTC offers many opportunities for two- and three-year scholarships awarded competitively to students who are already enrolled in college. While there are definite academic standards, the emphasis is on the student's total abilities and leadership potential.

Students who attend the basic camp under the two-year program may also compete for two-year scholarships while at camp. These scholarships pay for tuition, textbooks, lab fees, and other educational expenses, plus providing a living allowance of up to $1,000 each year the scholarship is in effect.

Nursing

Associate Professor: Juanita R. Theile (chairperson), R.N., Ed.D.

Instructors: Mimi Kubsch (assistant chairperson), R.N., M.N.; **Lorraine Noll**, R.N., M.S.N.; **Harriet C. Wichowski**, R.N., M.S.

Lecturer: Janie McCray, R.N., M.S.N.

The nursing program at UWGB provides an opportunity for registered nurses holding a diploma or associate degree in nursing to further their nursing education and earn a bachelor of science degree in nursing.

The UWGB B.S.N. program is accredited by the Wisconsin Board of Nursing.

Nursing program objectives and educational methods are designed to meet the needs of adult learners and practicing R.N.'s. Students are encouraged to utilize

and share previous learning and experience. Courses are offered on an alternating day and evening schedule and lecture sessions meet one day per week. Students have a choice of clinical agencies and locations and arrange their own clinical schedules.

The program assists students to identify and achieve career goals. Five nursing roles are emphasized: professional, provider of care, teacher, manager and researcher. In addition to these roles, in-depth attention is given to community health nursing, nursing theories, emphasis on the Roy model, the nursing process, group process, therapeutic communication skills, physical assessment, and care of individuals throughout the life span. The program encourages the development of autonomous, independent nursing actions capable of assisting individuals, groups and agencies to resolve health-related problems.

Since 1965 the bachelor's degree in nursing has been endorsed by the American Nurses Association and most recently by the National League for Nursing as the minimal preparation needed to enter professional nursing. Preparation in nursing at the baccalaureate level promotes:
- job security and promotion,
- upward career mobility,
- lateral movement from one specialty to another,
- an increase in personal market value,
- an increase in professional identity,
- an increase in nursing capabilities,
- critical thinking,
- eligibility for graduate school in nursing.

Requirements for the Major

Specific requirements to achieve the 124 credits are:

All-University Requirements (30 credits)
See description elsewhere in this catalog.

Nursing Program Prerequisites
See entry requirements.

Nursing Major (36 credits)
Nursing courses:
689-315 Health Assessment, 3 cr.
689-411 Theoretical Foundations, 2 cr.
689-415 Adaptation in Health and Illness, 4 cr.
689-421 Community Health Nursing, 6 cr.
689-425 Adaptation to Acute/Chronic Health Problems, 4 cr.
689-431 Nursing Management, 3 cr.
689-435 Nursing Research, 3 cr.
689-451 Advanced Nursing Concepts, 4 cr.
689-483X Computer Applications in Nursing, 3 cr. (approval pending)
689-483X Adaptive Parent-Child Health, 4 cr. (approval pending)

Freshman-Sophomore-Level Supporting Courses:
Introductory Statistics, 3 cr.
Public Speaking, 3 cr.

Junior-Senior-Level Supporting Courses (9 credits):
Upper-division courses to support individual career goals.

Electives
To total 124 credits.

Prerequisites for Entry

For acceptance into the nursing program, these requirements must be met:
- graduation from an accredited associate degree or diploma nursing program
- current Wisconsin R.N. licensure
- admitted to the University
- credit evaluation of previous college or university courses
- two advising appointments:
  - academic adviser
  - nursing adviser
- academic plan on file
- successful completion of NLN Profile II and Clinical Performance Tests (30 cr.)
- completion of course work in these areas:
  - Natural sciences, 9 cr., including Anatomy and Physiology
  - Social sciences, 9 cr., including Human Development Across Life Span
- cumulative grade point average of 2.25 on above prerequisite course work

The prerequisite course requirements may be met by transfer credit, credit by exam, or enrollment in a UWGB course.

Public and Environmental Administration

Professor: Michael E. Kraft, American government and politics, legislative processes, public policy analysis, environmental policy.

Associate Professor: Bruce B. Clary (chairperson), public policy, environmental politics, urban policy and management, organization theory, research theory and methods.

Assistant Professor: Mary T. Bailey, public management and budgeting, organization theory and decision making, environmental policy, energy management, regulation and administrative law.

IMPORTANT. At the time of publication of this catalog, plans are underway to merge the Public and Environmental Administration professional program with the Urban Studies concentration. Students interested in Public and Environmental Administration should see also the description of Urban Studies in this catalog and consult a faculty adviser from one of the programs. An addendum describing the merged programs and outlining requirements will be published as soon as plans are complete.

Changes in society during the current century have produced rising demands for greater effectiveness, efficiency, productivity, and responsiveness in governmental operations. As a result, there is an increasing need for public policy makers and public administration professionals who are able to engage in sophisticated processes of leadership and decision making, public problems identification and analysis, public policy evaluation and development, and public systems planning and management. This need is the central focus of the major in public administration. It emphasizes developing skills in problem identification, analytic techniques, decision making, planning and management, and leadership for social change.

Requirements for the Major

To qualify for a major in public administration, each student must complete 11 courses (33 credits) at the junior-senior level. Part of this requirement includes five courses from one of three program tracks designed to allow students to specialize in an area of interest. Additionally, 24 units consisting of freshman-sophomore level and supporting course work is required. Equivalent preparation such as prior work experience may substitute for one or more of these courses.

Freshman-Sophomore-Level Requirements

(6 credits or equivalent preparation required)
350-102 Introduction to Public Policy
350-201 Problem Analysis and Decision Making

Supporting Course Requirements

(18 credits or equivalent preparation required)
246-133 Fundamentals of Public Address
552-105 Expository Writing

778-101 American Government and Politics

298-202 Macro Economic Analysis
OR
298-303 Micro Economic Analysis

255-205 Social Science Statistics
OR
600-260 Elementary Statistics

600-155 Computers and Microcomputers
OR
600-256 Introduction to Computer Science I

Junior-Senior-Level Requirements (33 credits)

255-301 Foundations for Social Research
298-306 Public Finance and Fiscal Policy
350-315 Introduction to Public Administration
350-415 Public and Nonprofit Budgeting
350-460 Public Policy Analysis

350-435 Administrative and Policy Laboratory
OR
350-497 Administrative and Planning Internship

Fifteen units selected from one of three program tracks: (1) public management, (2) public policy, (3) environmental administration. Courses for a track are selected in consultation with a faculty adviser.

Requirements for the Minor

Eight courses (24 credits) are required for the interdisciplinary minor in Public and Environmental Administration. Four courses must be taken at the upper-division level.

Freshman-Sophomore-Level Requirements (6 credits)

350-102 Introduction to Public Policy
350-201 Problem Analysis and Decision Making

Required Supporting Courses (6 credits)

778-101 American Government and Politics

298-202 Macro Economic Analysis
OR
298-203 Micro Economic Analysis

Junior-Senior-Level Requirements:

(12 credits from this group)
298-305 Natural Resources Economic Policy
298-306 Public Finance and Fiscal Policy
298-402 Resource Economic Analysis
350-301 Environmental Politics and Policy
350-305 Regulatory Policy and Administration
350-310 Leadership in Organizations
350-315 Introduction to Public Administration
350-400 Environmental Law
350-410 Administration of Local Government
350-415 Public and Nonprofit Budgeting
350-420 Decision Theory and Methods
350-421 Planning Theory and Methods
350-460 Public Policy Analysis
778-416 American Legislative Process
778-460 American Foreign and Defense Policies
944-305 Urban Politics and Policy
944-314 Administrative Law
944-351 Transportation and the City

Careers and Advanced Study

The degree in public and environmental administration provides preparation for graduate work in a variety of fields, including law, political science, social services and public policy. The interdisciplinary curriculum allows for course work in all these areas and students may design their academic plans in such a way as to emphasize courses which will prepare them for graduate study. Students who have graduated from the program hold a variety of positions in local, state and the federal government and the nonprofit sector. They perform roles such as administrative analysts, budget officers, data processors and personnel counselors.

Bachelor of Social Work and Social Services

Associate Professors: Betty Baer (director, social work program), social work education, social work curriculum and program development, social welfare policy and services, methods of social work practice; **David Galaty**, social service theories and applications, history and philosophy of scientific ideas, epistemology, environmental problems; **Robert Mendelsohn** (chairperson), clinical and community psychology, planning, social and organizational psychology of human services delivery systems; **Rolfe White**, methods of social work practice, organizational change, evaluation of services, counseling.

Lecturer: Richard Jansen, methods of social work practice, human relations training, communications skills, behavioral dynamics of human systems, humanistic psychology, human resource development.

Bachelor of Social Work Degree (B.S.W.)

The Bachelor of Social Work is a separate degree for students who major in social work. The primary purpose of the degree is to prepare competent social workers for entry into a wide variety of careers for which the Bachelor of Social Work is an initial requirement.

A decision to formally enter the social work major should be based on experience in the introductory and prerequisite courses in social work and field experience. These courses are designed to help acquaint students with social work as a career, and to determine the potential the student has for developing the necessary levels of social work competencies by graduation.

Requirements for the Major

There will be changes in the requirements for the Social Work major, effective during the 1986-87 academic year. These changes, which were not available at the publication date of this catalog, are necessitated by the standards of the Council on Social Work Education to which the program anticipates submitting an application for accreditation during 1986-87. Prospective majors are urged to consult with a social work faculty adviser for updated requirements for the B.S.W. degree.

All-University Requirements (30 credits)
Humanities, 9 cr.
Social Sciences, 9 cr. (automatically completed by B.S.W. requirements)
Natural Sciences, 9 cr.
Senior Seminar, 3 cr.

Prerequisite Background Requirements (21 credits)
Social Work majors are required to select 21 additional credits in prerequisite background requirements from a list of courses available from Social Work advisers.

Supporting Subject Requirements (12 credits)
255-205 Social Science Statistics
255-305 Foundations for Social Research
552-105 Expository Writing
One additional course designated by the Social Work faculty

Social Work Core Courses (30-36 credits)
892-300 Introduction to Field Experience
892-302 Social Service Issues
892-305 The Social Work Profession
892-330,331 Basic Concepts of the Social Services I, II
892-402,403 Field Experience in a Social Service Agency I, II
892-410,411 Principles of Social Service Methods I, II
892-360 Social Service Delivery Systems and Cultural Differences

Concentration Emphasis (9 credits)
A minimum of nine upper-level credits must be selected from an interdisciplinary concentration relevant to social work. Typical concentration emphasis courses might be selected from Human Development, Social Change and Development, Urban Studies, Humanistic Studies, and Managerial Systems.

Elective Courses (22-31 credits)
The B.S.W. degree requires a total of 124 credits.

Social Services Professional Minor

The Social Services program is a professional minor for students who are majoring in a concentration and who want to explore an application of their major before graduating and/or for students who are interested in one of the number of human services fields other than social work. These include counseling, clinical psychology and rehabilitation.

The Social Services minor must be combined with an interdisciplinary concentration. Any concentration program may be combined with the professional program in Social Services. In practice, however, most Social Services students have majored in Human Development, Humanistic Studies, Social Change and Development, Urban Studies, or Managerial Systems, or in a combination of one of these concentrations with disciplinary programs in psychology or sociology. Some Social Services students might also choose a second professional program in Public and Environmental Administration, or Education. Each of these majors has particular strengths, depending upon the student's projected emphasis within the social services field.

Social service training is applicable to a wide range of careers in the human services. Graduates have been employed in positions such as welfare worker, counselor, personnel specialist, social advocate, administrator and child and youth care worker. There are, of course, other possibilities. The professional minor is organized as a two-semester "package" in order to maintain interrelationships between the basic concepts, methods, and field experience, permitting integration of theory with experience. Social service core courses are recommended for students in their junior and senior years who have most of their concentration credits completed.

Changes in the requirements for the Social Services minor will become effective during the 1986-87 academic year. These changes were not available in time for the printing of this catalog. Prospective minors should consult with a Social Services faculty adviser for updated requirements for the minor.

Prerequisites

892-202 Introduction to the Social Services
AND
892-250 Principles of Counseling and Psychotherapy

Core Courses

Senior year, semester I
892-330 Basic Concepts of the Social Services I
892-402 Field Experience in a Social Service Agency I
892-410 Principles of Social Services Methods I

Senior year, semester II
892-331 Basic Concepts of the Social Services II
892-403 Field Experience in a Social Service Agency II
892-411 Principles of Social Service Methods II

The Personal Major

A personal concentration is a self-designed program for students who find that their educational objectives and interests do not fit into any one of the existing concentrations. It is an alternative which may be planned around any theme consistent with the University's commitment to an education based upon the interrelatedness of knowledge and which focuses on human beings and their various environments.

In planning a personal concentration, students determine what it is they want to do and how the educational opportunities at UWGB can help attain this; design a personal program which can best enhance these objectives; and then formulate a proposal stating those objectives. This plan may consist of any combination of regular courses, experimental courses, independent study, internships, off-campus learning, and special programs, as long as the combination is a coherent program centered around an individual theme and contains a minimum of 30 credits at the junior-senior level. Essentially, the personal concentration can be organized in any way that makes sense and meets graduation requirements, as long as it clearly shows the interrelatedness of the student's proposal.

Students' final proposals must be approved by a personal concentration committee. The personal concentration process generally begins during the end of the sophomore year or at the beginning of the junior year.

In writing their concentrations, students must define the problem area, point out related problems, show how their personal concentration might effect solutions, and state the particular areas in which they see opportunities to integrate their abilities and needs with social or organizational goals.

An adviser in the Individualized Learning Program Office helps students organize details of their programs and can suggest faculty members to be consulted for their expertise in the students' interest areas.

Information about the personal major is available from the Individualized Learning Programs Office.

Preprofessional Programs

There are three ways to approach preparation for professional studies at UWGB:

1. Many professional schools exist on the graduate level and require a bachelor's degree from an accredited school for entrance. This is true of such fields as law, medicine, dentistry, library science, social work, some journalism and business administration programs, and others. Students can receive excellent preparation for these professional programs through the bachelor's degree programs at UWGB.

2. Another plan provides two years of basic, foundation studies at UWGB in preparation for an undergraduate degree in a professional program not offered at UWGB such as engineering. After two years at UWGB, the student transfers to the school offering that program.

3. The last possibility is similar, except that it provides two degrees—one from UWGB and one from a university offering the particular professional program desired by the student—and usually takes about five years to complete. Under this plan, students most often spend three years at UWGB and two at the other institution.

Students planning to enter a professional program should get all the information possible about the professional school or schools they are interested in early in their college careers and they should locate the appropriate adviser at UWGB for the professional area they want to pursue.

Here are some of the preprofessional programs available. This list by no means represents all of the professional programs which may be prepared for at UWGB. Students may be able to develop programs in many other areas to meet their own preprofessional program needs.

Students seeking preprofessional studies should contact the Office of Academic Advising for information and referral to appropriate faculty advisers.

Health Professions

Medicine: Almost all medical schools require a bachelor's degree for entrance and specify certain subjects that a candidate must have taken. These requirements may be met at UWGB. Exceptional ability, high aptitude in science, and outstanding achievement in premedical college education are all important for admission to medical school. The premedical student should learn requirements for the medical school of his or her choice early on, as well as take advantage of advising to plan a premedical program at UWGB to meet these requirements.

The most logical major at UWGB for students interested in premedicine and human life science is the Human Adaptability major in Human Biology. Other majors for students with interests in nutrition, field biology, chemistry or physics would be the Nutritional Sciences major in Human Biology, or the Science and Environmental Change concentration.

The premedical program at UWGB is successful from several perspectives. One is that graduates who achieve a high enough grade point average (3.5 or better) and who also have good medical entrance exam scores have virtually all been accepted into medical schools. Another reason is that UWGB's emphasis on a multidisciplinary program, in addition to being excellent preparation for medicine, also prepares students for other professional activities besides medicine or allows them more than one choice of graduate education opportunities after their bachelor's degrees.

An interesting aspect of UWGB is the opportunity for qualified undergraduates to participate in professional research—a privilege usually reserved for graduate students. Research experience improves the graduate's chances of entrance into medical and graduate schools and of obtaining job situations.

Dentistry: All dental colleges also specify certain subjects and most of them require completion of at least 90 credits of college work and good scores in the Dental Admissions Test before admission to the dental school. Entrance into these programs, too, requires early planning.

As for medicine, the most logical major for the predental student is Human Adaptability. The benefits of UWGB's program for predental students are similar to those for medical students, including the multidisciplinarity and opportunities for actual research experience.

Also, those students whose grade point averages are about 3.0 or better and who achieve good dental entrance exam scores have all been accepted into dental schools.

Information on courses necessary for premedical and predental programs may be obtained from the UWGB premedical adviser.

Nursing: Students interested in nursing can enter the program offered in cooperation with UWGB by the Bellin College of Nursing in Green Bay. This program will lead to the Bachelor of Science in Nursing awarded by Bellin. The student must be admitted both to the Bellin College of Nursing and to UWGB and takes courses at both institutions.

Registered nurses who have either a diploma or an A.D.N. and who want to complete the B.S.N. degree should inquire about UWGB's degree completion program for nurses. (See the description of this program in the Professional Studies section of this catalog.)

Pharmacy: The University of Wisconsin-Madison pharmacy program offers the bachelor's degree after completion of five years work. Two years of prepharmacy may be undertaken at UWGB, with the remaining three years in the School of Pharmacy on the Madison campus.

Veterinary Medicine: While admission requirements for veterinary schools vary, typically a minimum of two years of preprofessional college work is required, including specific courses. Since entrance is highly competitive, high grade point averages are essential. Students desiring entrance to schools of veterinary medicine should learn the requirements early and plan their programs with the help of an adviser.

Law

Law schools, unlike some other professional schools, do not require a uniform program of study or a specific undergraduate major. Law schools do recommend that a prelaw student attempt to reach several goals during the undergraduate years: an understanding of the development of social, political and economic institutions; and ability to communicate well, both orally and in writing; the capacity to think clearly and analytically; and a habit of disciplined study.

Preparation for law school can be carried out through concentrations, disciplines, and professional programs at UWGB. Among the most common areas of study for prelaw students are political science, Public and Environmental Administration, Managerial Systems, Social Change and Development, Urban Studies, and Humanistic Studies. Students considering any of these programs should discuss their interests and academic needs with the chairpersons or designated prelaw faculty advisers in those areas.

In addition to an undergraduate major in an appropriate field, prelaw students should consider courses in a wide range of liberal arts and sciences. Courses in political science, economics, sociology, history, philosophy, literature, accounting, computer science, and the natural sciences are recommended. Faculty advisers can suggest particular courses in those fields. Students should also consult the prelaw student advisory guide for recommended courses.

Admission to law school is highly competitive, so prelaw students must maintain good grade point averages in their college work. Students must also take the Law School Admissions Test (LSAT) in the junior year or early in the senior year for law school application.

UWGB can provide a strong undergraduate preparation for the legal profession. To select a suitable course of study, students should discuss their plans with faculty advisers in the several areas noted. The Academic Advising Office can indicate which faculty advisers in each concentration, discipline, and professional program can help them decide about law school and a course of study at the University.

Engineering

For students interested in attending UWGB for two years and then transferring to an engineering program at another university, UWGB offers courses in mathematics, physics, chemistry, engineering drawing, engineering mechanics, and other related courses which provide adequate preparation for the first two years of study. Preengineering students should contact a preengineering adviser early in their studies for help in planning a program that will transfer to an engineering school.

Agriculture

Good basic preparation for the prospective student in agricultural science is available through UWGB's courses in the physical and life sciences, the social sciences and humanities. Faculty advisers for agricultural studies will assist students in contacting one of the three UW System agricultural colleges and in developing an appropriate program of study. Sample programs of study with UWGB course equivalents to courses at the three UW System agricultural colleges are available.

Pre-agriculture students ordinarily would take two years at UWGB, transferring to a school or college of agriculture at the beginning of the junior year. Students desiring a degree in the field of agriculture should see the adviser early in order to arrange the completion of sequence course requirements prior to transfer.

Architecture

Architecture curricula have become more and more flexible in the last 15 years. This flexibility is the result of the adaptation of the profession to the changing role of the architect in the process which shapes our physical environment. It has become necessary for the architect to be more aware of the social and behavioral consequences of his/her work. The architect is now required to be well versed in the dynamics of environmental change. This professional evolution has made the master artist/builder a more interdisciplinary professional. Thus, it is now possible to transfer into a professional program in architecture after spending at least two years in a liberal arts program of study which emphasizes pre-architectural studies, and many students now complete a bachelor's degree in preparation for a professional master's degree in architecture. The latter alternative makes it possible for the pre-architecture student to gain a broad-based interdisciplinary education prior to entry into an architectural curriculum. Such a program of study allows for a broader range of career choices. These include urban design, urban planning, interior and industrial design, in addition to architecture.

Architecture combines the study of the natural sciences, social and behavioral sciences, engineering, mathematics and fine art. Thus, a strong pre-architectural program can be designed from the offerings of the several concentrations, professional programs, and disciplines at UWGB. Much of the integration required to mold these courses into a degree program at UWGB has been accomplished in the interconcentration program in environmental design. This program can be taken as an emphasis in the Urban Studies or Communication and the Arts concentrations. The Environmental Design program has a history of high quality preparation for students interested in architectural careers. Students who have successfully completed the program have been placed in prestigious architecture schools across the nation; in addition, many of these students have received scholarship funds at the graduate level.

Pre-architecture students should consult with the environmental design adviser, Prof. Ronald Baba, Urban Studies, in their first semester at UWGB.

City Planning and Community Development

Professional instruction in city planning and community development is available at the graduate level at many universities. UWGB offers undergraduate programs through Urban Studies, Regional Analysis, environmental design, and other programs that are particularly appropriate for entry into such programs. Students who are interested should learn about entry requirements for the professional schools early in their undergraduate years.

Social Work

Accredited schools of social work offer a one- or two-year program of graduate study leading to the degree of master of social work. Admission to such programs is based upon scholarship and personal qualifications for the profession. Preference for admission is given to students who have a Bachelor of Social Work degree and experience in a social service agency. A student at UWGB can prepare for this graduate course of study through the Bachelor of Social Work degree or the professional program in social services with one of the following concentrations: Human Development, Urban Studies, or Social Change and Development.

Physical Education

Chairperson: Bernard Starks

Assistant Professor: Robert Goemans, coaching certification and physical education activity courses.

Lecturers: Carol Hammerle, physical education activity courses, basketball coach, coordinator for women's athletics; **Roger Harriman**, physical education activity courses, swimming and diving coach, aquatics coordinator; **Janis Pum**, physical education activity courses, women's tennis coach, cheerleader adviser; **Bernard Starks**, coaching certification coordinator and physical education activity courses.

The Physical Education program leads students to the understanding of their physical as well as intellectual and social selves, thereby contributing to their development as whole persons. The program stresses refining and developing motor skills and the associating physiological and kinesiological principles related to efficient and stressful physical activity.

Understanding oneself physically can improve one's relationships with the social, cultural, biological, and aesthetic environments. Program offerings allow individuals to develop, improve upon or to maintain a high level of physical wellness which will contribute to the quality of life in work as well as leisure time pursuits. Physical education is, therefore, related to all other units and programs on campus.

Credit for Basic Instruction Courses

While the Physical Education unit does not offer a major or minor, a student may take up to four credits of physical education courses numbered from 100 to 499 for elective credit toward a B.A. or B.S. degree. In addition, any number of approved physical education courses and credits may be counted as degree credits if those courses are listed on a student's academic plan as a requirement for: a) an interdisciplinary major; b) a disciplinary program major; c) a professional program; or, d) a part of the supporting subject or background requirements—but only if the related program is completed before graduation.

Credits in physical education courses taken in addition to the above provisions will not count toward graduation. Consult the Timetable for further regulations and procedures about physical education credits.

Physical education students must demonstrate evidence of personal fitness for selected courses by submitting the required University medical examination forms to the Student Health Services Office.

Coaching Certification

The coaching certification program consists of a minimum of 16 credits designed to prepare students for coaching responsibilities. The program is approved by the Wisconsin Department of Public Instruction for certification as an athletic coach in the public schools of Wisconsin. Youth-sport coaches are also encouraged to acquire similar training.

Students are encouraged to initiate coaching certification early in their course of teacher preparation to assure normal matriculation. However, students desiring certification may normally complete requirements within two academic years.

Some coaching certification courses are appropriate for interdisciplinary study and many students select individual courses without completing the entire program. Persons already teaching and/or coaching may select courses to expand their personal and professional background.

UWGB's coaching certification program is consistent with the recommendations of the National Council of State High School Coaches, the National Association for Girls and Women in Sport, and the American Alliance of Health, Physical Education, Recreation and Dance, as well as the Wisconsin Department of Public Instruction.

Required Courses
(15 credits listed below)

478-102 Introduction to Human Biology, 3 cr.

742-401 Philosophy of Athletics and Coaching, 2 cr.
OR
742-402 Psychology and Sociology of Sport, 2 cr.

742-403 Organization and Administration of Athletics, 2 cr.
742-405 Scientific Conditioning of the Athlete, 2 cr. (prerequisite 478-102 or equivalent)
742-406 Prevention and Treatment of Athletic Injuries, 2 cr. (prerequisite 478-102 or equivalent)
742-410 to 434 Principles of Coaching, 2 cr., select from courses listed below:
- 410 Basketball/Softball
- 411 Basketball
- 412 Bowling
- 413 Crew
- 414 Curling
- 415 Fencing
- 416 Field Hockey
- 417 Football
- 418 Golf
- 419 Gymnastics
- 420 Handball Team
- 421 Ice Hockey
- 422 Lacrosse
- 424 Skiing
- 425 Soccer
- 426 Swimming and Diving
- 427 Tennis
- 428 Track and Field
- 429 Volleyball
- 430 Wrestling
- 431 Cheerleading
- 433 Pom-Pon Team
- 434 Drill Team

742-435 to 459 Field Experiences in Coaching, 2 cr. (See courses listed under Principles of Coaching)

Electives (1 credit minimum)

742-401 Philosophy of Athletics and Coaching (2 credits)
742-116 First Aid and Emergency Care (2 credits)
742-117 Cardiopulmonary Resuscitation (1 credit)
742-171 to 184 Athletic Officiating (1 credit)
- 171 Basketball
- 173 Football
- 174 Gymnastics
- 179 Baseball/Softball
- 183 Volleyball

External Degree Programs

Extended Degree in General Studies

The extended degree in general studies at UWGB is for Wisconsin adults who want to complete a bachelor's degree, but have been hampered because of job schedules, family responsibilities, or distance from a four-year campus. It is an excellent opportunity for adults who wish to continue their education without being limited to on-campus courses. The Bachelor of Arts: General Studies degree enhances the ability to communicate effectively, to make *more thoughtful decisions, and to cope* with our changing society.

In this program, classroom learning is replaced with independent learning contracts. Courses offered through the Extended Degree are self-paced. Professor and student meet to work out details of a study plan, and then maintain contact through appointments, phone calls, and other agreed-upon means. Contracts cover a 12-month period rather than the traditional semester schedule.

Extended degree students use study guides specifically designed for program requirements, and may take advantage of periodic weekend seminars. Students work directly with the same UWGB professors who teach the on-campus courses. When students enter the program, their learning activities are structured; however, as they progress, they are encouraged to *develop unique* and highly individualized learning activities.

Because of the unique nature of the extended degree, a two-credit entrance seminar helps students understand competency education, contract learning, adult development, and the Extended Degree program. Students who have successfully completed the seminar find it "a rich learning experience," "a good way to get started back to school," and "a good investment of time."

Students complete general requirements and competencies in each of six areas of the liberal arts: business and economics, communications, humanities and fine arts, natural sciences, problem solving, and social sciences. In addition, each student designs an area of emphasis, with faculty approval, of 15 credits which enables the student to focus on a problem or theme related to personal or professional interests.

To succeed in a program of this nature, students are expected to be highly motivated, and willing to work independently on assignments. Students who need an extended degree can contact an extended degree adviser to discuss alternative ways to earn credits. Current options available include credit for prior learning (CPL), College Level Examination Program exams (CLEP), *correspondence courses, media* courses and evening courses at UWGB or a campus near the student. Extended degree advisers are familiar with these alternative methods of earning credits, and assist students in selecting appropriate learning activities.

Persons who want more information should contact an extended degree adviser in the Individualized Learning Programs Office. A catalog listing available courses for the freshman through the senior year is available.

University Without Walls

University Without Walls (UWW) is an external degree program which offers Wisconsin residents the opportunity to earn a UWGB undergraduate degree through an off-campus format. The program is designed for persons who are unable to attend on-campus courses as well as for those who want to participate in an alternative educational process. Upon acceptance to the program, UWW students do the majority of their study through individualized learning contracts.

A learning contract is designed by the student *in collaboration* with a UWGB professor with expertise in the area of interest. It outlines what will be learned, the method of study, resources used, the number of credits received, and means of evaluating the work students will complete on their own. This is an exciting and demanding process which requires dedication from the students involved because they take considerable responsibility for developing and initiating their own contracts.

Persons who are attending on-campus courses but find the UWW format exciting should inquire into independent study courses. Independent study enables on-campus students to expand their curriculum beyond the classroom.

Though the method of study is different, UWW students may earn a degree, with approval of the instructional unit chairperson, in any of the majors offered to on-campus students. Graduation requirements are the same as for on-campus students.

Due to the individualized nature of University Without Walls, the admission process is selective. Over the years of the program's existence, it has been found that graduates usually possess high levels of independent learning skills. Therefore, rigorous application procedures have been developed to ascertain beforehand an applicant's ability to attain a degree through UWW. Eligibility for acceptance into the program is based on:

- inability to attend on-campus courses or expressed preference for an alternative learning process.
- approximately two years of college credits.
- excellent writing skills (which will be assessed during the application process).
- evidence of ability to set objectives and follow through to completion as demonstrated by previous experiences.
- evidence of self-direction and motivation as indicated in the design of an initial learning contract.

Students who are interested in UWW but have fewer than 62 credits can contact the UWW adviser to discuss eligibility. Candidates may earn credits in a number of alternative ways. Available options include credit for prior learning (CPL), the College Level Examination Program (CLEP), *correspondence courses, media courses,* and evening courses at UWGB or another campus near a student's home. The UWW adviser is knowledgeable in these alternative methods of earning credits, and will assist students in selecting appropriate learning activities. For more information, students should contact the Individualized Learning Programs Office.

Academic Support Program

Staff: Joan E. Thron, director; **Michael Marinetti**, special services project supervisor; **Evalyn Larkin**, tutoring lab supervisor; **Jo Chern**, writing; **Ann Deprey**, reading and writing; **Marj Herrscher**, EOP adviser, writing and study skills; **Kathryn Koch**, reading; **Monroe Lerner**, writing; **Tezz Marquardt**, mathematics and science study skills; **Mary Quinn**, writing; **Michael Stearney**, mathematics and science study skills.

The Academic Support Program assists students in developing the skills they need to succeed in college, particularly the skills of critical thinking, effective writing, efficient reading, basic mathematics, and essential study techniques such as note-taking, reviewing, and summarizing, as well as the techniques of taking essay exams and objective tests.

Skills Courses and Workshops
The Academic Support Program offers nondegree credit courses in reading, writing, mathematics, and applied study skills. The following courses are usually offered both in the fall and spring semesters: College Reading Skills, Efficient Reading, Fundamentals of Writing, Elementary College Algebra, and Applied Study Skills Labs connected to introductory courses in Environmental Science, Human Biology, Human Development, literature, and sociology. In addition, workshops are available during the January interim that focus on such special problem areas as these: the research paper, sentence structure, rapid reading, composing on the microcomputer, and arithmetic review.

Tutoring
Individual tutoring is provided free to students who need short-term assistance with a course, paper, or project. Appointments may be scheduled at the tutoring lab. Small-group tutoring sessions for particular courses are also regularly scheduled.

Resource Materials
The Academic Support Program provides a variety of resource materials to assist students in improving their reading, writing, mathematics, and study skills. Among the most popular resources are handout sheets on topics such as How to Write a Research Paper, How to Document Resources, and How to Prepare for Exams. Some computer-assisted instruction materials also are available, including programs for word processing and improving writing skills.

Associate of Arts Degree

The associate of arts degree at the University of Wisconsin-Green Bay offers a flexible program with areas of emphasis in a broad range of subjects and represents a degree earned through a fully accredited university level educational program.

The A.A. degree certifies completion of a focused, structured program of study. This accomplishment represents essentially half of a bachelor's degree and a minimum of 62 degree credits.

There are several reasons why a person might find an A.A. degree beneficial:

- to add breadth and depth to the vocational training they have or plan to receive;
- to strengthen opportunities for advancement by gaining additional education and certification;
- to serve as a stepping stone toward a bachelor's degree;
- to provide an opportunity to pursue a special academic interest in a focused, systematic way;
- for personal enrichment and pleasure.

The University began granting the A.A. degree with the December 1977 graduation. Students and former students who may already have fulfilled A.A. degree requirements may file an academic plan and a request to graduate with the A.A. degree even though they are not enrolled for the semester in which they would graduate.

Requirements for the Degree

Requirements for the associate of arts degree at UWGB include:

- a total of 62 degree credits;
- a minimum of 15 credits of UWGB course work (meaning that only 47 transfer credits from another accredited college or university can be counted toward the A.A. degree);
- a grade point average of 2.0 or better;
- a completion of the all-University general education requirements except for the senior seminar requirement described elsewhere in this book;
- a minimum of 12 additional credits in one area of emphasis developed by the student and a faculty adviser;
- acceptable score on an English proficiency test or 3 credit hours of college level writing;
- supporting subjects as may be required by the individual area of emphasis;
- additional elective credits to total 62 or more earned degree credits;

A summary shows these requirements:
27 credits of liberal education and distribution
12 credits emphasis
3 credits writing (if required)
20-23 credits electives and/or supporting subjects
62-65 total

Associate of arts degree students must fulfill the same admission requirements as students in the bachelor's degree program. All of the services available to regular degree students apply to A.A. candidates and they can participate as fully in the life of the campus as they wish.

Tuition and fee charges for A.A. degree students are the same as for bachelor's degree students.

Persons interested in the associate of arts degree program should read especially the sections in this catalog on admissions and costs, all-University requirements, and descriptions of the academic programs which they may wish to emphasize. More information is available from the Office of Admissions and Orientation.

Graduate Programs

The University of Wisconsin-Green Bay offers graduate programs leading to the Master of Science or Master of Arts in Environmental Studies in specific areas listed below. In addition, in cooperation with other campuses in the UW System, four master's degrees in education are offered at UWGB.

Master of Science/ Master of Arts in Environmental Studies

The UWGB master's degree program offers areas of emphasis (tracks) in Community Human Services, Environmental Science, and Environmental Administration. Each area is described briefly below. All of the areas emphasize a problem-solving approach to practical issues in their respective fields. An interdisciplinary approach to problems is encouraged. And students have considerable flexibility in designing a program of studies relevant to their interests. The students' program of study consists of a minimum of 30 credits of graduate work. Some areas of emphasis may require more than 30 credits.

Community Human Services

Community Human Services focuses on the dynamics, structure, management and improvement of such organizations as:

—mental health clinics,
—social and welfare agencies,
—community organizations,
—rehabilitation agencies,
—hospitals,
and certain aspects of police departments, schools, and industrial organizations. The program seeks to provide sufficient knowledge to permit graduates to understand, modify, create and use these organizations to assist others.

Environmental Administration

This track develops knowledge and skills necessary for effective planning, management, and evaluation of policies, organizations and delivery systems. The track offers three specializations.

Administrative science: for students who wish to pursue careers in public or private organizations with special emphasis on management techniques and decision making.

Policy studies: focuses on policy issues related to contemporary public problem solving activities, on the public policy system, and on methods of policy analysis.

Systems planning and analysis: for quantitatively oriented students who wish to engage in sophisticated professional-level systems planning and analysis operations.

Environmental Science

Focuses on scientific analysis of and solutions to contemporary environmental problems, such as:

—waste management and resource recovery
—resource planning and management
—ecosystems studies
—water quality
—community health
—quantitative methodologies

Also, a cooperative program between the University of Wisconsin-Green Bay and The Institute of Paper Chemistry in Appleton is available.

In addition to the three tracks described above, students may participate in a personally designed emphasis. This allows for a unique combination of elements from the various tracks to meet unusual goals for a student.

Cooperative Programs in Education

UWGB, in cooperation with the Universities of Wisconsin at Milwaukee (UWM) and Oshkosh (UWO), offers four master's degrees in the field of education. These programs and the UW institutions holding entitlement to the degrees are listed below. All of the course work for these programs is normally completed on the UWGB campus.

—Educational Psychology: Counseling (UWM)
—Administrative Leadership and Supervision (UWM)
—Curriculum and Instruction (UWM)
—Reading (UWO)

For More Information

For further information about the Master of Science or Master of Arts in Environmental Studies, with tracks in Community Human Services, Environmental Science, and Environmental Administration, contact the office of Graduate Studies, CC 335, (414) 465-2484. For further information about the cooperative programs in Education, contact the Education Office, Wood Hall (SE) 424, (414) 465-2137; or the Graduate Studies Office.

Course Descriptions

This section of the catalog contains course descriptions listed in alphabetical-numerical order. Students should not conclude that courses listed under one academic program may be taken for credit only in that academic unit. Many academic units accept for major and/or minor credit courses listed under another academic area. This is one of the many reasons students should seek advising in designing their programs of study.

Every course described in this catalog is not offered every semester, though nearly all of them are offered on a regular basis, such as every spring, or every fall, or in odd-numbered or even-numbered years. Some courses may be offered only during the January interims. Up-to-date information on course periodicity is published in each *Timetable*.

That is why students should consult the *Timetable* for each session when planning their programs. *Timetables* also publish new courses and special offerings, such as experimental courses or seminars, which do not appear in this catalog.

Prerequisites

Two types of previous course experience may be indicated in the *Timetable*—prerequisites (required) and recommended prior courses.

Prerequisites indicate the minimum level of proficiency or background knowledge needed for successful achievement of the course objectives. Students who have not fulfilled required prerequisites will not be allowed to enroll in a course. Exceptions to prerequisites may be made by the course instructor or the instructional unit chairperson, but the student is responsible for seeking approval of exceptions before enrolling in the course.

Recommended prior courses are basically advisory. Students who have not completed recommended prior courses—usually lower-level courses—may enroll in a course if they choose, but they do so at their own risk. Instructors will not hold back the progress of a course for those students who have not taken recommended prior courses. Students who misjudge their ability to complete a course without recommended prior courses may get a lower grade than they desire. They also run the risk of finding it necessary to drop the course, which also means loss of tuition and costs of books and course materials.

Because the required prerequisite/recommended prior course policy was adopted shortly before the publication of this catalog, most of the academic units were not able to designate required and recommended courses in the descriptions in this book. Only the course descriptions for Human Adaptability, Nutritional Sciences, and biology have been corrected here. Students should consult the *Timetable* for each semester for required and recommended courses for each course they plan to take.

Abbreviations and Symbols

Abbreviations commonly used in course descriptions are:

cr	credits
P	prerequisite(s)
fr	freshman
soph	sophomore
jr	junior
sr	senior
cons inst	consent of instructor
†	all-University requirements course

Instructional Unit Numbers

The instructional unit number listed with each group of course descriptions is used for identification and record keeping. Students will need to combine the instructional unit number with the course number to complete registration forms, for example. For record keeping, Biology 303, Genetics, would be listed 204-303. The first three digits refer to the instructional unit; the last three to the course number. The six-digit number also is used to refer to course prerequisites.

Courses are listed numerically by instructional units in the *Timetables*, which list what courses are being offered each semester, January, and summer session. The *Timetable* also tells when the course is scheduled and, in most cases, who will be teaching it.

Instructional unit numbers are:

156 Anthropology
168 Art
204 Biology
225 Chemistry
242 Communication and the Arts
246 Communication Processes
255 Community Sciences
296 Earth Science
298 Economics
302 Education
350 Public and Environmental Administration
400 Freshman Seminar
416 Geography
448 History
478 Human Adaptability
479 Nutritional Sciences
481 Human Development
493 Humanistic Studies
552 Literature and Language: English-American
553 Academic Support Program-English
554 Literature and Language: French
556 Literature and Language: German
558 Literature and Language: Spanish
575 Managerial Systems
600 Mathematics
601 Academic Support Program-Mathematics
644 Military Science
689 Nursing
705 Music
707 Music-Applied
709 Theater
736 Philosophy
742 Physical Education
754 Physics
778 Political Science
820 Psychology
834 Regional Analysis
862 Science and Environmental Change
867 Senior Seminars
875 Social Change and Development
892 Social Services
900 Sociology
930 University Without Walls
944 Urban Studies

Courses with Variable Content

Many academic programs of the University offer courses with variable content to provide students with opportunities for individual work and exploration of unusual, specialized, or topical subjects not ordinarily included in the curriculum. They fall into five categories: selected topics, student-led courses, independent study, internships, and senior honors projects. General descriptions of the nature and philosophy of courses in each category are provided below. They are cited only briefly by number and title in the course lists of units offering them. Information on how to develop or take such courses can be found in the *Timetable* or the Academic Advising Office.

281, 481 Student-Led Courses 1-4 cr.
Well prepared, highly motivated students are offered the chance to develop and lead courses on their own. Topics derive directly from student interest and initiative and are chosen from subjects of contemporary concern not covered in regularly scheduled or catalogued courses. One to three qualified students may work with a faculty adviser to propose a course they feel competent to design and lead. Proposals are routed through an appropriate interdisciplinary concentration or professional program for approval based both on merit and potential demand.

Upon approval, courses are listed in the *Timetable* with the instructional unit student-led course number. The listed title will appear on student transcripts. Students may enroll for a maximum of six credits of student-led courses in any one semester. A maximum of 18 credits can be accumulated in 281 and 481 courses except by special permission. A complete set of guidelines for student-led courses is available for consultation in concentration and professional program offices.

283X, 483X Selected Topics 1-4 cr.
Courses and seminars presented on an experimental basis or in response to special demand. Topics may be chosen to represent current issues of general concern, special interests of student groups or faculty members, special resources or visiting faculty, or other areas of interest not represented in existing programs. A particular topic is offered only once under the selected topics course number. It may then be adopted as a regular course and assigned a regular course number.

When offered, the title and number of credits is announced in the *Timetable* under the heading of the sponsoring unit. Further information can be obtained from the unit or the instructor. Introductory courses are presented under the 283X number. Those calling for more advanced preparation carry the 483X number and normally require the consent of the instructor for enrollment. The title of the course as announced in the *Timetable* appears on the transcripts of students who enroll.

298, 498 Independent Study 1-4 cr.
Offered on an individual basis at the student's request and consisting of a program of selected reading and research planned in consultation with a faculty member in the subject matter area of the student's choice. A student wishing to study or conduct research in an area not represented in available scheduled courses should develop a preliminary proposal and seek the sponsorship of a faculty member. The student's adviser can direct him or her to instructors with appropriate interests. A written report or equivalent is required for evaluation, and a short title describing the program must be sent early in the semester to the registrar for entry on the student's transcript. *Timetables* can provide up-to-date information on independent study.

484 Senior Honors Project 3 cr.
Each interdisciplinary or professional program offers qualified students the opportunity to undertake a project to qualify for graduation with honors. Such a project —normally a thesis, research, or other creative activity—is carried out in the latter part of the junior year or in the senior year with the consent of an adviser. Specific details are available from advisers and chairpersons. Students should register for an honors project not later than the first semester of the senior year.

497 Internships 3-12 cr.
Supervised practical experience in an organization or activity appropriate to a student's career and educational interests. Includes supervised reading and periodic meetings with faculty sponsor. P: jr st and cons of department chair.

156 Anthropology

156-100 Varieties of World Culture † 3 cr.
A survey of the variety of ways of life that exist in the world. Stress is given to the concepts of culture, cultural relativity, and ethnocentrism. Representative case studies of tribal and peasant societies are considered.

156-110 Introduction to Physical Anthropology † 3 cr.
A study of populations from a biological evolutionary perspective. The evolutionary history, diversity, and adaptation of human beings is explored. Also included is discussion of the mutual interaction and influence of human culture and biology within an evolutionary framework. See 478-110. Credit is not granted for both 156-110 and 478-102.

156-220 Myth, Ritual and Religion † 3 cr.
Critical survey and analysis of mythologies, rituals, and religion and magic among divergent cultures of the world. Emphasis is placed on how religious and magical systems interrelate with family, political and economic institutions. P: soph st or 255-102.

156-250 The Anthropology of Contemporary U.S. Culture 3 cr.
Anthropological perspectives and methods are applied to the study of contemporary American culture, focusing on values and symbols, enculturation, proxemics, language, work and leisure, domestic life, and political behavior. The lecture/discussion format is supplemented by collective study of specific ethnographic problems in the cultural setting of northeast Wisconsin. P: 156-100 or 210 or 900-202.

156-283X Selected Topics 1-4 cr.
See page 98.

156-298 Independent Study 1-4 cr.
See page 98.

156-301 Peoples and Cultures of a Selected Region 3 cr.
Description and analysis of a selected area with emphasis on cultures of that area, their development, contemporary variation, and relationship to significant social issues. Areas may include Africa, South Asia, Southeast Asia, Oceania, Northeast Great Lakes Region, and the cultures of American Indians, Afro-Americans, and European peasantries. Courses may be taken for credit each time a different region is presented. See *Timetable* for specific offerings. P: *jr* st.

156-303 Cultural Ecology 3 cr.
How people, nature, and culture interrelate. The approaches hunting, agricultural, and industrial societies use in adapting to the physical environment are studied. P: *jr* st.

156-304 Family, Kin, and Community 3 cr.
A cross-cultural comparison of the form and function of such social institutions as marriage and the family; age, sex and kin groups; task groups; caste and class. P: *jr* st.

342 Human Evolution 3 cr.
See 478-342.

364 Human Variability 3 cr.
See 478-364.

156-483X Selected Topics 1-4 cr.
See page 98.

156-497 Internship in Museum Anthropology 1-4 cr.
Cooperative venture with the Neville Public Museum. Students will negotiate a specific anthropologically related task to be carried out at the museum under museum staff supervision and seek approval of a UWGB anthropology faculty sponsor. Tasks might include research on, or cataloging of artifacts and/or their display or presentation in special programs. An opportunity to experience behind-the-scenes aspects of professional museum work. Not a general museum course. P: 156-100, 110, 210 or 215 and soph st.

156-498 Independent Study 1-4 cr.
See page 98.

168 Art

168-105 Drawing 3 cr.
Introduction to studio art work and to fundamental concepts of drawing structure and design. Emphasis upon two-dimensional art work employing various drawing techniques in black and white media.

168-106 Design Methods 3 cr.
This studio seminar to serves as an introduction to design methods. Its focus is investigating spatial design as a decision-making and problem-solving process bounded by criteria which include human sensory systems, ergometrics, proxemics, basic structural systems, and materials. These investigations are combined with experiences and creativity systems, graphic and workshop tools and techniques.

168-107 Two-Dimensional Design 3 cr.
Introduction to design studio art work and to fundamental concepts of art structure and composition. Emphasis upon two-dimensional art work in color and design utilizing the elements and principles of design.

168-200 Introduction to Mixed Media on Paper 3 cr.
Designed to prepare students who may specialize in drawing, painting, or printmaking. Encourages exploration of the interrelationships of water-based mediums (watercolor, acrylics, dyes) to drawing tools, photographics, images, collage and the incorporation of found objects. Use of a wide variety of paper surfaces will be emphasized. P: 168-105, 168-106.

168-210 Introduction to Painting 3 cr.
Investigation of painting media; oil, watercolor, and acrylics and their inherent expressive qualities and characteristics.
P: 168-107.

168-220 Introduction to Sculpture 3 cr.
Introduction to various sculpture media and their inherent expressive qualities. Construction of basic forms using clay, plaster, cement, and other media. P: 168-107.

168-230 Introduction to Ceramics 3 cr.
Introduction to the forming of clay by pitch, slab, and coil methods and throwing on the wheel. Pottery decoration and glaze application. P: 168-107.

168-243 Introduction to Photography 3 cr.
The creative process in photography is studied to develop visual perception through active participation in discussions and photographic exercises. See 246-243.

168-250 Introduction to Experimental Textiles 3 cr.
Students explore ways in which prewoven fabrics can be altered through surface embellishment (batik, painting, color application, photocopy transfer) and through assembling and reconstructing (stitching, quilting, soft sculpture). Emphasis is on integration of textile processes and concepts with those normally associated with painting, drawing, and sculpture. P: 168-105, 168-106, 168-107.

168-260 Art Metals: Jewelry Fabrication 3 cr.
Studio work in creating and designing jewelry projects using varied metal techniques, processes and metal media. Forming, shaping, and designing of jewelry as quality handcrafted art forms for personal adornment and expression. P: 168-105, 168-106, 168-107.

168-283X Selected Topics 1-4 cr.
See page 98.

168-298 Independent Study 1-4 cr.
See page 98.

168-301 Life Drawing and Anatomy 3 cr.
The skeletal structure and muscular articulation of human and animal forms as a basis for artistic interpretation. P: 168-105, 168-106, 168-107.

168-311 Intermediate Painting 3 cr.
Cultivation of techniques for personal expression; composition and development of imaginative concepts in oil paint and allied media. P: 168-210.

168-314 Watercolor Painting 3 cr.
Creative approach to watercolor techniques; cultivation of personal expression and development of imaginative concepts. P: 168-210.

168-321 Intermediate Sculpture 3 cr.
Intermediate work in sculpture. Students use various media to develop personal forms of expression. May include metal fabrication, casting of metals, carving, lamination of plastics, and innovative methods of working with different materials. P: 168-220.

168-331 Intermediate Ceramics 3 cr.
Intermediate work in ceramic media with emphasis on the potter's wheel and the aesthetics of the vessel, surface decoration form and utility. P: 168-230.

168-332 Intermediate Ceramics: Moldwork 3 cr.
Studio work in the construction and use of molds for ceramic use. Explores multiple imagery, modular units, slip casting and the use of original and found forms in producing the ceramic object.
P: 168-230.

168-343 Photography II 3 cr.
Emphasis upon black and white photography and darkroom printing techniques. P: 168-243 or equivalent experience. See 246-343.

168-344 Photography III 3 cr.
A continuation of 168/246-343; investigation of black and white photography, allied media, and applications of photography. See 246-344.

168-353 Intermediate Textiles: Fiber 3 cr.
Investigation of the varied techniques of creating both two and three dimensional forms with fibers and pliable linear materials. Focuses on weaving (both on- and off-loom) with crochet, knotting and other fiber construction techniques introduced as supplements. Emphasis is upon the use of fibers as a vehicle for artistic expression. P: 168-105, 168-106, 168-107 required; 168-250 recommended.

168-355 Intermediate Textiles: Papermaking 3 cr.
Students explore the potential of handmade paper as a primary artistic material. Basic processes include pulp processing, sheet forming, poured pulp, color applications, and three dimensional techniques in casting, moulding and assemblage. P: 168-105, 168-106, 168-107 required; 168-250 recommended.

168-364 Art Metals: Casting 3 cr.
Study and investigation of casting techniques in jewelry and art metals media. Emphasis on designing wax models; varied casting processes (i.e., "lost-wax," centrifuge, steam casting, vacuum casting, gravity casting), and the aesthetic development of 3-D art metals/jewelry pieces as reflection of individual creative expression. P: 168-105, 168-106, 168-107.

168-373 Intaglio 3 cr.
Studio work in intaglio techniques including dry point, engraving and various etching procedures. P: 168-210.

168-375 Screen Printing 3 cr.
An introduction to studio work in screen printing, including basic materials and equipment, blockout stencil making, paper stencil, pochoir, water soluble film, and photo emulsion technique. P: 168-105 and 168-106, or 168-243 and 168-343; or 242-231 and 242-331.

168-377 Lithography 3 cr.
An introduction to the art of lithography employing fundamental techniques of planographic printing. Explored and developed as a medium of expression in which students communicate personal statements reflecting the human condition of the environment. P: 168-105, 168-106, 168-107.

168-390 19th and 20th Century Art 3 cr.
Analyzes the evolution of art styles from neo-classicism to surrealism (1789-1945) and relates these movements to their historic and cultural origins. Topics include the struggle of the individual against the state and the academy, the influences of scientific and psychoanalytic discoveries on the arts, and the resulting changes in our perception of reality. P: 242-202.

168-395 Exhibition Development and Design 2 cr.
Introduction to the standards, practices and methods of the museum and art gallery profession. Includes most phases of successful exhibition development including planning, promotion and publicity, development of educational materials and programs, exhibition design and installation, and training in the proper handling and treatment of works of art. P: *jr* st and cons inst.

168-396 Gallery Practicum 1 cr.
Students completing the course in Exhibition Design and Development receive practical experience in the University gallery program. Each student is responsible for coordinating all aspects of an exhibition and oversees its installation. Students may take this course twice and may acquire additional credit via petition. P: 168-395, minimum grade B.

168-401 Advanced Life Drawing 3 cr.
Emphasis on the interpretation and expressionistic use of the human figure. Logical distortion and exaggeration to heighten the visual expression. May be repeated to a maximum of 9 credits. P: 168-301.

168-410 Advanced Painting 3 cr.
Maturing painting students explore specific problems relevant to their individual artistic development. A major goal is a consistent body of work, both conceptually and formally. The course also deals with portfolio preparation. May be repeated for a maximum of 9 credits. P: 168-311.

168-414 Advanced Problems in Watercolor 3 cr.
The developing watercolorist selects and concentrates on those aspects which seem relevant to artistic growth. A focus on specific problems, leading to development of a unique and personal style of expression. May be repeated for a maximum of 9 credits. P: 168-314.

168-421 Advanced Sculpture 3 cr.
Techniques and equipment; construction of tools; investigation of materials, traditional and innovative, as related to needs and aesthetic considerations of the sculptor. May be repeated to a maximum of 9 credits. P: 168-321.

168-431 Advanced Ceramics 3 cr.
Extension and development of ceramic techniques and aesthetics into a personal expression and portfolio development. May be repeated for a maximum of 9 credits. P: 168-331 or 168-332.

168-443 Advanced Problems in Photography 3 cr.
Each participant identifies an area of interest and an approach to the problems implied and is directed to resources in that problem area. Each student leads a seminar and prepares a paper on a selected photographer. Students also lead seminars on their work in progress and present the finished work to the class in a final portfolio. May be repeated for a maximum of 9 credits. P: 246/168-343. See 246-443.

168-444 Time Duration Visual Media 3 cr.
An investigation of visual media, especially film, video, and programmed multi-image projection, which require the passage of time to be perceived and which enable the producer direct control over the passage of time. The course includes active participation in discussions, exercises, and productions. See 246-444. P: 246/168-243 and 343.

168-453 Advanced Textiles 3 cr.
In-depth exploration in one area of textiles or papermaking including but not limited to: handmade paper; weaving and related fiber construction techniques; or alteration of prewoven fabrics (surface application, cutting and reconstructing). Student must have had prior experience in area selected for advance study. Emphasis is upon successful interaction of technical mastery and individual style. P: 168-250, 168-353 or 168-355.

168-463 Advanced Art Metals: Jewelry 3 cr.
Study of advanced techniques in jewelry; creative research and investigation of metals and jewelry media. Emphasis is upon technical competency of art metals media; designing; aesthetic development of a personal style; plus the creation of qualitative and expressive art jewelry pieces. May be repeated for a maximum of 9 credits. P: 168-363 and 168-364 or cons inst.

168-473 Advanced Intaglio 3 cr.
Advanced studio work in intaglio printing. Color techniques and development of a personal concept are stressed. May be repeated for a maximum of 9 credits. P: 168-373.

168-475 Advanced Screen Printing 3 cr.
Provides an advanced studio experience building upon the introductory course, 168-375, including printing on vacuum formed plastic, on glass, metal, and fabrics. Can be repeated for a maximum of 9 credits. P: 168-375.

168-477 Advanced Lithography 3 cr.
Provides further investigation of specific problems relevant to students' personal artistic development. Emphasis on developing individual competency, both technically and conceptually through assigned projects. May be repeated for a maximum of 9 credits. P: 168-377.

168-483X Selected Topics 1-4 cr.
See page 98.

168-490 Contemporary Art: Post 1945 3 cr.
Analyzes the art movements from abstract expressionism to post-modernism. It explores, critically, artists' grapplings with such issues as meaning and standards (or the lack thereof) in art today, pluralism, commercialization and popularization of art, morality in art, and the merging of life and art (the Zen viewpoint). P: 242-103.

168-498 Independent Study 1-4 cr.
See page 98.

204 Biology

204-202 Principles of Biology I † 4 cr.
An introduction to biological principles, structure and function of organisms, with consideration of interactions at cellular level, and examination of the relationships of organisms to the environment. Includes laboratories.

204-203 Principles of Biology II † 4 cr.
An introduction to biological principles; structure and function of organisms and examination of relationships of organisms to the environment. Includes laboratories. P: 204-202 required.

204-283X Selected Topics 1-4 cr.
See page 98.

204-298 Independent Study 1-4 cr.
See page 98.

204-302 Principles of Microbiology 4 cr.
A study of microorganisms and their activities. Included is their form, structure, reproductive physiology, metabolism, and identification; their distribution in nature and relationship to each other and to other living things. P: 204-202 and 225-108 or 212 required.

204-303 Genetics 3 cr.
Mechanisms of heredity and variation, their cytological basis and their implications in biology. P: 204-202 required.

204-304 Genetics Laboratory 1 cr.
Optional laboratory course to accompany 204-303, basic techniques of genetics. Investigation, analysis of animal, plant and human patterns of inheritance. P: 204-303 or 478-310, or concurrent registration required.

204-305 Biological Microtechnique 3 cr.
Laboratory theory and practice in cytological and histological techniques including preparation of permanent microscope slides of plant and animal tissues with emphasis on fixation, staining, and sectioning of materials. Preparation of semipermanent mounts of cells for the study of cell division, gamete formation and chromosome behavior. P: 204-203 required.

204-310 Plant Taxonomy 3 cr.
A laboratory, field and discussion course in identification and classification of plants of North America including flora of Wisconsin. P: 204-203 required.

204-311 Plant Physiology 4 cr.
General physiology of vascular plants within the context of a plant life cycle. Seed dormancy and germination, metabolism, transport systems, mineral nutrition, patterns of plant growth and development, growth regulators, reproduction, and senescence. P: 204-203, 225-212 required.

204-312 Mycology 3 cr.
Morphology and taxonomy of lower and higher fungi; fungi in medicine and industry; laboratory techniques involved in collection, isolation, culture, and identification; field trips; mycological literature. P: 204-202 required.

204-317 Structure of Seed Plants 3 cr.
The anatomy of seed plants with special emphasis upon tissue differentiation and structure. P: 204-203 required.

204-320 Field Botany 3 cr.
Identification and natural history of plants indigenous to northeastern Wisconsin. P: 204-203 required.

204-340 Comparative Anatomy of Vertebrates 4 cr.
Lectures compare organ systems of vertebrates and emphasize anatomy leading to human adaptations. Laboratory dissection of shark, mud-puppy, and cat. P: 204-203 required.

204-341 Ichthyology 3 cr.
An examination of the biology of fishes including classification, phylogeny, functional morphology and population characteristics. Aspects of the ecology of fishes will be studied in relation to behavior, distribution, diversity and production in fresh water environments. P: 204-203 required.

204-342 Ornithology 3 cr.
An overview of avian biology, including systematics, behavior, ecology, anatomy, and adaptations of birds. Laboratory work includes examination of prepared specimens and field study of local avifauna. P: 204-203 required.

204-343 Mammalogy 3 cr.
A comprehensive study of mammals including systematics, behavior and ecological relationships. Laboratory includes identification and preparation of skin and skulls and field techniques. P: 204-203 required.

204-345 Animal Behavior 3 cr.
The biology of animal behavior patterns; the behavioral interactions of animals with their environment. P: 204-203 required.

204-346 Comparative Physiology 3 cr.
The ways in which dissimilar organisms perform similar functions. Behavioral, physiological, and biochemical solutions to problems imposed on invertebrate and vertebrate animals by their environment. Lectures and discussions. Offered in alternate years. P: 204-203, 225-212 required.

204-347 Developmental Biology 4 cr.
Principles of development including gametogenesis, fertilization, gastrulation, organogenesis, and the effects of internal and external environmental factors on development. Laboratory work includes morphogenesis of amphibians, chicks and pigs, and work with living embryos. P: 204-203, 204-303 required.

204-402 Advanced Microbiology 3 cr.
Detailed study of microorganisms from virus to fungi in their environment. A study of both free-living and pathogenic organisms and their degrading abilities. P: 204-302 required.

204-405 Microbial Physiology 3 cr.
A study of microbial physiological and biochemical adaptations to temperature, oxygen, light, nutrients and other environmental factors. Primary emphasis is on the bacteria. P: 204-302, 225-300 or 225-303 required.

204-483X Selected Topics 1-4 cr.
See page 98.

204-498 Independent Study 1-4 cr.
See page 98.

Other courses that count toward a major or co-major in biology are:
478-310 Human Genetics 3 cr.
478-312 Evolutionary Processes 3 cr.
478-313 Brain Functions and Human Behavior 3 cr.
478-318 Mammalian Reproduction 3 cr.
478-342 Human Evolution 3 cr.
478-402 Human Physiology 3 cr.
478-404 Animal Physiology Lab 1 cr.
478-413 Neurophysiology 3 cr.
479-401 Agricultural Genetics and World Food Production 3 cr.
862-302 Principles of Ecology 3 cr.
862-307 Ecology of Fire 2 cr.
862-308 Ecology of Invasions 2 cr.
862-322,323 Ecosystems Analysis I,II 4,4 cr.
862-363 Plants and Forest Pathology 3 cr.
862-403 Limnology 3 cr.

225 Chemistry

225-108 General Chemistry † 5 cr.
Designed for students who will take only one semester of general chemistry. A survey course covering basic concepts of matter —its measurement, properties and states; atomic structure and chemical bonding; solutions; acid-base theories. An introduction to organic chemistry and biochemistry is also included. Laboratory work is selected to reinforce lecture topics. Full graduation credit will not be awarded for 225-108 and the courses in the following sequence: 225-211, 212. P: 601-094 or equivalent.

225-211 Principles of Chemistry I † 5 cr.
The first course in the Principles of Chemistry sequence. Atomic structure, chemical bonding, periodic table, thermochemistry, properties of gases, molecular structure and properties, solutions, chemical equations. Three lectures and three hours of laboratory per week. Full graduation credit for both 225-211 and 225-108 will not be awarded. P: 600-101 or equivalent.

225-212 Principles of Chemistry II † 5 cr.
A continuation of the Principles of Chemistry sequence. Thermodynamics, kinetics, chemical equilibrium, solubility, acid-base reactions, oxidation-reduction, nuclear reactions. Three lectures and three hours of laboratory per week. Full graduation credit for both 225-212 and 225-108 will not be awarded. P: 225-211.

225-283X Selected Topics 1-4 cr.
See page 98.

225-298 Independent Study 1-4 cr.
See page 98.

225-300 Bio-Organic Chemistry 3 cr.
Emphasis on those aspects of the field pertinent to students planning to enter the biologically related disciplines. Includes basic organic chemistry, natural products, and molecules important to biological systems. (Credit will not be given for both 225-300 and 225-302 or 225-303.) P: 225-212 or 108.

225-301 Bio-Organic Chemistry Laboratory 1 cr.
Optional laboratory course to accompany 225-300. P: credit or concurrent registration in 225-300.

225-302 Organic Chemistry I 3 cr.
A study of the chemistry of carbon compounds. Structure, reactions, synthesis, stereochemistry, reaction mechanisms, spectroscopy, nomenclature and physical properties of both aliphatic and aromatic compounds. All common functional groups and natural products are covered. P: 225-212.

225-303 Organic Chemistry II 3 cr.
A continuation of 225-302. P: 225-302.

225-304 Organic Chemistry Laboratory I 1 cr.
One three-hour laboratory per week. Basic techniques and synthesis in organic chemistry. P: credit or concurrent registration in 225-302.

225-305 Organic Chemistry Laboratory II 1 cr.
One three-hour laboratory period per week. Intermediate level instrumental techniques and syntheses in organic chemistry. P: credit or concurrent registration in 225-303.

225-311 Analytical Chemistry 4 cr.
Introduction to the theory and practice of chemical analysis. Gravimetric analysis techniques, computations, solubility products, and applications. Volumetric analysis techniques, computations, acid-base titration, oxidation-reduction titrations, precipitation titrations, and complexometric titrations. Introduction to instrumental analysis; spectrophotometric and electroanalytical methods. P: 225-212.

225-320 Thermodynamics and Kinetics 3 cr.
Temperature, heat and work, thermodynamic properties of gases, solids, and solutions; homogeneous and heterogeneous equilibria; thermodynamics of electrochemical cells; statistical thermodynamics; the calculation of thermodynamic properties of substances; chemical kinetics. P: 225-212 and either 754-202 or 104 and 600-203.

225-321 Structure of Matter 3 cr.
The concepts of physical chemistry and modern physics are presented in an integrated fashion. Topics covered are: introduction to quantum theory, symmetry, atomic and molecular structure, crystal structure, spectroscopy, X-rays, properties of gases, liquids, and solids. P: 225-212 and either 754-202 or 104 and 600-203.

225-322 Thermodynamics and Kinetics Laboratory 1 cr.
One three-hour laboratory per week. P: credit or concurrent registration in 225-320.

225-323 Structure of Matter Laboratory 1 cr.
One three-hour laboratory per week. P: credit or concurrent registration in 225-321.

225-330 Biochemistry 3 cr.
Nature and function of the important constituents of living matter, their biosynthesis and degradation. Energy transformation, protein synthesis, and metabolic control. P: 225-303 or 225-300, 301 and 204-202.

225-331 Biochemistry Laboratory 1 cr.
One three-hour laboratory per week. P: credit or concurrent registration in 225-330.

225-402 Advanced Organic Chemistry 3 cr.
An extension of Organic Chemistry 303 with a more quantitative physical organic approach. Advanced topics include: reaction mechanisms, molecular orbital theory, conservation of orbital symmetry, aromaticity, stereochemistry, linear free energy relationships, isotopes effects, pericyclic reactions, photochemistry, natural products, and advanced topics in molecular spectroscopy. P: 225-304, 225-320, 225-321.

225-403 Advanced Organic Chemistry Laboratory 1 cr.
A laboratory to accompany Advanced Organic Chemistry. Topics to be covered include: advanced molecular spectroscopy, organic qualitative analysis, physical organic chemistry experiments. P: 225-305, and credit or concurrent registration in 225-402.

225-410 Inorganic Chemistry 3 cr.
A survey of the elements including coordination and organometallic compounds. Modern bonding theories, group theory, and periodic properties are extended and applied to actual chemical systems and reactions. General acid-base theory and non-aqueous solvent systems are discussed. Special topics of current interest are included. P: 225-321.

225-413 Instrumental Analysis 4 cr.
A survey of the theory and practice of analysis by instrumental methods including those based on absorption and emission of radiation, electroanalytic methods, chromatographic methods, and radiochemical methods. P: 225-311 and credit or concurrent registration in 225-321.

225-417 Nuclear Physics and Radiochemistry 3 cr.
Introduction to the properties and reactions of atomic nuclei; the application of the properties of radioactive nuclei to the solution of chemical, physical, biological and environmental problems. P: 225-212 and either 754-202 or 104 and 600-203.

225-418 Nuclear Physics and Radiochemistry Laboratory 1 cr.
One three-hour laboratory per week. P: credit or concurrent registration in 225-417.

225-483X Selected Topics 1-4 cr.
See page 98.

225-498 Independent Study 1-4 cr.
See page 98.

242 Communication and the Arts

242-102 History of the Visual Arts: Ancient to Medieval † 3 cr.
A broad survey of the visual arts in the Western world beginning in prehistoric times and ending in the late Gothic period.

242-103 History of the Visual Arts: Renaissance to French Revolution † 3 cr.
A broad survey of the visual arts in the Western world beginning in the early Renaissance and ending in the contemporary period.

242-121 Masters and Masterpieces of Music † 3 cr.
The musical style of several well-known composers as evident in selected compositions of each. Class lectures are combined with outside listening to give the student a basic repertoire of musical compositions of various forms and styles.

242-141 Introduction to the Performing Arts: Theater and Music 3 cr.
Centers on the literature and the artists in theater and music from a historical perspective. Entails research prior to performances, attendance at performances, interviews with artists, and the writing of critiques.

242-142 Performing Arts Perspectives: Experience and Evaluation 3 cr.
Presupposes the historical background of 242-141. The emphasis is on understanding the elements of performance from the perspective of the audience and critic. Entails research prior to performances, attendance at performances, interviews with artists, and the writing of critiques.

242-160 Introduction to Language † 3 cr.
Introductory study of language and linguistics, including basic principles and methods in structural linguistics, social and regional variation in language, historical change, and introductory study of meaning.

242-202 Concepts and Issues of Modern Art 3 cr.
Modern art began its break from traditional art (art regarded as a recorder of visual fact) in the late 19th century. A series of radical concepts have emerged, each raising questions about the function of art in modern society, challenging preconceptions and ultimately enlarging our ideas of what art is or can be. This course examines key concepts, the visual art which evolved, and the corresponding issues they raise. It also deals with the wider cultural matrix in which modern artistic ideas germinate. Designed to prepare both the art student and non-art student with an informed attitude and framework with which to approach the variety of visual arts produced today.

242-210 Film and Society 3 cr.
Deals with film primarily in its social context, i.e., the ways in which film reflects and influences society. Films such as Griffith's *Birth of a Nation*, Lang's *Metropolis*, Eisenstein's *October*, Vertov's *Man With a Camera*, Renoir's *Rules of the Game*, and films chosen from the student film series are examined for their social content, both explicit and implicit, and the social milieu of their creation. Emphasis is also placed on the ways in which different cultures use films and on the cross-cultural influences which occur. See 493-210.

242-221 Popular Music Since 1955 3 cr.
Provides an introduction to the essence and evolution of popular music since 1955 and its relationship to society. Emphasis is placed on rock music in the 1960's and early 1970's, the period of greatest stylistic expansion and also the period in which the music was most intimately intertwined with its social milieu.

242-231 Introduction to Graphic Communications 3 cr.
Introductory program for students with vocational objectives or with interests in graphic communication. Provides a basic background required for entry into advanced courses. Emphasis on basic principles and potentials of visual communication, application of design concepts, exploring aspects of printing, preparation of mechanicals, type units of measurement, letterspacing, and type styles as communicative devices. P: prior course in photography or design.

242-243 Native American Cultures: Film and Performance I 3 cr.
A study of images of the American "indian" in selected films and literature. Focus is on the "popular" and stereotypical images of Native People and will be counterpointed with documentaries and writings which attempt to present with more authenticity some of the cultural world views. Some introduction to creative group performance principles of the subsequent course for all-University requirements.

242-244 Native American Cultures: Film and Performance II 3 cr.
A continuation of the all-University requirements Communication and the Arts package beginning with 242-243. In this portion, emphasis is on the process of group work toward creating/developing a performance piece from Native American materials. It is primarily an experiential "studio" course based upon materials from the first semester. If and when feasible, the work will be publicly performed. Previous "theater" experience or particular interest in theater is not necessary. P: 242-243.

242-261 Aesthetic Awareness: Foundations † 3 cr.
Students are encouraged to break out of habitual ways of perceiving and into the subjective world of feeling, from which aesthetic responses come. Starting with analysis of color, line, point, shape, form, texture, space, value and tone, instructors go on to show how these basic elements of the visual arts appear in other arts and other environments.

242-272 Women in the Visual and Performing Arts 3 cr.
Surveys images of women in the visual and performing arts and compares them with information drawn from non-artistic sources in order to clarify the kinds of knowledge we can gain from the study of the arts. Emphasizes works by women in order to revalue their place in our history. Emphasizes different cultures, periods and forms of art depending on the background of the instructor. P: 493-206.

242-281 Student-Led Courses 1-4 cr.
See page 98.

242-283X Selected Topics in Communication and the Arts
See page 98.

242-295 Sensing and Communication 1 cr.
Practice and philosophical background in a series of exercises and activities designed to heighten sensory awareness for the teacher/performer, drawing both from ancient exercise techniques of Aen and Hatha Yoga and from modern Sensory Awareness as taught by Charlotte Selver and Charles Brooks. Exercises include practice in breathing, sounding, stance, and movements for students in the performing arts and related areas. P: soph st or cons inst.

242-298 Independent Study 1-4 cr.
See page 98.

242-301 Communication and the Arts Projects in the Community 1-5 cr.
Projects vary, but emphasize service, creative, developmental, and communications activities in the community. May be repeated for credit. P: cons inst.

242-323 Language and Human Conflict 3 cr.
Language as cause and consequence of racial, social, ethnic and national conflict; problems in dialect differences, language and nationalism, linguistic and cultural minorities, nonverbal communication, language and world view.

242-329 Cultural Cross-Communication II: Expressive Traditions 3 cr.
Cultural conflict and influence and enrichment that arise when differing traditions of the arts come into contact. Course topics vary and have included such areas as ethnomusicology, jazz history, American show music, and West African art. Students should consult the *Timetable* for specific listings of topics each semester. Course may be repeated once with a different topic.

242-331 Graphic Communications Studio I 3 cr.
Introduces students in a studio setting to problem solving techniques in graphic communication. Students will have an opportunity through a series of projects, including mock interviews with clients and contact with a printer, to expand visual, verbal, technical and management skills, to integrate them by completing projects and to critically evaluate the final product. Evaluation includes methods of investigating the problem, evidence of considerating alternate solutions, creative approach to solutions, and the finished product. Some research into traditional and contemporary solutions to similar problems is required.

242-332 Graphic Communications Studio II 3 cr.
Continues work begun in 242-331 in problem solving techniques. Studio projects are used for the same objectives as in 242-331 but there is more emphasis on working in groups and carrying a single project through all phases from the concept to final productions. Students investigate a product and design packaging and promotional campaigns, using management, publications, photography, design, printing, and copywriting skills. Results are critically evaluated at each stage. P: 242-331 (246-343 strongly recommended).

242-361 Aesthetic Awareness: Interpretation 3 cr.
One of a sequence of courses examining the process of aesthetic experience, this course concentrates on the experience of the perceiver rather than that of the creator. It posits that awareness can be increased in several ways: by developing the senses, by altering the habits of the perceiver, by changing the pattern of interaction between the perceiver and the environment, and by changing the condition of the environment. The course seeks to heighten and refine awareness in two ways: through exploration of selected aesthetic objects, and through laboratory experimentation. Each student sets up a contract with the instructor establishing appropriate goals and measurements.

242-362 Aesthetic Awareness: Psychology of Aesthetic Perception 3 cr.
Explores what is known of the psychological and physiological processes that give rise to aesthetic perception and arousal. Special emphasis is given to current work on cognition and perception, and the relationships between these processes and art and other sources of the aesthetic experience. Students are asked to do a paper or a creative project demonstrating their understanding of the central themes of the course.

242-364 Aesthetic Awareness: Creation 3 cr.
The artist's aesthetic experience is explored through readings, discussion, and exercises. Attention is given to how and why the artist works, the artist's relationships to society and audience, and the artist's concerns with creative process and end products. Work culminates in student presentations of creative works in their chosen art forms. P: 242-261.

242-370 Modern American Culture 3 cr.
A survey of fad, fashion, and popular art: the media, music, advertising, and entertainment. Although they exist in the shadow of the fine arts and are usually ephemeral, popular art, fad, and fashion express the intimate unguarded concerns of modern America.

242-372 Aesthetic Awareness: Traditional Art Styles 3 cr.
Interpretation of the arts based upon stylistic analogy and the assumption that a change in cultural style signals a change in the style of human consciousness itself. Emphasis placed on comparative study of artists, writers, architects, and thinkers from the Renaissance to the modern periods.

242-373 Aesthetic Awareness: Avant-garde Art Styles 3 cr.
Comparative study of common stylistic elements operating in different forms in the work of avant-garde artists, composers, playwrights, and novelists. Emphasis on the nature of innovative consciousness.

242-375 Communication Skills: Language of Metaphor 3 cr.
Metaphor is a verbal process of pretending one thing is another. It is a powerful part of how we imagine our worlds and how others try to structure our worlds. The course examines the metaphoric process itself and, through exercises and analyses of examples, seeks to develop skills in creating metaphors and understanding those created by others, especially those that have become an unconscious part of our language and culture.

242-380 The Arts: London 3 cr.
The arts in and about London are always in a lively state of action. This program attempts to taste and analyze as many forms of the arts as time, energy, and funds allow. The group tries to become involved in several performing arts events as well as investigate museum collections, neighborhood art groups, and, if possible, spends time with artists working in various art forms. Students note the ways in which the British solve their needs for the arts in society. Students keep a journal during their London stay recording especially critical responses to events, persons, places, etc. Each student negotiates in advance an individual project to be carried out in some area of the arts as they are experienced in London and Britain. P: cons inst.

395 The Individual and His Culture: The Filmmaker's View 3 cr.
See 493-395.

242-395 The Biological Aspects of Language 3 cr.
Studies of language as a biological system, including language development in children, the integration of the speech organs and the nervous system, and connections between human speech and animal communication. Offered in January.

242-395 Photographic Design for Print Media 3 cr.
An investigation of photographic design and craft for print media ranging from the commercial printing press to non-silver exhibition prints. Projects will emphasize photographic illustration from concept through assignment, editing, scaling, and placement of images in a print design. Offered in January. P: 246-343.

405 Urban Technological Design 3 cr.
See 862-327.

242-430 Mass Media and Society 3 cr.
Analysis of the media as persuader, informers, entertainers; public opinion, readership, and audience studies; communication theory; legal aspects; critical examination of mass communication in the changing social environment.

242-432 Graphic Communications Workshop 3 cr.
A problem solving workshop, applying concepts in graphic design, technology and management. Advanced students work on projects for university or non-profit groups from concept to finished product, including involvement with design, writing copy, contacting printers, clients, etc. Groups may also become involved in consulting to solve graphics problems for nonprofit groups. Course content emphasizes the roles of graphic communication in society at large. Emphasis is on group problem solving within the context of real life situations. P: prior course work in photography and 242-332.

242-450 The Construction of Public Images 3 cr.
Develops skill in reading the imagery of mass media and public environments. Case studies probe image problems in news, promotion, entertainment, photography, tourism, sports, landscape, and other realms. The student considers or contrives alternative imagery with higher fidelity to contemporary conditions and with greater humanizing potential. P: ar st.

242-462 Aesthetic Awareness: Research 3 cr.
A summative/integrative learning experience for students in the Aesthetic Awareness program and for those in Communication and the Arts who have put major emphasis there. A special theme each time the course is offered is a center around which student research projects are negotiated with the instructor. Students participate in selecting the theme. Possible themes are: The Place of Aesthetics in American Society; Environmental Aesthetics and Public Policy; Teaching Aesthetic Awareness in the Schools; Aesthetic Awareness and Community Organizations, and others.

242-463 Aesthetic Awareness: Evaluation 3 cr.
Seeks to clarify the process we use in making aesthetic judgments, to examine the various systems of evaluation that are current, and to prepare each student to take hold of the process of evaluation so that he or she can locate, express, and insist on the validity of his or her aesthetic values. P: 242-261 or equivalent; 2 st or course in criticism.

242-471 Environmental Design Workshop II 3 cr.
Analysis and design of group spaces, such as houses, classrooms, waiting rooms, and other spaces intended for occupancy by groups of people. Past design projects have taken the form of designing and producing a book focusing on environmental design of group spaces including sections on case studies conducted by student design teams. Students can expect some major project of this sort in addition to readings, research, and design analyses. Draws support from 834/944-326, Human Living Space II, and 242-402, Designing the Environment II. Students are strongly advised to enroll in at least one of these parallel offerings. P: 944-401 and cons inst.

242-472 Environmental Design Workshop IV 3 cr.
A culminating experience for students who have participated in the workshop sequence. Each student proposes, designs, and executes a design/research project on an elected topic. Individual projects are acceptable in some instances; projects by design teams are encouraged. This "thesis" project is overseen and evaluated by the teaching staff and a faculty committee representing appropriate areas of study. The project must include at least: 1. A written document covering area of focus, research methods, and conclusions, design methods, and development of design alternatives. 2. Descriptive graphic presentations with emphasis on design alternatives developed. 3. Formal, public jury presentations during the project and at its conclusion. P: nine workshop credits and cons inst.

242-477 Women as Creative Agents 3 cr.
Seeks to clarify the multiple ways women have exercised their creative capacities and to describe the external and internal factors that support creative work. Examines some of the cultural assumptions about creativity in women by comparing them with the evidence of at least six biographies of women in several fields who have been recognized for their creative achievement. Explores the ways that great women and relatively unknown women artists may serve as role models for others. P: 875-241 or 242-364.

242-481 Student-Led Courses 1-4 cr.
See page 96.

242-483X Selected Topics in Communication and the Arts 1-4 cr.
See page 96.

242-484 Senior Honors Project 3 cr.
See page 98.

242-497 Internship in Graphic Communications 3-9 cr.
A field course offering instruction and experience in a professional, graphic communications related environment. The internship for qualified students, when available, may be in any area of the field (management, design work, technical processes) as long as it involves work among professionals. Credit is variable depending on the work involved but no more than three credits may be used to meet requirements for a major. P: 242-432 and prior written cons inst.

242-498 Independent Study 1-4 cr.
See page 98.

246 Communication Processes

246-100 Writing Skills Laboratory 3 cr.
A basic course in college-level expository writing, including conventional forms of argumentation, comparison/contrast, and research reports. A laboratory program for small-group and individualized instruction complements general class meetings. The course is competency-based, such that students may complete requirements by examination at designated times during the semester, and is designed to meet University requirements for competence in writing. P: passage of freshman entrance exam.

246-102 Introduction to Mass Communications † 3 cr.
Survey of the interplay between American society and mass media, both print and broadcast; commercial, cultural, and political functions of the media; popular taste; the pseudo-environment of symbols; the concept of a free and responsible press.

246-133 Fundamentals of Public Address 3 cr.
An examination of the principles of oral message preparation and presentation. Students will engage in preparing and presentation actual public communications.

246-161 English as a Second Language: Reading and Lecture Comprehension 3 cr.
Work toward acquisition of the basic listening and recording skills a student must have in order to be able to follow lectures and focus on the main points in notetaking; learning the fundamentals of preparing and giving an oral presentation regarding a scientific, scholarly, or technical topic; development of technical vocabulary. P: ESL proficiency test.

246-163 English as a Second Language: Expository Writing I 3 cr.
Acquisition of basic principles of nonfiction writing in English, including work toward eliminating grammatical problems; a review of the fundamental rules of rhetoric; study of the patterns of organization most frequently used by American technical writers. This course should be helpful to students whose native linguistic background may be other than English and who want to learn how to approach writing a research paper. P: ESL proficiency test.

246-164 English as a Second Language: Expository Writing II 3 cr.
Refinement and extension of competence in technical writing with particular emphasis on the psycholinguistic characteristics of technical written expression in American English. This course is intended for the student of a non-English native linguistic background who has already mastered the basic rules of writing nonfiction, but who wants to gain a deeper understanding of the logical and organizational principles followed by American scientists and professionals in written accounts of their work. P: ESL proficiency test.

246-166 Fundamentals of Interpersonal Communications 3 cr.
Basic principles of personal interaction as a base of the communication process. Investigation through study, practice, and discussion includes the role of communication in interpersonal relationships, the role of identity and self-concept in communication behavior, and the roles which information reception and evaluation play in determining effectiveness of communication.

246-200 Communication Processes: An Introduction 3 cr.
An overview of a variety of communication processes, what they share, how they differ, their uses for communication, for art, and for individual growth and their effect on the social fabric. The course includes practical experience with these processes as well as a theoretical framework for continuing study. P: one course in communications suggested.

246-201 Human Information Processing 3 cr.
An introduction to the study of human cognition from the information processing perspective. Examines the processes of sensation, perception, memory, thinking, language, and problem solving with special attention to the role of these processes in communications (i.e., graphics, journalism, linguistics, photography, etc.). P: 246-200.

246-203 Newswriting Laboratory 3 cr.
Assignments in gathering and writing news; copy editing; emphasis on developing an objective, clear, accurate, and forceful style.

246-205 Intercultural Communication 3 cr.
Provides a conceptual framework for understanding and coping with the cultural differences confronted by international students in the U.S. and by American students considering study, travel, or work abroad or who would like to be acquainted with the viewpoints of international students. Thus, the course should be of special interest to international students during their first year in America and to American students who would like to be exposed to other cultures and perspectives. The course is designed to provide an experiential background which will make other courses and activities about international affairs more meaningful.

246-229 Bibliographic Organization and Control of Information 3 cr.
An introduction to libraries as information systems, including print and electronic information control and retrieval, systems of library classification, information search tools and online data bases; reference materials, indexes, specialized collections, and bibliographical networks.

246-243 Introduction to Photography † 3 cr.
The creative process in photography is studied to develop visual perception through active participation in discussions and photographic exercises. See 166-243.

246-253 Practicum in Print Journalism I 1-3 cr.
Supervised experience on the staff of the student newspaper, providing for the development of skills in some facet of newspaper operation: reporting, feature writing, or photojournalism. Repeatable. P: cons inst.

246-283X Selected Topics 1-4 cr.
See page 98.

246-298 Independent Study 1-4 cr.
See page 98.

246-303 Feature Writing 3 cr.
Writing feature articles for magazines and newspapers; information gathering, professional standards, and effective style are emphasized. P: writing course or cons inst.

246-305 Elements of Electronic Media 3 cr.
Exploring the potentials of television and radio; analyzing communication strategies employed in these media; examining policy and practice in commercial and educational operations and the forces that control them.

246-306 Radio Broadcast Practicum 3 cr.
An advanced production course emphasizing development of writing, producing, announcing, reporting, and problem solving skills in the broadcast environment of radio station WGBW-FM. Students work on their knowledge of broadcast skills, responsibilities, and systems in a classroom/workshop context, while at the same time gaining experience in similar areas at WGBW-FM. P: 246-305 or cons inst.

246-307 Television Production Techniques 3 cr.
Exploration of various uses of television as an informative, persuasive, and entertainment medium. Combines examination and analysis of current uses of the medium in a professional context with practical experience in planning and producing a finished product for television. P: 246-202 and 246-305.

246-308 Telecommunications Delivery Systems: Cable and Satellites 3 cr.
Focusing on cable and satellite telecommunication systems, this course provides an overview of historical development, economics, and current operations of telecommunications technology and investigates its impact on society. Topics include programming and telecommunications systems, interactive computer uses, changing media formats and delivery systems, and applications of telecommunications systems in the communications environment of the future. P: 246-102, 246-305.

246-309 Electronic Media Commercial Campaigns
An intensive examination of TV/media commercials as a unique form of communication. Through the use of student projects, individual and team, the demands and rigors of the creative process are revealed. Legal and ethical considerations are also presented and discussed. P: 246-305.

246-320 History of the English Language 3 cr.
The origins, development, and cultural background of the English language (dialects, grammar, pronunciation, spelling, vocabulary, and usage), including contemporary American English.

246-321 Sociolinguistics 3 cr.
Communications in social groups and application of linguistic principles to specific cultural problems, including the study of social and regional dialects, stylistic variations, bilingualism, linguistic interference, paralinguistic behavior, and language acquisition.

246-322 Modern Linguistics 3 cr.
Structure and system in language, with attention to modern English and including principles of structural linguistics (phonology, morphology, and syntax), tagmemic grammar, and generative-transformational grammar.

246-324 Psycholinguistics 3 cr.
A brief survey of language structures and an intensive examination of the psychological processes by which we produce and perceive those structures. Additional topics include: comparisons with animal communication and other communication methods; acquisition of language; origin of language; memory.

246-325 Applied Linguistics 3 cr.
Application of linguistic principles to specific problem areas, including language acquisition, the teaching of reading, the teaching of English as a second language, the teaching of composition (especially remedial composition), and institutional communications; special emphasis upon problems faced by secondary school teachers. P: at least one course in linguistics.

246-326 Modern Semantics 3 cr.
A study of meaning in language. The course covers topics in how meanings of words and phrases change, how meanings may be measured, the relations between logic and meaning, cultural differences in meaning due to language structure differences, and the effects of situation on meaning. P: 246-200 or one course in linguistics.

246-327 Contrastive Linguistics and Error Analysis 3 cr.
A practical introduction to the techniques of comparing languages for their structural and conceptual similarities and differences, and of analyzing the errors committed by second language learners. The implications of the findings made by using either of the two approaches will be brought out. This course should be useful to anyone interested in the characteristics of the human communicative system, and to future foreign and second language teachers. P: 242-160 or cons inst.

246-333 Persuasion and Argumentation 3 cr.
Designed to foster an awareness, appreciation and understanding of contemporary forms and methods of oral persuasion. The student will be exposed to theory and practice in an attempt to produce both better practitioners and more cautious consumers of persuasion. P: jr st or cons inst.

246-335 Organizational Communication 3 cr.
A study of communication in the modern organization; communication variables in the context of organizational theory; development of a systems perspective regarding functions, structures, and levels of communication in the organization. Examination of common organizational communication evaluation tools and training interventions.

246-336 Theories of the Interview 3 cr.
Examines the basic theory behind conducting effective interviews. Specific types of interviews are discussed, including selection, counselling, exit, discipline, appraisal, mass media, and research interviews. Both the interviewee's and the interviewer's perspectives are examined. P: 246-133 or 246-166 or 246-200.

246-337 Small Group Communication 3 cr.
Focuses on the role communication plays in small group processes. Special attention is given to developing the special communication skills needed in the small group setting. For instance, students are taught how to use specified questioning strategies to deal with an argumentative group member. Additionally, the course involves conducting analysis of actual group communication processes. P: 246-200 or 166.

246-343 Photography II 3 cr.
Emphasis upon black and white photography and darkroom printing techniques. P: 246-243 or equivalent experience. See 168-343.

246-344 Photography III 3 cr.
A continuation of 168/246-343; investigation of black and white photography, allied media, and applications of photography. See 168-344.

246-345 Designing Multiple Media Applications of Photography 3 cr.
Emphasis upon programmed multi-image designs bringing together photography, graphics, and sound. P: 246/168-243.

246-346 Photographic Design for Print Media 3 cr.
An investigation of photographic design and craft for print media ranging from the commercial printing press to non-silver exhibition prints. Projects will emphasize photographic illustration from concept through assignment, editing, scaling and placement of images in a print design. P: 246-343.

246-353 Practicum in Print Journalism II 1-3 cr.
Supervised experience on the staff of the student newspaper, providing for the development of advanced skills in some facet of newspaper operation: reporting, feature writing, photojournalism or editing. May be repeated for credit. P: 246-203, 303 or 343; or successful experience on *The Fourth Estate* staff.

246-380 Communication Law 3 cr.
Freedom of the press and broadcast media, with a focus on the problems of gag orders, contempt, privacy, censorship, libel, and slander. An overview of copyright law, the Federal Communications Act, and other laws affecting communication.

246-390 Scientific and Technical Communication 3 cr.
Scientific and technical writing for professional and lay audiences, including news articles and features, laboratory reports, procedure manuals, grant and contract proposals, and technical reports. Emphasis on skills for professional work in science communication, but open to science students and media students. P: 9 cr. in natural science (or completion of natural science all-University requirements); completion of University writing requirement.

246-403 Advanced Reporting 3 cr.
In-depth, localized reporting of contemporary affairs; emphasis on research skills, writing styles, and the values at stake in the treatment of each story. Student work is designed for either newspaper publication or radio broadcast. P: 246-203.

246-443 Advanced Problems in Photography 3 cr.
Each participant identifies an area of interest and an approach to the problems implied and is directed to resources in that problem area. Each student leads a seminar and prepares a paper on a selected photographer. Students also lead seminars on their work and present the finished work to the class in a final portfolio. P: 246/168-344. May be repeated to a maximum of 9 credits. See 168-443.

246-444 Time Duration Visual Media 3 cr.
An investigation of visual media, especially film, video, and programmed multi-image projection, which require the passage of time to be perceived and which enable the producer direct control over the passage of time. The course includes active participation in discussions, exercises, and productions. P: 246/168-243 and 246/168-343.

246-445 Human Communication Theory 3 cr.
Human communication theory evolves from a number of academic disciplines. This course integrates a variety of theories to promote a sensitivity to and an understanding of the complexity of human communication. It examines the construction of various communication theories, various communication contexts, and specific processes in communication, and leads to the development of communication theories by class members. P: cons inst.

246-460 Publications Management 3 cr.
An analytical, problem-solving approach to communication through print media that applies to a wide variety of situations publications professionals encounter. The course includes strategies for organizing a publications effort and planning and producing publications, and suggests ways that professionals evaluate their products. It discusses impacts of technology on publications and implications for changes in the publications field. P: jr st and prior course work in communications.

246-483X Selected Topics 1-4 cr.
See page 98.

246-487 Communication Audits 3 cr.
A communication audit identifies and analyzes strengths and weaknesses of communications within an organization. In conducting an audit, students gain practical experience as well as furthering their understanding of theoretical concepts in organizational communication. They conduct interviews with personnel, administer questionnaires, analyze the data, and make recommendations for improving communication with the client organization. P: 246-335 required; a basic statistics course recommended.

246-497 Internship 3-9 cr.
A field course offering instruction and experience in a professional environment. The subject area may be any communication process as long as it involves work among professionals. Typical internships are in reporting, television or radio, public information, photography, and similar contexts. The course is repeatable if a different internship is involved, but no more than three credits may be used to fulfill requirements for a co-major (disciplinary program) in Communication Processes. P: prior written cons inst.

246-498 Independent Study 1-4 cr.
See page 98.

255 Community Sciences

255-205 Social Science Statistics 3 cr.
Application of statistics to problems of the social sciences, particularly those problems pertaining to Regional Analysis, Urban Studies, Human Development, and Social Change and Development. Application of statistical techniques in problem definition; hypothesis construction; and data collection, processing, and evaluation. P: soph st.

255-301 Foundations for Social Research 3 cr.
An integrated introductory examination of the nature of science, theory, and statistics. The emphasis is on identifying and interpreting relationships between social phenomena. This is assured by applying the conceptual tools provided in the course to specific problems. P: 600-260 or 255-205 and one course in social sciences.

255-302 Methods of Participant Observation and Interviewing 3 cr.
Course provides instruction and experience in extended interviewing and participant observation which are principal data gathering methods in sociology, anthropology, and psychology as well as practical methods in applied fields such as social services, community development, public health, and development studies. Course also considers theoretical and ethical issues relating to these methods of research. P: one lower level course in psychology, sociology or anthropology.

296 Earth Science

296-110 Dinosaurs: Rise to Ruin 1 cr.
Over 200 million years ago dinosaurs and other reptiles became the dominant animals on earth. For nearly 150 million years these animals ruled the land, sea, and air. This course explores dinosaurs, their ancestors, rise to preeminence, reasons for success, and possible reasons for their extinction.

296-200 Basic Earth Science † 3 cr.
Introduction to the basic geological processes that modify the earth's landscapes. Includes segments on astronomy, weather and climate, soils, oceanography and the geologic history of Wisconsin. Note that a student does not receive credit for both 296-200 and 296-202. Field trip may be included.

296-202 The Earth's Physical Environment † 4 cr.
The materials and processes that have determined and are now modifying the physical features of the earth's environment are described and analyzed. Credit not granted for both 206-202 and 296-200. Field trips.

296-222 The Ocean of Air: An Introduction to Weather and Climate † 3 cr.
Fundamental processes of the atmosphere, the resulting weather and climate, and the effects of the atmosphere on other aspects of the earth's environment and on humans. Same as 834-222.

296-230 Geology of Wisconsin 3 cr.
The Wisconsin story is one of high mountains now worn away, volcanoes no longer active, and seas long since departed. At different times tropical storm waves battered shore cliffs near Baraboo, coral reefs dotted warm shallow seas, and glaciers buried the state with ice. At other times rich mineral deposits, such as those recently discovered near Crandon, were formed. The geological processes shaping these events constitute the content of this course. An all-day field trip is required.

296-283X Selected Topics 1-4 cr.
See page 98.

296-298 Independent Study 1-4 cr.
See page 98.

296-302 Geologic Evolution of the Earth 3 cr.
The physical history of the earth through geologic time and the attendant evolution of plants and animals. Principles governing interpretation of the rock and fossil record. Unraveling of events culminating in modern landscape and life forms. Field trips.
P: 296-202 or cons inst.

296-303 Geologic Evolution of the Earth Laboratory 1 cr.
Practical application of geologic principles and techniques to interpretation of earth history. Field trips. P: credit or concurrent registration in 296-302.

296-306 Drifting Continents 3 cr.
The theory of continental drift has revolutionized many aspects of the earth sciences, and the evolution of this theory provides an opportunity to explain many geologic phenomena, such as earthquakes and volcanoes, as well as to examine a recent example of a scientific revolution. Considers relationship of continental drift and mineral resources, evolution, and mountain building.
P: 296-202.

296-310 Paleobiology 4 cr.
Considers the preservation, morphology, evolution, interrelationships and paleoecological significance of fossil plants and animals. Includes field and laboratory study of fossil assemblages and their environments. P: 296-302, 296-303 or 204-203 or cons inst.

296-340 Rock and Mineral Resources 3 cr.
Macroscopic identification of common rocks and minerals, formation and uses of rock and mineral resources, and the environmental impact of resource exploration and extraction. Field trips.
P: 296-202.

296-350 Geologic Field Methods 4 cr.
Description and application of standard field techniques employed in assembling geologic data. Includes mapping, measuring sections, collecting rock and fossil specimens, and preparing and presenting a report on a geologic problem. P: 296-202, 296-302.

296-365 Structural Geology 3 cr.
Structures produced by deformation of the earth's crust: faults, folds, foliations. Methods of field study and laboratory analysis. Tectonic significance of structures within the earth's crust. Stress and strain analysis and its application to rock deformation.
P: 296-202.

296-380 Geomorphic Processes 3 cr.
Landforms influence many activities including transportation, settlement, and agriculture in addition to constituting a fundamental aspect of scenery. Landforms are in constant flux as dynamic processes on and within the earth shape and reshape materials of the crust. This course describes and evaluates the operations and interrelationships of agents involved in creating and modifying the physical features of the earth's surface. P: 296-202.
See 416-380.

296-402 Stratigraphy and Sedimentation 3 cr.
Principles of physical- and bio-stratigraphy, and sedimentation. Discusses concepts of sedimentary processes, sedimentary environments, and stratigraphic relationships of time and physical characteristics. Includes a brief historical development of principles, the methods and techniques used to study sediments and sedimentary rocks, and the application of principles and methods to interpretation of local geology. Field trip. P: 296-202.
See 416-420.

296-420 Soil Classification and Geography 3 cr.
Morphological properties of soils, major kinds of soil horizons; principles of soil classification, taxonomic systems; soil-landscape relationships; genesis and global distribution of major kinds of soils; soil surveys and their interpretations for agriculture, engineering, and urban planning. Field trips. P: 296-320 or 202.

296-441 Mineralogy 4 cr.
A survey of important concepts in mineralogy. Crystallography, symmetry, and molecular structure of minerals. Optical properties of minerals and identification of minerals in thin section. Description and recognition of minerals and ores in hand specimen. P: 225-212.

296-442 Petrology 4 cr.
Classification, genesis, and occurrence of sedimentary, igneous, and metamorphic rocks; introduction to optical methods of identification; identification of rocks in hand specimen. P: 296-441.

296-470 The Glacial Environment and Chronology 3 cr.
An interdisciplinary approach to an understanding of the extremes in environmental behavior which characterized Pleistocene time. Surveys the principles of glaciology and describes the impact of glaciation on the landscape. Field trip. P: 296-202.
See 416-470.

296-483X Selected Topics 1-4 cr.
See page 98.

296-498 Independent Study 1-4 cr.
See page 98.

Other courses for upper division earth science credit include:

Land and Soil Resources
416-351 Elements of Cartography
416-353 Air Photo Interpretation
416-451 Computer Cartography
416-453 Advanced Air Photo Interpretation
834-356 Environmental Impact Analysis
862-303 Conservation of Natural Resources
862-320 Soil Environment
862-321 Soil Environment Laboratory
862-342 Environmental Geology
862-345 Geology of Energy Resources
862-421 Soils of Wisconsin Field Trip
862-454 Remote Sensing by Satellite
862-460 Resource Management Strategy
862-462 Land Use Tour of Wisconsin
008-761 Global Environmental Monitoring
009-741 Land Use, Institutions and Policy

Water Resources
862-300 Descriptive Hydrology
862-331 Oceanography
862-335 Water and Waste Water Treatment
862-382 River Basins in Transition
862-403 Limnology
862-430 Quantitative Hydrology
862-434 Water Chemistry
008-759 Coastal Zone Management

Meteorology-Climatology
416-325 Regional Climatology
862-350 Meteorology
862-351 Synoptic Meteorology Laboratory
862-450 Air Pollution Chemistry and Meteorology
008-776 Bioclimatology

Geology
862-342 Environmental Geology
862-345 Geology of Energy Resources

298 Economics

298-202 Macro Economic Analysis 3 cr.
An introduction to the behavior of our economy in the aggregate, basically focusing upon the process by which the economy achieves a certain level of output and employment.

298-203 Micro Economic Analysis 3 cr.
An introduction to the decision-making process of individuals and business firms associated with the determination of what products will be produced, how they will be produced, and what prices specific goods and services will command. Includes a discussion of the institutional framework within which these decisions are made; for example, proprietorships, partnerships, corporations and cooperatives.

298-283X Selected Topics 1-4 cr.
See page 98.

298-298 Independent Study 1-4 cr.
See page 98.

298-301 Economic and Social Security 3 cr.
A description and critical analysis of the income distribution system in the U.S. economy and the various institutions and programs developed to modify the system to provide an income to all citizens. Includes an analysis of social security programs, workers' compensation, the negative income tax and other income redistribution programs.

298-302 Intermediate Macro Economic Theory 3 cr.
Study of the principles and theories of national income determination; an examination of policy proposals to deal with inflation, unemployment, economic fluctuations and economic growth at national and international levels. P: 298-202 or cons inst.

298-303 Intermediate Micro Economic Theory 3 cr.
Development of the tools used in the consumer's and producer's behavior. Major emphasis on the application of economic theories to problems dealing with the production, exchange, and distribution of output. P: 298-203 or cons inst.

298-304 Contemporary Labor Markets 3 cr.
An explanation of the determination of wages and employment at the level of the firm, the industry, and for the total economy. P: jr st and 298-202 and 203, or cons inst.

298-305 Natural Resources Economic Policy 3 cr.
Acquaints the student with policies leading to arrangements for the development, management, and use of natural resources. Emphasizes the longer time horizon required for the conservation of resources and a general concern for the quality of the ecosystem. P: jr st.

298-306 Public Finance and Fiscal Policy 3 cr.
Effects of government spending and taxation on resource allocation, incomes, prices, and employment. Includes a consideration of the uses and effects of fiscal policy. P: jr st and 298-202 and 203, or cons inst.

298-307 Sources of Contemporary Economics Concepts 3 cr.
The development of contemporary economic thought, drawing upon contributions from the mercantilist period to the present, emphasizing contributions of major schools of thought. P: jr st.

298-308 Business Cycles 3 cr.
Description and recent history of business cycles; leading explanations of levels of employment, output, and prices; savings and investments, forecasting, governmental policy. P: jr st and 298-202.

298-309 Urban Economics 3 cr.
See 944-309.

298-330 Money and Banking 3 cr.
An analysis of money as an economic institution and of the organizational structure of the commercial and central banking system in the U.S.; study of the monetary theory and policy in the national and international setting. P: 298-202.

298-401 Regional Economic Analysis 3 cr.
Basic concepts and problems in the economic study of subregions of an economy, in both an intraregional and interregional context; problems in regional analysis; economic concepts regarding location, spatial organization, and planning for regional development. P: 298-202. Same as 834-401.

298-402 Resource Economics Analysis 3 cr.
Application of tools and concepts in current economic decision making with special emphasis upon common property resources management (i.e. water and air). P: jr st and 298-202 and 203.

298-403 International Trade 3 cr.
Theory and concepts in development of international trade and finance; contemporary conditions and problems in international economic relations. P: jr st and 298-202.

298-404 Economics of Developing Areas 3 cr.
Social and economic factors underlying economic development; leading issues in growth and theory; comparative rates of progress in different countries. P: jr st and 298-202.

298-406 Comparative Economic Systems and Institutions 3 cr.
Analysis of contemporary functioning of different economic systems and institutions. Employs case studies to contrast market directed economies and centrally planned economies.

298-420 Integration of Contemporary Economic Problems in K-12 Curriculum 1-3 cr.
Introduces K-12 educators and other students to major economics concepts and explores materials and methods for effective integration of economics into overall school curriculum. P: completion of at least one education methods course and/or teaching experience. For graduate credit, graduate standing is required.
See 302-420.

298-483X Selected Topics 1-4 cr.
See page 98.

298-498 Independent Study 1-4 cr.
See page 98.

302 Education

302-142 COSMOS, The Societal Implications of the Study of the Universe 3 cr.
See 862-142.

302-201 Analysis of Learning Environments 3 cr.
Provides tools, procedures, and experiences needed to analyze learning environments in the public schools. Helps examine potential and interest in relation to opportunities and demands in the teaching profession and helps determine if the student wishes to become a teacher. Course content focuses on variables affecting teaching and learning as well as forces in society affecting the schools. The teacher and teaching behavior, the school as a social institution, values shaping American education, the student, alternative school organizations, the curriculum, and instructional processes are major variables studied. Students spend approximately 30 hours in the schools.

302-202 Changes in American Education 3 cr.
Explores education as a life-long learning process within cultural contexts, not limited to formal schooling. Includes how medias and environments educate. All decisions within social institutions about goals, methods, financing, time structuring, etc., are value issues to be confronted within a given society. Cross-cultural comparisons foster a clear perspective of American education.

302-203 Introduction to Environmental Education in the Schools 2 cr.
Environmental education: philosophies, curricular materials, and related instructional strategies. Direct involvement in local schools at the grade level and in subject matter appropriate to student's area of anticipated certification. P: soph st.

302-204 Values in Conflict: The School Experience of Minority Background Children 3 cr.
Differing explanations about why minority background children often do poorly in school, and what is being done to improve the situation. Historical and current values and life experiences of several major U.S. minorities (Native Americans, Blacks, and Chicanos) are explored and contrasted with dominant middle class white values. Conflicts are examined. Ethnocentrism and social class bias as reflected in teacher expectations and instructional materials. Students examine assumptions and attitudes about minorities to reduce ethnocentrism and interact in an authentic and genuine manner with people from diverse backgrounds.

302-205 Basic Operations of Audio Visual Equipment 1 cr.
Step-by-step independent instruction on operation of projecting, recording, and duplicating equipment and on basic preparation of instructional materials. P: cons inst.

302-206 Cultural Images in Books and Related Materials for Children and Adolescents 3 cr.
The student becomes aware of the varied images of ethnic and racial groups, and sex roles as developed in tradebooks, textbooks, and other instructional materials for children and adolescents and learns how to effectively use books and other instructional materials to detect negative images and build positive images.

302-281 Student-Led Courses 1-4 cr.
See page 96.

302-283X Selected Topics in Education 1-4 cr.
See page 96.

302-298 Independent Study 1-4 cr.
See page 96.

302-301 Introduction to Education and Teaching 3 cr.
This course is required for teacher certification and should be taken before all other required teaching methods classes. The technical skills of teaching, the application of learning theory, instructional planning, micro teaching, and evaluating teaching effectiveness are studied. Also, students spend 2-1/2 hours a week in a school to observe and participate in various aspects of the instructional program. P: 481-210 or 331 or 920-308.

302-302 Principles and Methods of Teaching Social Studies in Elementary Schools 2 cr.
Designed to acquaint students with concepts, processes, learning skills, teaching methods, and resource materials related to the social sciences. Attention is given to questioning, classroom environment, content and topic selection, scope and sequence, and forces influencing the social studies curriculum. Peer teaching opportunities are included. P: 302-301.

302-303 Principles and Methods of Teaching Art in the Elementary Schools 2 cr.
The purpose is to prepare the student to teach art to children by providing theoretical and practical experiences in art and education. Topics include the philosophy and psychology of art education, characteristics and stages of creative development in children and children's art, principles and procedures for selecting and motivating elementary experiences, developing specific lesson plans and units in elementary art and the organization of a developmental curriculum for art in the elementary school. P: 302-301.

302-304 Principles and Methods of Teaching Music for the Elementary Teacher 2 cr.
Deals with the identification of children's musical needs and methods and materials to assist classroom teachers in meeting these needs. Practical experience with basic elements of music are included to develop the classroom teacher's competency and self confidence. Required for general elementary certification. P: 302-301 and competency in music fundamentals.

302-305 Principles and Methods of Teaching Math and Science in the Elementary School 4 cr.
Acquaints students with foundation principles, methods and materials related to teaching mathematics and science in the elementary school. This class focuses on measurement in the metric system, the development of mathematical concepts and skills, error patterns and remediation, problem solving in mathematics, development of understanding processes and concepts of science, special concerns related to science activities and concerns related to sex and race bias in elementary school mathematics and science. P: 302-301; 600-281 recommended.

302-306 Principles and Methods of Teaching Health and Physical Education in the Elementary School 3 cr.
Acquaints the prospective elementary school classroom teacher with those special knowledges and awarenesses which are deemed necessary for the planning and conduct of health and physical education instruction. P: 302-301.

302-307 Principles and Methods of Teaching Reading in the Elementary School 3 cr.
Acquaint students with teaching methods in developmental reading. Major areas addressed include nature of the reading process, reading readiness, vocabulary, comprehension, and study skills development. Diagnosis and instructional techniques for meeting the needs of diverse learners are discussed. P: 302-301.

302-308 Children's Literature: Contemporary Practices in the Elementary School 3 cr.
Examines practices which produce an effective children's literature program. Analyzing of children's books; developing of instruction units and independent programs to foster positive attitudes toward reading; using books for personal development; using books for developing attitudes about social issues such as ecological concerns and social and minority group relations; and criteria of evaluating content, methods, and effect on students.

302-309 Principles and Methods of Teaching Language Arts in the Elementary School 2 cr.
Contemporary practices for the elementary and middle school classroom are approached through both theory and experiences. Students are expected to develop a language arts model, a rationale, the basic processes and skills as well as assessment procedures for use in the classroom. An emphasis on small group activities, continuing participation and student initiative will be stressed. P: 302-301.

302-310 Principles and Methods of Teaching Communication Arts Courses in Secondary Schools 2 cr.
Contemporary practices for teaching communication arts are approached through both theory and experiences. Students develop a communication arts model, a rationale, basic processes and skills as well as assessment procedures for use in the classroom. Emphasis on small group activities, continuing participation and student initiative is stressed. Required for certification to teach communication arts, drama, English, journalism and/or speech in the secondary school. P: 302-301 and appropriate preparation in Communication Arts.

302-311 Principles and Methods of Teaching Foreign Languages: Secondary and FLES 2 cr.
Principles and methods of teaching foreign languages to students of all ages; texts and other materials are evaluated; planning for one semester's teaching is simulated. Required for certification to teach foreign languages. P: 302-301 and appropriate preparation in a foreign language.

302-312 Principles and Methods of Teaching Social Studies in Secondary Schools 2 cr.
Acquaints students with concepts, processes, learning skills, teaching methods, and resource materials related to the social sciences. Attention is given to questioning, classroom environment, content and topic selection, scope and sequence, and forces influencing the social studies curriculum. Peer teaching opportunities are included. Required for certification to teach social studies in the secondary school. P: 302-301 and appropriate preparation in social studies.

302-313 Principles and Methods of Teaching Mathematics in Secondary Schools 3 cr.
Acquaint students with principles, methods and materials related to teaching mathematics and computer science in the secondary school. Attention is given to development of mathematical concepts and skills, selection and use of materials, motivation, lesson and unit planning and evaluation. Required for certification to teach mathematics and computer science in the secondary schools. P: 302-301 and appropriate preparation in mathematics.

302-314 Principles and Methods of Teaching Science in Secondary Schools 3 cr.
An examination of the nature of high school science curricula, recent innovations in science teaching, evaluation, and classroom teaching techniques. Required for certification to teach science in the secondary schools. P: 302-301 and appropriate preparation in science.

302-315 Principles and Methods of Teaching English as a Second Language 3 cr.
Introduces the basic methods of teaching ESL and the underlying theories from linguistics, psychology, education, and sociolinguistics. Designed to give students opportunity to develop lessons for the ESL class using various methods, discuss and critique these methods, and consider their use in future situations. Required for certification to teach English as a Second Language. P: A minimum of one course in linguistics or another area to develop foundation academic competence to teach ESL plus 302-301.

302-316 Principles and Methods of Teaching Secondary School Art 3 cr.
Includes principles of art teaching methodology, procedures and strategies; classroom motivation techniques; preparation of art lessons; lesson plans; evaluation and grading techniques of art learning experiences; creativity and visual awareness-perceptual techniques; curriculum development in art, and other related material concerning the role of the art teacher in the secondary school. Required for certification to teach art in the secondary school. P: 302-301 and appropriate preparation in art.

302-317 Principles and Methods of Teaching Instrumental or Choral Music 3 cr.
Philosophical and curricular issues involving secondary school music. Materials and methodologies pertinent to a secondary school music curriculum are studied. Special emphasis is placed on developing rehearsal objectives for a performance oriented music curriculum. Required for certification to teach instrumental or choral music. P: 302-301 and appropriate preparation in music.

302-318 Reading and Study Skills in the Secondary School 2 cr.
Developmental reading, comprehension and retention, vocabulary development, motivation, rate, and flexibility. Consideration of diverse reading abilities and interests and development of appropriate study and learning techniques for reading in content areas. P: 302-301.

302-319 Adolescent Literature in Secondary School Reading 3 cr.
Examines practices in high schools, junior high schools, and middle schools which produce effective adolescent literature programs. Includes analysis of literature for the adolescent, current practices in literacy curriculum, personal development and literature for the adolescent, literature and social issues, and criteria for evaluating adolescent literature and literature programs.

302-334 Principles and Methods of Teaching General Music in the Elementary School 3 cr.
Focuses on exploring philosophical and theoretical foundations of music education. Curriculum development is approached by identifying children's musical needs in contemporary society. Traditional and contemporary methods and materials are reviewed and evaluated in relation to the development of feasible music curriculum framework. Required for certification in general music grades K-6. P: 302-301 and appropriate preparation in music.

302-335 Principles and Methods of Teaching General Music in the Secondary School 2 cr.
Develops understanding of the musical needs of the adolescent, insight into secondary general music with respect to contemporary education and the economy, and materials appropriate for the entire range of educational needs (e.g. gifted, multicultural, handicapped, average). Major focus is on teaching music literacy with emphasis on functional music reading, a perspective of music throughout history, and a working knowledge of materials currently marketed by the music industry. P: 302-301 and appropriate preparation in music.

302-355 Theory and Practice of Human Relations Skills 3 cr.
See 892-355.

302-402 Student Teaching in the Elementary School 2-12 cr.
Supervised student teaching or internships in the elementary school. Required for a teacher's license. P: sr st, preregistration with faculty in Education, written cons inst, and assignment by the faculty in Education. Offered on a pass-no credit basis only.

302-403 Student Teaching in the Secondary School 2-12 cr.
Supervised student teaching or internships in the secondary school. Required for a teacher's license. P: sr st, preregistration with faculty in Education, written cons inst, and assignment by the faculty in Education. Offered on a pass-no credit basis only.

302-404 Creative Learning 3 cr.
Students define creativity, confront creative experiences in their lives, structure and evaluate creative programs, review research on creativity, and synthesize a creative program in their roles as student, teacher, or parent. P: jr st.

302-405 Individualizing Instruction 2-3 cr.
New and innovative learning programs in grades K-12 designed to individualize instruction. Development of specific performance objectives, diagnostic procedures, staff organizations, student monitoring systems, and choice-elective instructional programs. Students may participate in a task force student-initiated project for the third credit. P: jr st.

302-406 Evaluation and Testing in Education 2-3 cr.
Techniques for constructing tests and measurement systems, statistical procedures applied to classroom data, monitoring and assessing individual and group learning situations, using and interpreting data from standardized tests. Students may participate in a task force student-initiated project for the third credit. P: jr st.

302-408 Reading Disability: Diagnosis and Remediation of Reading Problems 3 cr.
Important causes of reading disability and appropriate corrective strategies and materials. Psychological, physiological, and sociological considerations affecting disabled readers. The student learns to administer related diagnostic instruments, interpret results, and prescribe instructional procedures. Designed to meet expectations of classroom teachers. Suitable for both elementary and secondary school teachers. P: 302-307 or 318.

302-410 Introduction to the Education of Exceptional Children 3 cr.
A survey of the kinds of exceptionalities found in the school population, the needs of such children, and some methods for meeting them. Information enables the teacher or parent to recognize and understand exceptional children and unique subtleties that deserve specific attention. P: jr st.

302-415 Counseling Role of the Classroom Teacher 2 cr.
Provides teachers and future teachers with the knowledge of specific counseling and guidance skills necessary to enhance their counseling effectiveness. The course will focus on becoming more aware of these skills and how one best implements them in the classroom. P: teaching experience or upper division status in a teacher education program.

302-420 Integration of Contemporary Economic Problems in K-12 Curriculum 1-3 cr.
See 298-420.

302-421 Reading Readiness and Language Development 3 cr.
Focuses on the acquisition of reading skills and development of language in preschool through primary grades. The instructional and diagnostic strategies appropriate to these grade levels will be discussed. Selected reading and language development programs will be examined. Topics to be addressed include listening and reading comprehension, vocabulary development, word identification strategies, and approaches to beginning reading. P: 302-301 or 481-331.

302-422 Reading in the Content Areas 3 cr.
Practical guidelines for classroom teachers who are teaching in various subject areas—English, social studies, mathematics, science, etc. Suggestions for teaching reading and study skills related to content and approaches to dealing with technical and specialized vocabulary, developing study guides, and effectively dealing with reading problems in the content areas are the focus of this course. P: 302-307 or 318 or cons inst.

302-441 History, Philosophy, and Current Programs in Early Childhood Education 3 cr.
See 481-441.

302-442 Curriculum and Program Development in Early Childhood Education 3 cr.
See 481-442.

302-445 Early Childhood Center Administration and Community Resource Management 3 cr.
A survey course in children's center management dealing with governmental licensing and controlling agencies, various aspects of program organization and administration (e.g., funding, staffing, accounting), and utilizing family and community resources. Includes a study of early childhood programs in the community. P: cons inst.

302-451 Field Experience in Environmental Education 1-12 cr.
Prestructured or individualized study in environmental education at environmental centers, e.g., Trees for Tomorrow, MacKenzie Environmental Center, etc. Credit determined based on length of assignment and nature of activities. P: jr st and appropriate background for specific program.

302-481 Student-Led Courses 1-4 cr.
See page 98.

302-483X Selected Topics in Education 1-4 cr.
See page 98.

302-498 Independent Study 1-4 cr.
See page 98.

Courses in other areas for which education credit may be received include:
481-210 Introduction to Human Development 3 cr.
481-331 Human Development I: Infancy and Early Childhood 3 cr.
481-332 Human Development II: Middle Childhood and Adolescence 3 cr.
820-338 Psychology of Learning 3 cr.

350 Public and Environmental Administration

350-102 Introduction to Public Policy 3 cr.
An examination of major ideas, issues, problems, and value conflicts associated with implementing public policy in governmental institutions. The course covers theories of public administration, formal and informal aspects of public bureaucracies, decision-making processes, management of personnel in public organizations, the power of bureaucracies, bureaucratic responsibility and public control of government, ethics and public service, contemporary trends and alternative futures for public bureaucracies.

350-201 Problem Analysis and Decision Making 3 cr.
Focuses on theories and methods applicable to identifying and analyzing problems and issues and to developing alternative problem-solving strategies. Considers the role of facts and values in problem identification, criteria appropriate for distinguishing between private and public problems, and develops skills in problem analysis and problem solving.

350-281 Student-Led Courses 1-4 cr.
See page 98.

350-283X Selected Topics in Public and Environmental Administration 1-4 cr.
See page 98.

350-298 Independent Study 1-4 cr.
See page 98.

350-301 Environmental Politics and Policy 3 cr.
An introduction to political and administrative aspects of environmental problems, with special emphasis on American politics and public policy. The nature and scope of environmental problems; the environmental movement and processes of agenda setting; the role of public opinion and interest groups; the policy making process; decision making in administrative agencies; policy evaluation; selected problems and issues in environmental policy and administration; and political issues in adaptation to a sustainable society. P: 778-101 or 350-102 or cons inst.

350-305 Regulatory Policy and Administration 3 cr.
An examination of the purposes, structure, legal aspects, and operation of public regulatory agencies and programs in the United States. Topics include theories and controversies underlying regulatory policy, issues in contemporary regulatory policy and administration, and rational models and methods for risk analysis and decision making. Case studies and exercises will cover a variety of regulatory processes, including those associated with public health, consumer protection, product safety, environmental quality, and energy development and use. P: 778-101 or 350-102 or cons inst.

350-310 Leadership in Organizations 3 cr.
Covers roles, functions, and environments of organizational supervisors, project leaders, executives, managers, administrators, and other administrative agents, especially in public enterprises; the relationships between the behavior of administrative agents and work group performance in a variety of organizational and program settings. P: jr st or cons inst.

350-314 Administrative Law 3 cr.
See 944-314 and 778-314.

350-315 Introduction to Public Administration 3 cr.
Examines principal tools and methods for planning, designing, analyzing, and managing public systems. Provides understanding of the structure of public systems, their environment and restrictions on them, decision-making processes, and possible features of service delivery systems. Develops skill in application of systems design and analysis techniques to problems associated with planning and managing public systems. P: 350-102.

350-320 Local Government Operations I 2 cr.
History, functions, powers, and principal officers of the several types of local governments in the U.S. Introduces participants to major organizational characteristics and administrative operations of such jurisdictions. Emphasizes development of student skills in supervision, public and interpersonal relations, communications, and in elementary methods for budgeting and administrative analysis. P: introductory course in American government, 350-102, and cons inst.

350-321 Local Government Operations II 2 cr.
Major ideas, issues, and policies concerning jurisdiction, formation, and administrative operations of local units of government; introduces selected administrative and service delivery operations of such units, and to the use of computers in local government. Emphasizes development of skills in supervision, public and interpersonal relations, administrative analysis, and in use of productivity improvement and program evaluation methods. P: 350-320.

350-322 Local Government Operations III 2 cr.
Local government applications of productivity improvement techniques and of methods for analyzing policy problems, issues, and alternative problem solutions, including benefit-cost analysis. Also examines the probable future environment of local governments and emphasizes means for improving local government relationships with the public and other jurisdictions of government. P: 350-321.

350-400 Environmental Law 3 cr.
An overview of major environmental laws, including historical development, the structure of the law, and the implementation of these laws by federal, state, and local agencies. Special emphasis is given to the impact of landmark legislation, particularly the National Environmental Policy Act and the Clean Air Act, on state and local regulatory authority. Other topics include: administrative agencies and process; the influence of the courts; economic approaches to environmental regulation; national and international policy questions related to such issues as acid rain, toxic wastes, and nuclear waste disposal; citizens' suits and questions of legal standing; and environmental mediation.

350-410 Administration of Local Government 3 cr.
Covers contemporary problems and trends in intergovernmental relations and in the organization, management, and financing of local governmental and public service entities. Examines ideas and issues concerning the management of such entities and means for improving and/or reducing the costs of local governmental services, including service consolidation, interjurisdictional contracts and compacts, and metropolitan government. Emphasizes local governmental systems, institutions, and administrative arrangements in Wisconsin, and includes supervised student research on topics of interest to class members.

350-415 Public and Nonprofit Budgeting 3 cr.
Covers the history, philosophy, purposes, attributes, types, and operational elements of major public budgetary systems used in the United States, with emphasis on object, performance, program, and PPB systems and their applicability to various programs, organizations, and governmental jurisdictions. Examines principles and methods used in designing and managing public budgeting systems and relationship between program planning, policy planning, and budgetary operations. Develops skill in applying analytic and decision-assisting tools to public budgetary operations. P: 350-102, or another course in American government, or cons inst.

350-420 Decision Theory and Methods 3 cr.
Provides fundamental skills in program planning and evaluation. Theory is introduced to explain practical application. Emphasis is on building skills and understanding: how to plan for effective implementation; how to apply cost-effectiveness analysis; how to do cost estimating; how to schedule priorities; how to design evaluation into programs from the start. For persons interested in government, business, or nonprofit organizations. P: 350-421 or cons inst.

350-421 Planning Theory and Methods 3 cr.
Focuses on planning for complex socio-technical systems in the public sector, including analysis, design, evaluation, and control. Covers the theory of planning, general systems theory, the political and administrative setting of public planning operations, and methods of planning analysis, such as cost-effectiveness analysis and model building. Emphasizes practical application of theory and methods through case studies and projects, and provides both a theoretical and methodologic basis for study of specialized fields of planning, including those concerned with urban, regional, land use, environmental policy, and resource planning. P: one course in statistics or cons inst.

350-435 Administrative and Policy Laboratory 1-6 cr.
Multidisciplinary, team investigation of selected problems, policies, operations, programs, program outcomes, organizations, and organizational subsystems in the public sector. Students participate in design and implementation of project plan and function in appropriate project-related roles. P: 3 courses in public administration or equivalent.

350-460 Public Policy Analysis 3 cr.
An introduction to public policy analysis and to the policy-making process in American government. Topics include approaches to the study of public policy, the nature of public problems, the policy agenda, policy formulation, assessment of policy alternatives, policy adoption, policy implementation and evaluation, and the use of policy analysis in decision making. Special attention is given to political aspects of policy analysis, to models and methods for critical analysis and rational design of public policies, and to practical applications of policy studies. Develops skills in legislative research, preparation of position papers and other policy development documents, and methods of policy analysis and evaluation. P: 778-101 or 350-102 or cons inst.

350-470 Capital Projects Planning and Programming 3 cr.
Methods for determining demand for selected kinds of capital projects emphasizing public sector and environmentally related facilities. Preparation of capital projects budgets, pre-architectural plans and specifications, and capital project programs. The logic of capital budgeting decisions, and of project funding alternatives, especially in public sector projects. Role of retirement funds, revenue, and general obligation bonds in public sector capital project programs. P: 350-102 or cons inst.

350-481 Student-Led Courses 1-4 cr.
See page 98.

350-483X Selected Topics in Public and Environmental Administration 1-4 cr.
See page 98.

350-497 Internship in Public Policy and Administration 3-6 cr.
Supervised internship in an organization appropriate to the student's career interests and program of study. Includes supervised reading and periodic seminars relevant to internship. Agencies include local, state and federal governments and such nonprofit institutions as hospitals. P: 3 courses in public administration.

350-498 Independent Study 1-4 cr.
See page 98.

416 Geography

416-102 An Introduction to Geography: The Regions of Earth † 3 cr.
Contemporary geography, its viewpoints and methodology. Geographic reality of the present day world is analyzed in the form of case studies in which both the regional approach and systematic analysis are used.

416-120 Survey of Physical Geography 4 cr.
Characteristics and world distribution of physical factors which in combination form the natural environment; elements of weather and climate, climatic types, earth materials, landforms, vegetation and earth resources. Attention is paid to the role of humans in the modification of these physical elements and their changing distribution. 2 hours of lab a week. Required field trips.

416-202 Introduction to Cultural Geography † 3 cr.
The impact of culture through time in creating the earth's contrasting landscapes. Emphasis on case studies which often focus on North America.

416-215 Economic Geography † 3 cr.
Patterns of economic activities, including agriculture, extractive industries, manufacturing, transportation and trade. Major theories and concepts essential to understanding the location of economic activities are discussed.

416-250 Displays of Geographic Information 3 cr.
The appreciation, use, and evaluation of maps and air photos as informational sources.

416-283X Selected Topics 1-4 cr.
See page 98.

416-298 Independent Study 1-4 cr.
See page 98.

416-320 Landform Geography: Topics and Regions 3 cr.
Geographic methods of landform description and analysis with application to selected regions of the world. P: 296-202.

416-325 Regional Climatology 3 cr.
The elements, controls, and classification of climates; the distribution of climatic types over the earth; world patterns. P: 834-222.

416-341 Urban Geography 3 cr.
The city is viewed in two perspectives: as an entity among other cities and the surrounding region, and as a complex of subsystems, commercial, residential and manufacturing, functioning in space. P: jr st.

416-342 Contemporary Human Settlements 3 cr.
An examination of human settlement forms with an emphasis on geographical patterns. Topics include the evolution of early human settlements and communities, the development of the city, the arrangement of settlements in the landscape, and the relationships between settlement types, physical environment, and culture.

416-343 Field Experience in Contemporary Human Settlements 3 cr.
This course is a logical extension of 416-242. As such, students and faculty members spend time in the field examining human settlements, forms, and patterns. This examination involves applying skills, observation, identification, classification, analysis and synthesis of a variety of landscape components and their relationship to the resident's values, technology, and institutions. This course has been based in London, England, and Green Bay.

416-351 Elements of Cartography 3 cr.
Principles of basic cartography including problem identification and clarification, data collection and analysis compilation, generalization and symbolization. Emphasis on presentation of data on medium and large scale maps. P: jr st.

416-353 Air Photo Interpretation 3 cr.
Techniques for the interpretation of the uses humans make of the earth. Vertical, oblique, and infrared aerial photography are used in analyzing human use of the earth and its resources. P: jr st.

416-361 Geography of Africa 3 cr.
The broad physical and human patterns of Africa; historical aspects of geography including the imposition of colonial organization on resource use and on indigenous cultures. P: soph st.

416-368 The Geopolitics of World Regions 3 cr.
An examination of the impact of geographic factors on political behavior and relationships. Topics include concepts such as political space, political territoriality, the organization of space, and the nature of boundaries. The course also considers movement and migration as a political and social process and examines the impact of regional relationships on global social, economic, and political structures. See 778-368 and 834-368.

416-371 Geography of the United States and Canada 3 cr.
The physical features, resources, people, and economic activities of the United States and Canada. The various regions of the two countries are compared and contrasted. P: soph st.

416-372 Analysis of the Great Lakes Region of North America 3 cr.
A systematic analysis of the areas surrounding the Great Lakes of the United States and Canada; internal and external relationships; economic activities; regional change and problems. P: soph st. See 834-372.

416-377 Analysis of Northern Lands 3 cr.
A topical and regional analysis of the subarctic and arctic areas of North America and Eurasia; regional emphasis on Alaska, Northern Canada, and Scandinavia. P: soph st. See 834-377.

416-378 Geography of Conflict Areas 3 cr.
The economic and political geography of areas actually or potentially dangerous to the peace of the world are investigated to analyze underlying causes of existing tensions. P: jr st.

416-380 Geomorphic Processes 3 cr.
See 296-380.

382 Regional Analysis of Northwestern Europe 3 cr.
See 834-382.

416-420 Soil Classification and Geography 3 cr.
See 296-420.

416-451 Computer Cartography 3 cr.
An introduction to the use of the computer in assisting cartographic production, its advantages, disadvantages and limitations; the employment of current cartographic display software systems; and the application of computer assisted mapping to geographic problems. P: 416-250 and 416-351 or cons inst.

416-453 Advanced Air Photo Interpretation 3 cr.
Remote sensing is presented as a source of information, with particular emphasis on the extraction of land-use, landform, wetland, and vegetative information. Aerial photographs are used as a primary information format. Geometry of aerial photographs, photo-interpretative techniques, radial-line triangulation, photogrammetric mapping, and automated classification as applied to information extraction, serve as major components of the course. P: 416-353 and 416-351 or cons inst.

416-465 Colloquium for Geography 3 cr.
Orientation to geography as a scholarly discipline; its development, objectives, essential concepts, methods of investigation, institution, opportunities, problems and trends. P: geography major in jr or sr yr or cons inst.

416-470 The Glacial Environment and Chronology 3 cr.
See 296-470.

416-483X Selected Topics 1-4 cr.
See page 98.

416-498 Independent Study 1-4 cr.
See page 98.

448 History

448-100 History of the Modern World 3 cr.
An introduction to the history of the world during the past five centuries, and particularly since 1900. Considerable attention is accorded to the period since 1945. The global nature of modern historical change is emphasized, with special stress on the interaction of Europe and North America with the societies of Asia, Africa, and Latin America. Major topics include the rise and impact of capitalism, Western expansion and imperialism, the African slave trade, the creation of new societies in North and South America, the evolution of colonial empires, the impact of colonialism on Asia and Africa, the rise and impact of socialism, the industrial and scientific revolutions, the development of the modern world system, nationalism and revolution in the Third World, the role of the United States in the postwar world, the evolution of the communist societies, contemporary Western Third World relationships, and the state of the world system today.

448-201 Ancient Civilization 3 cr.
Examines the evolution of early civilization from its beginnings in the Near East and eastern Mediterranean to classical Greece and the decline of the Roman Empire. Attention is given to the art, institutions, ideas and values as well as the political, social and economic development of early Mesopotamia, Egypt, Palestine, Greece, and Rome.

448-202 The Middle Ages 3 cr.
Examines Western civilization from the late Roman Empire to the Renaissance and Reformation. Emphasis on the Christian Church; feudalism; the emergence of national states and institutions; urban civilization; agriculture, trade, and technology; and cultural achievements.

448-203 History of Europe from 1300 to 1815 † 3 cr.
Origins and development of Western civilization from the Renaissance and Reformation to the Napoleonic era. Emergence of the nation-state; absolutism and parliamentary government; development of urban centers, the middle class, commerce, capitalism, and early industry; dynamics of Western expansion and its collision with nonEuropean cultures; the scientific revolution; the Enlightenment; the French Revolution; beginnings of the industrial revolution in England; appearance of the secular and rational human.

448-204 History of Europe from 1815 to the Present † 3 cr.
Emergence of modern Europe. Revolutions against the old regimes; industrialization, urbanization, and the origins of modern classes and institutions; the ideologies of conservatism, liberalism, socialism, communism, and fascism; the impact of science on society; imperialist expansion; the making of new nations in Europe and the third world; advent of mass society; world wars and totalitarian politics; reconstruction of Europe; Europe today.

448-205 History of the United States from 1600 to 1865 † 3 cr.
The institutional basis of American government and the impact of changing ideas, social structure, and expectations on American culture. Attention to political, economic, and legal development, factional and sectional disputes; and the fundamentals and important founders of American liberalism and conservatism.

448-206 History of the United States from 1865 to the Present † 3 cr.
Major factors for change, their effects on American values, and the principal examples of intellectual and institutional accommodation. Attention to domestic and international effects of technology, economic development, and economic and ethnic-based social and political movements.

448-207 Roots of Black America † 3 cr.
A survey of Black people's experience in America beginning with African culture and following the development of Afro-American culture and institutions. The course includes political and institutional history and seeks to understand the evolution of a culture and a people.

448-208 The Development of Modern Science in Western Society 3 cr.
The interrelationships between modern science and Western society and the ways in which each has helped shape and form the other. Emphasis on the blossoming of modern science in the 17th century, the influence of the sciences and technology in recent times, and the development of some of the major theoretical structures in science.

448-250 Traditional Asian Civilization † 3 cr.
An introduction to the history and civilization of traditional Asian societies, including China, Japan, India, and the various peoples of Southeast Asia. Primary attention is focused on the evolution and structure of civilization before the increasing Western impact in the 19th century; China and Japan receive the major emphasis. Among topics considered are cultural life, art, music, literature, sociopolitical traditions, economic structure, and the various religious and philosophical systems such as Buddhism, Hinduism, Islam, Confucianism, and Taoism.

448-251 Modern Asian Civilization † 3 cr.
An introduction to the history and civilization of East, Southeast, and South Asia since the end of the 18th century, with particular attention to the period since 1900; China and Japan receive the most attention. Major emphasis is on social, political, economic, and cultural change under the impact of the West. Topics include the breakdown of traditional Chinese civilization, Japanese modernization, Western imperialistic pressures on China, European colonization of South and Southeast Asia, the evolution of anti-Western nationalism and revolutionary movements, the building of modern Japanese technocratic society, the rise and development of Chinese communism, the Korean and Vietnam wars, and the societies of Southern Asia since independence.

448-283X Selected Topics 1-4 cr.
See page 98.

448-298 Independent Study 1-4 cr.
See page 98.

448-302, 303 History of American Thought and Culture 3, 3 cr.
Development of patterns of American thought and culture within the context of the major Western intellectual traditions; emphasis on changing American conceptions of nature, humanity, society, progress, and art and how in the works of key American thinkers and in the formation of characteristic American cultural agencies such conceptions were given coherency and social force. P: jr st or cons inst. Can be taken out of sequence.

448-306, 307 History of European Thought and Culture from the Renaissance to the Present 3, 3 cr.
Development, transmission, and impact of European philosophy, religion, science, literature, art, and social thought; significant thinkers and cultural institutions; major currents and trends. 306: Renaissance, Reformation, Scientific Revolution, Age of Reason. 307: romanticism, liberalism, nationalism, positivism, irrationalism, socialism, fascism, existentialism. P: jr st or cons inst. Can be taken out of sequence.

448-309 History of Science in Modern Times 3 cr.
Development of science since the 16th century as part of its cultural matrices; discussion of important scientific concepts of the last four centuries. P: jr st or cons inst.

448-310 American Colonial History 3 cr.
A course dealing with perhaps the best researched and most understood period of American history which can provide an excellent understanding of the foundations of American institutions and attitudes against which subsequent continuity and change may be measured. It offers perspectives on a number of problems, particularly in the area of politics, economics, and social movements, providing meaningful insights into the perennial reconciliation between ideals and necessity. Also makes available an understanding of evolution of values during the transition period between the pre-industrial and industrial society in America. P: an introductory course in history (preferably 448-205 or 206) or cons inst.

448-311 History of Wisconsin 3 cr.
A survey of Wisconsin from European exploration to the present. The development of Wisconsin as part of the international Great Lakes region and as part of the United States. The political, economic and cultural history of the region, territory and state, as exemplification of regional and national history and as the development of a distinctive political community within the American system. P: 448-205 or 206, or cons inst.

448-314 History of the Russian Empire 3 cr.
Survey and analysis of social, intellectual, political, and economic developments and crises from the Crimean War to the Bolshevik Revolution. P: jr st or cons inst.

448-315 The Soviet Union from 1917 to the Present 3 cr.
Survey of the origins and evolution of the main ideological, political, economic, social, diplomatic, and cultural developments of Russia since the Bolshevik Revolution. P: jr st or cons inst.

448-320 U.S. Military History 3 cr.
Reviews important developments in American military strategy and its relationship to national policy. The views of relevant theorists are considered as well as the utility of these views in actual strategic situations. The course ends with a consideration of current military thinking and the balance of forces. P: 3 cr. lower level history or cons inst.

448-322 Economic and Business History of the United States from 1876 to the Present 3 cr.
The development of a corporate economy and the rise of government intervention; industrial, financial, agricultural, and labor reorganization; wage and price policies and their relationship to these general themes; special attention to modernization and urbanization and the developing relationship between the domestic and the world economy. P: jr st or cons inst.

448-324 History of American Foreign Relations, 1865 to the Present 3 cr.
Factors contributing to American foreign policy including changing views of the world, the balance of power, idealism, and self-interest. An effort is made to evaluate foreign policy decisions and to describe the relationship between foreign policy concerns and domestic politics. P: jr st or cons inst.

448-325 History of Modern Germany 3 cr.
Survey of the political, social, economic, and cultural development of modern Germany from the establishment of the Empire in 1871 to the division of Germany after World War II. P: jr st or cons inst.

448-343 America's Urban Past 3 cr.
Investigation of the American urban experience; the economic, political, social, and ideological forces that have shaped urban development; the city as a transforming force in American culture and as product of that culture. P: jr st or cons inst.

448-350 Social History of Europe 3 cr.
Development of social thought, institutions, organizations, and policies from early to modern Europe. Special attention is paid to the impact of economic change on society, the formation of classes, the consequences of the industrialization of Europe and contemporary social issues, crisis, and conflicts.

448-352 History of Modern China 3 cr.
Analysis of selected themes in Chinese history since 1800. Topics that might be discussed include the impact of the West, reform programs in late imperial China, Chinese nationalism, republican China, the rise of Chinese communism, Maoist thought, and the development of Chinese communist society. P: jr st or cons inst.

448-354 History of Modern Southeast Asia 3 cr.
An introduction to modern Southeast Asian history, with particular attention to the period since 1800. Countries discussed include Vietnam, Indonesia, Thailand, Malaysia, Singapore, Cambodia, Laos, and the Philippines. Emphasis is placed on the remaking of Southeast Asia under the stimulus of the West and the Southeast Asian response. Among the major themes are state and nation building, colonialism, economic and social change, nationalism, the impact of communism, U.S. policies in Southeast Asia and the Vietnam War. P: jr st or cons inst.

448-356 History of Africa 3 cr.
The social, political, economic, and cultural development of Sub-Saharan African societies from prehistoric times to the present, with emphasis on the period since 1800. Among main topics are traditional modes of thought and culture, the spread of Islam, the development of kingdoms and "stateless" societies, the slave trade, the African diaspora in the Americas, European colonialism and its heritage, changing musical traditions, the emergence of modern African nation-states, post colonial politics and evolution of white domination in Southern Africa, and the contemporary African struggle against underdevelopment and neo colonialism.

448-358 Aspects of Latin American History 3 cr.
Historians of Latin America have noted several themes which seem to characterize the development of countries of that region. This course examines some of these themes, such as conquest, colonization and neo-colonialism and class and ethnic conflict between landlord and peasant and capitalist and worker to seek understanding of external and internal forces which have contributed to the making of modern Latin America. P: jr st or cons inst.

448-367 World Wars I and II: Age of Global and Total Conflict 3 cr.
Examination of the causes, development, and results of the world wars; survey of the major military operations on land, sea, and in the air, as well as their strategic, political, economic, and social implications; analysis of the war aims of the belligerents; and assessment of the impact of the wars on specific societies and on the development of the modern world. Many documentary films are used. P: jr st or cons inst.

448-375 Great Decisions: Issues and Options in International Affairs 3 cr.
Examination and discussion of major regional and global issues, problems and conflicts, their impacts on the United States and other countries, and analysis of policies and policy alternatives; evaluation of international affairs on the shaping of U.S. foreign and domestic policy. Case studies change every year. Public lecture presentations are an integral part of the course and may be taken for continuing education credit, or may be audited by anyone through the Office of Outreach.

448-403 Political and Social History of Modern America 3 cr.
Political and social change in 20th century America; the evolution of governmental roles in social change; the development of American culture; and the emergence of the United States as an industrial and political power. P: sr st or cons inst.

448-404 Political and Social History of Modern Europe 3 cr.
Political and social change in 20th century Europe; origins and impact of World War I; emergence of communism and fascism; the road to World War II; post-war renaissance of the European community. P: sr st or cons inst.

448-405 History of Technological Change 3 cr.
The impact of major inventions on the patterns of life in modern society; ecological problems resulting from technological changes. P: sr st or cons inst.

448-480 Seminar in History 3 cr.
Focuses on theoretical and practical topics and problems such as research techniques, source materials, comparative studies, analysis and interpretation, and the writing of historical inquiries. Required of all history students, the seminar is valuable to graduate students and seniors majoring in other academic fields. P: sr st or cons inst.

448-483X Selected Topics 1-4 cr.
See page 98.

448-498 Independent Study 1-4 cr.
See page 98.

See also relevant courses in other areas which may be taken for history credit, including:

156-301 Peoples and Cultures in a Selected Region 3 cr.
242-200 History of the Visual Arts: Ancient to Medieval 3 cr.
242-201 History of the Visual Arts: Renaissance to the Present 3 cr.
242-340 Greek and Roman Art 3 cr.
242-342 Italian Renaissance 3 cr.
493-101, 102 Foundations of Western Culture 3, 3 cr.
493-250 European Economy and Society 3 cr.
493-251 Business and American Life 3 cr.
493-274 Red Man in White America 3 cr.
493-320 Man, Machines, and the Environment 3 cr.
493-332 Art and Social Thought 3 cr.
493-374 Wisconsin Indians: Historical and Cultural Perspectives 3 cr.
493-390 Violence, War, Revolution and Society 3 cr.
493-474 The Native Americans: Emergence of Pan Indian Cultures 3 cr.
875-333 Social Change in a Selected Area 3 cr.
875-361 Historical Perspectives on Social Change 3 cr.
875-385 Dynamics of Revolutionary Change 3 cr.
944-313 The City Through Time and Space 3 cr.
944-345 Women in American Perspective 3 cr.

478 Human Adaptability

478-102 Introduction to Human Biology † 3 cr.
Introduction to the basic concepts, principles, and processes in human biology; the origin of life, evolution, cells, population, genetics, reproduction, disease, the anatomy and function of major organ systems in humans, and human adaptability.

478-110 Introduction to Physical Anthropology 3 cr.
An introduction to understanding human populations from a biological, evolutionary perspective. The evolutionary history, diversity, and adaptation of human beings is explored. Also included is discussion of the mutual interaction and influence of human culture and biology within an evolutionary framework. See 156-110.

478-203 Anatomy and Physiology I 2 cr.
The structure and function of the human body, its organs and organ systems: emphasis on cardiovascular system. Primarily for nursing and nutrition students. P: 204-202 required.

478-204 Anatomy and Physiology II 4 cr.
The structure and function of the human body, its organs and organ systems: emphasis on systems other than cardiovascular systems: respiratory, excretory, digestive, nervous, endocrine, skeleto-muscular systems. Primarily for nursing and nutrition students. P: 478-203 required.

478-205 Biotechnology and Human Values 3 cr.
Examination of technological developments in biology and medicine, including genetic, behavioral and organism modification, and the moral and ethical concerns raised by such technologies. P: 478-102 or 204-202 or 478-110 required.

478-206 Fertility, Reproduction and Family Planning 3 cr.
Deals with the many factors that influence reproduction and fertility, i.e., physiological, psychological, social, cultural, and ethical; the methods available for limiting or increasing reproduction; and the nature of family planning programs. P: 478-102 or 478-110 or 204-202 required.

478-217 Man, Nature and Disease 3 cr.
An overview of the impact of diseases in humans. Emphasis is on the major diseases, their causes, the effect on the individual, the historical significance, and the methods of control. Diseases such as plague, VD, leprosy, cholera, river blindness, hookworm, lice, cardiovascular disease, and cancer are discussed. P: 478-102 or 478-110 required.

478-250 Introduction to Adult Fitness 2 cr.
A survey of the goals, scope and efficacy of health and fitness programs in both industrial and community settings. Field trips, demonstrations, and observational experiences are included.

478-252 Methods for Directing Adult Fitness Programs 1 cr.
Emphasizes practical aspects of directing adult fitness groups. Topics covered include aerobic exercise prescription, exercise intensity monitoring, aerobic and muscular conditioning activities, as well as warm up and cool down procedures. Students will gain practical experience from planning and conducting various aspects of an exercise session.

478-281 Student-Led Courses 1-4 cr.
See page 98.

478-283X Selected Topics in Human Adaptability 1-4 cr.
See page 98.

478-298 Independent Study 1-4 cr.
See page 98.

478-310 Human Genetics 3 cr.
Principles of human and population genetics and the genetic implications of technology; human metabolism, birth defects, and genetic diseases; genetic counseling and gene therapy. P: 204-202 or 478-102 or 478-110 required.

478-311 The Scientific Perspective and Man's Self-Image 3 cr.
Examines the scientific method and its impact on humans' view of themselves and their social institutions. Studies the fundamental assumptions, processes and limitations of science in understanding the complex nature of man. Topics include the impacts of the physical sciences upon the social sciences, social influences on the processes and conclusions of science, the impact of a scientistic social philosophy upon the development of personal identity and the validity of science in exploring such human experiences as love, hope, altruism and free will. P: two courses in science.

478-312 Evolutionary Processes 3 cr.
The cytological, morphological, behavioral, and geographic factors involved in the origin of species and higher taxa. P: 204-203 or 478-110 required.

478-313 Brain Functions in Human Behavior 3 cr.
Considers the role of the nervous system as the basis of human behavioral adaptation. Specific topics include: evolution of nervous systems and behavior; human nervous system functional anatomy; neural bases for drives, emotions, range and fear, hand-eye coordination, conditioning and learning; development of the human nervous system and behavior. P: 478-102 or 478-110 or 204-202 required.

478-318 Mammalian Reproduction 3 cr.
Basic reproductive processes, with emphasis on the factors, both hormonal and environmental, that affect reproductive functions in mammals; how these processes can be modified to control reproduction. P: 204-203 required.

478-320 Biology of Human Development and Senescence 3 cr.
The physical and functional events of the stages in the life sequence of the human being. Changes in musculo-skeletal, cardiopulmonary, central nervous, and endocrine systems and how they may relate to sociopsychological concerns. Offered in alternate years. P: 478-102 or 204-202 required. See 481-320.

478-333 Introduction to Sports Physiology † 3 cr.
How the human body meets and resists or adjusts to the stresses of the environments of sport, adventure and exploration. Lecture and laboratory demonstrations. P: 478-102 or 204-203 required.

478-342 Human Evolution 3 cr.
Phylogenetic history and affinities of homo sapiens and the evidence on which they are based. Potential effects of technology on future human evolution. P: 478-102 or 478-110 or 204-203 required. See 156-342.

478-350 Introduction to Exercise Physiology 4 cr.
The study of acute and chronic effects of exercise on major organ systems. Emphasis is on the significance of these effects as they relate to developing and maintaining physical fitness. P: 478-203/204 or 204-203 required.

478-351 Kinesiology 3 cr.
Basic anatomical and mechanical principles as they relate to human movement. P: 478-333 or 478-350 required.

478-364 Human Variability 3 cr.
The study of living human populations with an emphasis on the variability found from one to another in terms of biological and cultural factors. Stress is placed on biological differences found between subspecific populations, or races, from around the world, such as blood group, skeletal, and other adaptive systems. In addition, populations living in stress environments such as high altitude, arctic, and deserts are examined. P: 478-110 or 478-102 required.

478-370 Scientific Writing and Discourse 3 cr.
Prepares students to write and to present orally and graphically material, suitable to their training, in a polished and convincing manner. Students will learn general principles of writing, speaking, preparation of graphic materials and copy. Students will make brief oral presentations and write short excerpts. A final paper and presentation is required. P: jr/sr st.

478-402 Human Physiology 3 cr.
The functions of the major organs and organ systems of humans other than the central nervous system and the special senses. P: 204-203 and 225-212 required.

478-404 Animal Physiology Laboratory 2 cr.
Students perform laboratory research in the study of major animal organ systems and are exposed to techniques of physiological investigation. Topics include consideration of experimental error; cardiovascular/respiratory, enzyme, endocrine, nervous, muscular, renal, and osmoregulatory systems; and whole-body, electrophysiological, surgical, biochemical, histological, and behavioral techniques. P: 478-402, or 204-346, or 478-413, or 478-318 or concurrent registration required.

478-412 Principles of Parasitology 3 cr.
Interactions of human populations with parasitic worms, protozoans, and arthropods. Laboratory includes identification and life cycles of parasites. P: 204-203 required.

478-413 Neurophysiology 3 cr.
The nervous system and its functions in perception, interpretation, and the production of physiological and behavioral response: fundamental concepts, neuronal function, sensory systems, and processing mechanisms. Emphasis on limitations imposed by various environments. P: 204-203 and 225-212 or equivalent or cons inst required.

478-440 Seminar: Topics in Human Adaptability 2 cr.
Interdisciplinary and collaborative library research with student reports on selected phenomena and problems in human adaptability. Strongly recommended for majors. P: sr st required.

478-448 Human Histology 3 cr.
A lecture-laboratory course dealing with the microscopic structure and function of cells, tissues, and organs of vertebrates, with emphasis on the human. P: 204-203 or 478-104; and one upper level vertebrate biology course required.

478-481 Student-Led Courses 1-4 cr.
See page 98.

478-483X Selected Topics in Human Adaptability 1-4 cr.
See page 98.

478-484 Senior Honors Project 3 cr.
See page 98.

478-498 Independent Study 1-4 cr.
See page 98.

479 Nutritional Sciences

479-142 You and Your Food † 3 cr.
Consumer related coverage of the nutritional requirements of sedentary populations. Purposes, production, processing, packaging, advertising, and distribution of food; changes in foods from farm to market to table in order to meet specific biological needs; deterioration and preservation of foods; uses and abuses of additives; food safety and consumer protection. P: 478-102 or 478-110 or 204-202 required.

479-212 Food Preparation 4 cr.
Principles of food selection and preparation with emphasis on methods which maximize the retention of nutritional value. P: cons inst.

479-250 World Food and Population Issues 3 cr.
An overview of world hunger and population growth as interrelated problems. Describes the dimensions of the world food situation and its ramifications; what constitutes hunger, its scope, complex causes and effects. Examines general strategies and obstacles to the solution of the world food and population problems from the standpoints of conflicting cultural values, differences in educational and socioeconomic levels, technology and total resources. P: 478-102, 478-110 or 204-202 required.

479-281 Student-Led Courses 1-4 cr.
See page 98.

479-283X Selected Topics in Nutritional Sciences 1-4 cr.
See page 98.

479-298 Independent Study 1-4 cr.
See page 98.

479-300 Nutritional Significance of Food † 3 cr.
Fundamentals of human nutrition, including functions and requirements of essential nutrients; means of obtaining an adequate diet. Specific attention is given to the needs of infancy, adolescence, adulthood, pregnancy and lactation, and aging. P: one year of high school chemistry or 225-108 and 204-202 required.

479-301 Crop Science 3 cr.
Principles of plant science involved in the growth, management, and production of field crops. Biological factors, environment, soil, climatic and technological foundations of agronomy and crop distribution. P: 204-202 or a course in botany required.

479-302 Nutrition and Culture 3 cr.
Effects of environment and culture on food habits in historical perspective. Role of food in health and disease as related to humans and the biosphere. P: 204-202 or 478-102 required.

479-312 Quantity Food Production and Service 3 cr.
Principles of quantity food preparation and service. Laboratory affords experience in quantity preparation, service, and costing of food. Field trips. P: 479-212 required.

479-321 Physiological Chemistry 3 cr.
Principles of physiological chemistry as related to metabolism in living organisms. Credit will not be given for both 225-330 and 479-321. P: 225-301 required.

479-404 Food Science 3 cr.
Standards of food quality, food preferences, food assay, food deterioration, adulteration; methods of preservation and distribution. Laboratory includes quantitative analysis of and instrumental procedures for various food components; arranged student visits and/or interaction with specific area food laboratories. P: 225-303 or 225-330 required.

479-409 Analysis of Food and Food Products 2 cr.
Laboratory and lecture course studying principles, methods, and techniques necessary for analytical chemical analyses of food and food products. Analyses and instrumental methods are related to the standards and regulations for food processing. P: 225-301 or 225-304 or 225-311 required.

479-421 Community Nutrition I 3 cr.
Nutritional problems of the individual within the context of the larger community—the world, the nation, the region, and the state. Studies methods of assessing nutritional status, agencies, and programs which focus on alleviating malnutrition. Addresses the role of nutrition education is addressed. P: 479-302 required.

479-422 Community Nutrition II 3 cr.
Nutrition of the individual within a local ecological setting—the country, city, special population segments, the family. Prevention and control of malnutrition, nutrition education and feeding programs are explored in depth. Field experience in applied nutrition. P: 479-421 required.

479-481 Student-Led Courses 1-4 cr.
See page 98.

479-483X Selected Topics in Nutritional Sciences 1-4 cr.
See page 98.

479-484 Senior Honors Project 3 cr.
See page 98.

479-485 Advanced Human Nutrition 3 cr.
Physiological and biochemical principles of nutrition; fundamental concepts of human nutrition and nutritional diseases. P: 225-331 or concurrent registration and 479-300 required.

479-488 Nutrition in Disease 3 cr.
Therapeutic applications of nutrition in treatment of human diseases. Emphasis upon familiarization with the medical terminology, etiology, biochemical and clinical manifestations of disease conditions. Students determine changes in nutrient intake, food and eating patterns necessary for treating disease conditions and construct suitable meal plans. P: 479-485; 225-331 or concurrent registration required.

479-498 Independent Study 1-4 cr.
See page 98.

481 Human Development

481-210 Introduction to Human Development † 3 cr.
An interdisciplinary approach to the study of human development from conception through death. This survey covers topics such as physical development, social and emotional development, personality development, the development of language, intellectual development and creativity, and the process of human learning. Students considering majoring in Human Development should take this course.

481-215 Issues in Human Development 3 cr.
Examines various issues and controversies in human development in order to illustrate how values influence the process of resolving them. Both cultural values (e.g., "individualism") and various theories of development are examined as values systems shaping the process of understanding people, particularly those influencing the process of deciding what is "good" for people and what people "need." Not intended for Human Development majors. P: 481-202 or 210.

481-281 Student-Led Courses 1-4 cr.
See page 98.

481-283X Selected Topics in Human Development 1-4 cr.
See page 98.

481-298 Independent Study 1-4 cr.
See page 98.

481-320 Biology of Human Development and Senescence 3 cr.
See 478-320.

481-331 Human Development I: Infancy and Early Childhood 3 cr.
Current theories, methods of study, and pertinent research provide the framework for studying human development from conception through the preschool years. Interrelationships between the biological, sociocultural, and psychological aspects of development are emphasized. Required core course. P: 481-210 or equivalent.

481-332 Human Development II: Middle Childhood and Adolescence 3 cr.
Individual development from the beginning of the elementary school years through adolescence in the context of the sociocultural, economic, and physical growth factors influencing the developmental processes that characterize the "typical" older child and adolescent at each level of development. Interpretation of behavior from the perspectives of such theorists as Erikson, Freud, and Piaget is stressed. Required core course. P: 481-331.

481-333 Observation and Interpretation of Child Behavior 3 cr.
The behavior and development of young children is studied in depth through direct observation of children in selected situations and through comparison of the observations with theories and established data regarding child development. P: 481-331

481-334 Play and Creative Activities in Childhood 3 cr.
Concepts of the contributions of play and creative activities to physical, intellectual, emotional, and social aspects of development. Specific contributions of selected creative activities are examined. Audio-visual materials provide opportunities for observation. P: 481-331.

481-335 Introduction to Experience with Young Children 1 cr.**
Supervised work with young children in a group situation. Recommended only for those students earning certification in early childhood education. P: 481-331 and written cons inst.

**Meets a requirement for certification in early childhood education in Wisconsin.

481-336 Sex Role Development in Contemporary Society 3 cr.
Developmental analysis of the biological, personality, social and cultural factors contributing to sex role identity and behavior in contemporary society. P: 481-210.

481-339 Woman in the Life Cycle 3 cr.
Introduces the student to the significance of sex and gender as variables in the study of human development and in the interpretation of such studies. Readings include original research in cultural anthropology, the psychology of women, literary criticism, and literature. P: 481-210 or 820-101 or 820-102 or 900-202.

481-342 Cross Cultural Human Development 3 cr.
Covers cultural differences in perception, cognition, language and thought, child development, child rearing, and personality. Examines relationships between various aspects of culture (value, economy, ecology, political system) and psychological functioning within both non-Western cultures and American ethnic subcultures. P: 481-210.

481-420 Tests and Measurements 3 cr.
Methods and problems of measuring human characteristics, including determination of validity, reliability, and interpretive schemas for such measures. Examination of selected tests in intelligence, achievement, attitudes, interests, and personality. Typical uses of tests and methods for reviewing tests. P: a course in statistics. See 820-420.

481-429 Theories of Personality 3 cr.
Major ideas and systematic statements about the organization, function, change, and development of human personality. Readings acquaint the student with a variety of personality theorists such as Freud, Adler, Jung, Sullivan, Erikson, Dollard and Miller, Skinner, and selected existentialists. P: 481-331 and jr st.
See 820-429.

481-431 Cognitive Development 3 cr.
The development of cognitive functioning from infancy to adulthood. The stimulus-response, cognitive, and psychoanalytic approaches to intellectual development are analyzed. Current issues and research are critically examined. P: 481-331, 332.

481-433 Human Development III: Adulthood and Aging 3 cr.
An interdisciplinary approach to theory and empirical research concerning developmental processes across the adult life span. The course deals with psychological, cultural and biological factors which influence development in young adulthood, middle adulthood, and old age. Required core course. P: 481-331, 332.

481-435 Abnormal Behavior 3 cr.
Deviations from normal intellectual, physical, emotional, and social development (e.g., retardation, psychopathology, emotional problems) throughout the life cycle are covered. Includes study of accelerated development, delayed development, and disturb-areas in development. Biological and environmental origins of deviations are examined. P: 481-331, 332. See 820-435.

481-436 Counseling with Children and Adolescents 3 cr.
Introduction to theories and principles of counseling as applied to children and adolescents. Surveys different theoretical approaches and techniques for helping children and adolescents cope with the developmental deviations introduced in 481-435. P: 481-331, 332, 435.

481-437 Counseling with Adults and the Aged 3 cr.
Introduction to theories and principles of counseling as applied to adults and the aged. Surveys different theoretical approaches and techniques for helping adults and the elderly cope with the developmental problems of the latter half of the life cycle introduced in 481-435. P: 481-331, 332, 433, 435.

481-439 The Social, Behavioral and Biological Implications of Aging 3 cr.
An interdisciplinary overview of older Americans, with emphasis upon creating for them an optimum environment. Physiological change, problems of meeting health care needs, social status, and psychological change, with emphasis upon individual difference. Historical and anticipated future changes in the older population will be discussed.

481-441 History, Philosophy, and Current Programs in Early Childhood Education 3 cr.**
Historical and philosophical bases of early childhood education, with emphasis upon current approaches and programs; guided observations of young children. (Also listed as 302-441.)
P: 481-331, 333, 334 and 431.

481-442 Curriculum and Program Development in Early Childhood Education 3 cr.**
A developmental approach to curriculum and program, including the effective interweaving of various disciplines in a program for young children. Program priorities and planning will be considered within the context of developmental levels and the variety of populations to be served. (Also listed as 302-442.) P: 481-331, 333, 334, 431 and 441.

481-452 Social Gerontology 3 cr.
Concerned with an examination of elderly persons as they relate to their children and kin network, network of friends, and environmental setting. The interdependency of these three areas will be discussed as well as their relation to social policy.
P: 481-433.

481-481 Student-Led Courses 1-4 cr.
See page 98.

481-483X Selected Topics in Human Development 1-4 cr.
See page 98.

481-484 Senior Honors Project 3 cr.
See page 98.

481-495 Language Acquisition in Childhood 3 cr.
An interdisciplinary approach to language acquisition and development, including structural and transformational linguistics, biological and physiological aspects, relationship to psychological development, use as a cognitive tool, communication skills, and the effects of sociocultural factors. Includes student observations and interpretations of child speech behavior. P: 481-331.

481-498 Independent Study 1-4 cr.
See page 98.

493 Humanistic Studies

493-101, 102 Foundations of Western Culture I, † II † 3, 3 cr.
Western civilization and cultures are approached from broadly historical perspectives, considering not only major events, developments, and personalities, but the ideas, concepts, and values that mold each age and constitute our traditions and sources. The first semester covers the period from ancient civilizations to the Renaissance. The second semester is from the Renaissance to the modern world. This is a basic course for students in the humanities and serves as an important background course for all other students as well.

493-201 Introduction to Humanities I: Music and Art in Western Civilization † 3 cr.
Explores the ways in which fine arts, such as visual arts, music, and film, express ideas and values. Several cultural eras in western civilization are considered, relating historical developments and social factors to aesthetic creativity. This is a basic subject for majors or co-majors in Humanistic Studies. It is also an excellent general introduction to humanistic ideas, methods, and values, for all students.

493-202 Introduction to Humanities II: Literature, Philosophy and History in Western Civilization † 3 cr.
Studies some of the elementary forms (epic and lyric poetry, drama, historical narrative, philosophical dialogue, novel) and ideas (appearance and reality, destiny, fate, free will, tragedy and comedy, truth, and the good) and methods (criticism, description, textual analysis) which have been predominant at various times in Western thought. Course content may change from time to time. This is a basic subject for majors or co-majors in Humanistic Studies. It is also an excellent general introduction to humanistic ideas, methods, and values, appropriate for all students.

493-204 Humanistic Values Through Literature 3 cr.
Through discussion of essays, stories, poems, plays, and novels, this course examines particular value issues from a humanistic perspective. Among topics which might be studied are "the search for a meaningful life," "human worth," or "conflicts between the individual and society." Readings on the specified topic include both Western and non-Western viewpoints, and range from modern authors like Camus, Hesse, and Vonnegut, to Shakespeare, Sophocles, and Plato.

493-205 Personal Values and Social Reform 3 cr.
Any attempt to reform society involves, at least implicitly, major questions concerning the value of such an attempt. This course examines some of these value questions, such as: Are attempts at social reform generally beneficial or harmful to individuals in the society being reformed? How does one determine whether a society is good or bad, and thus, whether a society should be reformed? Do programs for reform of society necessarily restrict or obstruct the exercise of individual freedom? Why might someone be interested in reforming society? Such issues will be examined through reading, discussion and lectures. See 892-205.

493-209 Folklore and Folkloristics † 3 cr.
Introduction to the forms and methods of studying oral literature, especially folk tales, poetry, myths, legends, epics, jokes, proverbs, riddles, curses, toasts, and blessings. Most attention is given to non-Western forms of oral literature, some to West European forms and styles. Methods of collecting, studying, and analyzing oral folklore are stressed.

493-210 Film and Society 3 cr.
Deals with film primarily in its social context, i.e., the ways in which film reflects and influences society. Films such as Griffith's *Birth of a Nation*, Lang's *Metropolis*, Eisenstein's *October*, Vertov's *Man with a Camera*, Renoir's *Rules of the Game*, and films chosen from the student film series are examined for their social content, both explicit and implicit, and the social milieu of their creation. Emphasis is placed on the ways in which different cultures use films and on the cross-cultural influences which occur. See 242-210.

493-250 European Economy and Society 3 cr.
Introduces major issues, developments, and problems which shaped European societies in the course of the fundamental transformation from rural, agrarian, and largely static societies, to urban, industrial, and rapidly changing ones. Highlighted are the major developments in agriculture, commerce and industry; the impact of science and technology; the evolution of modern labor and management patterns of prices, wages, economic cycles, and consumption; changes in economic principles, practices and institutions; and the corresponding transformation of Europe's social and cultural patterns.

493-251 Business and American Life 3 cr.
Describes the social and individual values which relate human experience to business goals; the influence of business values on the organization of American life; business successes and shortcomings and the ways in which American civilization has adapted to them. Representative personalities, firms, and events are studied to achieve the goals of the course, and to permit a comparison of the development of the American economics tradition with the European tradition discussed in 493-250, European Economy and Society.

493-274 Red Man in White America † 3 cr.
A multi-disciplinary survey of the changing position of Native Americans in American culture and society. Historical relations of Indians and Whites are examined to discover basic processes of socio-cultural change, such as ecological succession, evolution of corporate organizations from tribal beginnings, and growth of Pan-Indian culture patterns. Past and current stereotypes, images, and visions of "the Indian" are examined critically. Attempts are made to answer basic questions such as: What has the Indian meant to Americans? What does it mean to be Indian? Who and what is an Indian?

493-281 Student-Led Courses 1-4 cr.
See page 98.

493-283X Selected Topics in Humanistic Studies 1-4 cr.
See page 98.

493-295 Art and Ideas in Western Culture 3 cr.
Using the celebrated series of television films entitled *Civilization*, narrated and produced by art historian Kenneth Clark, this course surveys the works and ideas of a selection of sculptors, architects, musicians, philosophers, poets, and writers to provide a cultural history of the Western world from the middle ages to the present. Offered in January.

493-298 Independent Study 1-4 cr.
See page 98.

493-301 Humanistic Studies Projects in the Community 1-5 cr.
Projects vary, but emphasize service, creative, developmental, and communications activities in the community. May be repeated for credit. P: cons inst.

493-302 Human Identity 3 cr.
The concept of human identity is presented from the vantage point of many disciplines; the contributions of science and art and their mutual interaction are demonstrated. P: 493-201, jr st or cons inst.

493-305 Value Theory and the Humanities 3 cr.
A systematic and critical survey of ideas and methods of value inquiry with special attention to problems and claims of values of the environment and the humanities. Some of the topics considered are be the origins of traditional problems of value, the methods of value inquiry, and the relation of a general theory of value to other disciplines in the humanities and the sciences.
P: 493-201, 202.

493-310 Criticism of the Performing Arts 3 cr.
An approach to the principles and techniques of criticism of various performing arts, such as music, theater, and movies. Includes study of the aesthetic bases of criticism, analysis of the work of critics, the relationship of the critic to the community, and practice in writing critical reviews. Some degree of sophistication in at least one of the performing arts is desired. P: jr st or cons inst.
See 242-310.

493-323 The Writings of the Old Testament 3 cr.
The Old Testament as literature and as part of the literary heritage of the Western world. This approach excludes, therefore, any sort of ecclesiastical or doctrinal preconceptions of the Old Testament's value as an exclusively religious work, though attention is necessarily paid to religious convictions, ideas, and views which influenced and helped to develop it. The books of the Old Testament are approached with as much objectivity as possible, and they are examined as literature by genre (narrative, poetry, idyll, drama), with techniques of literary analysis applied to them as appropriate relative to theme, character, plot, symbolic order, and structure. P: jr st or cons inst.

493-324 The Writings of the New Testament 3 cr.
A study of the origins of the Christian tradition as reflected in the primary texts of that tradition contained in the New Testament. It examines the major divisions of the writings of the New Testament, the life of Jesus as recorded in the gospels, the importance of St. Paul and the issues he addressed in the development of early Christianity, and the apocalyptic writings of St. John. P: jr st or cons inst.

493-325 Judiasm, Christianity, and Islam 3 cr.
The world's three great monotheistic religions; their origins; the experience, the ideas, and attitudes which they share; the features which make each a distinct and unique expression and system of belief in the God who is One.

493-326 Non-Western Religions 3 cr.
A study primarily of the two major religions of the East, Hinduism and Buddhism. It attempts to explore the richness, variety, and flexibility of the faith and practice of Hinduism, with its belief in a multiplicity of gods and goddesses, and to examine Buddhism from the standpoints of its various sects and schools—Theravadic (Hinayana), Mayahana, Zen, and Tantric.

493-332 Art and Social Thought 3 cr.
An examination of the role of art and art criticism in various modern theories of social order and social change. The interrelations of social value and the environment of art and ideology. Art as an agent in social change and art as a measure of social well-being. The course emphasizes the place of art within liberal, socialist, communist, and fascist thought and practice. Art, whether seen as personal expression or as the expression of social process, is considered primarily from the perspectives of social criticism and historical analysis. P: 493-201, 202, jr st or cons inst.

493-333 Utopia and Antiutopia 3 cr.
A study of the origins, history, and philosophical and political significance of utopian thought in Western culture. The course covers the development of major utopian ideals from Plato to the present.

493-340 Perspectives on Human Values: The Classical World 3 cr.
Focuses on the world of classical Greece and Rome as reflected in its literature. The course varies in content from semester to semester and employs these approaches: a) an in-depth study of the Greek world-view in the tragedies of Aeschylus, Sophocles, Euripides, and the comedy of Aristophanes; b) a general study of the Greco-Roman world, including the epics of Homer and Virgil, Greek and Roman tragedy, comedy, and satire. P: 493-201, 202, jr st or cons inst.

493-341 Perspectives on Human Values: The Medieval World 3 cr.
Focuses on the medieval world as reflected in its literature. Students explore the history, society, culture and values of the middle ages by beginning with the heroic deeds of Beowulf, Roland and the Vikings, continuing to the chivalric romances of King Arthur and Tristan leading finally to the wonderful tales of Chaucer and Boccaccio that mark the end of this period.

493-342 Perspectives on Human Values: Renaissance to Rationalism 3 cr.
The form of western culture first takes shape in the Italy of the 14th and 15th century Renaissance. The idea of the individual as the measure of value is born in the Renaissance and continues its development throughout the western world through the 18th century, usually termed the age of Rationalism. This course studies the major thinkers and artists of the era beginning with the Italian and ending with the introduction of western ideas onto the American continents. P: 493-201, 202 or cons inst.

493-343 Perspectives on Human Values: Romanticism to Naturalism 3 cr.
Romanticism begins, as a self-conscious notion, in the early 19th century coincidental with the great political, economic and technological changes in western culture. The course studies the nature of these changes and their effects on romantic artists and thinkers beginning with English romanticism and ending with the social, political and literary movement associated and the term "naturalism" in Europe and America. P: 493-201, 202, or cons inst.

493-344 Perspectives on Human Values: The Modern Period 3 cr.
In the modern world, no single set of values seems to have sufficient authority to command belief and provide assurance. In such a skeptical situation, it is increasingly difficult for people to dwell meaningfully with themselves and the things of their world. This course seeks to provide a critical reflection on some of the most significant ways in which writers and artists have sought to understand the value predicaments and dilemmas of the human condition. Confining itself chiefly to the first 50 years of this century, this course focuses primarily, but not exclusively, on values associated with either tragic or comic perceptions found in works of literature, philosophy, history and the fine arts. P: 493-201, 202 or cons inst.

493-354 France Today 3 cr.
Beginning with an examination of French history and traditional customs and values, this course studies as many aspects of contemporary French culture as possible, including rural and urban life, industry and commerce, art and music, etc. P: jr st or cons inst.

493-356 Contemporary German Culture 3 cr.
An introduction to the culture of the four German speaking countries (the Federal Republic of Germany, the German Democratic Republic, Austria, and Switzerland) and to German culture in the U.S. Emphasis is on the post-World War II era, with particular focus on West Germany. P: jr st or cons inst.

493-358 Latin America Today 3 cr.
Studies specific humanistic aspects of contemporary Latin American culture, including its history, art, literature, music, and value systems. The goal is to come to as complete an understanding as possible of the people of Latin America today. P: jr st or cons inst.

493-359 The Americas Look at Each Other 3 cr.
Through the study of Latin American writers and artists, this course examines the way the Latin American culture perceives our North American culture. The aim is to provide students with a new and increased awareness of their own cultural environment as well as that of Latin America. P: jr st or cons inst.

493-361 January Abroad: German Culture 3 cr.
Travel to one of the German speaking countries. German culture studies through on-site lectures followed by tours of interesting historical and architectural sites, visits to universities and museums, factories and business concerns, and attendance at concerts and operas. Usually based in Berlin and one or two of the large West German cities such as Hamburg and Cologne.

493-363 January Experience Abroad: Mexico 3 cr.
An exposure to the accessible portions of 1) a culture of ancient Mexico, 2) the culture of present day Mexican villages, and 3) the culture of contemporary urban Mexicans. The course typically takes place in the states of Yucatan, Quintana Roo, Campeche, and Chiapas, with emphasis upon the cultures of the ancient and contemporary Mayа. Stress on cultural relativity and cultural systems. Students examine their own values in the context of the value systems of these other cultures. Work may be completed in either Spanish or English.

364 Women and Religion 3 cr.
See 875-440.

493-365 January Abroad: England and Its Heritage 3 cr.
Provides a field trip to England for on-site study of English literature, history, and culture. The center of study is the city of London —its museums, galleries, palaces, cathedrals, theaters, and other places of literary and historical interest. The course also includes conducted study tours to other sites which are central to the English heritage, such as Bath, Brighton, Cambridge, Canterbury, Oxford, Stonehenge, and Stratford Upon Avon.

493-371 American Indian Art and Artists 3 cr.
A study of the art and painting of selected North American Indian cultures, using comparative analyses of art as expression of differing value systems. The course uses the public television series *American Indian Artists* consisting of six 30 minute videotapes on the arts and crafts of painting, pottery, sculpture, and jewelry making of six contemporary artists. Films, slide presentations, and lectures on the aesthetic ideals and basic symbolism of American Indian art supplement the series.

493-374 Wisconsin's Indians: Historical and Cultural Perspectives 3 cr.
Indian cultures of Wisconsin in the period 1600-1830. Basic cultural patterns and the social life of such tribes as the Winnebago, Menominee, Sauk, Fox, Kickapoo, Huron, and Potawatomi and their historical transformation. Attention to the impact of the fur trade, missionaries, and Euro-Americans in the area.

493-376 Cultural Conflict in French Canada 3 cr.
Cultural nationalism or separatism, grounded in a sense of group identity founded on language, religion, historical traditions, and popular and elite arts and literature, can be the source and dynamic element in political confrontation between different cultural groups. This course analyzes the conflict between the English and the French in Canada, one of many cases of conflicting cultural groups in the world today. Focusing on the cultural dimension of the problem, the course attempts to assess the consequences, both creative and destructive, of the tension and struggle. P: 242-323.

493-480 Humanities Seminar 3 cr.
Advanced study of contemporary problems seen from the perspective of the humanities. Topics vary from term to term. Among principal topics explored are: identity, alienation and cultural conflict; continuity and change in values; language and culture; and the humanities and imagination. Required for Humanistic Studies majors. P: sr st.

493-481 Student-Led Courses 1-4 cr.
See page 98.

493-483X Selected Topics in Humanistic Studies 3 cr.
See page 98.

493-484 Senior Honors Project 3 cr.
See page 98.

493-496 Independent Study 1-4 cr.
See page 98.

552/554/556/558 Literature and Language

Please note that each language has a separate curriculum area number. Many courses are offered separately in several languages. The appropriate curriculum area number must be included when completing registration forms. Courses in which the content is at the discretion of the instructor may be repeated for credit if the content is different each time. Students should check the *Timetable* for specific course offerings in foreign literature and language.

552 ENGLISH-AMERICAN

554 FRENCH

556 GERMAN

558 SPANISH

100 College Writing 3 cr.
An introductory course in college writing, emphasizing writing as a four-step process of prewriting, drafting, revising, and editing. Focuses on sentence structure, paragraph development, principles of organization, and an introduction to research paper techniques, and includes a review of the conventions of punctuation, grammar, spelling, and usage. P: 553-093 or satisfactory score on placement exam.

101, 102 Introduction to the French, German, Spanish Language, I, II 4, 4 cr.
The first two semesters of language study seek to develop basic ability in understanding, reading, speaking and writing. No prior language study necessary for 101. One year high school or one semester college language study prerequisite for 102. See section on retroactive credit preceding course descriptions.

104 Introduction to Literature † 3 cr.
A study of the distinctive characteristics of poetry, plays, short stories, and the novel, intended to help students understand, appreciate, and enjoy literature. Works studied range from the classic to the contemporary.

105 Expository Writing 3 cr.
Designed to improve college-level writing skills, this course emphasizes principles of logical reasoning, effective organization and development of ideas using a variety of rhetorical modes, and improvement in research paper techniques. Reading and writing assignments in some sections of the course may be focused on particular topics, such as issues in the Social Sciences. P: 552-100 or waiver of 552-100 by high score on placement exam.

107 The Short Story † 3 cr.
An introduction to the short story as a literary form. The stories selected may be arranged according to period theme, nationality, or author.

201, 202 Intermediate French, German, Spanish Language I, † II † 3, 3 cr.
Intermediate study develops more fully the ability to understand, read and speak the language. Courses are in sequence according to level of achievement. One year of high school foreign language equals one semester of university work. See footnote about retroactive credit. P: 554/556/558-102 or equivalent.

206 Women in Literature 3 cr.
The course surveys both women as writers and women as characters in literature. It emphasizes the wisdom, experiences, and insights of women writers and women in literature, looks at the works from a variety of critical perspectives, and clarifies the values inherent and/or envisioned in those works. The course is concerned with literature from two or more cultures with emphasis on comparing and contrasting the social and human values reflected in the literature of those cultures.

212 Introduction to Creative Writing: Fiction † 3 cr.
A first course in the writing, appreciation, understanding, and technique of fiction.

213 Introduction to Creative Writing: Poetry † 3 cr.
A first course in the writing, appreciation, understanding, and technique of poetry.

214 Introduction to English Literature I † 3 cr.
An introductory, chronological survey of English literature from Anglo-Saxon times to the end of the 18th century. Among writers studied are Chaucer, Shakespeare, Donne, Milton, Pope, Swift, and others whose works comprise the major literary heritage of all English-speaking people.

215 Introduction to English Literature II † 3 cr.
An introductory, chronological survey of English literature from the 19th century to the present, including such writers as Wordsworth, Shelley, Keats, Byron, Tennyson, Browning, Dickens, Shaw, Conrad, Joyce, Lawrence, Eliot, and Thomas.

216 Introduction to American Literature I † 3 cr.
An introductory chronological survey of American literature from Bradford to Melville, including such writers as Mather, Bradstreet, Paine, Irving, Cooper, Poe, Emerson, Hawthorne, Thoreau, and Melville.

217 Introduction to American Literature II † 3 cr.
An introductory chronological survey of American literature from Whitman to the present, including such writers as Longfellow, Dickinson, Twain, James, Crane, Eliot, Pound, Fitzgerald, Hemingway, Faulkner and Cummings.

225 French, German, Spanish Conversation and Composition 3 cr.
Helps develop greater fluency in the language through classroom practice in conversation. Emphasis on developing ease and correctness of oral expression through directed and extemporaneous conversations, dialogues, class presentations and dramatic reading of texts. Also includes practice in expository writing and grammar review. This is an appropriate course for students with four years of high school language study or two years at the University level. See section on retroactive credit. P: 202 or equivalent.

283X Selected Topics 1-4 cr.
See page 98.

289 Intensive German 15 cr.
Intensive course aimed at developing foundational proficiency in one semester. Class meets six hours a day, four days a week. Emphasis is on communication. Represents the equivalent of both introductory and intermediate courses in the language. As a follow-up, students are encouraged to spend January abroad or a subsequent semester at the University of Kassel.

298 Independent Study 1-4 cr.
See page 98.

301 Intermediate Creative Writing 3 cr.
An intermediate course for writers of poetry, fiction, drama and journalistic features. Begins with a comparison of literary texts with their source materials; then students develop writing projects based on research of historical documents or other source material. P: 552-212 or 213 or 246-203 or cons inst.

302 Fiction Writing Workshop 3 cr.
An advanced course in the practice of writing fiction. Group criticism of student work. May be repeated once for credit. P: 212 or cons inst.

304 Advanced Expository Writing 3 cr.
The study and practice of non-fiction writing of various kinds, including autobiography, argument, the personal essay, and the formal essay. Particular attention is paid to developmental strategies, organization, tone and style. The reading and writing assignments of some sections of this course may be focused on a particular area, such as business, education, or professional studies. P: 552-104 or equivalent or cons inst.

315 The English Novel: 1700-1860 3 cr.
A study of the development of the English novel from its beginnings to the mid-Victorian period. Typically, eight novels are discussed, chosen from authors such as Daniel Defoe, Lawrence Sterne, Henry Fielding, Tobias Smollett, Jane Austen, Sir Walter Scott, Charlotte Bronte, Emily Bronte, William Thackeray, Charles Dickens, George Eliot.

316 The English Novel: 1850 to the Present 3 cr.
A study of the development of the English novel from the mid-Victorian period to modern times. Typically, eight novels are discussed, chosen from authors such as Charles Dickens, George Eliot, Anthony Trollope, Thomas Hardy, Oscar Wilde, Joseph Conrad, James Joyce, Virginia Woolf, D.H. Lawrence, Elizabeth Bowen, Joyce Cary.

323 Approaches to Literature 3 cr.
Studies various ways of analyzing a literary work, including historical, psychological, and formal approaches. Specific poems, plays, and novels are examined using different critical approaches. Required for English/American literature majors. P: jr st or cons inst.

325 Advanced Written and Oral Expression in French, German, Spanish 3 cr.
Follows 225. Continues development of fluency through intensive practice and study of the spoken and written language. Stresses accurate use of grammatical structures. Interpretation of texts is used to develop sensitivity to differences in style, tone and levels of language from colloquial to formal. Helps develop greater confidence and skill. May be taken concurrently with 329. See section on retroactive credit. P: 225 or cons inst.

331 Major American Prose Fiction 3 cr.
A study of American prose fiction including examples of novels, short stories and satire. Major prose writers such as Melville, Twain, Fitzgerald, Hemingway, Wright and Bellow are considered.

333 Literary Themes 3 cr.
A single theme (such as fantasy, war, revolution, love, alienation) is explored through the literature of one or many nations. May include novels, short stories, poetry, and plays. Available in American, English, French, German, Spanish, or literature in translation. May be repeated for credit when a different theme is studied.

335 Literary Eras 3 cr.
Studies the works of a number of writers in relation to their time, and includes poetry, prose and drama. Eras offered include the Middle Ages, the Renaissance, the Romantic, the Victorian, the Modern, and the Contemporary, and occasionally others. Available in American, English, French, German, Spanish, or literature in translation. May be repeated for credit when a different era is studied.

350 Major Foreign Drama 3 cr.
A study of French, German, Spanish drama either by period or by theme. Conducted either in the foreign language or in English. Inquire about receiving retroactive credits for prior experience.

351 Major Foreign Prose Fiction 3 cr.
A study of French, German, Spanish short story and/or novel either by period or by theme. Conducted either in the foreign language or in English. Inquire about receiving retroactive credit for prior experience.

352 Major Foreign Poetry 3 cr.
A study of French, German, Spanish poetry either by period or by theme. Conducted in the foreign language or in English. Inquire about the possibility of receiving retroactive credit for prior experience.

354 France Today 3 cr.
Beginning with an examination of French history and traditional customs and value, this course proceeds to study as many aspects of contemporary French culture as possible, including rural and urban life, industry and commerce, art and music, etc. P: jr st or cons inst.

356 Contemporary German Culture 3 cr.
An introduction to the culture of the four German speaking countries (the Federal Republic of Germany, the German Democratic Republic, Austria, and Switzerland) and to German culture in the U.S. Emphasis is on the post-World War II era, with particular focus on West Germany. P: 556-202 or equivalent. See 493-356.

358 Latin America Today 3 cr.
Studies specific humanistic aspects of contemporary Latin American culture, including its history, art, literature, music, and value systems. The goal is to come to as complete an understanding as possible of the people of Latin America today. P: 556-202. See 493-358.

359 The Americas Look at Each Other 3 cr.
Through the study of Latin American writers and artists, this course examines the way the Latin American culture perceives our North American culture. The aim is to provide students with a new and increased awareness of their own cultural environment as well as that of Latin America. P: 556-202. See 493-358.

431 Shakespeare 3 cr.
The study of a representative selection of Shakespeare's plays including comedies, tragedies, and histories. Required for English/American literature majors.

434 Major British Writer(s) 3 cr.
A study of one or more outstanding figures in British literature, such as Chaucer, Milton, Blake, Wordsworth, Conrad, Joyce, or Virginia Woolf. Important themes, techniques, and influences are emphasized.

435 Major American Writer(s) 3 cr.
A study of one or more outstanding figures in American literature, such as Melville, Twain, Dickinson, Whitman, Frost, Hemingway, Fitzgerald, or Faulkner. Important themes, techniques, and influences are emphasized.

483X Selected Topics 1-4 cr.
See page 98.

490 Seminar in Literature 3 cr.
An intensive study of a major writer, literary movement, literary period, or influence. Extensive research in the chosen topic is required. P: jr st.

498 Independent Study 1-4 cr.
See page 98.

553 Academic Support Program

553-079 Composing on the Microcomputer 1 non-degree cr.
A general introduction to the use of microcomputers in the writing process, with particular attention to the use of word-processing software at the prewriting, composing and editing stages. No prior microcomputer experience is required.

553-087 Rapid Reading Workshop 1 non-degree cr.
Success in college depends in part on a student's ability to read quickly and efficiently. This course is designed to increase each student's reading rate and improve comprehension. Each student is evaluated using a reading test with standardized norms. Reading materials used in the course are geared to the reading level of the individual student. No prerequisites. P-NC basis.

553-088 Rewriting Workshop 1 non-degree cr.
Designed for students who need practice in reworking drafts of compositions, making writing more suitable for presentation. Students work on such techniques as shaping prose for a particular audience, eliminating wordiness and unnecessary jargon, enlivening dull sentence structures, and cultivating a personal style. No prerequisites. P-NC basis.

553-089 Dealing with the College Experience 1 non-degree cr.
Explores issues and methods of money management, efficient time management, study habits, and the formation of study groups. Important elements in interpersonal relationships, such as listening, assertiveness, trust, and male-female relationships, are addressed. Steps in problem solving are identified and applied to career selection. No prerequisites. P-NC basis.

553-090 Spelling Workshop 1 non-degree cr.
An intensive short term workshop designed for students who feel a need for review on strengthening of spelling skills. The workshop functions on an individualized basis to diagnose spelling errors, provide systematic instruction in specific spelling rules, suggest techniques for countering spelling problems, and provide practice in proofreading techniques. No prerequisites. P-NC basis.

553-091 Sentence Structure Workshop 1 non-degree cr.
Intended for students who desire to improve sentence structure patterns, to increase the accuracy of sentence structures in their writing, and to enrich the variety of sentence patterns produced in their writing. No prerequisites. P-NC basis.

553-092 College Reading Skills 3 non-degree cr.
Incorporates college level study skills with general reading improvement techniques. Emphasis on vocabulary building, comprehension improvement, reading rate and flexibility. Course format is a combination of class meetings and some individual laboratory work. No prerequisites. P-NC basis.

553-093 Fundamentals of Writing 3 non-degree cr.
Helps students master skills necessary for writing clear sentences and paragraphs. Students write often and gain the skills to revise what they have written. No prerequisites. P-NC basis.

553-094 The Paragraph 1 non-degree cr.
This workshop is intended for students who need to gain or review skills in paragraph development, unity, and coherence. Practice is provided in creating and developing paragraphs. Students examine various paragraph patterns and practice these patterns. Attention is given to methods of controlling paragraph coherence and unity: transitional devices, repetition, and pronoun substitution. Students are expected to write on a daily basis. No prerequisites. P-NC basis.

553-095 Journal Writing Workshop 1 non-degree cr.
This course prepares students in the art of keeping a journal for personal use, as an aid to invention in the writing process, or as practice for courses which require a journal as part of the class assignment. Students read and discuss samples of professional and student written journals. A substantial portion of the course are guided, daily writing practice in a variety of journal formats and on a variety of topics. No prerequisites. P-NC basis.

553-096 College Study Skills 1 non-degree cr.
A five-week course consisting of instruction in: mastery of textbooks through a system of reading and note taking, an efficient method of taking and studying lecture notes; techniques for studying and taking exams. Also, one-fourth of the time is spent in the UWGB library, learning about and using its facilities. No prerequisites. P-NC basis.

553-097 Efficient Reading 1 non-degree cr.
Stresses both reading rate and attendant comprehension skills for the average reader. Format is a combination of class meetings and some individualized laboratory work. No prerequisites. P-NC basis.

553-098 Fundamentals of Grammar 1 non-degree cr.
Designed to review the basic principles of traditional grammar and to see how the application of these principles can strengthen and clarify written discourse. No prerequisites. P-NC basis.

553-099 The Research Paper 1 non-degree cr.
The ability to use library resources comfortably, to focus research questions effectively, and to write documented papers persuasively is essential to every college student. This course is designed to introduce students to research techniques and to provide them with the opportunity to practice the essential steps behind good research papers. No prerequisites. P-NC basis.

575 Managerial Systems

General Courses

575-102 Personal Finance 3 cr.
Explores a variety of consumer problems encountered in a modern, complex economy. The central theme of the problem focus revolves about economic problems such as budgeting, financing and investing. Lateral problem themes explore the philosophies and values of consumers, the psychology of consumer behavior and the legal aspects of consumer rights.

575-202 Business and its Environment 3 cr.
The major components of the business enterprise and its environments of resources, competition, and regulation are studied by participation in a simulated world of competitive manufacturers who attempt to accomplish appropriate business goals. Pricing, profit, finance planning, controls, ethics, environmental impact, social responsibility, and other important concepts. Emphasis on issues that tend to enlarge the students' awareness of environmental issues that challenge the business leader.

575-206 Law and the Individual 3 cr.
An introduction to the American legal system, its processes, language, ethics and laws from the viewpoint of the individual. The student is asked to confront and evaluate the principles of our legal system and specific laws which directly relate to the individual—family, personal injury, property, consumer, criminal, privacy, probate and administrative laws.

575-217 Quantitative Methods in Administration 3 cr.
Applications of elementary mathematics including probability, statistics, linear programming, game theory, and associated models to practical business decisions; the use of probability tables. Encourages translating of typical business problems to obtain and examine relevant numerical answers. Techniques are tied to practical business problems. P: *credit or concurrent* registration in 600-260.

575-281 Student-Led Courses 1-4 cr.
See page 98.

575-283X Selected Topics in Managerial Systems 1-4 cr.
See page 98.

575-298 Independent Study 1-4 cr.
See page 98.

575-300 Introductory Accounting 3 cr.
Basic concepts and terminology of financial accounting; the underlying principles of accounting as well as the processes by which accounting data are recorded, summarized, and reported; accounting problems concerned with sole proprietorships, partnerships, and corporations; principles underlying the accounting for current and fixed assets, current and long-term liabilities, and the owner's equity accounts. P: *soph st recommended.*

575-305, 306 Business Law I, II 3, 3 cr.
Laws affecting business, conducted on the case method with emphasis on the Uniform Commercial Code. Introduction to law and the legal process, contracts, agency, property including environmental problems, landlord-tenant and real estate laws. Sales, including consumer protection laws, secured transactions, negotiable instruments, corporation and partnership law, estate and bankruptcy law are introduced in the second half of the course. P: *jr st.* 575-305 must be successfully completed before taking 306.

575-395 Practicum in Financial Statement Analysis 3 cr.
Examines the theory and practice of the analysis of published financial statements. The course will include a review of the balance sheet and income statement as well as an in-depth analysis of such topics as short and long term liquidity, funds flow analysis, ROI analysis, the analysis of operations and the problems related to the project of earnings. P: 575-204 & 575-343 or cons inst.

575-472 Introduction to International Business 3 cr.
A study of factors that combine to affect business on an international level, including law, finance, marketing, management, political, and social elements. Students will gain an awareness of the major concepts and principles underlying international business relationships. P: 575-302, 575-305, 575-322, 575-343, 575-382.

575-481 Student-Led Courses 1-4 cr.
See page 98.

575-483X Selected Topics in Managerial Systems 1-4 cr.
See page 98.

575-484 Senior Honors Project 3 cr.
See page 98.

575-487 Internship in Business Administration 1-4 cr.
Practical experience in individualized assignments with business, government, and social service organizations. Student may work on either a full-time or a part-time basis for compensation and academic credit according to arrangements tailored to the needs of the student and employer. NOTE: Enrollment subject to availability of internships. Students should contact program director. P: *jr or sr st,* 3.0 grade point average or better except by permission of program coordinator.

575-498 Independent Study 1-4 cr.
See page 98.

Accounting and Quantitative Methods

575-301 Intermediate Accounting 4 cr.
Theories underlying financial accounting practice; special problems associated with preparation of the income statement and balance sheet; accounting principles underlying the valuation of cash, receivables, inventories, long-term investments, fixed assets, liabilities, and owners' equity accounts; relevant APB opinions and FASB statements. P: 575-300.

575-302 Accounting for Administrators 3 cr.
Accounting concepts and methods; interpretation and use of accounting reports and analyses for the managerial purposes of planning, coordination, and control; cost-profit-volume relations budgeting, effects of taxation and price level changes on decision-making. P: 575-300.

575-312 Managerial Accounting 3 cr.
Principles and procedures utilized in the accumulation of cost data in an organization; the role of cost accounting in management and how cost data are recorded in the accounts; job order and process cost systems; the use of flexible budgeting and standard cost accounting in the overall context of budgetary control. P: 575-300, 600-260 and 575-217.

575-313 Financial Accounting: Theory and Practice I 3 cr.
Specialized financial accounting topics; pronouncements of the AICPA and FASB, price level accounting, accounting changes, statements of changes in financial position, tax allocation, accounting for leases and pensions, special sales arrangements, and partnerships. P: 575-301.

575-314 Financial Accounting: Theory and Practice II 3 cr.
Business combinations; principles and techniques involved in the preparation of consolidated financial statements; special problems in consolidations pertaining to intercompany inventory profit, preference interests and liquidating dividends; "earnings per share" calculations, accounting for branch operations, and accounting for foreign operations. P: 575-313.

575-316 Governmental and Institutional Accounting 3 cr.
Accounting theory and practice unique to governmental and institutional jurisdictions; control of revenues and expenditures through budgets and allotments; comparison with commercial accounting, including nature and purpose of separate funds. P: 575-300.

575-410 Introduction to Income Tax Theory and Practice 3 cr.
Federal and state income tax as applied to individuals, partnerships, and corporations: tax and raw source materials; written problems; tax planning and tax determination. P: 575-300.

575-411 Financial Information Systems 3 cr.
Principles of systems design with an emphasis on organizational structure; internal control; flow charts and the impact of people on systems studies; systems requirements regarding the procedural areas of accounting systems such as cash purchasing, inventory management, sales, billing. P: 575-314 or cons inst.

575-412 Auditing Standards and Procedures 4 cr.
Audit standards, professional ethics, legal liability of auditors. Audit procedures as they relate to assets, liabilities, equity as well as revenue and expense accounts. Includes an examination of effect of the computer on auditing, statistical sampling, and internal auditing. P: 575-411 or cons inst.

575-414 Advanced Managerial Accounting 3 cr.
Cost concepts for decision making which include cost-profit analysis, breakeven analysis, differential and comparative cost, capital budgeting and control, profit performance measurements and linear programming for decision making. Use of responsibility accounting concepts and implication of transfer pricing for performance evaluation. Use of selected quantitative techniques in the cost accounting function. P: 575-312, 575-217 and 600-260.

575-415 Advanced Income Tax Theory and Practice 3 cr.
A study of advanced topics in income tax on both the state and federal levels. Primary emphasis is on federal tax as it relates to corporations, estates, trusts and partnerships, including both tax planning and determination. P: 575-300, 575-410.

Marketing

575-322 Basic Marketing 3 cr.
An overview of the marketing system and the managerial techniques used to market goods, services, and/or organizations. Analyses of the relationships between marketing activities and economic, political, and social institutions; understanding the actions of consumers; and making appropriate product, promotion, price, and distribution decisions. P: jr st.

575-325 Principles of Public Relations 3 cr.
External relations of the business enterprise or governmental unit; attitudes and actions of the public and how they affect internal relations and conduct of the unit.

575-327 Selling and Sales Management 3 cr.
Covers principles and techniques of successful selling that lead to a mutually profitable relationship between salesperson and customer. Emphasis is also directed toward the nature and scope of sales management, specifically selecting, training and directing sales personnel; the importance of customer satisfaction; the relationship of company philosophy to the sales force; and fundamentals of communication process. P: 575-322 or cons inst.

575-422 Principles of Retailing 3 cr.
Management practices in the operation of retail and wholesale enterprises. Nature of retailing in the U.S.; basic requirements for successful store management; opportunities and careers; store location; building, fixtures, equipment; interior layout; organizational structure; personnel management; merchandise management; sales promotion and customer service; controls; coordination and management. P: 575-322.

575-423 Principles of Advertising 3 cr.
Types of advertising and their characteristics; planning, execution, and evaluation of advertising campaigns. P: 575-322.

575-424 Marketing Research 3 cr.
The techniques of obtaining and analyzing information about marketing problems; obtaining data from primary and secondary sources, and interpreting them for marketing decisions. Development of target market determination plans to test the feasibility and relevance of a proposed new small business or the expansion of an existing enterprise. P: 575-322 or cons inst.

575-425 Promotional Strategy 3 cr.
Analysis of the environment in which persuasive efforts take place. Appropriate concepts from communication theory. The promotional tools which can be used to communicate to various publics about products, services, ideas and institutions are treated from a promotion system perspective. P: 575-322 or cons inst.

575-426 Marketing Management 3 cr.
Contemporary environmental issues and managerial problems faced by marketing management. Develops analytical abilities. P: two marketing courses or cons inst.

575-428 Consumer Behavior 3 cr.
Includes an in-depth analysis of various theories of buyer behavior including ultimate and industrial consumers. Implications for marketing management are stressed. P: 575-322.

575-429 Marketing Strategies for Non-Business Institutions 3 cr.
The applicability of marketing concepts, strategies and techniques to the problems faced by non-profit institutions in their attempts to relate to various societal needs. Relevant current literature is analyzed and field experience is gained in solving institutions' problems. P: 575-322.

Finance

575-343 Corporation Finance 3 cr.
Organization for management of finance of business units; management of fixed and working capital; short- and long-range financial planning; money and capital markets; failure; reorganization. P: 575-300.

575-344 Real Estate Principles and Practices 3 cr.
A survey of the subject of real estate. Examines the importance of land, the nature of real estate ownership, contracts, title transfer, and mortgage instruments. Special attention to the theory of real estate valuation; real estate finance; and real estate investment. The impact of taxation, marketing, and insuring and current legislation affecting real estate are examined. A broad survey course, not intended to prepare students for the real estate licensing examination. P: 575-343.

575-345 Principles of Risk Management 3 cr.
The theory and principles of risk management; techniques and bases for decision making in management of business and personal risks; an introduction to the insurance function. P: jr st, and 575-343.

575-347 Management of Financial Institutions 3 cr.
Explores the role that financial institutions play in our economy in forming and managing capital resources. The course examines the processing of financial intermediation and disintermediation. Various types of financial institutions such as commercial banks, credit unions and insurance companies are studied in terms of their financial organization, structure and their investment management objectives and strategies. P: 575-343.

575-442 Problems of Investment 3 cr.
Principles underlying the construction and management of investment portfolios; meeting investment needs of personal and institutional investors; reducing investment risks inherent in selection; inflation, depression, and money market fluctuations. P: 575-343.

575-443 Financial Planning and Control 3 cr.
The efficient management of working capital: analysis and projection of financial data for planning, control, and for dealing effectively with the financial dimensions of management decisions P: 575-343.

575-444 Financial Decisions and Federal Taxes 3 cr.
Aimed at recognizing federal tax problems to facilitate planning and financial decisions, and to acquaint the student with how substantially different tax liabilities can attach to nearly identical economic events. In addition to teaching tax research, the course examines tax considerations in selecting a business form, solving capital gains and loss problems, buying and selling real estate, acquiring and disposing of fixed assets, reorganizing and dissolving corporations, and choosing accounting methods. Not aimed at preparing tax returns. P: 575-343.

575-445 International Finance 3 cr.
Theory and recent experience in currency standards, international banking, foreign exchange fluctuations and controls, international monetary cooperation and special topics. P: 298-403.

575-446 Advanced Corporation Finance 3 cr.
Deals with long-term financing decisions in an environment of uncertainty. Specific adaptations of capital budgeting techniques and theoretical considerations for the cost of capital concept. Mergers, acquisition, bankruptcy, and alternative financing methods are discussed within the framework of shareholder wealth maximization. P: 575-343.

575-447 Security Analysis 3 cr.
Expanded discussion of fundamental and technical analysis within a framework of efficient markets and uncertainty. Modern portfolio theory and techniques for adjusting portfolio returns for risk are examined in depth. Development of overall investment strategy within the environment facing the investor or portfolio manager. P: 575-442.

575-448 Financial Management of Nonprofit Organizations 3 cr.
Applies the theory and methodology of finance to a variety of financial problems of the human service/nonprofit organization and seeks to develop skills in and an understanding of decision making appropriate to securing financial resources for organizing and effectively allocating those resources among its programs. The course examines such topics as grantsmanship, fund raising, pricing of services, methods of reimbursement, managing endowments, financial planning and budgeting (including performance budgeting, zero-base budgeting and programming-planning budgeting), program feasibility analyses, and program performance measurement. Case studies are used to provide experience in applying theory and concepts. P: 575-343 or cons inst.

575-450 Bank Administration 3 cr.
Commercial banking theories and practices from a financial management perspective are comprehensively treated with emphasis on operations, administration and asset-liability management (bank services, credit, loan, investment, profitability, cost control, and capital analysis). Examines competitive and regulatory implications during an era of deregulation of the financial industry. P: 575-347.

Management

575-317 Computer Techniques for Business Decisions 3 cr.
A complete spectrum of quantitative decision-making problems from the business field are discussed. Solutions are provided for all the case problems in the course, including many classical business optimization problems that were heretofore unsolvable. Fortran IV is taught and used extensively. Lecture and computer lab. P: 575-217 or 600-150 or cons inst.

575-362 Human Resource Management 3 cr.
Introduction to personnel management. Manpower planning, selection, recruitment, training, motivation, fringe benefits, salary and wages, and labor relations. P: jr st.

575-366 Collective Bargaining 3 cr.
Cases of techniques and problems in dealings between organized employes and their employers; industry-wide collective bargaining; constraints in the public service; administration of collective bargaining agreements. P: cons inst.

575-382 Introductory Management 3 cr.
Basic ideas and concepts of managing. The realities of management in contemporary situations with emphasis on the behavioral approach, understanding the environment of managing, the knowledge required by managers, functions performed, and adjustment to rapid changes in the future. P: jr st.

575-384 Industrial Management 3 cr.
The management of physical and human resources in the production and operation functions for producing goods or providing services in manufacturing and processing enterprises. P: jr st.

575-385 Management of the Nonprofit Organization 3 cr.
The operation and management of organizations that operate within our society for purposes other than generating profit for owners or shareholders. Models such as the hospital and the university focus on the operational principles, optimizing criteria and management control techniques characteristic of such institutions. In addition to examining the areas of accounting, finance, marketing, organization, and personnel, the nonprofit organization is discussed in terms of its social responsibility and the political and economic conditions in which it operates. Case studies used in a seminar format. P: 575-382 or equivalent experience or cons inst.

575-386 Small Business Management 3 cr.
Case study analysis of management principles and concepts concerning the development and operation of small businesses. Student evaluation of the application of certain management principles in specific small businesses. Phases of business management at the level of simplification suitable to enterprises of limited size and staff. P: jr st or cons inst.

575-387 Ethics and Social Issues in Business 3 cr.
Through the use of case studies and simulations, the course examines the interplay of ethics in business decision making and explores the appropriate social role of the business firm as it is confronted by a variety of current issues. Students are called upon to evaluate their own ethical position with respect to a broad range of issues and to consider the implications of those positions for the firm and for society. Issues to be discussed include the corporate role in politics and government, the impact of business upon the environment and resource utilization, and business relations with consumers, employes, minority groups, other businesses and investors. P: 575-382 or cons inst.

575-389 Behavioral Science Applications for Managers 3 cr.
Designed for the intended career manager who desires to gain a knowledge of the behavioral sciences as related to the business organization. Direct business applications of motivation theory, learning theory, leadership theory, and small group behavior will be explored. P: 575-382.

575-462 Seminar in Personnel Management 3 cr.
Provides a foundation through discussion of personnel problems and experiences which can be translated into developing corporate personnel policies. Case studies related to urban, cultural, and legal realities along with making decisions which affect the administration and development of personnel policies are included. P: 575-362 or cons inst.

575-463 Labor Legislation and Administration 3 cr.
Federal and state statutory and administrative regulation of social legislation and benefit programs; other regulations, including workmen's compensation, unemployment compensation, social security, and labor laws with respect to women and children. P: jr st or cons inst.

575-467 Fundamentals of Compensation and Benefits Planning 3 cr.
Examines theories of compensation and work motivation, their impact on various reward systems, and the rationale for decisions affecting the selection of benefits. Case studies illustrate the problems in choosing benefits, communications to employee groups, and cost factors in making benefit decisions. P: 575-362.

575-485 Managerial Economics 3 cr.
Application of the basic theoretical tools of economic analysis (micro and macro) to the problems of business management, including topics on demand, production, costs, pricing, forecasting, etc. Current economic issues of interest to the manager, such as environmental policies and regulations are discussed. P: 298-202, 203 and sr st.

575-486 Small Business Feasibility Analysis 3 cr.
Problems in small business development research related to determining the feasibility of proposed businesses regarding the developer's objectives and choosing market targets suitable to the economic, political, physical, ethical, and environmental constraints of the site and the investor. Determination and analysis of student proposed small businesses relative to development costs, operating expenses, financing arrangements, and computerized cash flow projections. P: 575-424 and sr st or cons inst.

575-488 Rational Decision Making in Administration 3 cr.
Through close analysis of actual cases in which business decisions are made, rational process techniques are developed for making administrative decisions in business and government. P: 575-382.

575-489 Problems of Business Management 3 cr.
Contemporary problems in business and public administration. In addition to cases, class exercises, and readings, the student undertakes a major project paper which relates a contemporary administrative problem to an existing or created business or administrative organization. P: 575-382 or cons inst.

Nonprofit Organization Management

575-316 Governmental and Institutional Accounting 3 cr.
Accounting theory and practice unique to governmental and institutional jurisdictions; control of revenues and expenditures through budgets and allotments; comparison with commercial accounting, including nature and purpose of separate funds. P: 575-204.

575-385 Management of the Nonprofit Organization 3 cr.
The operation and management of organizations that operate within our society for purposes other than generating profit for owners or shareholders. Models such as the hospital and the university focus on the operational principles, optimizing criteria, and management control techniques characteristic of such institutions. In addition to examining the areas of accounting, finance, marketing, organization, and personnel, the nonprofit organization is discussed in terms of its social responsibility and the political and economic conditions in which it operates. Case studies used in a seminar format. P: jr st or cons inst.

575-429 Marketing Strategies for Non-Business Institutions 3 cr.
The applicability of marketing concepts, strategies and techniques to the problems faced by non-profit institutions in their attempts to relate to various societal needs. Relevant current literature is analyzed and field experience is gained in solving institutional problems. P: 575-322.

575-448 Financial Management of Nonprofit Organizations 3 cr.
Applies the theory and methodology of finance to a variety of financial problems of the human service/nonprofit organization and seeks to develop skills in and an understanding of decision making appropriate to securing financial resources for organizing and effectively allocating those resources among its programs. The course examines such topics as grantsmanship, fund raising, pricing of services, methods of reimbursement, managing endowments, financial planning and budgeting (including performance budgeting, zero-base budgeting and programming-planning budgeting), program feasibility analysis, and program performance measurement. Case studies are used to provide experience in applying theory and concepts.

600 Mathematics**

600-101 Intermediate Algebra 3 cr.
Preparation for 600-104, for students with a high school background of first-year algebra. Properties of the real numbers; solving linear and quadratic equations and inequalities; polynomials; fractional expressions and equations; exponents, powers and roots; systems of linear equations. P: one year of high school algebra and satisfactory placement score.

600-104 Elementary Functions: Algebra and Trigonometry 4 cr.
For the student whose mathematical background is inadequate for 600-202. The real number system; inequalities; functions and their inverses; exponential and logarithmic functions; trigonometric and inverse trigonometric functions; complex numbers; polynomial and rational functions; systems of equations. P: 600-101, or two years of high school algebra and satisfactory placement score.

600-151 COBOL: A Business Data Processing Language † 3 cr.
Introduction to COBOL, the predominant computer language for commercial applications. P: 600-101 or two years high school algebra and satisfactory placement score.

600-155 Computers and Microcomputers 3 cr.
A course for nonmajors designed to develop an understanding of computer concepts, computer systems, use of computer software, and computer programming techniques. Examines the way in which those without extensive training in computer science use computers and microcomputers in the work setting. Students use existing software packages to gather, display, and interpret information. The programming language BASIC is taught. P: 600-101 or 2 yrs. high school algebra and satisfactory placement score.

600-201 Calculus for the Management and Social Sciences 3 cr.
The basic concepts and techniques of differential and integral calculus. Applications in the fields of accounting, economics, finance, and management are emphasized. Full credit is not given for both 600-201 and 202. The student who enrolls in 600-202 after receiving credit for 600-201 will receive 1 credit for 600-202. P: 600-101 or 2 yrs high school algebra and satisfactory placement score.

600-202 Calculus and Analytic Geometry I 4 cr.
Differential and integral calculus of the elementary functions with associated analytic geometry; applications. P: 600-104 or satisfactory placement score. (See note on credit in 600-201.)

600-203 Calculus and Analytic Geometry II 4 cr.
Transcendental functions; techniques of integration; applications; sequences and series. P: 600-202.

600-204 Calculator Calculus 1 cr.
Provides students with empirical experiences which illustrate the theory of Calculus I. Students are supplied with programmable calculators, trained to write and execute programs, and directed to conduct mathematical experiments. Laboratory sessions cover material from Calculus I, including limits, derivatives, the mean value theorem, graphing, integrals, etc. P: 600-202 or concurrent registration.

600-209 Multivariate Calculus 3 cr.
Real-valued functions of several variables; tangent and normal lines; chain rule for partial derivatives; extrema; least squares method; higher-ordered derivatives; integration; polar and cylindrical coordinates; spherical coordinates; vector fields; line integrals; physical applications. P: 600-203.

600-242 Discrete Mathematics 4 cr.
A first course on methodology associated with discrete mathematical structures. Fundamentals of enumeration, partitions, algebraic counting techniques, generating functions, recurrence relations, graph theory, and combinatorial designs. Selected special topics. P: 600-104.

600-255 FORTRAN: A Scientific Programming Language 2 cr.
A thorough introduction to FORTRAN programming and the design of elementary algorithms; includes integer, real number, and alphanumeric processing; one, two, and three dimensional arrays; FORMATS; functions; subprograms. P: 600-202.

600-256 Introduction to Computer Science I 3 cr.
Designed to develop an understanding of basic concepts of computer science. Topics include problem solving, algorithmic processes, characteristics and organization of computers, and programming in a higher level language using techniques of good programming style. Assignments include a number of applications in the physical, social, life, and management sciences. P: 600-101 or 2 yrs of high school algebra and satisfactory placement score.

600-257 Introduction to Computer Science II 3 cr.
Continues the development of discipline in program design, style and expression, as well as debugging and testing begun in 600-256. Students are introduced to larger programming projects covering such topics as aspects of string processing, recursion, internal search/sort methods, simple data structures, machine organization, and assembly language. Algorithm analysis, documentation, use of subroutines and other techniques used in advanced programming projects are also studied. P: 600-256.

600-260 Introductory Statistics † 3 cr.
Descriptive and inferential statistics; frequency distributions; graphical techniques; measure of central tendency and of dispersion; probability distributions; large and small sample estimation and inference; regression, correlation, analysis of count data, analysis of variance. P: 600-101 or two years of high school algebra and satisfactory placement score.

600-281 Conceptual Foundations of Elementary Mathematics I 3 cr.
Common threads running through the mathematics content of the elementary school are emphasized in this exploration of the foundations of arithmetic. The processes of abstraction, symbolic representation, notational manipulation and modeling will be explored in all arithmetic contexts. Significant features of the discipline of mathematics will be discussed. May not be taken on a pass/no credit basis. P: 600-101 or high school algebra and satisfactory placement score.

600-282 Conceptual Foundations of Elementary Mathematics II 2 cr.
A continuation of Math 281, this course examines non-arithmetic mathematical topics of elementary school, including geometry, probability, statistics, algebra, and programming concepts. May not be taken on a pass/no credit basis. P: 600-101 or high school algebra and satisfactory placement score; 600-281 recommended.

600-283X Selected Topics 1-4 cr.
See page 96.

600-298 Independent Study 1-4 cr.
See page 96.

600-305 Ordinary Differential Equations 3 cr.
Solutions and applications of first and higher order linear differential equations; the meanings of existence and uniqueness theorems; non-linear differential equations; modeling physical and biological systems. P: 600-203.

600-309 Systems of Ordinary Differential Equations 3 cr.
Systems of linear, first-order differential equations, making use of matrix algebra with eigenvectors and eigenvalues, and numerical methods. Applications. Non-linear differential equations. P: 600-305 and 320.

**A prerequisite implies a satisfactory performance. In most mathematics courses, a grade of "C" is sufficient; in some a grade of "B" is advisable.

600-311 Advanced Calculus 3 cr.
Jacobians; transformation of coordinates; functional dependence; constrained extreme and Lagrange multipliers; line, surface and volume integrals; scalar and vector fields; gradient, divergence, and curl; divergence theorem; Stokes' theorem. P: 600-209 and 320.

600-312 Real Analysis 3 cr.
Basic ideas of real analysis; sets and functions; topology of the real numbers; sequences and series of real numbers; limits of functions; the derivative; the Riemann integral; sequences and series of functions. P: 600-209 and 320.

600-320 Linear Algebra I 3 cr.
Matrices and vector space concepts. Systems of linear equations, matrices, determinants, vectors in 2- and 3-space, vector spaces, linear transformations, eigenvalues, and eigenvectors. P: 600-202.

600-321 Linear Algebra II 3 cr.
A continuation of 320. Positive-definite matrices, normal forms, the principal axis theorem, applications. P: 600-203 and 320.

600-328 Introduction to Algebraic Structures 3 cr.
Groups, rings, and fields as organizing ideas. Basic structure theorems. Applications. P: 600-203 and 320.

600-350 Numerical Analysis 3 cr.
Application of computer techniques in solving various mathematical and engineering related problems. Types of problems to be considered are: solutions of equations, factorization of polynomials, solutions of systems of equations, interpolation, curve fitting, differentiation, integration, and solutions of differential equations. In addition to writing computer programs to solve some of these problems, comparisons will be made among various techniques to determine errors involved in approximation schemes, advantages and disadvantages to applying a particular technique to a particular problem, and the unstable nature of some methods. P: 600-203, 600-320 or concurrent registration in 600-320 and FORTRAN ability.

600-351 Data Structures, Storage and Retrieval 3 cr.
An introduction to concepts involved in storage, retrieval, and processing of data for use in computer applications. Included are structures such as arrays, stacks, queues, linked lists, trees, and networks. Particular emphasis is placed on design of efficient algorithms that use these different structures for various processing needs. These include searching, sorting, evaluation of arithmetic expressions, construction of symbol tables, and memory management. P: 600-257.

600-352 Computer Graphics 3 cr.
Basic techniques of computer graphics such as point and line plotting, clipping, and windowing are introduced and the use of graphics hardware is discussed. Students use and build graphics packages. P: 600-257.

600-353 Computer Organization and Programming 3 cr.
An introduction to binary, octal, and hexadecimal number systems, and data representation. A study of assembly language programming, including actual programming exercises. Included is an overview of computer software and hardware components. Topics considered are assemblers, loaders, compilers, memory, microprogramming, monitoring, gates, adders, circuits, and applications of Boolean algebra to circuit analysis. P: 600-257 and a background in algebra.

600-355 Applied Mathematical Optimization 3 cr.
Analytical and numerical optimization techniques; linear, nonlinear, integer, and dynamic programming. Techniques applied to problems of water, forest, air, and solid waste management. P: 600-202 and 320, or concurrent enrollment in 320.

600-357 Theory of Programming Languages 3 cr.
Several commonly used high-level programming languages will be compared and contrasted in this course. The advantages and disadvantages of compiling and interpreting will be discussed. Language design and syntax will be studied. Other topics include data types, variables, constants, binding of a variable, scope of a variable, and procedure data handling. P: 600-257.

600-360 Theory of Probability 3 cr.
Probability as a mathematical system, with applications; basic probability theory; combinational analysis; distribution functions and probability laws; mean and variance of a probability law; expectation of a function with respect to a probability law; normal, Poisson, and related probability laws; random variables. P: 600-209.

600-361 Mathematical Statistics 3 cr.
Sample moments and their distributions; tests of hypotheses; point and interval estimation; regression and linear hypotheses; nonparametric methods; sequential methods. P: 600-320 and 360.

600-364 Biometrics 4 cr.
Emphasis on life science problems. Analysis of variance techniques, linear regression, correlation analysis and nonparametric techniques; introduction to statistical computation. P: 600-260.

600-385 Foundations of Geometry 3 cr.
Intuitive and deductive introductions to Euclidean, affine, hyperbolic, spherical, elliptic and projective geometries. P: 600-202.

600-410 Complex Analysis 3 cr.
Algebra and geometry of complex numbers; analytic functions, elementary transformations, integration, Taylor and Laurent series, contour integration, residues, conformal mapping. P: 600-209.

600-416 Orthogonal Functions and Partial Differential Equations 3 cr.
Fourier series, Fourier transform; orthogonal functions; Legendre and other polynomial systems; Bessel functions; characteristic functions and values; Green's function; wave equation in one and more dimensions; D'Alembert's solution; separation of variable in various coordinate systems; Dirichlet problem; *strings and membranes*; heat flow, electricity flow. P: 600-305 and 320.

600-450 Theory of Algorithms 3 cr.
Introduction to design, analysis, and comparison of algorithms along with average and worst case time complexities. Includes divide and conquer techniques, greedy method, dynamic programming, and graph searching. Applications to profit maximization with constraints (knapsack problem), job sequencing, matrix and bit string multiplications, task assigning, optimal tape storage, graph coloring, processor scheduling, traveling salesman problem, and others. A class of nonpolynomial time complexity problems called NP complete problems is also discussed along with algorithms to approximate solutions to these problems when the search for exact solutions is not feasible. P: 600-203 and 600-351.

600-451 Data Base Management Systems 3 cr.
A project oriented course. Each student is responsible for designing and creating a real data base using the Data Definition Language contained in the computer's Extended Data Management System. The project is to include a program capable of entering information into the data base and extracting information to be output in report form. The project uses the same Data Definition Language and Data Base Manager calls that administrative programs use in the existing student and library data bases. The data base itself is a network type based on the CODASYL data base model. P: 600-351 and COBOL ability.

600-452 Operating Systems 3 cr.
An introduction to operating systems, techniques, and philosophies behind management of computing resources. Topics include memory management (paging, real and virtual storage), processor management (scheduling and multiprocessing), process management (asynchronous processes, concurrent programming, deadlock), auxiliary storage management (scheduling, file structures, recovery, backups), and case studies of some popular current operating systems. P: 600-353.

600-454 Artificial Intelligence 3 cr.
A study of methods used to improve the performance of computers in those skills which measure "intelligence": recognition of analogies, ability to understand language, interpretation of visual images, problem solution, and manipulation of machinery. A list processing language (LISP) is used. P: 600-351, 600-357.

600-455 Microprocessors and Microcomputer Systems 3 cr.
An integrated lecture/laboratory approach to digital electronics, microcomputer interfacing, and microcomputer programming. P: 226-104 and course in computer programming.

600-456 Advanced Topics in Microcomputing 3 cr.
A lecture/laboratory course on the hardware and software techniques for interfacing instruments and peripheral devices to a microcomputer, development and use of system software, and advanced programming of microcomputer systems. P: 600-455 or cons inst.

600-457 Compiler Theory 3 cr.
A project oriented course including software concepts, focused primarily on the theory of compilers. Students apply theory in a team project, either writing or substantially modifying a compiler. Includes formal language definition, dictionaries, symbol tables, text scanning, parsing, arithmetic expressions and Polish strings. P: 600-353.

600-465 Business and Industrial Statistics 4 cr.
Statistical methods commonly applied in business and industry. Topics covered are quality control, control charts and acceptance sampling; multiple regression, time series, smoothing and forecasting; index numbers. P: 600-260.

600-483X Selected Topics 1-4 cr.
See page 98.

600-492 Special Topics in Mathematics 1-3 cr.
This course brings together students and professors who have mutual interest in some topic not otherwise available among the usual mathematics offerings. Examples are: Number Theory, History of Mathematical Thought, Mathematical Logic, Combinatorics, Computer Graphics, Computer Architecture, Computer Software, Operating Systems, Data Management, Simulation and Modelling, Artificial Intelligence, Ecosystems Analysis and Prediction, Mathematical Political Science, Models of Economic Growth, Mathematical Models of Facilities Location, Mathematical Methods for the Life Sciences. P: jr st and cons inst.

600-498 Independent Study 1-4 cr.
See page 98.

Other courses applicable to mathematics:
226-315 Mechanics III 3 cr.
008-704 Discrete Multivariate Statistical Analysis 2 cr.
008-767 Statistical Design and Analysis of Experiments 4 cr.
008-768 Multivariate Statistical Analysis 4 cr.

601 Academic Support Program-Mathematics

601-093 Arithmetic Review 1 non-degree cr.
A review of the arithmetical concepts needed for 601-094. Topics include operations with decimals, percents, fractions, and integers, with special emphasis upon practical applications. It will be taught in a modular form through lectures and tutorial sessions. No prerequisites. P-NC basis.

601-094 Elementary Algebra 3 non-degree cr.
Intended as a preparation for Math 101. Topics include binary operations, variable expressions, factoring, equations of higher degree, fractional equations, absolute value, and operations with rational expressions. Offered on pass/no-credit basis except by petition. No prerequisites.

644 Military Science

644-123 Exercise Leadership I 1 cr.
See 742-123.

644-211 Introduction to Military Science I (MS 11) 2 cr.
(Pre-Professional Course) Introduces first year students to the *ROTC program, an overview of Army life, the Department of* Defense and the Army's tasks and roles in national defense and community activities. Provides fundamental knowledge and applicable skills in map reading, radio and telephone procedures, CPR, and orienteering through practical application in the classroom and field. Includes a summary of Army branches and their responsibilities and roles as part of the Army team.

644-212 Introduction to Leadership and Navigation II (MS 12) 2 cr.
(Pre-Professional Course) Expands upon experiences in MSH 11. Provides a foundation in exploring and understanding formal leadership and management theory and how it applies in military and civilian environments. A continuation of fundamental knowledge and skill in first aid, basic marksmanship training, and customs and courtesies. Provides a review of the Army's role in national defense and community service and an overview of the specialized organizations, units, skills, and training contributing to those services.

644-221 Military History Studies (MS 21) 2 cr.
(Pre-Professional Course) Studies of U.S. military history, tracing the origin and development of military organization, including theories and practices of war (the evolutionary nature of war) from the American Civil War, World Wars I and II, the Korean Conflict, and the U.S. Army in Vietnam, to the contemporary military realities. Continued practical development of leadership skills through practical exercises.

644-222 Basic Leadership and Management (MS 22) 2 cr.
(Pre-Professional Course) Development of leadership skills through introduction to military techniques of training, training management and instruction on the concept of performance-oriented training; review of fundamentals of leadership; study of styles of leadership, the setting and the problems through the use of case studies and film clips which portray the development of problems in military leadership. Leadership challenges and problem solving techniques in the military are compared to nonmilitary situations.

644-431 Small Unit Tactics (MS 31) 2 cr.
(Professional Course) Introduction to squad and platoon level command problems and tactics. Army communication and preparation for advanced ROTC camp by review of basic military skills and subjects; advanced land navigation and orienteering; completion of precamp preparation. Continued professional development of leadership skills at the squad and platoon level through the use of unit level training techniques. P: 644-431.

644-432 Advanced Leadership and Management (MS 32) 2 cr.
(Professional Course) Introduction to the professional military science (ROTC) program. Introduces juniors in military science to basic concepts of military management with an emphasis on integrating face-to-face leadership skills with management techniques. Students learn organizational theory and staff procedures and participate in a series of practical exercises designed to provide an opportunity to apply techniques of organizational decision making and communication. P: 644-211, 212, 221, 222 or equivalent military experience or cons inst.

644-441 Contemporary Military Science (MS 41) 2 cr.
(Professional Course) Introduces ROTC seniors to concepts of task organization, combined arms teamwork, basic company level tactics, and tactical planning, and combat support and combat service support aspects of military operations. Emphasizes development of a working knowledge of the technical aspects of management in the Army's unit level organization. Incorporates the fundamentals of military law. P: 644-431, 432.

644-442 Practicum in Managerial Activities of the Commissioned Officer (MS 42) 2 cr.
(Professional Course) Focuses on the role of the Second Lieutenant in a military line organization and on the Army's expectations regarding his or her commission, conduct, behavior, duty performance and public image. Introduction to military law and military justice; obligations and responsibilities of an officer in both line and staff environments; active duty considerations affecting an officer and his or her family, including military movements, compensation and financial management, and career progression. P: 644-431, 432, 441.

689 Nursing

689-315 Health Assessment of the Adult 3 cr.
Focuses on the components of the health history; basic skills, including instrumentation, of a physical examination; and communication skills, verbal and written, pertinent to both. The intent is to identify and describe the range of normals from obvious abnormal conditions and make a judgment about health status. This course contributes to students' ability to gather comprehensive assessment data on an adult. A required component is a performance examination in which students demonstrate the ability to complete a health history and a physical examination. P: registered nurse license, anatomy course or cons inst.

689-411 Theoretical Foundations in Nursing 3 cr.
Comparative study of selected conceptual models of nursing to help with understanding current practice and educational trends, curriculum design and accreditation process. Particular emphasis on professional roles, theoretical frames of reference, further development of a personal philosophy of nursing and identification of professional learning needs and plans to meet those needs. P: prerequisites to nursing major and acceptance into the BSN Completion Program for RNs.

689-415 Adaptation in Health and Illness 4 cr.
Focuses on theory and application of the Adaptation Model with well and ill clients, emphasizing care of the elderly. Family and legal aspects are included. The course incorporates the steps of the nursing process. The impact of personal and professional values in decision making regarding nursing care is explored. Clinical learning experiences are provided to help demonstrate use of the Adaptation Model. P: 689-315, 689-411 or concurrent registration.

689-425 Adaptation to Acute and Chronic Health Problems 4 cr.
The Adaptation Model and specific nursing competencies applied to the care of middle aged clients who are in states of ineffective adaptation due to a variety of pathophysiologic conditions of an acute or chronic nature. Special emphasis on the nature and scope of health education. Direction of study and clinical area individually negotiated with the instructor. P: 689-315, 689-411 and 689-415.

689-431 Nursing Management 3 cr.
Use of management theories, models and processes applied to the care of clients and in supervision of other health care personnel. Examines skills and strategies used in nursing management and administration. Examines some of the major concepts related to management such as organizational structure, health care team, role responsibilities, role conflicts, labor relations, budgeting, decision making, assertiveness, leadership styles, group process and performance appraisal. Apply pertinent concepts to an area of nursing practice. P: 689-415.

689-435 Nursing Research 2 cr.
An introduction to the basic principles of research theory and methodology with the goal of understanding the research process and attaining the ability to critique and apply nursing research to practice. The role of the nurse as a nurse researcher is explored. The course introduces students to the research process through individual selection of a health related problem, initial search of the literature, statement of hypothesis and proposed methodology to be used. P: 689-415.

689-441 Community Health Nursing 6 cr.
Combines theory and clinical practice. The focus is on individuals, families, aggregates, and communities through the use of the Roy Adaptation Model and the nursing process with an emphasis on the primary, secondary, and tertiary levels of prevention. P: 689-315, 689-411, 689-415, 689-419, 689-425, 689-435.

689-451 Advanced Nursing Concepts II 4 cr.
Synthesis of knowledge, skills and attitudes in the utilization of the adaptation framework are promoted. Students are provided with the unique opportunity to explore interests intellectually and clinically and apply strengths of their choice. Special emphasis is given to the nature of professionalism and the professional role: the autonomous role; the expanding role of the nurse; ethical issues in nursing; economic, legal and political, and social forces on nursing; the purpose and value of professional organizations. P: 689-421, 689-425, 689-431 and 689-435 or concurrent registration.

705 Music

705-101 Basic Musicianship 3 cr.
Musical notation, scale and chord structure with reference to the keyboard; developing skills in sight singing, ear training, and rhythmic and melodic dictation.

705-115 Ear Training and Sight Singing 1 cr.
Concentrated drill in all aspects of musicianship. Emphasis on sight singing and aural perception in intervals, melodies, chords, and rhythms. To be taken concurrently with 705-151.

705-116 Ear Training and Sight Singing 1 cr.
Continued drill in all areas of musicianship. Emphasis on sight singing in more than one part, on aural perception of more complex melodies and rhythms, and on identification of chords in harmonic context. To be taken concurrently with 705-152.

705-151, 112 Materials and Values in Music I, II 3, 3 cr.
The materials of which western music is made are viewed not only in structural terms, but also in psychological, aesthetic, and social perspective. Students planning a music major should enroll concurrently in 705-115 or 116. P: some previous background in music or 705-101. Must be taken in sequence.

705-241 Jazz Improvisation 3 cr.
Lecture and laboratory work in music improvisation skills. Lectures on notation and function of chords, chord symbols, scales and rhythms. Laboratory work in selected record learning and actual playing sessions. P: basic background in music reading and playing.

705-251 Literature and Styles in Music I 4 cr.
Involves a historical and theoretical survey of music literature and musical style from antiquity to 1700. Music and musical attitudes are also viewed in the perspective of other arts as well as in relation to their social and cultural milieu. Related ear training and sight singing skills are developed and students also do some "composing" in period styles. P: 705-152.

705-252 Literature and Styles in Music II 4 cr.
Involves a historical and theoretical examination of music literature and musical style in the 18th century. Music and musical attitudes are also viewed in the perspective of other arts as well as in relation to their social and cultural milieu. Related ear training and sight singing skills are developed and students also do some "composing" in period styles. P: 705-251.

705-283X Selected Topics 1-4 cr.
See page 98.

705-298 Independent Study 1-4 cr.
See page 98.

705-315 Choral Arranging 2 cr.
Arranging, adapting, and creating scores for small and large vocal ensembles. Includes an original composition for soprano-alto-tenor bass (SATB) to be performed by the concert choir. P: 705-252.

705-316 Instrumental Arranging 3 cr.
Arranging, adapting, and creating scores for small wind ensembles, as well as full band. Includes an original composition to be performed by the concert band. P: 705-252.

705-318 Choral Literature 2 cr.
Analysis of large choral masterpieces from Schuetz to the present. A comparative study of musical styles, interpretive practices, and performance problems inherent in extended choral works and the vocal and instrumental resources necessary to their performance. P: jr st.

705-325 Diction for the Voice: German 1 cr.
Designed for the voice student to facilitate acquiring skills needed to sing in German. Students are introduced to the International Phonetic Alphabet as a tool for pronunciation. Upon completion of the course, it is expected that students will have the skills to function as a singer in the language. P: 707-105 required; concurrent enrollment in applied voice recommended.

706-326 Diction for the Voice: French 1 cr.
Designed for the voice student to facilitate acquiring skills needed to sing in French. Students are introduced to the International Phonetic Alphabet as a tool for pronunciation. Upon completion of the course, it is expected that students will have the skills to function as a singer in the language. P: 707-105 required; concurrent enrollment in applied voice recommended.

705-327 Diction for the Voice: Italian 1 cr.
Designed for the voice student to facilitate acquiring skills needed to sing in Italian. Students are introduced to the International Phonetic Alphabet as a tool for pronunciation. Upon completion of the course, it is expected that students will have the skills to function as a singer in the language. P: 707-105 required; concurrent enrollment in applied voice recommended.

705-331 Choral Conducting 3 cr.
Detailed study of conducting techniques; emphasis on practical application to choral organizations. P: 705-315 or 316.

705-332 Instrumental Conducting 3 cr.
Detailed study of conducting techniques; emphasis on practical application to the full score and instrumental organizations. P: 705-316.

705-341 Woodwind Techniques 2 cr.
Lecture and laboratory experience in the performance of woodwind instruments including flute, oboe, bassoon, clarinet, and saxophone. Requirements are performance proficiencies on all instruments and completion of a reference syllabus. P: jr st.

705-342 Brass Techniques 2 cr.
Lecture and laboratory experience in the performance of brass instruments including trumpet, French horn, trombone, baritone, and tuba. Requirements are performance proficiencies on all instruments and completion of a reference syllabus. P: jr st.

705-343 String Techniques 2 cr.
Lecture and laboratory experience in the performances of string instruments including violin, viola, violoncello and string bass. Requirements are performance proficiencies of all instruments and completion of a reference syllabus. P: jr st.

705-344 Choral Techniques 2 cr.
A course addressed to the problems of conductors of school choirs and choruses, and to students who wish to improve their understanding of the art of choral singing. Its design and content are intended to deal with the principles, techniques and methods of choral conducting. Areas of particular concern are: tone, diction, rehearsal techniques, planning and organization.

705-345 Percussion Techniques 2 cr.
Lecture and laboratory experience in the performance of percussion instruments including snare drum, tympani, and accessories. Requirements are performance proficiencies on all instruments and completion of a reference syllabus. P: jr st.

705-346, 347 Keyboard Accompanying I, II 1, 1 cr.
Techniques of accompanying the vocal soloist and the choral ensemble at the piano, including laboratory experience in various types of accompaniment. P: 705-042.

705-351 Literature and Styles in Music III 4 cr.
Involves a historical and theoretical examination of music literature and musical style in the 19th century. Music and musical attitudes are also viewed in the perspective of other arts as well as in relation to their social and cultural milieu. Related ear training and sight singing skills are developed and students also do some "composing" in the Romantic style. P: 705-252.

705-352 Literature and Styles in Music IV 4 cr.
Involves a historical and theoretical examination of music literature and musical style in the 20th century. Music and musical attitudes are also viewed in the perspective of other arts as well as in relation to their social and cultural milieu. Related ear training and sight singing skills are developed and students also do some "composing" in 20th century styles. P: 705-351.

705-411, 412 Composition 3, 3 cr.
Exercises and original compositions in media from solo to quintet, in forms from binary to sonatina, etc., depending on the needs of the individual students. P: 705-352.

705-417 Arranging for Jazz Ensemble 2-3 cr.
Acquaints students with the musical knowledge necessary to write an artistic jazz arrangement. P: four semesters of music theory or equivalent background.

705-423 Seminar in Music Literature 3 cr.
Studies in selected areas of music literature. Emphasis is on music for specific media, such as chamber music, opera, music for keyboard, etc., or on works of a single composer. The course may deal with more than one subject area during the semester.

705-431 Jazz Ensemble Techniques 3 cr.
Seminar lecture and laboratory experiences in procedures for rehearsing and teaching the jazz ensemble. Included will be a daily playing experience in a jazz ensemble, writing an arrangement for the jazz ensemble with clinics and lectures in jazz theory, arranging, improvisation, piano, bass, guitar, drums, trumpet, trombones and saxophone. During the second week, some time will be devoted to watching guest directors for the UWGB summer jazz camp work with their ensembles. P: jr st.

705-483X Selected Topics 1-4 cr.
See page 98.

705-498 Independent Study 1-4 cr.
See page 98.

707 Applied Music

707-001-440 Class and Private Instruction in Instruments and Voice 1-2 cr. or 3 cr.
Study of the solo literature of music through class or private instruction. Placement by audition before the applied music committee. Instruction in piano, organ, voice, flute, oboe, clarinet, saxophone, bassoon, horn, trumpet, trombone, baritone, tuba, percussion, guitar, violin, viola, cello, double bass, and harp is dependent upon available resident music staff and their teaching loads.

Students not enrolled full time must meet the following prerequisites to study applied music:

1. Concurrent registration in or completion (in residence) of 705-101 or music theory/history sequence, 705-151 through 705-352;

2. Concurrent registration in or completion of piano proficiency, 707-001 through 707-042;

3. Concurrent registration in a major performing ensemble: 707-151, 351, 707-241, 441; 707-242, 442; 707-162, 362; 707-261, 461;

4. Students enrolled in 707-401 through 707-438 must have filed an academic plan which specifies a co-major in music.

Full time students at UWGB will follow the same pattern of concurrent registration, except that those students enrolled full time, who have completed 705-101 and are waiting to take 707-151 may continue their study in applied music at the 100 level.

707-143, 343 Jazz Ensemble 1 cr.
707-144, 344 Woodwind Ensemble 1 cr.
707-145, 345 Brass Ensemble 1 cr.
707-146, 346 Percussion Ensemble 1 cr.
707-148, 348 Collegium Musicum 1 cr.
707-150, 350 New Music Ensemble 1 cr.
707-151, 351 Orchestra 1 cr.
707-153, 353 String Ensemble 1 cr.
707-162, 362 Oratorio Choir 1 cr.
707-163, 363 Vocal Ensemble 1 cr.
707-164, 364 University Singers 1 cr.
707-241, 441 Concert Band 1 cr.
707-242, 442 Marching Band 2 cr.
707-261, 461 Concert Choir 1 cr.
707-283X, 483X Selected Topics 1-4 cr.
707-298, 498 Independent Study 1-4 cr.
707-011, 012, 013 Keyboard Musicianship I 1 cr.
707-021, 022 Keyboard Musicianship II 1 cr.
707-031, 032 Keyboard Musicianship III 1 cr.
707-041, 042 Keyboard Musicianship IV 1

709 Theater

709-283X Selected Topics 1-4 cr.
See page 98.

709-298 Independent Study 1-4 cr.
See page 98.

709-483X Selected Topics 1-4 cr.
See page 98.

709-498 Independent Study 1-4 cr.
See page 98.

Acting

709-131 Beginning Acting I 3 cr.
Through theater games, vocal and physical exercises, and improvisation, a basic organic approach to acting technique is developed. Leads to development of skills and vocabulary that provide the basis for the actor's sense of self and ability to adapt to a variety of performance situations.

709-132 Beginning Acting II 3 cr.
Development of warm-up techniques, practice in group and duo improvisation, and beginning scene work and analysis. Analysis of scenes from American dramatic literature develops ability to study scripts from the actor's viewpoint and to embody insights in performance. P: 709-131 or cons inst.

709-141 Movement for Theater 3 cr.
An experiential course in nonverbal communication especially designed for those interested in the performing arts. Course work is based on a number of mind/body techniques, e.g., modern dance, circus, mime, sensory awareness, voice/physical improvisation, bioenergetics, which students can apply to their subsequent work in a number of areas, including dance, theater, music. Learning experiences progress from free form movement expressions, to developing and using a concrete technique, and finally to applying that technique to the communicative experience.

709-231 Intermediate Acting I 3 cr.
Scene work in realistic dramas, with particular emphasis on the plays of Chekhov and Ibsen. Techniques of script analysis and character development are practiced. P: 709-132 or cons inst.

709-232 Intermediate Acting II 3 cr.
Scene work in modern American and British comedies, including plays by Neil Simon and Noel Coward. Techniques of timing, pacing, comic invention and characterization are practiced. P: 709-231 or cons inst.

709-331 Advanced Acting I 3 cr.
Scene work in poetic drama and period plays emphasizes techniques of verse interpretation, research into production history and performance styles, and use of appropriate movement, manners and behavior. P: 709-232 or cons inst.

709-332 Advanced Acting II 3 cr.
The actor's role in contemporary theater experiments is studied and experienced through research into avant-garde theater companies and development of a performance group. P: 709-233 or cons inst.

Developmental Drama

709-375 Principles of Developmental Drama 3 cr.
Developmental drama is the application of dramatic play to the total personal development of the individual. This course offers definitions of developmental drama, examines its evolution, and suggests its relationship to other disciplines and various social institutions. Techniques in improvisation, game playing, and impersonation are acquired, with demonstration of their application. P: 709-131, 709-132 or cons inst.

709-376 Application of Developmental Drama 3 cr.
Developmental drama techniques are practiced, and methods of organization are studied. Through work in the Green Bay community, experiments in applying developmental drama suggest methods of leadership, defining objectives, and using dramatic play as a basis for social interaction, education, and therapy. P: 709-375.

Voice and Speech

709-233 Voice for the Actor I 3 cr.
Introduction to principles of vocal training systems, which are widely used in actor training and provides students with a working knowledge of their vocal and physical capabilities. Work on breathing, posture, and development of warm-up procedures. Detailed work in the systems as appropriate.

709-234 Voice for the Actor II 3 cr.
Development of key concepts of vocal and physical exploration. Application of vocal life to problems facing the performer: control of pitch, rate, and volume; verse speaking; textual analysis; rehearsal procedures and audition; preparation. P: 709-233.

Dance

709-128 Beginning Jazz Dance 2 cr.
Introduces the beginning dance student to the techniques of dance; specifically to the theories and practice of the jazz genre. Repeatable up to 6 credits.

709-137 Beginning Ballet 2 cr.
Development of strength, flexibility, coordination, rhythm, and correct body placement as these elements pertain to the technical and stylistic demands of ballet upon the human body. Repeatable up to 6 credits.

709-145 Beginning Modern Dance 2 cr.
The use of the medium of modern dance both technically and stylistically to develop strength, flexibility, coordination and rhythm in the human body which leads to physical self expression. Repeatable up to 6 credits.

709-228 Intermediate Jazz Dance 1 cr.
Continued study and execution of the style and techniques of jazz dance. A study of the styles of major choreographers in the American musical theater. P: concurrent enrollment in ballet or modern dance. Repeatable up to 4 credits.

709-237 Intermediate Ballet 2 cr.
A progression from Elementary Ballet with more complex rhythmical, spatial, and technical problems. Introduction of pointe work for women. Importance of body size to technical development with the relationship of weight and diet emphasized. P: cons inst and/or two semesters of Elementary Ballet. Repeatable up to 8 credits.

709-245 Intermediate Modern Dance 2 cr.
Progression from elementary modern dance with increasingly more complex technical problems. Increasing emphasis on understanding and executing major modern dance styles. Importance of body size to technical development with the relationship of weight and diet emphasized. P: cons inst and/or Elementary Modern Dance. Repeatable up to 8 credits.

709-328 Advanced Jazz Dance 1 cr.
Advanced study and execution of the style and technique of jazz dance. A study of the styles of major choreographers in the American musical theater. Competence in performance stressed. P: concurrent enrollment in either ballet or modern dance. Repeatable up to 5 credits.

709-337 Advanced Ballet 2 cr.
A progression from Intermediate Ballet with advanced technical problems, study and analysis of various styles of ballet, emphasis on pointe work for women, partnering, and ballet performance techniques. P: cons inst and/or Intermediate Ballet. Repeatable up to 10 credits.

709-340 Dance Techniques 2 cr.
Technical ballet forms transposed into modern interpretations. In-depth study specializing in a particular style. P: 709-237 and 709-228 or 709-245.

709-345 Advanced Modern Dance 2 cr.
Progression from Intermediate Modern Dance to a high proficiency of technical ability in modern dance. Emphasis on performance level of ability in modern dance. P: cons inst and/or Intermediate Modern Dance. Repeatable up to 10 credits.

709-440 Choreography 2 cr.
Technical forms and applications for composition of movement for presentation. In-depth study of rhythmic patterns and their relationships to movement, as well as creative content, musical interpretation, projection, and dynamics. Movement and placement for large ensembles is included. P: 709-141 and 709-228 or 709-237 or 709-245.

Technical Theater

709-220 Stage Management 3 cr.
Acquaints students with the procedures and functions of both the professional and nonprofessional stage manager. It also serves students who in other capacities will be in contact with stage managers so they understand the needs, functions, and usefulness of the stage manager's position. Skills such as department organization, scheduling procedures, and budget responsibility are gained which may be applied to other fields as well as theater.

709-221 Theater Production Techniques I: Stagecraft 3 cr.
Lectures and laboratories in the organization and operation of theater productions, with emphasis on beginning stagecraft, lighting, sound, and scene design. Participation in a theater production (minimum of 40 hours). Required of students with an emphasis in theater.

709-222 Theater Production Techniques II: Costume/Makeup 3 cr.
Lectures and laboratories in the organization and operation of theater production with emphasis on costuming, makeup, and an introduction to costume design. Participation in a theater production (minimum of 40 hours). Required of students with a co-major in theater. P: 709-221 or cons inst.

709-321 Scene Design 3 cr.
Concentration on the practical techniques of scene design. Lectures and laboratories on the skills of mechanical drawing, rendering, and model building for the theater. Develops ability to create the visual and mechanical environment to support the presentation of theater pieces. Plays are studied and designed in class and individual projects are required.

709-322 Costume Design 3 cr.
History of costumes as they relate to the theater. Costume design in relation to the play and the actor. A study of the processes behind costume design with emphasis on fabric, color and line, mass, and light. Participation in a theater production (minimum of 40 hours). P: 709-221, 222 or cons inst.

709-323 Lighting Design 3 cr.
The aesthetic practice of design of lighting in theatrical production. The study of composition and psychological effects of stage lighting. An understanding of contemporary equipment and control systems with supporting laboratory practice. Individual projects and participation in a theater production (minimum of 40 hours). P: 709-221, 222 or cons inst.

709-325 Three Dimensional Stage Makeup 2 cr.
Lectures and laboratories on the principles and application of stage makeup, with emphasis on materials, light and color, and character analysis. Participation in a theater production (minimum 40 hours). P: 709-222 or cons inst.

709-423 Advanced Stage Lighting 3 cr.
The aesthetic practice of lighting in theatrical productions, with emphasis on preparation for the lighting designers union exam. Practical application of the tools used in lighting. Advance work and individual projects required. Continuation of 709-323. P: 709-221, 222, & 323.

709-424 Advanced Technical Practices 3 cr.
Studies in modern theater technology, electronics, optics, and stage mechanics with an emphasis on the artistic potentialities presented by these developments. Individual projects and participation in a theater production is required. P: 709-222, 323 or cons inst.

Theater History/Literature/Criticism

709-235, 335 Theater Performance in the Community 1-3 cr. ea.
For students who wish the experience of participating in a theater production with the opportunity to become involved in their area of greatest interest. May include performance as well as technical work in plays, dance, or readers theater performance in high schools, for children, or for community groups. May be repeated for up to six credits of 235 and 3 credits of 335 or repeated for 3 credits of 235 and 6 credits of 335.

709-309, 310 Theater History I, II 3, 3 cr.
Theater art and craft, its functions in and significance to the different cultures in which it has thrived.

709-351, 352 Directing I, II 3, 3 cr.
Theories and techniques of theatrical staging. Relationship of the director to the actors. Students direct scenes of varying lengths and complexity from different kinds of drama and types of staging. Study of dramas, dramatists, critics, and directors; staging exercises. Students interested in directing should plan their program in consultation with the theater chairperson.

709-403, 404 Seminar in Theater Arts 3, 3 cr.
Individual or small group study focused on a specific area or areas of theater interest and related to other disciplines whenever possible. Pertinent in the study of theater of various periods and cultures.

709-405 Theater Management 3 cr.
A course in theater management on both the professional and non-professional levels. Will include the organization and classes of professional theaters and types and organization of nonprofessional theaters. Financial or business management, box office procedures, and promotion and publicity units will pertain to both the professional and nonprofessional theaters. P: 6 credits of theater courses or consent for non-theater students.

709-409 Theater Criticism 3 cr.
A careful look at the major statements in western theater criticism from the Greeks to the present. The approach is one of historical development, together with applied criticism. Selected major dramatic texts are analyzed in light of their contemporary and historically precedent critical theories of what theater is or should be. The format is that of a senior-level seminar. P: 709-309 and 709-310 or cons inst.

See also relevant courses in other areas including 242-241, 242, Introduction to Theater History I, II and relevant courses in literature and language.

736 Philosophy

736-101 Introduction to Philosophy † 3 cr.
A general introduction to the basic ideas and problems of philosophy. The course deals with the various disciplines and schools of philosophy with some emphasis on the important issues and their relevance to the present world.

736-102 Problems in Ethics 3 cr.
Discussion and examination of ethical problems which are significant to an individual in the contemporary world. In addition to tradisional issues, the course also examines current ethical issues in such areas as law, medicine, public policy, business, and education.

736-104 Freedom and Individuality 3 cr.
The notions of freedom and individuality and their significance for an individual in a complex and highly structured society. Emphasis on the relation of historical considerations to contemporary issues.

736-106 Pacifism and Violence † 3 cr.
The value and possibility of the pacifist desire to eliminate violence from human affairs will be examined through reflection upon possible sources, types, and functions of human violence. This course involves reading and discussion of books in such fields as literature, psychology, and philosophy.

736-111 Elementary Logic 3 cr.
A course structured to help students recognize and judge the validity of various types of reasoning, especially those which are employed in nontechnical contexts.

736-207 Philosophy and Literature † 3 cr.
A study of issues shared between philosophy and literature as reflected in literary works. Emphasis is on the nature and meaning of literature for an understanding of the world.

736-208 Science and Human Values † 3 cr.
An examination of the implications of the social and natural sciences for human values: a study of the history of the distinction between fact and value in segments of human life such as politics, law, and medical technology.

736-209 Reason and Passion: Philosophical Issues in Film 3 cr.
An exploration, through discussion of films, readings, and lectures, of the tension between reason and passion in human life. This general topic is treated under four headings: tolerance, justice, truth, and practicality, each of which represents reason in tension with passion. Required reading of books by authors such as Plato, J.S. Mill, and Freud, and viewing of films by such producers as Bergman and Kubric, serves as a basis for philosophical reflection on the central issue of the course.

736-210 Civilization and Culture 3 cr.
This course investigates the value to humans of being civilized and of belonging to cultures, by raising and pursuing answers to such questions as the following: what is the relation between being civilized and being human? Is it necessary to belong to a culture in order to be human? Do some cultures promote human development while others obstruct it?

736-211 The Arts and Human Existence 3 cr.
A study of the nature and meaning of the various fine arts such as painting, literature, music, and film, with some emphasis on the nature of the work of art and the creative activity of the artist. This course stresses the significance of art for human existence.

736-283X Selected Topics 1-4 cr.
See page 98

736-298 Independent Study 1-4 cr.
See page 98.

736-301 Criticism of Values 3 cr.
An examination of the possibility for rationally adopting any value or set of values. Such issues as the nature of value, the ability to know value, the problem of change and endurance of values are studied through examination and discussion of works by various traditional and contemporary authors. P: jr st and one course in philosophy.

736-302 History of Philosophy I 3 cr.
An examination of the origins and early development of Western philosophy in the context of classical Greek culture. The course provides an introduction to the thoughts of Plato, Aristotle, and selected pre-modern thinkers and movements, with an emphasis on clarifying issues which have endured as abiding concerns of the Western philosophical tradition. P: 736-102.

736-304 American Philosophy 3 cr.
A survey of some of the major thinkers and ideas in the American philosophical tradition, including a discussion of the view of Peirce, James, Royce, Dewey, and Santayana. The course concentrates on those schools and movements that are distinctly American such as Transcendentalism, Naturalism, Pragmatism, and Instrumentalism. P: jr st and a course in philosophy.

736-314 History of Philosophy II 3 cr.
An examination of major thinkers and movements representative of philosophical thought from the 17th century to the present. P: 736-302.

736-322 Aesthetics 3 cr.
A survey of some of the main philosophical theories of art and beauty in Western culture with an emphasis on developing a critical understanding and appreciation of the nature and purpose of art. P: a course in philosophy.

736-324 Contemporary Philosophical Movements 3 cr.
A study of current philosophical movements in Europe and America. Different movements are studied at different times (e.g. phenomenology, existentialism, analytic philosophy, intuitionism, pragmatism and Marxism). Variable content. P: 736-314.

736-325 Marxist Humanism 3 cr.
A study of Marx's writings, concentrating on his concern for the value of human life and activity. Certain issues are examined in detail, such as alienation, class struggle, historical process, the relation of the individual to society. P: a course in philosophy.

736-326 Philosophy, Politics and Law 3 cr.
A critical and systematic study of the nature of politics and law and their interrelations, of general legal theory, legal rights, judicial reasoning, the problems of justice, property and morality and law. P: a course in philosophy.

736-327 Ethics and the Medical Profession 3 cr.
Develops conceptual skills and tools for recognizing and defining ethical issues having to do the relationship of medical professionals and patients, the rights of patients, public health and medical resources, truth-telling, suffering and death, medical experimentation and technology, law, politics, and medicine. The goal is to provide a general humanistic introduction to problems of ethics in the medical profession.

736-404 Major Philosophical Figures 3 cr.
A study in depth of the thought of a selected figure who has made a significant philosophical contribution. Different thinkers are studied at different times (e.g., Plato, Aristotle, Leibniz, Hume, Kant, etc.). Variable content. P: cons inst.

736-405 Major Philosophical Issues 3 cr.
A study in depth of selected philosophical issues. Different issues are studied at different times (e.g. problems of being; problems of knowledge and reason; problems of value, etc.). Variable content. P: cons inst.

736-406 Philosophical Problems in the Sciences 3 cr.
Philosophical examination of the logic and knowledge claims of the various natural and social sciences, with emphasis on questions of their foundations and assumptions bearing on their interpretations of nature, the social world, the human individual. A study of such problems as freedom and determinism, the nature of human actions, etc., in the light of the methods and results of the various sciences. Different sciences are studied at different times (e.g. physics, mathematics, psychology, sociology, economics, political science). Variable content. P: two courses in philosophy.

736-483X Selected Topics 1-4 cr.
See page 98.

736-498 Independent Study 1-4 cr.
See page 98.

742 Physical Education

742-101 Swimming I 1 cr.
Fundamental swimming, basic water survival skills, and safety taught to students with minimum swimming ability. American Red Cross certification available.

742-116 First Aid and Emergency Care Procedures 2 cr.
Provides information and practical training in Red Cross, medical self help, and emergency medical procedures. American Red Cross certification available.

742-117 Cardiopulmonary Resuscitation 1 cr.
Causes and effects of respiratory, cardiac and circulatory insufficiencies and arrests are explored as well as appropriate emergency care responses for such crises. In addition to readings and classroom interaction, students develop resuscitation skills on adult and infant mannequins. Skill and written exams are required for certifications from the American Red Cross and from the American Heart Association.

742-121 Personal Conditioning 1 cr.
The principles of exercise physiology are introduced as they relate to muscular and organic stress from participation in calisthenics and exercise with light apparatus. Conditioning programs such as circuit and interval training, isotonic and isometric exercise, etc., are explained. Students select a specific program and goal, design a personal exercise program within that context and plot progress. Such insights and experiences seek to motivate students toward life-long fitness.

742-122 Training with Weights 1 cr.
The theory of heavy resistance training and its effects upon the musculature is presented along with the basic principles of the several styles of training with weights. Students select a specific training style, design a personal exercise program and plot progress. Safety considerations are stressed.

742-123 Exercise Leadership I 1 cr.
Introduction to a formal, concentrated and progressive program of calisthenics based upon the U.S. Army's physical readiness program. Students also learn to function as leaders for group exercise. The physical readiness test is administered. Supplementary information on weight control, cardiovascular training, posture, etc., is included.

742-124 Conditioning Through Running 1 cr.
Designed for the individual who prefers a program of vigorous exercise to one of primarily recreational nature. Emphasis is on cardiovascular benefits of running and the practical application of various types of running to improve physical fitness.

742-126 Backpacking 1 cr.
The mechanics of walking with a moderate load are emphasized. Packing, shelter construction, proper equipment and cold weather survival are integral to the course. Snowshoes or cross country skis may be used in season. An overnight field trip is required.

742-145 Golf I 1 cr.
The fundamental skills of grip, stance and stroking with irons and woods are taught with emphasis upon efficient mechanics and control. Information about history, equipment, rules, etiquette, safety, and strategy necessary for responsible play also are included. Students are critiqued on their practice on the range and play upon the campus course.

742-148 Karate I 1 cr.
Instruction in basic techniques of striking and kicking and their defenses as used in karate. The history, philosophy and traditions of karate are stressed. Personal conditioning and self-discipline are inherent to the course.

742-154 Tennis I 1 cr.
Designed to develop basic skills and techniques so students have confidence to pursue tennis as a lifetime activity. It includes the forehand, backhand, flat serve, volley, lob, smash, footwork, singles and doubles positioning and strategy, regular and no-add scoring, U.S.T.A. rules, care and selection of equipment.

742-159 Racquetball I 1 cr.
Instruction in basic skills and understanding necessary to engage in racquetball as a competitive recreational activity. Service, service returns, and rallying skills are taught. Information about history, rules and courtesies, equipment, and common strategies are included.

742-161 Basketball Team Play 1 cr.
Intended for students who wish to improve their knowledge of or insight into the game as players or as spectators. Not geared for the coach or the varsity player. Provides instruction and practice on the offensive and defensive fundamentals of team play and individual basic skills. Offensive and defensive formations are presented along with the strategies commonly employed to exploit or counter them.

742-170 Volleyball Team Play 1 cr.
The proper execution of passing, setting, spiking and saving are emphasized. Information about the development of the game, its rules and etiquette, and equipment used is included.

742-171 to 184 Officiating (sport) 1 cr.
Provides interpretation of the rules and officiating mechanics of a specific sport in preparation for students to become officials. Class members are encouraged to register with the Wisconsin Interscholastic Athletic Association and may become eligible to officiate interscholastic, recreation, or other league contests.

Approved courses are:
171 Officiating Basketball
179 Officiating Softball/Baseball
181 Officiating Swimming and Diving
183 Officiating Volleyball

742-199 Snowshoeing 1 cr.
Instruction in the basic techniques of snowshoeing, including uphill travel, downhill travel, turning and trail breaking. Procedures for winter camping are presented, with specific emphasis on safety and cold weather survival. One overnight field trip required.

742-201 Swimming II 1 cr.
Emphasizes improvement of basic swimming techniques. Satisfactory completion enables students to enroll in subsequent aquatic courses. American Red Cross certification available. P: 742-101 or equivalent.

742-202 Swimnastics 1 cr.
Swimnastics is the study and use of various conditioning and fitness activities specifically designed for the pool or aquatic medium.

742-204 Lifesaving 1 cr.
Includes principles and techniques of personal safety, victim rescue, resuscitation, preventive lifeguarding, small craft safety, and first aid. Red Cross Advanced Lifesaving certification available. P: 742-201 or equivalent.

742-205 Water Safety Instruction 2 cr.
Trains instructors to conduct swimming programs sponsored by the American Red Cross. Swimming skills are perfected so instructors can serve as good models and gain the confidence of students. Successful methods of planning lessons, organizing classes, presenting material, and evaluating progress are studied. American Red Cross certification available. P: 742-204 or Advanced Lifesaving Certificate.

742-206 Scuba 2 cr.
The nature and use of equipment peculiar to skin and scuba diving is taught along with basic diving skills and considerations necessary for functional diving. Lectures are on the physiological aspects of respiration, the physics of diving, the physiological and environmental hazards of diving, and proper first aid procedures for emergencies. Certification by PADI may be earned. P: 742-201 or equivalent.

742-212 Sailing I 1 cr.
Introduction to sailing including terminology, kinds of boats, water safety, and practical sailing experience. Individualized instruction is given in boats. Designed for those with little or no previous sailing experience.

742-213 Sailing II 1 cr.
Advanced techniques of sailing including safety, weather, and navigation.

742-221 Slimnastics 1 cr.
Introduces a variety of conditioning programs, including diet and exercise techniques for attaining desired weight and figure goals to improve and maintain a positive body image.

742-226 Orienteering 1 cr.
Designed for persons interested in outdoor recreation and wilderness travel. Orienteering is the ability to navigate across familiar and unfamiliar territory by imaginative and intelligent use of map and compass.

742-248 Karate II 1 cr.
Builds upon basic skills and physical and mental development of beginning karate. The opportunity to improve students' karate rank is provided by continuing instruction in offensive and defensive techniques in conjunction with voluntary competition.
P: 742-148 or equivalent.

742-254 Tennis II 1 cr.
Improves basic skills and develops intermediate skills such as the loop swing, tip-spin ground strokes, spin serve, one-half volley, drop volley, drop shot, approach shot, and more advanced strategy for both singles and doubles. P: 742-154 or equivalent.

742-259 Racquetball II 1 cr.
Provides students with comprehensive insight into all aspects of the sport: safety, conditioning, strategy, and skill analysis for singles, doubles, and other play variations.

742-402 Psychology and Sociology of Sport 2 cr.
The effects of competition and cooperation, values, spectators, and group interaction on overall performance are examined and compared in relation to social and psychological factors affecting athletes. Individual differences in motivation, personality, and social factors are analyzed to provide a basis of meaningful study for prospective coaches. P: 820-102, 820-202 or 900-202.

742-403 Organization and Administration of Athletics 2 cr.
A functional course in various phases of organizing and administering an interscholastic athletic program with application to athletics in non-academic environments as well (e.g. boys' clubs, tennis clubs). P: jr st and either 742-401 or 742-402.

742-405 Scientific Conditioning of the Athlete 2 cr.
Interrelationships between growth and development and athletic participation by pre-adolescents; principles of physiology of exercise, and general and specific techniques of physical and psychological conditioning are studied. P: 478-102 or equivalent.

742-406 Prevention and Treatment of Athletic Injuries 2 cr.
Provides prospective coaches with basic insight into the nature of common athletic injuries. Emphasis is upon prevention, physical conditioning, strapping, properly fitted and designed equipment, condition of the competition site, conduct of practices, and respect of existing injuries. Treatment considerations include estimating the nature and extent of the injury, feasibility of moving the victim, immediate care at the scene, modes of required transport, sideline care, training room modalities, referral for definitive diagnosis, and treatment of simple follow-up rehabilitation. P: 478-102 or equivalent competency in gross human anatomy and jr st.

742-410-434 Principles of Coaching 2 cr.
Fosters inquiry into the materials, drills, offenses, and defenses of specific sports. The literature of the field, personal interviews and observations, staff lectures and/or conferences are the tools of the course. Students collect materials for selected aspects of chosen sports and organize them appropriately for future use in coaching. P: jr st, permission of instructor/ coaching certification adviser.

742-435 to 459 Field Experiences in Coaching 2 cr.
Culminates study and preparation for a practical coaching experience. Participation in practice, competitive and other coaching experiences under the supervision of an experienced cooperating coach. Student coach maintains daily log and consults with and is observed by CCP adviser. P: jr st, 742-401, 402, 403, 405, 406, 410 to 434 (Principles of Coaching) or equivalents and/or permission of instructor/coaching certification adviser.

754 Physics

754-103 Fundamentals of Physics I † 4 cr.
A non-calculus physics course covering fundamentals of mechanics, energy, power, thermodynamics and sound. Applications to the areas of biology, chemistry, the earth sciences and technology. P: 600-104 or equivalent. Graduation credit will not be awarded for both 754-103 and 754-201.

754-104 Fundamentals of Physics II † 4 cr.
A non-calculus physics course covering fundamentals of electricity and magnetism, electronics, light, atomic and nuclear structure and relativity. Applications to the areas of biology, chemistry, the earth sciences and technology. P: 754-103.

754-201 Principles of Physics I † 5 cr.
A calculus physics course intended for students of science and engineering. Fundamentals of mechanics, Newton's laws, momentum, energy, fluid statics and dynamics; temperature, heat transfer, thermodynamics; vibrations, waves and sound. P: 600-202 or concurrent registration in 600-202 with cons inst. Graduation credit will not be awarded for both 754-201 and 754-103.

754-202 Principles of Physics II † 5 cr.
A calculus physics course intended for students of science and engineering. Electric forces and fields, DC and AC circuits, magnetism; atomic structure, semiconductors; electromagnetic waves, light; relativity, quantum effects, nuclear physics and elementary particles. P: 754-201 and 600-203, or concurrent registration in 600-203 with cons inst. Graduation credit will not be awarded for both 754-202 and 754-104.

754-283X Selected Topics 1-4 cr.
See page 98.

754-298 Independent Study 1-4 cr.
See page 98.

754-306 Biophysics 3 cr.
See 862-306.

754-313 Mechanics I 3 cr.
See 862-313.

754-314 Mechanics II 3 cr.
See 862-314.

754-315 Mechanics III 3 cr.
Origin and development of mathematical physics; mathematical techniques especially the use of vectors, tensors, Fourier analysis, and generalized coordinates in physical problems; conservation laws and their relationship to mechanical problems; the physical basis of control and feedback; introduction to rigid body dynamics, accelerated coordinate systems, introduction to acoustics. P: 754-202, 600-209 and 305.

754-317 Electromagnetic Radiation 3 cr.
A firm foundation in geometrical optics and the nature of electromagnetic radiation is applied in the discussion of optical instruments and the measurements of electromagnetic radiation. Topics may include solar radiation, atmospheric optics, photochemistry, and plant growth chambers. P: 754-202.

754-318 Optics Laboratory 1 cr.
Experiments in geometrical and physical optics, optical instruments and measurements, properties of lasers. P: 754-317 or cons inst.

754-320 Thermodynamics and Kinetics 3 cr.
See 225-320.

754-321 Structure of Matter 3 cr.
See 225-321.

754-322 Thermodynamics and Kinetics Laboratory 1 cr.
See 225-322.

754-323 Structure of Matter Laboratory 1 cr.
See 225-323.

754-341 Intermediate Astronomy 3 cr.
See 862-341.

754-350 Meteorology 3 cr.
See 862-350.

754-404 Electricity and Magnetism 3 cr.
An advanced approach to electrical and magnetic phenomena; plasmas, waveguides, electrical energy generation and transmission. Maxwell's equations and electro-magnetic waves, electric and magnetic properties of matter. P: 754-202 and 600-209.

754-405 Electronics for Scientists 4 cr.
Fundamentals of electronics, electronic elements, basic circuits, combinations of these into measurement and control instruments. P: 754-104 or 202.

754-414 Conventional Energy Technology 3 cr.
See 862-414.

754-415 Solar and Alternate Energy Systems 3 cr.
See 862-415.

754-417 Nuclear Physics and Radiochemistry 3 cr.
See 225-417.

754-418 Nuclear Physics and Radiochemistry Laboratory 1 cr.
See 225-418.

754-455 Microprocessors and Microcomputer Systems 3 cr.
See 600-455.

754-483X Selected Topics 1-4 cr.
See page 98.

754-498 Independent Study 1-4 cr.
See page 98.

778 Political Science

778-100 Introduction to Political Science † 3 cr.
A survey of the major areas of modern political science: political philosophy and theory, including methodology; comparative government; political development and change, including revolution; and international relations and politics. Topics covered include: the balance of power, liberty and freedom, justice and equality.

778-101 American Government and Politics † 3 cr.
An introduction to the institutions and political processes of American government, with emphasis on the national level. The course covers the nature of political analysis; the constitutional, ideological, and cultural bases of American politics; public opinion and political information; the role of political parties, elections, and interest groups; policy-making processes in the Congress, the presidency, the courts, the bureaucracy, and state and local government; and issues and controversies in politics and public policy.

778-215 Understanding Presidential Elections †4 3 cr.
An examination of the electoral system affecting presidential campaigns and elections. Topics include the role of political parties, political action committees, the mass media, and campaign professionals; the nomination process, electoral rules and procedures; voter behavior; and political strategies. Students participate in a particular campaign and compare practical political strategies and activities to theoretical ideas. Offered only during presidential election years.

778-218 Political Behavior † 3 cr.
An introduction to political behavior, with emphasis on individual political beliefs and behavior. Special attention is given to the relationship between political knowledge and political behavior. Topics include: political socialization, public opinion, personality and politics, the mass media, and political participation. Students introduced to empirical political analysis, both qualitative and quantitative.

778-283X Selected Topics 1-4 cr.
See page 98.

778-298 Independent Study 1-4 cr.
See page 98.

778-305 Urban Politics and Policy 3 cr.
Concerned with urban social theory and its relation to urban political processes and public policy. Of central concern is the question: To what extent are basic human needs, as identified by urban theorists, frustrated and/or fulfilled by urban political processes and public policy. Policy arenas examined include: urban renewal, welfare policy, urban transportation, fiscal policy.
See 944-305.

778-310 The American Presidency 3 cr.
An examination of the American presidency, with emphasis on recent presidents and public policy making. Topics include: the history of the presidency; the nature and use of presidential power; presidential nominations and elections; the organization and operation of the executive office; the presidential role in public policy making; the relationship between the president and other key political actors, including the Congress, the bureaucracy, interest groups, public opinion, and the media; and presidential leadership and personality. P: 778-100 or 778-101 or cons inst.

778-312 Community Politics 3 cr.
An examination of power and decision making at the community level, focused on the question: "who governs?" Careful attention is given to alternative theories and approaches to community politics and to methods for the conduct of empirical research in the field. Class assignments include the study of local power structures and local policy formation. P: 778-100 or 778-101 or cons inst.

778-314 Administrative Law 3 cr.
See 944-314 and 350-314.

778-320 Constitutional Law 3 cr.
An examination of the law of the United States Constitution as that law has been developed by decisions of the United States Supreme Court. Topics include: the general structure of the Constitution; federalism; the doctrine of separation of powers; the limitations upon the powers of the United States and of the states imposed by the guarantees of rights and liberties to individuals made in the Constitution and amendments to it. The structure, operation and jurisdiction of the United States courts are also considered. P: jr st or cons inst. See 875-320.

778-330 Law and the Judicial Process 3 cr.
An examination of courts as institutions of government and law as an instrument of government. Topics examined include: the judiciary in the American system of government, the nature of the judicial process, judicial decision making, judicial policy making, compliance with judicial policies, and theories of law and jurisprudence. P: 778-101 or cons inst. See 875-330.

778-340 Political Theory 3 cr.
The foundations of Western political theory from the Greek polis to the 20th century. Leading political theorists are analyzed and discussed in their historical contexts and in terms of their basic ideas and concepts. The basic axiom of the course is that in order to understand particular political events, we need to understand general characteristics of governing, government, and politics. To help students gain such an understanding, the course attaches the study of politics to the history of Western political thought and practice. P: jr st or cons inst.

778-351 Comparative Political Systems 3 cr.
An introduction to comparative political analysis, stressing both the structure of political systems and major functions. Particular attention is given to the politics and government of Great Britain, France, the Soviet Union, and selected other developed nations. P: 778-100 or 778-101 or cons inst.

778-353 Politics of Developing Systems 3 cr.
Political processes in contemporary developing systems, with particular attention to problems of nation building, the formulation of cross national comparisons, and emerging patterns of regional cooperation. P: 778-100 or 778-101 or cons inst.

778-360 International Politics 3 cr.
An overview of international politics, including an analysis of "the national interest," the nation-state systems, nationalism, arms control and disarmament, international conflict, and conflict resolution. Examples are drawn from both the American and non-American perspective. P: 778-100 or cons inst.

778-368 Geopolitics of World Regions 3 cr.
An examination of the impact of social, physical, and cultural geographic factors on political behavior and relationships, including political conflict. Topics include concepts such as political space, political territoriality, the organization of space for political purposes, and the nature of boundaries. The course also considers human movement and migration as a political and social process, and examines the impact of regional relationships on global, social, economic, and political structures. P: 778-101 or cons inst. See 804-368.

778-378 Geography of Conflict Areas 3 cr.
See 416-378.

778-403 Political and Social History of Modern America 3 cr.
See 448-403.

778-410 Intergovernmental Relations 3 cr.
An analysis of the American system of government as a federal system with governments operating on three levels (federal, state, and local), yet functioning as one integrated and interdependent system. Attention is given to constitutional bases of federalism, how intergovernmental relations affect public policy, and revenue sharing. P: 778-100 or 778-101 or cons inst.

778-416 American Legislative Process 3 cr.
An examination of legislative institutions and policy making, with special emphasis on the United States Congress. Topics include: the role of legislatures in American politics; the electoral process; the nature of representation and the impact of the public on policy decisions; the political behavior of legislators; the impact of formal and informal institutions and practices on public policy making; political parties, leadership, staffs, committees, rules and norms, interest groups and lobbying; the role of the mass media; the role of legislatures in policy innovation and social change. P: 778-100 or 778-101 or cons inst.

778-460 American Foreign and Defense Policies 3 cr.
An examination of the major foreign and military problems facing the United States. Includes discussion of such topics as the organization and role of the military in American life, strategic and tactical military theory; the intelligence community, alliance politics, and the foreign policy-making process in the United States; and an assessment of its effectiveness. P: jr st or cons inst.

778-483X Selected Topics 1-4 cr.
See page 98.

778-498 Independent Study 1-4 cr.
See page 98.

820 Psychology

820-102 Introduction to Psychology † 3 cr.
Introduction to the understanding of behavior from psychophysiological, cognitive, social, and clinical perspectives; important issues, methods, and findings in the study of psychological processes.

820-202 Introduction to Social Psychology † 3 cr.
Introduction to social psychology; attitude formation and change, group processes, communication, roles, multiple group membership, social prejudice. P: soph st.

820-205 Psychology of Human Adjustment † 3 cr.
Personality adjustment and maladjustment in normal persons; need, frustrations, and conflict; adjustive techniques; analysis and rehabilitation. P: soph st.

820-283X Selected Topics 1-4 cr.
See page 98.

820-290 Environmental Psychology 3 cr.
A basic introduction to human-environment relationships that examines ways in which the physical environment influences human behavior. It introduces students to a variety of human-environmental relationships such as attitudes and beliefs about the physical environment, measuring and conceptualizing human response and behavior to physical environments, perceiving and knowing the physical environment, human social behavior in unusual environments, and geophysical factors that influence human behavior.

820-298 Independent Study 1-4 cr.
See page 98.

820-300 Experimental Psychology 4 cr.
Experimental methods in psychological research; designing and drawing conclusions from experimental research, critiques of research reports, individual and group laboratory projects in designing, conducting, interpreting and reporting research. P: soph st and 255-205 or 600-260.

820-306 Psychology of Perception 3 cr.
Nature of perceptual processes and their functional relationships to environments, behavioral, and central factors such as motivation, learning and personality. P: jr st.

820-309 Psychology of Motivation 3 cr.
The initiation and direction of behavior; role of physiology, personality, and environment in motivation; conflict, persistence, and change of motives; social motivation of achievement. P: jr st and 820-102 or 481-210.

820-310 The Self-Concept in Social Context 3 cr.
Surveys current theories and knowledge of the self-concept with particular emphasis on variations among groups which differ in ethnic background, gender, social class and age. Implications for interpersonal relations and achievement related behavior will be examined. P: 820-102 or 820-205.

820-311 The Psychology of Sports and Exercise 3 cr.
An upper division introduction to the study of the psychological aspects of involvement in sports. The course examines the relationship between participation in physical activity and psychological variables such as mental health, affiliation, aggression, motivation, and the role of sports in society. Little emphasis is placed on specific applications to coaching. P: 820-102, 820-202, or 900-202 required; 478-102, 255-205 recommended.

820-315 Educational Psychology 3 cr.
An overview of the psychological processes involved in teaching, learning, and their interaction. Topics include motivation, individual differences, classroom management, cognition, group processes, and educational assessment. Students will be required to complete several written assignments integrating observations of learning with educational analysis based upon library research. P: 820-102 or 481-210.

820-335 Psychology of Attitude and Public Opinion 3 cr.
Analysis of attitudes; social factors in the formation and change of attitudes; expression of attitudes in public opinion, voting, and consumer behavior; polling techniques and problems. P: jr st.

820-337 Social Behavior Dynamics 3 cr.
Important factors in social behavior, roles, multiple group membership, cognitive processes, motivation, aggression, social prejudice. P: jr st and 820-202.

820-415 Organizational Psychology 3 cr.
Relation between social structure and psychological behavior; problems of bureaucracy, leadership styles, communication networks, decision-making processes, and group productivity. P: sr st.

820-416 Psychology of Intergroup Relations 3 cr.
The psychology of conflict and cooperation, cleavage and integration. Principles and applications in such contexts as industrial organizations, cross-generation adjustments, race relations, and international relations. P: sr st.

820-417 Psychology of Cognitive Processes 3 cr.
Examines the contemporary theory and research on thinking processes; how people understand and interpret events around them; specific consideration is given to attention, recognition, thinking, memory, language, imagery, and problem solving.

820-420 Tests and Measurements 3 cr.
Methods and problems of measuring human characteristics, including determination of validity, reliability, and interpretive schemas for such measures. Examination of selected tests in intelligence, achievement, attitudes, interests, and personality. Typical uses of tests and methods for reviewing tests. P: a course in statistics.

820-429 Theories of Personality 3 cr.
Major ideas and systematic statements about the organization, function, change, and development of human personality. Readings acquaint students with a variety of personality theorists, such as Freud, Adler, Jung, Sullivan, Erikson, Dollard and Miller, Skinner, and selected existentialists. P: 481-331 and jr st.

820-430 History and Systems of Psychology 3 cr.
This seminar focuses on the major schools, figures, trends, and systems of thought in the field of psychology. It reviews the development of the field by looking at shifts in the conceptualization of the problems, phenomena, methods, and tasks for psychology. P: 820-102, 820-300, 1 upper division 820 course, jr st.

820-435 Abnormal Behavior 3 cr.
Deviations from normal intellectual, physical, emotional, and social development (e.g., retardation, psychopathology, emotional problems) throughout the life cycle are covered. Biological and environmental origins of deviations are examined. P: 481-331, 332.

820-438 Group Dynamics 3 cr.
Psychological principles as they apply to the individual in social groups, experimental analyses of group formation, maintenance, morale, and productivity. P: sr st and 820-202.

820-450 Psychological Stress and Adaptation 3 cr.
An examination in depth of the nature of stress, its effects on fundamental aspects of human behavior, its interrelationships with emotion, learning, and cognition. Some emphasis is placed on psychological methods of dealing effectively with stress, tension and anxiety. P: 156-100, 478-201, 820-102, 820-202 or 900-202.

820-465 Clinical and Community Psychology 3 cr.
Describes the typical activities, social functions, major theories, history and future trends of these two applied fields. Evaluates effectiveness of typical activities. The fields are differentiated from other human service fields. Discusses programs of study and training for aspiring psychologists, licensing qualifications, and occupational opportunities. Presents research on characteristics of practitioners. Most suited for persons considering careers in these fields. P: 820-102.

820-483X Selected Topics 1-4 cr.
See page 98.

820-498 Independent Study 1-4 cr.
See page 98.

834 Regional Analysis

834-205 Introduction to Cooperative Principles and Functions with Regional Variations 3 cr.
Various aspects of cooperatives; their history and development, present status and scope and future opportunities. Member relations and communications, financial and legal structures, policies and objectives.

834-220 Introduction to Regional Analysis † 3 cr.
The choices that people can and must make in the use of the limited space and resources available to them to satisfy their needs. Methods of defining regions, as based upon human activities and the nature of the total environment are developed.

834-222 The Ocean of Air: An Introduction to Weather and Climate 3 cr.
Fundamental processes of the atmosphere, the resulting weather and climate, and the effects of the atmosphere on other aspects of the earth's environments and on humans. See 296-222.

834-281 Student-Led Courses 1-4 cr.
See page 98.

834-283X Selected Topics in Regional Analysis 1-4 cr.
See page 98.

834-298 Independent Study 1-4 cr.
See page 98.

834-322 Regional Planning 3 cr.
The concept of planning, the history of its use in the development of regions, and the present status of planning in the United States with some international comparisons. P: jr st.

834-323 Land-Use Controls 3 cr.
Provides an opportunity to appreciate various forms of public land-use controls to students interested in land use planning and administration; as such the course aims to meet the needs of the students of Regional Analysis, Urban Studies, and Public and Environmental Administration in particular, and of those who are interested in the spatial manifestations of socio-economic functions in general. The course addresses "what, why, and how" aspects of land use controls. The "what and why" aspects are dealt with through lectures/discussions in the classroom, and the "how" aspect, being applied in nature, is illustrated with reference to a "real world" situation. Students analyze zoning and subdivision regulations of a selected community. P: soph st or cons inst.

834-325 Behavior in Designed Environments I 3 cr.
How the physical development of indoor and outdoor living spaces, including their location, form, and design, influence and shape human behavior. Contributing variables and techniques of measuring environment-behavior relationships. P: jr st. See 944-325.

834-326 Behavior in Designed Environments II 3 cr.
The application of techniques and knowledge of the environment-behavior relationship to studies of the designed area. The student develops and carries out all aspects of detailed study of a selected environment-behavior problem. P: jr st. See 944-326.

834-335 Transportation Systems in the United States 3 cr.
Intercity transportation systems in the United States, their development, impact, present character problems and trends. P: jr st.

834-340 Economics of Land Use 3 cr.
Study of economic relationship between humans and land. Emphasis is on the principles governing the land use and conservation, and in particular, the institutional arrangements—the working rules—of this basic resource. Application of principles in policy making in the areas of land valuation, taxation, and zoning in the context of economic regional development. Land use policies as they relate to management of public and private lands are studied intensively. P: jr st or cons inst.

834-342 Community Economic Development 3 cr.
Study of various forces involved in the process of community economic development. Includes the resource potentials—human and non-human—motivation, values and attitudes. The importance of education, and other institutional factors such as family, the political institutions and social and cultural institutions are studied and analyzed. The social and economic structures—transportation, communication, community services—are examined from the point of view of community development. P: jr st or cons inst.

351 Elements of Cartography 3 cr.
See 416-351.

353 Air Photo Interpretation 3 cr.
See 416-353.

355 Introduction to Quantitative Methods of Spatial Analysis 3 cr.
See 416-355.

834-356 Environmental Impact Analysis 3 cr.
Procedural requirements of NEPA; State NEPA equivalents; methodologies of and approaches to environmental impact analysis; assessment of alternatives; interdisciplinary exposure to substantive types of impacts using natural and social sciences; emphasis on social impact analysis; local field project in impact analysis. P: jr st.

834-368 The Geopolitics of World Regions 3 cr.
An examination of the impact of geographic factors on political behavior and relationships. Topics include concepts such as political space, political territoriality, the organization of space, and the nature of boundaries. The course also considers movement and migration as a political and social process and examines the impact of regional relationships on global social, economic, and political structures. See 778-368.

834-372 Analysis of the Great Lakes Region of North America 3 cr.
A systematic analysis of the areas surrounding the Great Lakes of the United States and Canada; internal and external relationships; economic activities; regional change and problems. P: soph st. See 416-372.

834-377 Analysis of Northern Lands 3 cr.
A topical and regional analysis of the subarctic and arctic areas of North America and Eurasia; regional emphasis on Alaska, Northern Canada and Scandinavia. P: soph st. See 416-377.

834-392 Analysis of South Asia 3 cr.
Regions of South Asian countries in various stages of development. Emphasizes the interaction of physical and human resources. P: soph st.

834-395 Seminar: Transportation Systems in Wisconsin 3 cr.
An analysis of the existing character of intercity rail, highway, water, pipeline, and air transportation in Wisconsin. Existing problems are identified and plans for the future evaluated. Each student will do a research paper dealing with one of the above types of transportation. (Offered in January only.) P: jr st or cons inst.

401 Regional Economic Analysis 3 cr.
See 298-401.

834-421 Techniques and Methods of Regional Planning 3 cr.
The use and application of basic tools for urban and regional planning; source of data and other information; techniques and methods of population, economics, land use, housing, and transportation analysis and projects. P: jr st.

834-454 Remote Sensing of the Environment by Satellite 3 cr.
Large area, small scale analysis of earth surface features by satellite imagery and data. Major emphasis will be on use of LANDSAT (NASA Earth Resources Satellite). Hands-on experience in manual interpretation of multispectral images with respect to vegetation, geology, soils, water resources and land use. Introduction to computer assisted analysis. Overview of other satellite systems including weather, passive and active microwave (radar) and thermal infrared. Fundamentals of the electromagnetic spectrum, sensors, and data processing systems. Public access to data and imagery. See 862-454.

834-472 Senior Seminar in Regional Analysis 3 cr.
A seminar focusing on regional problems relating to land use, economic development, outdoor recreation, transportation or others which might be of personal concern. Student research projects of a professional quality are included. P: sr st.

834-481 Student-Led Courses 1-4 cr.
See page 98.

834-483X Selected Topics in Regional Analysis 1-4 cr.
See page 98.

834-484 Senior Honors Project 3 cr.
See page 98.

834-498 Independent Study 1-4 cr.
See page 98.

862 Science and Environmental Change

862-100 Scientific and Technical Based Problem Solving 3 cr.
Scientific literacy, an understanding of the basic assumptions, values, and objectives of the natural sciences, is a general prerequisite to learning the knowledge and following the developments of science in our society. This course seeks to enhance the science literacy of the nonscience student through a focus on the nature of and values implicit in scientific reasoning and inquiry. Parallels and contrasts between our common logical reasoning skill heritage and those of science are studied. Criteria for determining the levels of goodness, worth and beauty of scientific reasoning and inquiry are examined. Readings from the areas of puzzle solving, science investigation histories and the nature of matter and energy provide the basis for those studies.

862-102 Introduction to Environmental Sciences † 3 cr.
The interrelationships between people and the various parts of the biophysical environment including the atmosphere, water, rock and soil, and biotic communities. Study of both the natural state and current problems of pollution and mismanagement. Scientific principles facilitate understanding of environmental processes. The social and personal consequences of environmental processes and possible solutions to current environmental problems. Designed for nonscience majors.

862-105 Elements of Descriptive Geometry 3 cr.
Orthographic projection and its application to analyzing and solving three-dimensional problems involving points, lines, planes and solids; axonometric projections for pictorial representation with engineering and design applications. P: 600-101.

862-125 Introduction to Horticulture 3 cr.
Introduction to techniques of intensive plant culture. Biological characteristics of horticultural plants, identification of home and commercial plant species, plant propagation, physiology and development. Examination of selected aspects of horticultural industry including vegetables, ornamentals, orchards, and greenhouse systems. Landscape techniques, home gardens, and plants in the home. Local field trip.

862-141 Elementary Astronomy † 3 cr.
A study of the solar system, stars, galaxies, and universe.

862-142 COSMOS, The Societal Implications of the Study of the Universe 3 cr.
Based on the television series, Cosmos, produced by Dr. Carl Sagan. The course examines the economic, educational, social and cultural impact of space exploration and of our knowledge of the universe. Students identify the major periods in human history which have to do with development of our knowledge of the Cosmos; examine the impact of the various scientific developments such as the Copernican heliocentric model and Darwinian evolution. The television series also leads students to examine the way in which current human activity is bringing about change in environmental conditions and the implications of this activity for the future of the planet as a human habitat and for activity of humans on other heavenly bodies in the solar system. P: 862-141 or 754-103 or 201 or 225-111.

862-162 Technology and Society 3 cr.
What are the effects and implications of technology on our society? How can we find out, and what can we do about it? This course considers the general problem of technology. With that as a background, some possible solutions, including alternate technologies and technology assessment, are considered.

862-186 Man and Wildlife I 3 cr.
This all-University requirements course examines the place of wildlife in the world shaped by humans. This part of the six-credit sequence is a survey of the positive and negative interactions of humans and wildlife resources of the world. The concepts of ecosystem stability, habitat diversity, and the basic ecological principles of sound wildlife management are examined. Identification, census techniques and current management strategies are reviewed. Man's effects on wildlife, through hunting, trapping, habitat modification and intrusion are studied. The values issues which set the context for the interaction between humans and wildlife are the main theme of the course.

862-187 Man and Wildlife II 3 cr.
The second part of a six-credit all-University requirements sequence. In this portion, special consideration is given to current wildlife resources, the principles of predator management, rare and endangered species, wilderness and primitive areas, changes in wildlife resources, environmental politics and environmental economics. The important value issues that set the context for the interaction between humans and wildlife continue as a main theme. P: 862-186.

862-190 Emergence of Western Technology † 3 cr.
Since about 1500 the technological balance of power has shifted dramatically from China, India and the Islamic world to western Europe and later to North America. This course traces the history of this transition and examines some of the factors which may have contributed to it, as well as discusses the implications and future of technology. P: 296-200 or 296-202 or 225-111 or 754-103 or 225-108 or 862-102 or 141.

862-205 Wilderness Ways 2-3 cr.
Lecture-Discussion: 2 cr. A course covering various aspects of the North American wilderness; including historical, legal, management, protection, means of travel, equipment, camping techniques, food and cooking, wilderness medicine, and basic survival principles. Emphasis on backpacking and canoeing as methods of wilderness travel. Demonstrations of several techniques and types of equipment and short field trips are included. Field Lab: I cr. The field lab involves planning and undertaking a 5-day wilderness trip (dates to be specified). The cost of the field trip is borne by the student. Equipment rental can be arranged at group rates. Contact instructor for further details.

862-260 Energy and Society † 3 cr.
A course concentrating on the issues relating energy and society rather than on energy technology. The technology studied is at a level compatible with a minimum mathematical preparation by the student. Topics covered are global energy flows, sources of energy, energy related problems, energy policy, energy conservation, energy growth, future scenarios. P: 862-102 or 754-103 or 225-111.

862-281 Student-Led Courses 1-4 cr.
See page 98.

862-283X Selected Topics 1-4 cr.
See page 98.

862-284 Husbandry of the Land 3 cr.
Concepts of land attitudes concerning land and husbandry; historical aspects of our relationship with land; agricultural development in the U.S.; land ethics as related to land economics; conflicting demands on the land; state and national land use policies; land for the future.

862-286 Forest Vegetation of Wisconsin † 3 cr.
Historical (native American, settler, logger) and contemporary (browsing, herbicide, urbanization) modification of Wisconsin forest vegetation. Biology of individual species and community dynamics (competition, nutrient cycling). Current management practices (clear-cutting, genetic selection, energy plantations, complete tree utilization) and problems (pest control, recreational impact, preservation of natural remnants). P: 862-102 or 204-202.

862-295 Water Microbiology 2 cr.
A course acquainting the professional allies of microbiology—the medically trained, the engineer, the urban planner, the conservationist—with the function of microbes in water. This includes the health aspects as well as their cleansing effects.

862-298 Independent Study 1-4 cr.
See page 98.

862-302 Principles of Ecology 3 cr.
The biological principles that govern the interactions of plants and animals in their physical and biotic environments. Concepts of succession, productivity, energy flows, and nutrient cycling in ecosystems. Physiological and behavioral adaptations of individuals to their environment. People as a factor in the ecosystems and concepts underlying strategies used in the management of natural resources. P: 204-203. (Credit will not be granted for both 862-302 and 862-322, 323.)

862-303 Conservation of Natural Resources 3 cr.
Principles of conservation, including the nature and extent of our natural resources; exploitation and conservation of our resource system; and the chemical, physical and biological processes occurring in nature which affect and influence our conservation and management practices. The politics and economics of resource conservation. P: 862-102 or 204-203 or 296-202.

862-306 Biophysics 3 cr.
The application of physical principles to understanding biological structure and phenomena; the physical-chemical basis of life and its origin. Applications to organisms, their subsystems and their relationship to physical factors in the environment. P: 204-203 and either 754-104 or 754-202.

862-307 Ecology of Fire 2 cr.
The use of fire to modify vegetation by native peoples in the past and by contemporary landscape managers. Examples of landscapes considered are grasslands, chaparral, southern pine forests and northern aspen forests. Causes and control of wildfires are discussed, as well as their impact on air pollution and soil conditions. Case histories of prescribed burning, e.g., blueberry production, big game management and bird habitat preservation are analyzed.

862-309 Ecology and Management of Endangered Species 2 cr.
The course covers the population dynamics, niche relations and functional role of species, including those endangered, in ecosystems. Comparisons are made of mechanisms whereby species became extinct in the past and are becoming extinct today. A review is made of management tools available for species preservation, with an assessment of specific successes and failures. Management alternatives for species preservation, considering economic, political and biological limitations are evaluated. P: 204-203.

862-313 Mechanics I 3 cr.
Elementary vector operations, resultant of two and three dimensional force systems, centroids, hydrostatic forces, equilibrium of trusses and frames, displacement, velocity and acceleration components, kinematics of particles using rectilinear and curvilinear coordinates, relative motion. P: 600-202.

862-314 Mechanics II 3 cr.
Laws of friction and impending motion, moments of inertia, virtual work, stability, translation, solution and plane motion of rigid bodies, work and potential energy of particles and rigid bodies, linear and angular impulse and momentum, central force motion. P: 862-313.

315 Mechanics III 3 cr.
See 754-315.

862-316 Mechanics of Materials 3 cr.
Stress and strain, torsion, bending of beams, shearing stresses in beams, compound stresses, principal stresses, deflection of beams, statically indeterminate members, columns. P: 862-313.

862-318 Industrial Pollution Control Techniques 2 cr.
This course first explains general air and water pollution control methods, including the nature of the major existing pollutants and a brief overview of the present governmental regulations. Then several selected types of industries (for example, paper and pulp making, cement manufacture, iron and steel processing, breweries, foundries, chemical process industries...) are discussed in detail; the general manufacturing process, how and where the major pollution arises, and the specific techniques used in that industry to control these emissions. P: 225-112.

862-319 Industrial Pollution Control Field Trips 1 cr.
Optional field course to accompany 862-318. Field trips are scheduled to a variety of local industries including a paper mill, foundry, MSD, etc. In addition, each student is required to prepare a research paper. P: Concurrent registration in 862-318.

862-320 The Soil Environment 3 cr.
The physical, chemical, and biological properties of soil; formation, classification, and distribution of major soil orders; influence of soil on agricultural, engineering, urban, and water systems. Field trip. P: 225-108 or 112; 296-202 recommended.

862-321 The Soil Environment Laboratory 1 cr.
Laboratory and field study of physical, chemical, and biological properties of soils. P: credit or concurrent registration in 862-320.

862-326 Mechanics of Materials Laboratory 2 cr.
Tensile and compression tests of wood, steel, aluminum and cast iron. Torsion, creep, beam stress and deflection. Combined stress, columns. Concrete cylinder and beam tests. P: Concurrent registration in 862-316.

862-327 Urban Technological Design 3 cr.
Develops an awareness and understanding of systems which sustain urban areas and the environmental changes caused by these systems. Serves as a communication bridge among the natural sciences, social sciences, and humanities, and as a basic course in environmental design processes. P: jr st. See 242-405.

862-330 Descriptive Hydrology 3 cr.
Qualitative study of the principle elements of the water cycle including precipitation, runoff, infiltration, evapotranspiration and ground water. Specific applications of hydrologic principles to water resource projects such as low flow augmentation, flow reregulation, irrigation, public and industrial water supply and flood control. Full graduation credit is not granted for both 862-330 and 862-430. P: 296-202.

862-331 Oceanography 3 cr.
Major disciplines in oceanography including the nature and extent of the marine environment, the physical and chemical properties of sea water; mass movements of oceanic water, marine geology, plant and animal life in the sea. Environmental problems associated with the exploitation of the marine environment and the Great Lakes. Field trip. P: 296-202 or cons inst.

862-334 Solid Waste Management 3 cr.
A study of the nature of the solid waste problem. Generation, collection, processing, and disposal of solid wastes is studied. Special attention is given to the recovery of material and energy resources from solid wastes. Guest speakers and field trips contribute to an understanding of local and regional solid waste problems and solutions. P: 204-202 or 225-111 or 296-202.

862-335 Water and Waste Water Treatment 3 cr.
Fundamentals of water and waste water treatment systems including both sewage and potable water treatment plants and their associated collection and distribution systems. Study of the unit operations, physical, chemical, and biological, used in both systems. P: 296-202 or 225-111 or 204-202.

862-341 Intermediate Astronomy 3 cr.
Emphasizes the modern developments in astronomy, stellar birth and death; white dwarf, neutron stars and black holes; origin and evolution of the universe; galaxies, quasars and radio sources; results of recent investigations of the solar system; search for extraterrestrial intelligence. P: Either 862-141 and 600-104 or 754-104, 202.

862-342 Environmental Geology 3 cr.
Applications of fundamental geologic concepts in the interpretation of environmental problems resulting from our exploitation of crustal resources. The environmental impact of construction, mining, waste disposal, natural geologic hazards, and the tapping of crustal energy reservoirs (fossil fuels, geothermal heat). Field trips. P: 296-202.

862-345 Geology of Energy Resources 3 cr.
A survey of geological energy resources: petroleum and natural gas, coal, uranium and geothermal energy. Geological environment of these resources, methods of discovery and utilization, and environmental and economic problems associated with them. P: 296-200 or 296-202 or equivalent.

862-350 Meteorology 3 cr.
Examines the composition and structure of the atmosphere; surveys atmospheric thermodynamics, dynamics and kinematics of air motion and radiation in the atmosphere. P: 754-201 or cons inst.

862-351 Synoptic Meteorology Laboratory 1 cr.
Application of principles presented in 862-350 to actual synoptic-scale weather situations. Techniques of weather analysis and forecasting. P: 862-350 or concurrent registration.

862-363 Plants and Forest Pathology 3 cr.
Studies of important diseases of forest, shade, and orchard trees and diseases of representative economic plants; fungus deterioration in wood storage and their economic importance with methods of control; field trips. P: 204-203.

862-366 Integrated Pest Management 3 cr.
The management of pest plant and animal populations employing an integrated combination of control methods emphasizing maximum dependency upon natural regulators of populations. Various control methods are analyzed, e.g., chemicals, disease agents, predators, parasites, hormones, breeding for resistance, habitat modification. Case histories of success and failure with integrated pest management programs for weeds, insects, fish, rodents, predators, and ungulates are discussed, as well as obstacles and incentives in the future for integrated pest management. P: 204-203.

862-378 Chemical Ecology 2 cr.
Selected topics concerning the chemical interactions of organisms and the environment. Topics such as chemical communications, chemical defense mechanisms and sex attractants are covered. The course is in basic lecture format and each student prepares a paper on an aspect of chemical ecology which is of interest to him or her. P: cons inst.

862-380 Radiobiology 2 cr.
An introduction to the use of radionuclides (C-14, P-32, etc.) and sources of ionizing radiation in biology, medicine and environmental sciences. Emphasis is on experimental methods currently used in the life sciences, including tracers in biology, radiation biology, nuclear medicine and radioecology. This course provides the background needed to obtain an AEC license to use radionuclides in most tracer experiments. Credit is not given for both this course and 226-418.

862-382 River Basins in Transition 3 cr.
Use of the river drainage basin as an important element in planning human activities compatible with existing local natural resources is introduced. A review of the natural and human history in one or more river basins in the U.S. is presented with an emphasis on the interrelationship between the natural resources such as water, land, plants and animals and human activities such as agriculture, industry, transportation and pollution. Elements of hydrology, geomorphology and socio-economic geography are used in the review. After completing a focus on a United States river basin, an integrated global perspective is provided by including land forms, human populations, land use, economic development, climate and other important features of selected river basins throughout the world. The case study approach is used on a comparative basis to analyze and to synthesize natural science and social science data available both domestically and in other countries. Value questions associated with basin resource use such as land ownership vs. land stewardship and upstream vs. downstream water rights in arid land are included. Occasional field trips and guest lecturers are used. P: jr st.

862-383 River Basins in Other Regions 3 cr.
A case study investigation of interaction between human activity and natural resources in river basins in other regions. Analyzing and synthesizing natural science, social science, and cultural data. Issues of basin resource use (such as land tenure vs. land stewardship and upstream vs. downstream water rights in arid land) in agricultural, industrial, commercial, residential, and preservational contexts are examined. P: jr st. plus either 862-382 or 862-102 or 296-202.

862-384 The Environment's Response to Human Settlement 3 cr.
Covers all facets of human settlement and resettlement as they apply to environmental impact and maintaining a steady state. The effects of initial settlement on the land and how the environment responds, and the issues and values that produce varying effects are discussed. Techniques of environmental protection for present day settlement and resettlement are covered. Each student selects a project (preferably in the Kewaunee Watershed) involving some aspect of the environment. The resulting research is reported in a research paper. P: jr st and one of the following: 862-102 or 296-202 or 225-108 or 225-111 or 754-103 or 754-201 or 204-202.

862-385 The Environment's Response to Human Settlement Laboratory 1 cr.
Each student manages an environmental project or a portion of a project if there is team effort, collects and analyzes the data and prepares a research paper. The paper should include literature research, project planning, data collection, discussion of results and analysis of impact of the research. The project site will preferably be in the Kewaunee Watershed, Wisconsin. This project is an extension of the project initiated in 862-384. P: 862-384 or concurrent registration.

862-401 Stream Ecology 3 cr.
A study of the structure and function of stream ecosystems. Functional relationships of feeding groups, nutrient spiralling and organic matter processing are examined as responses to stream morphology, stream order and watershed conditions. Extensive field sampling of northeastern Wisconsin streams. P: 204-203.

862-403 Limnology 3 cr.
Physical, chemical, and biological interactions in lakes and streams as expressed in the nature and dynamics of aquatic communities; laboratory and field techniques used in characterizing the aquatic environment. P: 204-203 and 225-111.

862-414 Conventional Energy Technology 3 cr.
An advanced course on conventional energy conversion equipment, electric power generation facilities, available fuels, energy related to transportation and energy policy. P: 600-203, 226-320.

862-415 Solar and Alternate Energy Systems 3 cr.
A study of alternate energy systems which may be the important energy sources in the future such as solar, wind, biomass, fusion, ocean thermal, fuel cells and magnetohydrodynamics. P: 226-104 or 754-202 or equivalent.

862-421 Soils and Geology of Wisconsin Field Trip 2 cr.
An intensive three-day field study tour of the properties, origins, and uses of major soils and landscapes of Wisconsin. This tour is offered in cooperation with UW-Madison departments of Soil Science and Geography. Pre-tour lectures at UWGB on Tuesday and Wednesday following Labor Day; depart for Madison Thursday evening. Tour leaves from Madison at 5:30 a.m. Friday with overnight stops at River Falls and Wausau and returns Sunday night to Madison. Two post-tour discussion periods at UWGB during September. Trip log and a paper on a topic related to soils and landscapes required before end of semester. Cost of tour bus, guide book, meals and lodging (3 nights) borne by student. Approximate cost in 1981 was $100. Deposit required. Enrollment is limited. See T. H. McIntosh for tour registration form. P: 296-202, credit or classification in 862-320 or 420 or cons inst.

862-422 Environmental Biogeochemistry 3 cr.
Microbial and chemical transformations of carbon, nitrogen, phosphorus, sulfur, and certain trace compounds in soil-water-atmosphere systems; fate of selected pesticides, fertilizers, natural and synthetic wastes in the ecosystem; beneficial and toxic effects on plants and animals, role in pollution of the environment; use of waste disposal systems for pollution abatement. Field trip. P: 204-202, 225-300, 296-202.

862-430 Quantitative Hydrology 3 cr.
Quantitative oriented study of the water cycle including precipitation, runoff, infiltration, evapotranspiration and ground water. Numerical procedures for various water resource developments including hydrograph prediction in both urban and rural areas, reservoir and streamflow routing and hydrologic uncertainty. Full graduation credit is not granted for both 862-330 and 862-430. P: 600-202, 296-202.

862-434 Water Chemistry 4 cr.
The physical, chemical, and biological factors that alter the composition of surface and ground water. Field and laboratory analysis techniques. Field trip. P: 225-311.

862-450 Air Pollution Chemistry and Meteorology 3 cr.
Chemical reactions and transport phenomena in the unpolluted and polluted atmosphere with emphasis upon dispersal processes and control. P: 225-112.

862-454 Remote Sensing of the Environment by Satellite 3 cr.
Large area, small scale analysis of earth surface features by satellite imagery and data. Major emphasis is on use of LANDSAT (NASA Earth Resources Satellite). Hands on experience in manual interpretation of multispectral images with respect to vegetation, geology, soils, water resources and land use. Introduction to computer assisted analysis. Overview of other satellite systems including weather, passive and active microwave (radar) and thermal infrared. Fundamentals of the electromagnetic spectrum, sensors, and data processing systems. Public access to data and imagery. P: 296-202 or 416-250. See 834-454.

862-460 Resource Management Strategy 3 cr.
Applications of principles of system analysis to designing resource management systems and to developing strategies for maintaining optimum environmental utilities. Decision models and the role of economic systems in resource management. P: sr st and some background in economics or conservation.

862-466 Vegetation Management 3 cr.
An analysis of current practices in managing U.S. vegetation, including establishment, maintenance, control and conversion. An assessment of management tools, such as cutting, grazing, chemical spraying, flooding and burning. Experience with and potential for vegetation management on the UWGB campus is observed and discussed, e.g. prairie and pond establishment, tree and shrub control, erosion control, conversion of forest to park and old field to forest, maintenance of lawns, golf greens and fence rows. The various practices and tools are evaluated in regard to their effectiveness, economic cost and environmental impact. P: 204-203.

862-472, 473 Ecosystems Analysis I, II 4, 4 cr.
The dynamics of ecosystems, emphasizing principles essential to analysis, understanding, and management. Description of major ecosystems, energy relationships, nutrient cycling, limiting factors, genetic adaptations and mechanisms of evolution, and management problems. Field trips, environmental data collection and laboratory analysis, and an introduction to systems analysis. To be taken in sequence. P: 204-203, 225-112, 754-104 or 202, 296-202 and 600-260.

862-481 Student-Led Courses 1-4 cr.
See page 98.

862-483X Selected Topics in Science and Environmental Change 1-4 cr.
See page 98.

862-484 Senior Honors Project 1-3 cr.
See page 98.

862-498 Independent Study 1-4 cr.
See page 98.

867 Senior Seminars

867-401 The Role of International Organizations in Support of Cultural and Scientific Developments 3 cr. (V. Nair)
Examines working conditions and nature of activities of international organizations supporting the work of the United Nations as well as the global problems and decision-making processes involved.

867-402 Images of Woman and Man 3 cr. (J. Brickley)
Western man has created clear-cut images of woman and man as interdependent (but not equal) opposites. These are treated as complex, far-reaching, and powerful strategies for organizing experience. These cultural images are identified, their purposes considered, and preservation and changes debated. Alternatives to traditional modes of treating men and women are considered.

867-406 Science and the Quality of Life 3 cr. (G. O'Hearn)
Students conduct indepth analyses on the impact of selected scientific developments on the quality of contemporary life using the analytic tools developed in their respective concentrations/majors. This interdisciplinary analysis of the impact of scientific and technological developments is designed to help students develop expertise in practical problem analysis, in communicating results to a cross section of individuals of varied backgrounds and training, and in examining the results for implications of public policy.

867-410 Biopolitics 3 cr. (W. Kaufman)
A consideration of "biology" and its possible effects on society: biologists and their attitudes toward ethical practices in research; the applications of research findings and the relation of political and national concerns to science and research; and the desires, attitudes and welfare of society as they relate to "biology."

867-412 The Impact of Science and Technology on Society 3 cr. (J. Wiersma)
Examines various technologies from both historical and present day perspectives and makes projections for the future. In general, the course attempts to examine the responsibility of science and technology to society and vice versa. Mechanisms used by government, industry, and the public for maintaining and developing responsible technology are scrutinized.

867-413 Imagination and Myth 3 cr. (E. Lauter)
Instead of presenting myths as if they were repositories of ancient history, this course investigates the ongoing process of myth-making as it is still practiced in various fields. After an introduction to several approaches to myth, students read several contemporary texts in order to learn to recognize, evaluate, and participate in myths with intelligence. A final project engages students in the act of mythmaking.

867-415 Applied Imagination 3 cr. (F. Fischbach)
Examines the nature and uses of a variety of practical means for defining and developing solutions for contemporary problems of a largely tangible nature, on both an environmental and individual scale. Students develop attitudes and abilities that help them meet future challenges by creatively finding better approaches to problem situations and evaluating ideas aimed at their resolution. Emphasis is on developing personal creativity and using that talent to make decisions.

867-418 Science as Metaphor 3 cr. (D. Galety)
Students from a variety of disciplinary and interdisciplinary programs examine the use of metaphor in explanations of various aspects of the world in which we live. Examples are taken from natural science and other fields depending on particular student expertise and interest. "A man's reach should exceed his grasp or what's a metaphor." (Apologies to R. Browning)

867-420 The Organization in Modern Society 3 cr. (M. Troyer)
Analyzes the social, philosophical, and profit oriented concerns which result from the relationship between institutions and modern society. Specific issues explored include: relationships of organizations and commercial spokesmen and political leaders to society; positive and negative economic effects of organizations on modern society; psychological effects of organizations upon individual behavior; socio-political effects of organizations on modern society; and considerations of organizational ethics and cultural norms which may serve as alternative values or organizational behavior in future society.

867-421 Science Fiction: The Social, Political, and Physical Future Through Literature 3 cr. (M. Greenberg)
Examines probable and improbable alternative futures as viewed through the work of leading science fiction writers. Special attention to moral and ethical implications of new technology, new forms of social control and organization, changing religious perspectives, and new lifestyles.

867-424 Stereotypes and Minority Groups 3 cr. (S. Bremer, B. Baker)
Explores why human beings stereotype each other and why society creates minority groups; how stereotypes affect those who stereotype and those who are stereotyped; how the maintenance of minority groups affects the oppressors and the oppressed; and what we—as individuals, as groups, and as a society—should do about stereotyping and maintenance of minority groups.

867-426 The Search for an Ideal Community: Planned New Towns and Cities 3 cr. (J. Murray)
Begins with a brief explanation of early literature from the proponents of the Greek city-state, to the 19th century utopians, and the 20th century new towns movement; then the class will simulate a planned community incorporating their own values and expertise.

867-430 Value, Reason, and Action in Art and Society 3 cr. (G. Null)
A transdisciplinary exploration of the problem of action in abstract theoretical and concrete applied contexts. The goal is to sharpen and enlarge the student's perspective on, analytical ability in relation to, and interest in the problem of the relation of self to society in the context of deliberately conceived, planned, and executed practical actions. Since social action is a fundamental and recurrent aspect of every individual's experience of him/her self in relation to cultural and subcultural contexts, the seminar will emphasize reflection on and conceptual articulation of universally practiced but seldom examined aspects of action.

867-432 Rebels and their Causes: Explorations in Biographies of Personal Rebellion and Social Change 3 cr. (H. Kaye)
This seminar will attempt to join our own individual journeys of discovery to an understanding of other person's crises in their social and political context. Students will read and discuss biographies or autobiographies of persons who have experienced crises between their values, observations, or personalities and the demands of society. The first weeks will be spent in detailed discussion of the social contexts, personal background, actions, and some of the writings about and by Tom Paine, Mary Wollstonecraft, Toussaint L'Overture, Emiliano Zapata, and V.I. Lenin. Then students will choose others to read and discuss. People such as Emma Goldman, Peter Kropotkin, Ho Chi Minh, Eugene Debs, Vincent Van Gogh, Gauguin, Jack Kerouac, Fyodor Dostoyevsky, Hermann Hesse, Nikos Kazantzakis, Henry Miller, Anais Nin, Frank Kafka, T.E. Lawrence, Isadora Duncan, Marilyn Monroe, St. Francis of Assisi, Albert Schweitzer, Henry David Thoreau, Bertrand Russell, Carl Gustav Jung, Albert Einstein, Wilhelm Reich, and Robert Oppenheimer are among possibilities.

867-433 Cultural Evolutionism: A Predictive Model of the Future 3 cr. (J. Mannino)
The theory of cultural evolutionism is presented and several hypotheses are drawn from it and applied to designated problem areas in modern industrialized cultures around the world. Students examine various implications derived from testing this theory based upon their individual interests and research efforts. In addition, the historical development of similar social evolutionary theories and predictive models of culture ranging from Jeremy Bentham to Karl Marx to Herbert Spencer are discussed and analyzed. Students are encouraged to react to and challenge the models and present alternative interpretations.

867-439 Topics in Human Rights 3 cr. (N. Polilis)
Explores the basic question of what human rights are or should be and the social engineering that might be required to effectively implement a human rights policy.

867-440 Global Disarmament: A Seminar in Alternative Future Investments 3 cr. (N. Petrakopoulos)
It is becoming increasingly clear that the world cannot afford unending hostility as the cost of "defense" is approaching more tha $800 billion a year worldwide. It is also becoming clear that such expenditures have not succeeded in maintaining or increasing any nation's sense of security. This seminar examines the assumption that the arms race is a worldwide phenomenon ultimately controllable only through the most comprehensive and universal means. We assume that the principal military spenders (U.S., U.S.S.R., China, West Germany, France, United Kingdom) can find and forge a civilized basis of collaboration and thereby pave the way to a promising and practical global disarmament system. The scientific, economic, and socio-political reasons as to why these assumptions are not utopian are discussed. A systematic global disarmament scheme would release immense human and material resources which could be applied to solving multiple problems. Therefore, the seminar also focuses on the implications of global disarmament for the quality of life. In what ways would people search for status and satisfaction? What kinds of scientific, spiritual, cultural, and material growth are possible? How could the transition from a global war economy to a civilian economy be achieved?

867-441 World Views: Perceptions That Shape Actions and Values 3 cr. (J. Salisbury)
This seminar begins with the assumption that people (and instead societies) adhere to a world-view by which they make sense of their lives. Furthermore, people tend to try to act consistently with their understanding of the world, thus contemporary problems can be better understood within the recognition of the existence of various world views. This seminar will explore some world views and encourage students to explore problems within this conceptual framework.

867-442 Language: Power and Style 3 cr. (C. Abbott)
In our thoughts and actions we both shape and are shaped by the language we use. Any people who share a language share an agreement on what the words and phrases of the language mean. That agreement is constantly being renegotiated. We are not often aware of the processes of that renegotiation and we are probably even less aware of how the agreements made affect our own thinking, imagination, and social contacts. But we cannot escape being affected. This course will focus on that agreement to understand better: how the agreement is negotiated; who or what exerts the most powerful influences; what we as individuals lose or gain in the process. Of special interest is the power we, as individuals or as members of groups, have in determining the kind of language we use. We will also try to understand better what effects language has on our thoughts, attitudes, imaginations, perceptions, and social contacts. Then we will try to formulate and articulate individual attitudes toward language. Just as citizenship entails certain responsibilities and privileges so does being a speaker of a language. And just as there is a wide range of reasoned attitudes citizens may have toward the state, there is an equally wide range of attitudes speakers may have toward their language.

867-443 The Scientific Perspective and the Human Self Image 3 cr. (R. Stevens)
Examines the scientific method and its impact on humans' view of themselves and their social institutions. This course studies the fundamental assumptions, processes, and limitations of science in understanding the complex nature of humans. Topics include the impacts of the physical sciences upon the social sciences; social influences on the processes and conclusions of science; the impact of a scientistic social philosophy upon the development of personal identity and the validity of science in exploring such human experiences as love, hope, altruism, and free will.

867-444 Liberal Learning and Decision Making: The Search for Connections 3 cr. (A. Hartley)
Explores the question—what is there about liberal learning which affects the quality of decision making? World conditions—hunger, nuclear armament, energy shortage—exemplify the need for understanding the cognitive and prescinal development aspects of the decision making process. This seminar focuses on such dimensions as critical thinking, information processing, empathy, and commitment. Students will be able to relate their prior studies to decisions of both personal (career/life) and policy issues.

867-445 Senior Seminar: Conservatism 3 cr. (J. Rogesch)
Conservatism as value, attitude, belief, program and ideology; the historical development of the concept since the eighteenth century and its application to modern issues. The course surveys a representative selection of conservative literature, emphasizing English and American political and cultural traditions. The survey is intended to enable students to develop historical or formal definitions for the concept of conservatism. Students will also examine a sustained piece of conservative writing in political theory or cultural criticism in order to analyze systematically an articulated conservative position.

875 Social Change and Development

875-203 Prejudice and the Human Condition 3 cr.
Origins, functions, and consequences of prejudice in relation to intergroup competition and conflict; impact of prejudice on the victims; potential means for reducing the role of prejudice in human relations. P. 255-102.

875-204 Freedom and Social Control 3 cr.
In the struggle between individual freedom and institutional power, our freedoms have become more fragile and vulnerable, while institutional and governmental authority has become more subtle and powerful. The increasing infringement upon individual freedoms, and increasing institutional power and prerogative, raising ever important questions of ethics, morals, and values concerning freedom and social control which this course explores. A significant portion of time is spent on individuals' freedoms and institutional controls from other culture perspectives. P: 255-102.

875-235 Sex and Society † 3 cr.
Examines some of the major social, political and personal issues related to sexual attitudes, sexual behavior, and sexuality in American society. Areas of study include changing sexual attitudes and behavior patterns; varieties of sexual expression (including homosexuality, bisexuality, transsexualism); the politics of socio-sexual issues (pornography, prostitution, health care, sex education, homosexuality); sexual offenses and offenders; sex counseling and therapy, and sex and ethical issues. P: one previous social science course.

875-241 Women and Changing Values † 3 cr.
Examination of traditional restrictions placed on women in family roles, sexual behavior, economics, politics, and religion to determine if they are crumbling. Discussion of what new roles and values are possible or probable, whether the more prescribed traditional values and roles are still valid, and how individuals can adapt to change.

875-265 Folk Music and Social Change 3 cr.
Analyzes non-elite song as a form of socio-political expression and protest in modern societies. Using an interdisciplinary and comparative social science approach, the course explores a variety of musical developments in several different countries in an attempt to understand the history of common people through their songs and ballads, and the socio-political movements which accompanied them. Although folk songs and kindred traditions of non-elite music are emphasized, some attention may be paid to other popular musical styles such as rock, jazz, country, bluegrass, reggae, highlife, and Norteno music. Among the examples that may be discussed are American folk songs generated by the Depression and Dust Bowl of the 1930's; the protest and topical American folk music of the 1960's; the "New Song" movement in Chile; the vocal traditions of Irish rebellion; songs of black struggle in North America and Southern Africa, Appalachian coal miners' songs; and the revolutionary songs of Maoist China. The song is placed in its historical, social, cultural, political, and economic context.

875-270 Third World: Development or Despair 3 cr.
Surveys causes and consequences of development and underdevelopment in selected nations and regions. Examines such themes as natural resources, imperialism, neocolonialism, population, education, food and fuel, employment, health, and political power. Emphasizes various cases indicating possible futures for the world's poor people. P: 156-100 or 298-102 or 202, or 778-100 or 875-100 or 900-202.

875-273 Blood, Honor and Envy: Values and Society in Southern Europe 3 cr.
Examines some values themes found in historical and contemporary societies in Southern Europe (Greece, Italy, Southern France, Spain). These include honor and shame, family loyalty, the menace of envy, male and female relationships, and political organization, among others. The values, and the sometimes rightly elaborated symbolic systems through which they are expressed (e.g., the bullfight, the evil eye belief system, the cult of saints and the virgin, etc.), are studied through case studies. Values themes are examined in the context of both historical process and social structure and comparisons across Southern European cultures and with North American culture will be stressed. P: 156-100, 900-202 or 255-102.

875-281 Student-Led Courses 1-4 cr.
See page 98.

875-283X Selected Topics in Social Change and Development 1-4 cr.
See page 98.

875-298 Independent Study 1-4 cr.
See page 98.

875-301 Social Change and Development Field Studies 6 cr.
Field course designed to be taken in conjunction with other Social Change and Development courses. Concentrates on aspects of social change in Northwestern Wisconsin and elsewhere.

875-303 Criminal Justice Process 3 cr.
Familiarizes students with the workings of the American criminal justice system. Included are analyses of a variety of issues concerning policing, the court system, and the system of corrections. The course also sensitizes students to ethical problems such as police use of deadly force, police corruption and brutality, the scope and nature of plea bargaining, disparities in sentencing, etc. P: 900-202 or 820-102 or 156-100 or 778-100.

875-311 The Role of Punishment in Society 3 cr.
Punishment and its many corporal and psychosocial variations has always been with us. Its effectiveness as an institutional and individual tool for social control and change is rarely questioned by the general public. This course challenges the effectiveness and values of punitive societies. Can a punitive society achieve and maintain constructive social control and change and sustain human values? If not, can we go beyond punishment and find an effective instrument for beneficial social control and change? P: 156-100 or 900-202.

875-320 Constitutional Law
Interpretations of the constitution and the development of our legal system. The law as a parameter and a molder of processes in society, current trends in constitutional law, implications for our development, and social options available if different interpretations occur. P: 6 credits in Social Change and Development, political science or history courses. See 778-320.

875-325 Law in Society 3 cr.
Examines the place of law in society and in relationship with other social institutions. Law in society is viewed from historical and cross-cultural perspectives. P: jr st or cons inst. See 944-315.

875-330 Law and the Judicial Process 3 cr.
See 778-330.

875-333 Social Change in a Selected Area 3 cr.
Processes and strategies of social change and development in a selected nation or set of nations. Course may be repeated for credit each time it focuses upon a different area.

875-340 Woman as Worker 3 cr.
Focuses on the problems women encounter as workers. The implications of such issues as women's double shift (as public and domestic worker), the socialization of domestic work, wages for housework and child care, women as a reserve labor force, differential wage scales and job segregation will be explored within a study group format. Analysis of the socioeconomic variables and ideologies which have shaped and supported women's place in the economic system; and examination of strategies for change, including legal action, social protest, trade unionism, community action, and the women's movement.

875-342 Women, Myth, and Identity 3 cr.
How archetypal and mythological images of women influence contemporary images of women and their roles. How early images of women, such as those revealed in Paleolithic cave art, early Mediterranean civilizations, Greek mythology, and Judaeo-Christian tradition, continue to influence modern images of women. Freudian and Jungian psychoanalytic theories concerning women. Prevailing images of women in education, economics, family, the sciences, politics, the arts, in our own and other cultures, are investigated to determine if the images are similar, if they are valid, and if there is a universal need for change.

875-345 Women in Cross-Cultural Perspective 3 cr.
Research materials and analytical tools from anthropology and sociology used to examine the changing position of women in selected pre-industrial, developing, and industrial societies. In addition to analyzing women's status and role in particular social context, comparisons across societies are drawn and reasons for differences proposed and discussed. Special emphasis on discovering the cultural, social, political, and economic institutions which shape women's lives worldwide. P: 875-241.

875-348 Women and the Law 3 cr.
Examines the changing legal status of women in relationship to other social forces. Surveys major historical landmarks in the development of women's legal rights and the current status of such areas as property rights, family law and employment opportunity. Based on an examination of the effectiveness and limitations of various legal tools—ERA, legislation, and lawsuits—in the struggle for women's equality, discusses alternative strategies for future action.

875-360 Models and Social Change 3 cr.
The value oriented problems of defining social change. Use and construction of models as analytical tools in the study of social change.

875-361 Historical Perspectives on Social Change 3 cr.
Application of the concepts and models of social change discussed in 875-360 to the question of the processes of social change through time. Emphasis on both the historical processes of social change and on values implicit in them. P: 875-360 or cons inst.

875-365 Development Planning 3 cr.
Historical overview of population technology, and economic development. Survey of the current and projected future situations in population, resources, and socioeconomic geography in the world's poor countries. A framework, based upon the concept of human resources (population weighed by "quality" of human potential), for considering, "What is the role of population in the economics of poor countries in the world today?" P: 875-360, 361 or 478-321.

875-371 Motivation and Social Change 3 cr.
A selective review of motivation theory with applications to change-related behaviors such as innovation, leadership, and entrepreneurship. Motivationally based theories of economic development. The interaction of psychological and sociocultural forces in collective phenomena such as social movements, the diffusion of innovations, and generational changes.

875-400 Environmental Law 3 cr.
See 350-400.

875-440 Women and Religion 3 cr.
Religion is an extremely powerful force in all societies and cultures. It is, however, a force whose pervasiveness, whose influence in all areas of human endeavor, is not fully recognized or understood. This course examines organized religions, principally those in the Judeo Christian tradition; it explores the history of organized religions, theologies and religious traditions as they shape and enforce the "accepted" roles and rules for women and men.

875-470 Senior Seminar in Social Change and Development 3 cr.
A rigorous analysis of an important social change issue or of the work of an important social change theorist. The emphasis is upon intellectual depth. P: 875-360/361.

875-481 Student-Led Courses 1-4 cr.
See page 98.

875-483X Selected Topics in Social Change and Development 1-4 cr.
See page 98.

875-484 Senior Honors Project 3 cr.
See page 98.

875-498 Independent Study 1-4 cr.
See page 98.

892 Social Services

892-202 Introduction to Social Services 3 cr.
The role of social change in modern society; field methods, principles, scope of the social services. P: soph st.

205 Personal Values and Social Reform 3 cr.
See 493-205.

892-250 Concepts of Counseling and Psychotherapy 3 cr.
Defines conditions which must be met to separate therapeutic from pseudo-therapeutic activities. Fundamental scientific and social concepts underlying all therapeutic activities are discussed as to their strengths and weaknesses. The course attempts to de-mystify counseling and psychotherapy interventions without destroying their usefulness as benign social means of controlling individual behavior. Not a "how to do" course but an introduction to understanding the social-psychological cultural matrix which underlies all forms of psychological helping. P: background in psychology or sociology.

892-255 Interviewing Skills: The Art and Practice of Social Communication 3 cr.
Enables the student to become an effective communicator/interviewer. The program emphasizes three basic components involved in being a communicator: (1) knowledge of communication/interviewing skills, (2) experience in applying communication skills, and (3) an understanding of oneself as a receiver and sender of messages. Oriented toward people interested in improving their abilities to relate to others. Particularly valuable for persons who plan vocations which involve considerable interaction with other people, such as public relations work, advice giving, personnel, administration, counseling, and social services.

892-257 Training in Social Service Skills and Techniques 3 cr.
The lab consists of a number of learning experiences intended to assist students in developing and/or increasing skills and awareness required for competent behavior as a helping person. Areas of focus include: (1) inner communication and awareness of personal values and behaviors; (2) other communication including dissecting messages, increasing listening skills, negotiating contracts and understanding roles within a system; and (3) assertion training for use in intervention with clients, colleagues and administrators. Students will learn about and share information on various helping agencies in the community.

892-281 Student-Led Courses 1-4 cr.
See page 98.

892-283X Selected Topics in Social Services 1-4 cr.
See page 98.

892-298 Independent Study 1-4 cr.
See page 98.

892-300 Introduction to Field Experience in a Social Service Agency 1-3 cr.
Offers an introductory exposure to working in a social services agency. A supervised program of observation and assistance to the agency is provided by a professional staff member of the agency. This course is necessary for students seeking career preparation in social work or human development. Students are expected to contract for placement with an approved social services agency for 40 hours of time per credit. A written assignment discussing the experience is required.

892-302 Social Service Issues: Public Welfare, Aged and Infirm, Drug Abuse, Probation and Parole, Child Welfare, Others 3 cr.
May be repeated for credit each time a different issue is studied. P: 892-202.

892-305 The Social Work Profession 2 cr.
An orientation to the knowledge, skills, and values of professional social work practice. Professional competencies expected of a Bachelor of Social Work graduate are defined and related to field training experiences. Required for B.S.W. majors and may be taken concurrently with 892-300, Introduction to Field Experience.

892-330 Basic Concepts of the Social Services I 3 cr.
Generic social service practices. Concepts focus on individuals, groups, and organizations as subjects of change; understanding techniques of interviewing, group management, and organizational change, with an emphasis on mental health and social work. Relationships between values and strategies of social intervention. Concurrent registration in 892-402 and 892-410. P: 892-202 or equivalent.

892-331 Basic Concepts of the Social Services II 3 cr.
The second part of a two-semester sequence which introduces students to analysis of generic social service practices. The sequence focuses on individuals, groups, and organizations as subjects of change. This course emphasizes concepts and techniques relevant to organizational and community change. Students are introduced to the different conceptual frameworks within which models of planned social change may be developed. Concurrent registration in 892-403 and 892-411. P: 892-330.

892-350 Concepts of Group Therapy and Group Counseling 3 cr.
Group work is based on concepts distinctly different from those of individual intervention. Concepts particular to group work are presented and, when possible, demonstrated in the laboratory. The relationship between group concepts and group counseling and group therapy is examined. This course will not prepare an individual to function as a group counselor/therapist; it will enable a student to be more critical and evaluative of counseling and therapy activities. P: jr st.

892-355 Theory and Practice of Human Relations Skills 3 cr.
Utilizes theories of human relations skills as developed in the behavioral sciences and tests the meaning and the application of these theories through small group participation.

892-360 Social Service Delivery Systems and Cultural Differences 3 cr.
Social service programs of culturally and technologically different societies are visited. The nature of the differences between the care-giving institutions are related to the cultures from which they emanate and which, in turn, they service. Offered in January and summer.

893-402, 403 Field Experience in a Social Service Agency I, II 3, 3 cr.
Actual social service work through placement in a social service agency; weekly seminar meetings and written reports. Concurrent registration in 892-410, 411 and 892-330, 331. P: 892-202.

892-410 Principles of Social Service Methods I 3 cr.
Applications of concepts important to the understanding of individual, group, organizational, and community dynamics to generic social service practices. Students bring to the class issues generated through their exposure to field placement activities. Discussions focus on applying conceptual tools for assessing the variety of responses to changing social needs from the perspective of the consumer of the service, the service deliverer, and the needs of society. Students develop an understanding of what they want to do and methods to achieve their goals. Skills to influence individuals, groups, and organizations are refined through the field experience. Concurrent registration in 892-330, 892-402. P: 892-202.

892-411 Principles of Social Service Methods II 3 cr.
Students apply various social service methods to stimulate the clients and the placement agency into greater effectiveness in the direction of their/its goals. A dual focus of client change and organizational change using general problem solving methods for change is developed. Concurrent registration in 892-331 and 892-403. P: 892-410.

892-450 Evaluation of Practice 3 cr.
An introduction to the principles of evaluation as applied to helper-client relationships within the context of various approaches to social intervention (one-to-one, group, agency, community). Practice evaluation is compared and contrasted with program evaluation. The assumptions and limitations associated with various clinical evaluation models are explored. The social, political, and philosophical issues of accountability are raised. Finally, the student has an opportunity to apply an evaluation approach to an actual experience. Experience in a social service agency is necessary to provide actual material for the application of the course principles. Students who do not have a current practice experience can make alternative arrangements with the course instructor. P: 255-205, sr st, 892-402 or cons inst.

892-481 Student-Led Courses 1-4 cr.
See page 98.

892-483X Selected Topics in Social Services 1-4 cr.
See page 98.

892-498 Independent Study 1-4 cr.
See page 98.

900 Sociology

900-202 Introduction to Sociology † 3 cr.
Introduction to major sociological concepts and ideas and their application to contemporary problems of societies.

900-208 Marriage and Family in American Society † 3 cr.
A sociological approach to marriage and families in American society. The course covers theories of historical changes in family life; the problems of defining family; social class, ethnicity and gender as key variables in the study of families; love and marriage markets; premarital and marital sex; family power, conflict and decision making; family production and reproduction; life transitions; and divorce and remarriage.

900-283X Selected Topics 1-4 cr.
See page 98.

900-298 Independent Study 1-4 cr.
See page 98.

900-301 Foundations for Social Research 3 cr.
An integrated introductory examination of the nature of science, theory, methodology and statistics. The emphasis is on identifying and interpreting relationships between social phenomena. This is assured by applying the conceptual tools provided in the course to specific problems. P: 255-205 or cons inst.

900-302 Social Stratification 3 cr.
Class, status and power as determinants of group interests, preferences, ideologies, and struggles; examination at the national and international level. P: 900-307 or cons inst.

900-304 Deviant Behavior 3 cr.
Description and analysis of the range of behavior regarded as problematic in contemporary society; evaluation of the major theoretical positions on norm constriction, labeling, causes and treatment. P: 900-202.

900-307 Social Theory 3 cr.
A critical analysis of classical and contemporary social theories with attention to their social and intellectual context, and contemporary application. P: 900-202 or cons inst.

900-311 Collective Behavior and Social Movements 3 cr.
Analysis of structure and processes of crowds, social movements, and masses with emphasis on societal contexts and relationships to social change. P: 900-202.

900-375 Sociology of Sexuality and Intimate Relations 3 cr.
A social constructionist approach is used to analyze the creation of the modern emphasis on intimacy and sexuality as essential aspects in the development of self and personal life. Particular subjects covered include gender and intimate experience; changing ideas of love, intimacy and erotic pleasure; concepts of sexual health; the politics of sexual identities and communities; social movements related to socio-sexual issues; mass cultural influences on intimate and sexual relations; and impacts on children and child rearing. P: 875-235 and 900-202 or 900-202 and 2 other social science courses.

900-404 Criminology 3 cr.
Analysis of the relationship of crime and society focusing on causes of crime and programs of control. P: 900-202 and one 300 level course in sociology.

900-483X Selected Topics 1-4 cr.
See page 98.

900-498 Independent Study 1-4 cr.
See page 98.

944 Urban Studies

944-200 Introduction to Urban Studies † 3 cr.
Looks at the richness and complexity of the human experience in the modern city. We examine the city as an arena in which interrelationships between enduring human concerns and social institutions find articulation and ask how the city influences these as well as how the established institutions and concerns influence the city.

944-210 Drawing Systems for the Designer 3 cr.
Introduction to the theory and practical application of various drawing systems, including orthographics, axiometrics, and perspectives. Emphasis is on the use of these drawing systems as aids in the design process. Projects ranging from working drawings to finished display renderings done in a variety of media.

944-230,231 Values in Black and White America I, II 3, 3 cr.
Designed to increase student's self knowledge, to help develop a considered, responsible set of personal values, and to promote understanding between black and white Americans. The courses compare basic values and views of life in two cultures, beginning with a brief look at values in white America and moving to a detailed study of the history and culture of black America. In the second course, we try to enrich our understanding of and appreciation for the range of possible expressions of the aspirations of the human spirit and the social context of individual values.

944-281 Student-Led Courses 1-4 cr.
See page 98.

944-283X Selected Topics in Urban Studies 1-4 cr.
See page 98.

944-298 Independent Study 1-4 cr.
See page 98.

944-302 Urban Behavior 3 cr.
This course focuses on the life that people live in cities. It examines how we perceive and form impressions about urban areas, how we use urban areas, and how we interact with others in these settings. The topics covered are psychological in nature, but rely on material from a variety of disciplines. P: jr st, 1 lower division social science course; 255-205 or equivalent.

944-303 Urban Sociology 3 cr.
The study of social life and population groups in the urban environment. Our concern is with the social and psychological consequences of city life and the political and economic forces which have produced the industrial and corporate cities of the present day. Other topics include theories of "community," the location of industrial and commercial areas, the distribution of racial and ethnic groups, and urban problems such as poverty, housing, and public services. P: 944-200 required; 900-202 recommended.

944-305 Urban Politics and Policy 3 cr.
Concerned with urban social theory and its relation to urban political processes and public policy. Of central concern is the question: To what extent are basic human needs, as identified by urban theorists, frustrated and/or fulfilled by urban political processes and public policy. Policy arenas examined include: urban renewal, welfare policy, urban transportation, fiscal policy. See 778-305.

944-307 Urban Public Law 3 cr.
Examines the changing character of United States' public law toward urban communities as that law is expressed in Congressional statutes, judicial decisions and administrative rules. The response of public law to housing problems, equalization of municipal services, school desegregation, land use, growth controls, etc., are analyzed. The course requires an in-depth description and analysis of national public laws (statutes), rules (administrative), and order (administrative and judicial) having to do with the urban setting. Students study government documents as primary materials. The government document center serves as a laboratory. P: 944-200.

944-309 Urban Economics 3 cr.
Addresses at an advanced level, economic problems of urban areas. Topics include urban spatial structure, local government finance, economic development, housing, zoning, and urban renewal. The course content is divided into three parts. In part one, the course develops theoretical models—some quantitative—of urban spatial form and structure. In part two, the course turns to issues in urban economics, including, but not limited to, those above. In part three, regular class meetings will end and students will work on research projects of their own design. Seminar procedures will be used throughout the course; therefore, enrolled students should be confident in their ability to critique rigorous reading materials and present to the class the results of their own research.

944-311 Studies in Urban Resources 3 cr.
The use of urban space and resources is explored through case studies; specific topics vary from year to year. Examples of topics include: Urban Environmental Policy, Housing, Land Use Policy.

944-312 Studies in Urban Behavior 3 cr.
The interrelation of human behavior and the biophysical and sociocultural environments of cities is examined through case studies. Specific topics vary from year to year. Examples of topics are: Environmental Perception, Social Responses to Urban Renewal, Altruism, Helping Behavior in Urban Settings, and Urban Behavior Patterns.

944-313 City Through Time and Space 3 cr.
A historical analysis of the development of urban settlements and the influences of social and technological change on urban structure. The course allows students to examine major topics of urban studies (including the organization of economic and social activities in urban space, the distribution of occupational and population groups, and the aesthetic qualities of cityscapes) in historical and cross-cultural settings.

944-314 Administrative Law 3 cr.
Focuses on administrative law in the American federal (i.e., intergovernmental) system. Its purposes are: a) to provide students with a comprehensive coverage of the fundamentals of administrative law; b) to assist students in understanding the connections between administrative law issues and issues of public policy; c) to introduce students to the legal dimensions of administrative problems. Administrative law has to do with the powers and procedures generally applicable to all administrative agencies. It is derived from several sources: constitutions (state and federal), statutes, common law, and the rules, regulations, and orders of administrative agencies themselves. P: 778-101 or 944-200 or cons inst.

944-315 Law in Society 3 cr.
See 875-325.

944-325 Behavior in Designed Environments I 3 cr.
How the physical development of indoor and outdoor living spaces, including their location, form, and design, influence and shape human behavior. Introduction to contributing variables and techniques of measuring environment-behavior relationships. See 843-325.

944-326 Behavior in Designed Environments II 3 cr.
Application of techniques and knowledge of the environment-behavior relationship to studies of the designed area. Students develop and carry out all aspects of a detailed study of a selected environment-behavior problem. See 834-326.

944-341 Cities in Literature and Art 3 cr.
Focus is on American writers and artists. Selection of novels, poems, plays, autobiographies, paintings, buildings, and photographs highlights historically important images of the city in America. The course considers what works of literary and visual art can tell us about cities, how the images created by writers and artists relate to their own urban experience and to ours, and how our cultural imagery can expand or limit our urban possibilities. P: 944-200 or jr st or cons inst.

944-345 Women in American Perspective 3 cr.
Provides a historical survey of the changing situations and various contributions of women in American society. It covers the colonial, frontier, Jeffersonian, urban-industrial, and modern periods, and it includes an in-depth study of the turn of the century women's movement. It also uses social analyses and individual life histories to explore the impact of sex role problems on contemporary women from different socioeconomic, ethnic, and personal backgrounds.

944-351 Transportation and the City 3 cr.
The impact of the transportation subsystem of the city upon other urban subsystems (residential, commercial) and upon urban dwellers.

944-375 Women: Strategies for Change 3 cr.
Designed to combine theoretical knowledge and practical experience in an effort to understand and evaluate alternative strategies for change in the status of women in society today. Intended for students with some background in women's studies and/or community activism. Differing theoretical approaches to social change for women are contrasted, focusing on their concepts of power relations, methods of reform, and effectiveness. Student projects concentrate on acquiring practical skills for social change, through community projects, or through internships with appropriate organizations, office-holders, or other skilled individuals of the student's choice.

944-401 Environmental Design Workshop I 3 cr.
Design problems at the individual's scale. Investigation of personal space, privacy considerations, and dimensional characteristics of the human body. Draws heavily on inputs from 834-325, 242-401, and guest lectures on such topics as ergonomics, ecological psychology, lighting, and acoustics. Projects aimed at elucidating interactions between individuals and physical and social situations in which these individuals behave. Investigations culminate in research and design analysis projects of specific individual environments selected by student design teams. Projects are presented in graphic and verbal form at public critiques. P: 242-271.

944-402 Environmental Design Workshop III 3 cr.
Community environment. Investigation of such areas as urban neighborhoods, central business districts and whole urban communities. Topics include residential quality, land use analyses, the urban infrastructure, urban amenities, transportation, and urban stressors. Assignments and projects are drawn from the community surrounding the University. Students can expect to participate in a semester long community design project involving one of the ongoing neighborhood planning and programs sponsored by Urban Studies. P: 944-401, 421, and cons inst; 862-327 and 944-430 are recommended.

944-421 Urban Planning I 3 cr.
Planning as a generic process—a critical examination of planning theory focusing on models of rationality, valuation processes, political decision making, governmental structure, and fiscal policy. The seminar juxtaposes theoretical analysis with case studies from actual planning practice to illuminate the history of planning in the American city, contemporary issues in planning, and the role of the planner in local governmental decision making.

944-422 Urban Planning II: Community Project 6 cr.
A field research seminar focusing on the planning/decision making processes in an ongoing program for revitalizing a West Green Bay neighborhood. Seminar members constitute a planning team, expected to make all of the organizational and operational decisions necessary to make the team an integral part of the community program. Topics and/or activities which the seminar may investigate include the planner as advocate and change agent; information requirements in planning; interest groups involved in community decision making; definition making; definition of the community and description of its residents; analysis of community needs; systems of service in the community; designing and implementing intervention strategies; basic systems for generating and organizing information for planning, and intervention activities.

944-430 Urban Aesthetics 3 cr.
An investigation of the physical/visual form of the American urban place. The city is analyzed as a response to the aesthetic and value systems of its inhabitants to the history of American urbanization; and to those bureaucratic systems which impact its form. This course is designed around a series of mandatory field trips and other case studies.

944-481 Student-Led Courses 1-4 cr.
See page 98.

944-483X Selected Topics in Urban Studies 1-4 cr.
See page 98.

944-484 Senior Honors Project 3 cr.
See page 98.

944-498 Independent Study 1-4 cr.
See page 98.

Directory

University of Wisconsin-Green Bay Faculty

Abbott, Clifford F., Associate Professor of Communication and the Arts; B.A., Tufts; M.A., Ph.D., Yale.

Abraham, Jerome B., Associate Professor of Communication and the Arts; B.M., M.M., UW-Madison.

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Appendix

Undergraduate Academic Rules and Regulations

Definitions

Credit - a quantitative unit of measurement of effort devoted to reading, discussion, lecture, and other activities associated with the learning process. Usually a credit requires a minimum of 15 hours of classroom time and an additional 30 hours of out-of-classroom effort.

Credit Load - the number of credits a student is carrying as a program at a given time in a term, e.g., at registration or at the end of the semester. All credits, regardless of grading status, count toward the credit load for certain purposes.

Maximum Credit Load - is a specific limitation of the number of credits that a student is allowed to carry at any time during a term. For a student in good standing the maximum credit load for a semester is 18 credits and for a student on probation this maximum is reduced to 15 credits; for shorter terms lower pro rata limitations are specified.

Minimum Credit Load - is a specific number of credits that must be carried to be eligible for a variety of programs and benefits, e.g., athletics and financial aids.

Grade Point Credits - the number of credits which are taken for a grade that will affect the grade point average. Some attempted credits may not count as degree credits, e.g., some physical education courses do not always result in degree credit and do not affect the gpa either.

Degree Credits - those credits which will count toward the 124 credits required for a bachelor's degree. Certain courses in physical education and all Academic Support Program courses do not result in degree credits even though they may have a credit value assigned for certain load measurement purposes.

Completed Credits - is the number of credits, excluding audited credits, for which a final grade, other than a temporary grade of I or N has been received, P-NC credits passed, degree credits, and attempted credits are included.

Audited Credits - are credits associated with courses in which the student has elected to enroll as an auditor. While these credits are subject to consideration for maximum credit load and fee assessment purposes, they are of no significance for any other purpose. Enrollment on an auditor basis is subject to special conditions.

P-NC Credits - are credits taken under a special grading option; these credits do not have any effect on the grade point average but, if passed, may add to the degree credits earned.

Grade Point Average (GPA) - is a numerical value derived from dividing the number of grade points earned by the number of credits attempted on a regular grade basis. P-NC, incomplete, and audit grades and credits have no effect on the grade point average. Only those courses attempted at UWGB are included in the gpa.

Example for a semester:

Philosophy 204	A	3 cr.	12 gp
Math 104	B	4 cr.	12 gp
German 102	BC	4 cr.	10 gp
ASP English 093	P	3 cr.	00 gp

attempted credits: 11
grade points: 34

34 divided by 11 equals 3.09 gpa

Cumulative Grade Point Average - is a gpa for all terms at UWGB and is calculated by dividing the cumulative total grade points earned by the cumulative total attempted credits.

Probation - is a status assigned to a student for lack of academic progress as measured by completed credits or for inadequate performance as measured by the grade point average, and should be considered as an advisory warning that improved performance is necessary to continue as a student.

Academic Drop -is a status assigned when the record of academic progress and/or achievement is unacceptable to the extent that the student is not permitted to continue to enroll at the University.

Good Standing - is a status assigned when a student is making adequate academic progress and his/her cumulative gpa is 2.0 or better.

Grading System and Grade Points

Grade point averages (GPA) indicate academic and class standing and are a means of measuring the quality of the student's academic work. Grade point averages are computed on a 4.0 basis. Point values for letter grades are:

Grade Symbol*	Definition	Grade Points/ Credit
A	Excellent	4
AB	Very Good	3.5
B	Good	3
BC	Above Average	2.5
C	Average	2
D	Poor	1
F	Unacceptable-No Credit	0
WF	Unofficial Withdrawal-No Credit	0

Grades Excluded From Grade Point Average
P—Pass: grade of C or better
NC—No credit: grade of D, F or WF

Other Symbols
S—Satisfactory Audit
U—Unsatisfactory Audit
DR—Dropped Course
W—Official Withdrawal From All Courses
NR—No Report
I—Incomplete

*NOTE: This grading system is effective beginning September 1986.

A student may elect courses on a pass-no credit basis with certain restrictions; see the special section on P-NC grading.

Since grading standards differ from institution to institution, grades received from other institutions outside of the University of Wisconsin-Green Bay are not used in computing the grade point averages.

Academic Standing

Every student is expected to maintain certain standards of academic achievement in all work carried at the University. The University has established these standards in terms of the quality of the work, as measured by the semester and cumulative grade point averages, and the quantity of work satisfactorily completed, as measured by the proportion of the credit load completed each semester.

Certain exceptions are allowed for part-time students, but unless otherwise stated part-time students are expected to meet the same standards of academic achievement as any other student.

Academic standings are reviewed at the end of each term and a revised standing will be reported to every student on the final grade report which is issued after each academic term.

Probation and Drop Status

The University is concerned about students whose academic achievements seem to indicate that they are not able to meet the expectations of their instructors or are experiencing other problems that may be interfering with their studies. A probation action is an advisory warning that a student should take appropriate actions to improve his/her achievement. A drop action is taken when the University feels that the student's academic achievement record to date indicates a need to interrupt enrolled status to reassess and reevaluate goals and plans. A student who has been placed on probation or drop status should give careful consideration to the factors that may be involved. The University encourages such students to seek assistance from counselors, advisers and course instructors, and provides various testing services and study skills development programs such as the Academic Support Program.

Every student is expected to maintain at least a C average (2.0 cumulative gpa) on all work carried, whether passed or not. Failure to achieve this minimum C average (2.0 gpa) in any term will result in a probation, continued probation or drop action at the end of that term, as shown below. Drop actions are taken at the end of each term, however, if a student was not enrolled for the fall semester, a drop action will not be taken solely on the basis of inadequate achievement in the January interim.

Every student is expected to complete a certain portion of the credits for which he/she originally enrolled. Failure to meet this second standard in each semester will result in a status of probation, continued probation, or drop, as shown below. Completion means that a grade of A, B, C, D, F, WF, P, or NC was earned, exclusive of previously passed courses which are being retaken voluntarily.

A student on probation may return to good standing if he/she fulfills certain requirements, as shown below.

1. Student in Good Standing (a and b)

a. Grade Point Requirement and Action:

1.0 to 1.99 end of semester or term cumulative gpa will result in probation status.

0.999 or less end of semester cumulative gpa will result in a drop status.

action on a part-time student will be withheld until at least 12 credits have been attempted at UWGB.

b. Credit Completion Requirements and Actions:

ORIGINAL* CREDIT LOAD	CREDITS COMPLETED	END OF SEMESTER STATUS
12 or more	8 or less	Probation
9 - 11	5 or less	Probation
6 - 8	2 or less	Probation

*Calculated at the end of the course add period.

Students who enroll for an original credit load of less than 6 credits are exempt from completion requirements. A student may drop at least one course from his/her original credit load* without incurring a drop or probation action. (EXAMPLE - a student enrolled for an original credit load* of 12 credits could drop one 5 credit course without incurring an action of probation or drop for lack of progress.)

2. Student on Probation (a and b)

a. Grade Point Requirements and Actions:

1.50 to 1.999 end of semester or term cumulative gpa will result in continued probation status for one term.

1.49 or less end of semester cumulative gpa will result in a drop status.

12.0 or better end of semester or term gpa and a 2.0 cumulative gpa will result in a return to good standing.

b. Credit Completion Requirements and Actions:

ORIGINAL* CREDIT LOAD	CREDIT COMPLETED	END OF SEMESTER STATUS
12 or more	8 or less	
9 - 11	5 or less	Drop
6 - 8	2 or less	
12 or more	9 - 11	Continued
9 - 11	6 - 8	Probation
6 - 8	3 - 5	
12 or more	12 or more	If cumulative
9 - 11	9 or more	gpa is 2.0 or better,
6 - 8	6 or more	return to good standing.

ORIGINAL* CREDIT LOAD	CREDITS COMPLETED	END OF SEMESTER STATUS
12 or more	6 or less	Probation
9 - 11	5 or less	Probation
6 - 9	2 or less	Probation

*Calculated at the end of the course add period.

Students who enroll for an original credit load of less than 6 credits are exempt from completion requirements. A student may drop at least one course from his/her original credit load without incurring a drop or probation action. (EXAMPLE - a student enrolled for an original credit load of 12 credits could drop one 5 credit course without incurring an action of probation or drop for lack of progress.)

3. Student on Probation (a and b)

a. Grade Point Requirements and Actions:

Less than 2.0 cumulative gpa will result in a drop status.

2.0 or better end of semester or term gpa and a 2.0 cumulative gpa will result in return to good standing.

b. Credit Completion Requirements and Actions:

Same as for probation standing.

Drop status is assigned for a period of one semester for the first drop earned. If a student is dropped for a second time the drop status will be for a period of two semesters. A student who is dropped at the end of the fall semester may enroll in the January Interim with the understanding that he/she is not eligible to continue for the spring semester unless his/her achievements during the January Interim would result in a return to good standing or continued probation. A student who is dropped at the end of the spring semester may enroll in the summer session with the understanding that he/she is not eligible to continue for the fall semester unless his/her achievements during the summer session would result in a return to good standing or continued probation.

Conditional matriculants must meet special contractual requirements specified at the time of admission. When a CM student is removed from CM status he/she must then meet all normal requirements. While enrolled as a conditional matriculant classification, the determination for drop action or continued conditional matriculant status will be made by the Conditional Matriculant Review Committee.

Appeals

Academic probation is a non-punitive warning and is not subject to an appeal. Academic drop status may be appealed by means of a special academic appeal to the vice chancellor for Academic Affairs or his/her designated representative. The vice chancellor may seek advice from the Academic Actions Committee. Any appeal should be filed within two weeks after the end of the semester. A student who is allowed to continue will be on probation and will be subject to any other special conditions that may be designated. An academic drop period provides time for a student to give careful thought to the situation that resulted in the drop action, to seek appropriate non-credit remedial preparation or assistance, and to reassess goals and aspirations in the context of the academic achievement record that has been compiled. Any appeal must include a clear explanation of the problems that resulted in the inadequate achievement and how the student proposes to resolve those problems.

In the event that an appeal is contemplated, the following items should be considered:

1. Are the **relevant** facts clearly stated and documented?
2. Are the **extenuating** circumstances cited of an unforeseeable nature?
3. Are the **relevant recommendations** from the instructor included, if this was appropriate?
4. Are needs and wants distinguishable on the basis of the statements?
5. Have you clearly stated the educational rationale for the request?

Limited Rights to Appeal an Academic Drop Action

A student who earns an academic drop action must file any written appeal for an exception within seven (7) working days from the date printed on the grade slip or the student record report which is mailed out to all students at the end of each term. Failure to meet this deadline shall result in an assumption that there will

be no appeal of the drop status and several possible consequences may evolve from that assumption, including the following:

1. Cancellation of housing in the Village Apartments or residence halls.

2. Cancellation of any advance registration for the next semester.

Appeals shall be filed with the assistant to the vice chancellor in the Office of the Registrar.

If the appeal is filed before the deadline, a student may expect to know the outcome of that appeal within seven (7) working days of the date that the appeal was filed. If notification by mail is desired, the student must enclose a self-addressed stamped envelope with the appeal. If no other arrangement has been made, a student may pick up a copy of the results of the appeal at window 7 of the Office of the Registrar.

As indicated elsewhere in the academic rules and regulations, a student who is dropped at the end of the fall semester may complete the January Interim and a student who is dropped at the end of the spring semester may complete the summer session. However, continuation in either of these special terms does not modify the requirement of filing an appeal within the deadline cited nor does it guarantee permission to register for the ensuing semester.

If the appeal is denied by the vice chancellor's designee, a student has the right of further and **final appeal** to the student-faculty Academic Actions Committee **if** the second appeal is filed within five (5) working days of the denial action. Second appeals should be filed at window 7 of the Office of the Registrar. As a part of your written appeal, you may request a personal appearance before the committee when they meet to review your appeal; the chairperson will notify the student of the time and day of the scheduled appeals meeting.

All grade slips are mailed out via first class mail on the following schedule:

1. **End of Fall Semester** - on the Friday preceding New Years Day, using the **local** address of record.

2. **End of January Interim** - on the Friday after the January Interim, using the **local** address of record.

3. **End of Spring Semester** - on the second Monday after the end of final exams, using the **home/permanent** address of record.

4. **End of Summer Session** - on the Friday, after the last day of classes for the eight (8) week session, using the **home/permanent** address of record.

A student does have the option of having **all** mailings made to a single address but this option must be indicated on an address correction form supplied by the Office of the Registrar.

Mail forwarding of any kind is the student's responsibility. Written notice of a change of address to all mailers is also a student's responsibility. **Failure to provide a prompt forwarding or proper notification of change of address will not be an acceptable excuse for any exceptions in the appeal process.**

Readmission

Readmission after an academic drop is not an automatic process. The Office of Admissions may decide to deny readmission or to grant readmission subject to specific requirements or conditions. A student who is readmitted after an academic drop is always readmitted on probation and subject to the normal standards of progress and achievement. An application for readmission should be submitted to the director of admissions at least 30 days in advance of the desired term of admission to allow for the full review process that may be required.

Withdrawal From the University

A student who desires to withdraw from all academic course work at any time after completing the study list request form or final registration must see a counselor in the Student Counseling and Development Office, an adviser in the Office of Academic Advising, or the Dean of Students. A complete withdrawal without failure may be requested at any time before 4:30 p.m. on the afternoon of the last day of regularly scheduled classes during the twelfth week of a semester, the sixth week of an eight week summer session or the second week of a January interim period.

If a student has not attended classes or taken the final examination in a course, a grade of WF (unofficial withdrawal) will be given unless official withdrawal procedures have been followed.

A decision to withdraw should be given careful consideration in terms of academic retention policy, veteran's benefits, family health insurance benefits, financial aids and other situations that have specific consequences from withdrawals. Any student who withdraws from two consecutive semesters will not be eligible to enroll without seeking readmission.

A withdrawal during the fifth through twelfth weeks of a semester will result in permanent recording of all courses of record at that time with a symbol of W (withdrew) after each course. The symbol of W is not a grade and has no effect on the grade point average.

All students should be aware of the fact that any semester in which a withdrawal is made after the end of the second week of a semester does count as a semester of enrollment for academic progress standards and will result in a probation action. If a student can provide evidence that a withdrawal is necessary due to unforeseeable extenuating circumstances he/she may be allowed to withdraw without a probation action if such evidence is provided at the time of withdrawal.

Withdrawal by a student with an original credit load* of fewer than six credits shall not result in a probation and drop status.

Course Drops

The course drop deadline has been established to allow the student ample opportunity to decide what content a course will cover, the type of readings and projects to be assigned, the instructor's teaching style and the methods of evaluation to be utilized. In some courses feedback from a formal evaluation process may not be available before the drop deadline. In such cases it is the student's responsibility to contact the instructor before the drop deadline to obtain information useful in making the drop decision. Therefore, feedback in the form of grades on papers or examinations is not an acceptable circumstance that would justify a late drop.

The drop deadline is intended to stimulate a student to weigh carefully all of the important considerations and to do this as early as possible. If a student decides that a course does not fulfill expectations, a reasonably early drop means that the student may then devote a greater portion of available study time and effort to remaining courses, and the instructor will be able to devote more time and effort to the students participating in the course. The eight week deadline for 14 week semester courses should provide an adequate opportunity to become acquainted with what a course is all about and make a decision as to whether it fits into one's program of study.

The two phases of the drop policy are described below:

1. First four weeks of a 14 week semester:

   —student may drop any course without the instructor's signature

   —no record of drop on permanent record

2. Fifth through 8th weeks:

   —course will appear on permanent record with the symbol W (withdrew) or DR (dropped)

3. Ninth – 14th weeks:

   —no official drops allowed, WF grade or F grade appears on transcript

For terms or classes of a shorter duration than 14 weeks, pro rata deadlines shall be established as follows:

Course Length in Weeks	Drop Deadline-End of Course Session Week	"W" or "DR" Symbol Recorded After
1	Wednesday, Week 1	Monday, Week1
2	Friday, Week 1	Wednesday, Week 1
3	Wednesday, Week 2	Friday, Week 1
4	Friday, Week 2	Friday, Week 1
5	Wednesday, Week 3	Wednesday, Week 2
6	Friday, Week 3	Wednesday, Week 2
7	Wednesday, Week 4	Friday, Week 2
8	Friday, Week 4	Friday, Week 2
9	Wednesday, Week 5	Wednesday, Week 3
10	Friday, Week 5	Wednesday, Week 3
11	Wednesday, Week 6	Friday, Week 3
12	Friday, Week 6	Friday, Week 3
13	Wednesday, Week 7	Wednesday, Week 4
14 or more (normal semester course)	Friday, Week 8	Friday, Week 4

A course session week always ends on a Friday. All courses that begin or end on nonstandard session weeks will have a nonstandard drop deadline.

Course Adds

After final registration a student may add other courses to his/her program if such an addition does not exceed the maximum credit load limitation and is completed before a specific deadline for additions. During a normal semester the add period is limited to the first two weeks of classes; for shorter terms an earlier deadline will be in effect. A student may petition for an exception if unforeseeable extenuating circumstances prevented compliance with the deadline.

Late Program Changes and Withdrawals

A student may be granted permission to drop a course or courses after the eight week deadline, or make a complete withdrawal after the normal twelfth week deadline, if one of these specific criteria can be verified:

1. If the student has serious mental or physical health problems as verified by a physician's or professional counselor's statement.

2. If there is a death or prolonged serious illness in the immediate family as verified by the family physician.

Under any of these circumstances, a counselor in the Student Development Center or an adviser in the Office of Academic Advising is authorized to grant permission for a late drop or withdrawal. If a student has any other reason for requesting a late drop or withdrawal he/she should direct a written appeal, stating the circumstances, to the vice chancellor for Academic Affairs or his/her designee for consideration.

Class Attendance

A student is expected to attend all class sessions. If, for any reason, a student is unable to attend classes during the first week of classes, he/she is responsible for notifying the instructor(s), in writing, of the reason for nonattendance and intentions to complete the course. Registered students are obligated to pay all fees and penalties as listed on the fee schedule; **nonattendance does not alter these obligations in any way.**

Maximum and Minimum Credit Loads

Eighteen credits is the normal maximum credit load and 12 credits is the normal minimum credit load. An average credit load is 15 or 16 credits.

A student in good academic standing may register for any number of credits up to a maximum of 18 credits per semester. A student will not be allowed to register for credits in excess of 18 if he/she does not have **prior written permission** to carry an overload from the vice chancellor Academic Affairs or his/her designee (director of Academic Advising). Likewise, any course adds that would have the effect of exceeding the maximum will not be processed if prior permission for an overload has not been granted.

A student may register for or reduce a program below 12 credits in a semester with the understanding that for certain purposes he/she will then be considered a part-time student. A student who reduces the credit load below 12 credits must check with the proper offices concerning implications for financial aids, government benefits, and other programs with credit load eligibility stipulations, including the standards of progress for probation and drop status purposes.

Maximum Credit Load Probationary Students

Maximum semester credit load is 15 credits for students on probation.

Grade and Grade Appeals

Each student will receive a grade from the instructor in charge of a course at the end of the respective semester or session. Grades must be in the Office of the Registrar no later than 96 hours after the final examination. Accompanying the grade rosters received from the registrar each semester will be information on current grading policies.

If a student is dissatisfied and wishes to appeal a particular course grade, he/she must first contact the instructor who issued the grade. If the student is still dissatisfied he/she may appeal to the concentration or professional program chairperson who must, in turn, consult with the instructor in the course. If the student wishes to appeal further he/she consults with the vice chancellor of Academic Affairs who also consults with the instructor and the appropriate chairperson. The vice chancellor or chairperson acts in an advisory capacity to the student and instructor.

Grade Changes

All final grades, with the exception of incompletes (I), will become permanent grades after the last day of classes for the next semester. Any discussions with faculty regarding grade levels or missing (N) grades must be pursued within this time period.

Incompletes

If, due to unusual yet acceptable circumstances, a student is unable to take or complete a final examination or other course work, he/she may arrange with the instructor to receive an "**incomplete**" in the course. The incomplete is filed with two tentative grades, one indicating the quality of the work to date, and a second to be assigned if no more work is completed, and a specific deadline for completing the work required for removal of the incomplete. The course instructor must file an incomplete removal form, stating the conditions for removal as well as the specific deadline for removal, before a grade of incomplete will be accepted for recording. Since the course is incomplete, grade points and degree credits remain undetermined until a permanent grade is established; however, a tentative academic action may be assigned on the basis of grades and credits received in other courses. Such an action will be reviewed after the incomplete has been converted into a permanent grade.

Incompletes for Graduating Seniors

Seniors anticipating graduation must remove all pending incompletes by the end of the sixth week of the final semester of attendance. Outstanding incompletes will be considered as "F" grades for purposes of estimating eligibility for graduation and, if applicable, honors.

Removal of Incompletes

The course instructor is responsible for informing the student, the Office of the Registrar and his/her concentration or professional program chairperson as to the specific deadline for removal of an incomplete. If no earlier deadline is specified, an incomplete (I) must be removed no later than the last day of classes for the next semester; **this is the absolute maximum allowable deadline.** If no other grade is submitted by the instructor within this deadline, incomplete (I) grades shall become a permanent grade of "F" with normal effect on the student's grade point average and earned credits.

A student may file a special petition for an exception to the removal deadline if bona fide unanticipated extenuating circumstances prevented compliance with the removal deadline, such as the following:

1. The student has serious physical or mental health problems which have been documented by a physician or professional counselor's statement.
2. The student has had a death or serious illness in the immediate family and this has been documented by a physician's statement.
3. The course instructor is on leave during the semester for removal.

If a student is a graduating senior, all "I" grades must be converted to a permanent passing or failing grade before his/her commencement date. All grades on the record shall become permanent as of that date with no possibility for removal or change.

An incomplete (I) grade is normally a temporary grade which is given when, due to **unforeseeable extenuating circumstances,** a student is unable to complete the course requirements within the normal term, e.g., illness during the final examination period.

Repeating Courses

A student may choose to repeat any course. All repeated courses will be designated with a letter "R" after the title on the transcript. When a repeated course is completed, the original grade and entry on the transcript will remain on the transcript but the credits, grade, and grade points earned for the most recent completion shall be the only enrollment completion that will have effect on the cumulative attempted credits, grade points earned, and grade point average. Courses repeated at another institution have no effect on the grade point average at UWGB.

Repeated courses do not count toward fulfillment of standards of progress requirements, for probation and drop status purposes, unless the previous grade was NC, F, WF, S or U.

Pass-No Credit Enrollment Information

Pass-no credit (P-NC) grading is a student-elected grading option which is available if a student does not want a regular grade in a course that would affect his/her grade point average. If a student wishes to take a course on a P-NC basis the decision must be made within the first two weeks of a semester, the first week of an eight week summer session, or the first two days of a January interim. A P-NC request form must be filed with the study list request form, the program change form, or the final registration form. Certain courses may not be elected on a pass-no credit basis if they are taken to fulfill certain requirements. These include the following:

Major and/or minor courses (300-400 level)

Professional Program courses (300-400 level including **all** courses in the teaching majors and minors, except student teaching)

Senior Distinction (484) project

Independent Study (298-498) courses

All-University requirements courses, including any course used to satisfy the writing requirement.

Electives may be taken on a P-NC basis. Non-degree credit courses (e.g. Academic Support Program) and student teaching are offered exclusively on a P-NC basis.

If there is any doubt as to whether it is permissible to count a P-NC graded course for degree requirements, always consult the Office of the Registrar before the two week deadline for P-NC changes.

If a course is taken on pass-no credit, grades of A, AB, B, BC, or C are designated pass and the grade is recorded on the final grade slip and the permanent record card as a "P". These grades are not used in computing the grade point average, but the earned credits do count towards graduation.

If a student should receive a grade of "F", "WF", or "D" in the course, the grade slip and transcript will read "NC" or no credit. A "NC" does not affect the grade point average or earned credits.

For example, if a student would like to explore a completely new area of interest it may be advisable to take it on pass-no credit since it may be difficult to estimate the difficulty of the work required as well as the level of other students in the course.

However, if a student is considering applying for graduate or professional schools or transferring to another undergraduate campus, the grading system may have an adverse effect on admission. Graduate schools generally prefer letter grades, because this enables them to better judge potential for academic success.

Since instructors generally do not know which students are taking their courses on pass-no credit, they record a letter grade. The letter grade is changed to a "P" or "NC" by the computer. This letter grade will be reported **only** upon the student's written request and the written request of an academic official from the college or university, or prospective employer, to whom the grade is to be sent. Students are cautioned about taking courses on pass-no credit even though the grade can be released in this way.

Prospective employers often share many of the negative feelings about pass-no credit grades that graduate schools have.

For more information check with an academic adviser before classes begin.

The decision to elect P-NC grading should be made at the time of registration and no change in P-NC status decisions will be allowed after the normal course add deadline. With the exceptions of Academic Support Program courses, student teaching, and selected Physical Education courses, no course is graded exclusively on a P-NC basis.

Audit Enrollment Information

A student may audit a course if space is available after students who have enrolled for credit have been accommodated. Special policies apply to senior citizen guest students and any other students who enroll under the special half-price fee arrangement; these policy statements are published in the Timetable for each term. Conditions and requirements for class participation are completely at the discretion of the course instructor. A student enrolled for credit may change to audior status, for grading purposes, at any time up to the course drop deadline. Audited credits do not count in the determination of credit completion requirements or for any program or benefits eligibility status. Audit credits are subject to consideration for maximum credit load limitations. Any change from audit status to credit status, for grading purposes, must be completed within the course add period.

Program Declaration and Advisers

To ensure the best possible program planning and course selection, all students are strongly encouraged to seek out advice and information on majors, all-University requirements, tool subjects, and other programs as soon as possible. All matriculated students must select an appropriate academic adviser to assist with course selection before each registration. The adviser's approval signature must be on the study list request for each registration until the student has filed an academic plan form. A student who attains junior standing (54 or more degree credits) must declare an interdisciplinary or professional major or minor before he/she will be allowed to register for another term. A student who has attained senior standing (84 or more degree credits) must file an approved academic plan before he/she will be allowed to register for another term.

Independent Study

Students interested in earning credits for research may wish to enroll for independent or directed study in one of the concentrations, disciplinary programs, or professional programs, under the course numbers of 298 for lower division work or 498 for upper division work. Enrollment may be for from 1 to 4 credits per course. To arrange for an independent study a student should prepare a statement of objectives and a list of readings and/or research projects that will lead to these objectives. This proposal may be designed by the student or prepared on the form which is available for this purpose. The written proposal, as approved by the instructor, should be placed on file in the Office of the Registrar by the end of the second week of classes. If a student does not place a copy of the proposal on file, he/she accepts full responsibility in the event that some unforeseeable circumstances prevent completion of the project with the same instructor.

If the student obtains the consent of an instructor, he/she must complete an undergraduate independent study card which must be submitted with the study list request form at the time of registration, or with an add card within the first two weeks of a semester. The approval signatures of the UWGB faculty member and his/her concentration or professional program chairperson must be on the independent study card. Only regular UWGB faculty are allowed to supervise independent studies.

Independent Study courses are subject to certain limitations:

1. Independent studies cannot be designed to duplicate a regular UWGB course; this type of study is intended to expand the curriculum.
2. A freshman or sophomore must have a minimum cumulative grade point average of 2.5 and a junior or senior must have a minimum of 2.0.
3. An independent study cannot be elected by the student on an audit or Pass-No Credit basis.
4. An independent study may be taken only with a regular member of the UWGB faculty/academic staff.

Standards of Academic Progress Required to Receive Financial Aid

The University's policy for standards of academic progress required to remain eligible for financial aid is governed by federal regulations published in the October 6, 1983, Federal Register Part 668.16. Following is a statement of the policy that has been enforced for UWGB aid recipients since January 1, 1984.

Undergraduate Students

1. Duration of Eligibility. Students enrolling on a **full-time** basis (12 credits or more) are eligible to receive financial aid for a maximum of 6 years or 12 semesters. Students enrolling on a **part-time** basis (6 to 11 credits) are eligible to receive financial aid for a maximum of 11 years or 22 part-time semesters. If a student enrolls for some semesters as a full-time student and for others as a part-time student, a proportional total number of semesters will be computed. Attendance during summer session for 6 credits or more will be counted as one part-time semester.

2. Credit Hours to be Completed. A student must have successfully completed the following minimum cumulative credits by the end of the designated academic year and the minimum credits per semester as a full or part-time student. Students starting mid-year (spring term) will be reviewed for partial year compliance at the end of that term.

Undergraduate Students Credit Completion Scale

Part Time

Year In School	Semesters Completed	Required Cumulative Credits
1	1	3
	2	6
2	3	12
	4	18
3	5	24
	6	30
4	7	36
	8	42
5	9	48
	10	54
6	11	60
	12	66
7	13	72
	14	78
8	15	84
	16	90
9	17	96
	18	102
10	19	108
	20	114
11	21	120
	22	126 +

Students must complete a minimum of 3 credits for the first two semesters and 6 credits thereafter.

Full Time

Year In School	Semesters Completed	Required Cumulative Credits
1	1	9
	2	18
2	3	27
	4	36
3	5	46
	6	57
4	7	67
	8	78
5	9	90
	10	102
6	11	114
	12	126 +

Students must complete a minimum of 9-12 credits per semester depending upon year in school.

Graduate Students

1. Duration of Eligibility. Graduate students enrolled in a Master's Degree program may receive financial aid for a maximum of 3 years or 6 semesters as full-time students and for a maximum of 5 years or 10 semesters as part-time students. Attendance during summer school for 3 or more credits will be counted as one part-time semester.

2. Credit Hours to be Completed. A graduate student who receives financial aid must complete a minimum of 6 credits per semester as a full-time student or 3 credits per semester as a part-time student. The student must also successfully complete the following cumulative number of credits by the end of each year.

Graduate Students Credit Completion Scale

Year In School	Semesters Completed	Required Cumulative Credits
Full Time		
1	1	6
	2	12
2	3	18
	4	24
3	5	30
	6	36
Part Time		
1	1	3
	2	6
2	3	9
	4	12
3	5	15
	6	18
4	7	24
	8	27
5	9	31
	10	36

Extended Degree students must satisfactorily complete contract work in progress before new aid may be provided for an equivalent of 12 full-time semesters.

General Information About Aid Eligibility

1. **Credit hour enrollment** will be established by the number of credits enrolled as of the end of the second week of classes for any term.

2. **Successful completion** means that a grade of A, B, C, D, or P was earned, exclusive of previously passed courses which are being retaken voluntarily.

3. **Other aid regulations** must be adhered to, and may limit aid awards to students because of other program regulations.

4. **Non-degree students (specials)** are eligible for guaranteed student loans only

and must meet the regular academic regulations of the university.

5. **Review.** A review of each aid recipient's eligibility will be made at the end of the academic year (between spring and fall semesters). Notification of probation or ineligibility will be sent to students at that time. Students on probation will be reviewed at the end of the next semester to determine continued aid eligibility. Students will be eligible to receive aid during the initial probationary warning period.

6. **Ineligibility for Aid.** If a student has not made adequate progress the student will be ineligible for additional aid. In order to again become eligible for aid, the student must enroll and earn sufficient credits to regain good standing according to the credit completion scale. The student must enroll and make up the deficiency without aid before future aid can be reinstated.

7. If a student is denied aid due to lack of progress, the student may appeal the determination by writing a letter explaining the reasons for lack of progress and providing evidence of mitigating circumstances. The appeal must be submitted to the financial aid office. The financial aid staff will review the appeals in committee and reach a final determination.

8. Effective September 1984, each student will have a semester starting point calculated from which future completion requirements will be measured. This starting point will be either the total number of semesters for which a student has been enrolled or the cumulative total of successfully completed credits, whichever is most advantageous to the student. For transfer students, the starting point will be determined by the cumulative total of successfully transferred credits.

9. Based upon the required credit completion scale, the student must achieve both the cumulative total and per semester credits for the subsequent semester in order to avoid probationary or termination status.

This policy is subject to review as needed. For questions or additional information contact the Financial Aid Office (414) 465-2075.

Financial Aid Refund Payment Schedule

Students receiving financial aid who drop credits must repay financial aid funds they have received. The amount of repayment is based upon federal Department of Education regulations (paragraph 668.21 of the federal financial aid regulations).

Students will be notified in writing about the amount of repayment due after the Financial Aid Office is notified about the withdrawal or credit drop. **The aid must be repaid by the student before future aid may be granted.** Also, failure to repay or to make appropriate arrangements will result in a hold being placed on the release of the student's official university records.

Students enrolled for sessions of less than the usual term duration who drop credits or withdraw, shall have a proportional repayment calculated on an individual basis.

Students who wish to appeal the amount of repayment due may provide written documentation of the request and should discuss the situation with a financial aid counselor.

Refund and Repayment Schedule

Fall/Spring Semesters			Summer Session		
Action During Week	Tuition Refund	Repayment of Aid for Noninstitutional Costs	Action During Week	Tuition Refund	Repayment of Aid for Noninstitutional Costs
1	100%	100%	1	100%	100%
2	80%	80%	2	70%	80%
3	60%	75%	3	30%	70%
4	40%	70%	4	0	60%
5	0	63%	5	0	45%
6	0	56%	6	0	30%
7	0	63%	7	0	15%
8	0	42%	8	0	0
9	0	35%			
10	0	28%			
11	0	21%			
12	0	14%			
13	0	7%			
14	0	7%			
15	0	0			
16	0	0			
17	0	0			
18	0	0			

UW-Center System Course Equivalency Tables

Center System Courses	UWGB Courses
Anthropology	
ANT 100	ANT elective
ANT 102	ANT 215
ANT 105	HUA/ANT 110
ANT 106	HUA elective
ANT 200	ANT 100
ANT 204	ANT 100
ANT 222	ANT elective
ANT 250	SCD 345
ANT 291	Determined by topic
ANT 293	Determined by topic
ANT 299	Determined by topic
ANT 301	COA 160
ANT 302	ANT elective
ANT 303	HUA elective
ANT 304	HUA elective
ANT 308	ANT elective
ANT 311	ANT elective
ANT 314	ANT 301
ANT 322	ANT elective
ANT 325	ANT 301
ANT 330	Determined by topic
ANT 341	ANT elective
ANT 343	ANT elective
ANT 349	ANT elective
ANT 351	ANT elective
ANT 353	ANT 301
ANT 370	ANT elective
ANT 400	ANT elective
ANT 408	ANT elective
ANT 440	ANT 340
ANT 450	ANT elective
ANT 470	ANT 303
ANT 545	ANT 310
ANT 570	ANT elective
Art	
ART 101	ART 105
ART 102	ART elective
ART 103	ART elective
ART 111	ART 107
ART 112	ART 106
ART 113	ART elective
ART 121	ART 210
ART 131	ART 220
ART 141	ART elective
ART 151	ART elective
ART 161	ART 243
ART 171	COA elective
ART 173	ART elective
ART 181	COA 102
ART 183	COA 103
ART 185	COA elective
ART 187	COA 202
ART 188	COA elective
ART 191	ART elective

Center System Courses	UWGB Courses
ART 192	ART elective
ART 193	Determined by content
ART 201	ART 301
ART 202	ART 401
ART 211	ART elective
ART 212	ART elective
ART 219	ART elective
ART 221	ART 314
ART 222	ART 414
ART 223	ART 311
ART 224	ART 410
ART 229	ART elective
ART 231	ART 220
ART 232	ART 321
ART 239	ART elective
ART 241	ART 377
ART 243	ART 373
ART 245	ART 375
ART 247	ART 371
ART 249	ART elective
ART 251	ART elective
ART 252	ART elective
ART 253	ART 230
ART 254	ART 331
ART 259	ART elective
ART 269	ART elective
ART 279	CA elective
ART 289	ART elective
Astronomy	
AST 100	SEC 141
AST 101	SEC elective
AST 200	SEC 141
AST 291	SEC elective
Biological Sciences	
BAC 101	BIO 302
BAC 230	BIO elective
BAC 299	Determined by content
BOT 100	BIO elective
BIOL 107	SEC 102
BIOL 109	BIO elective
BIOL 116	BIO elective
BOT 130	BIO 202 & 203 (plus CS ZOO 101)
BIOL 151	BIO 202 & 203 (plus CS BOT 152)
BIOL 152	BIO 202 & 203 (plus CS BOT 151)
BIOL 160	BIO elective
BOT 231	BIO elective
BOT 240	BIO 240
BIOL 250	SEC 302
BIOL 260	BIO 303

Center System Courses	UWGB Courses
BOT 291	Determined by topic
BOT 299	Determined by topic
BOT 400	BIO 310
BOT 450	BIO elective
FOR 120	SEC elective
WIL 140	SEC 186
NAT 170	SEC elective
PHS 104	HUA 203, 204
PHS 170	HUA elective*
PHS 202	Both courses equal HUA 203,
PHS 203	204 and elective credit
PHS 235	HUA elective**
ZOO 101	BIO 202 & 203 (plus CS BOT 130)
ZOO 103	SEC 102
ZOO 105	HUA 102
BIOL 107	SEC 102
BIOL 109	BIO elective
BIOL 116	BIO elective
ZOO 140	SEC 186
BIOL 151	BIO 202 & 203 (plus CS ZOO 152)
BIOL 152	BIO 202 & 203 (plus CS ZOO 151)
ZOO 155	HUA elective*
BIOL 160	BIO elective
ZOO 170	HUA elective**
ZOO 203	HUA 206
ZOO 234	HUA elective
ZOO 235	BIO elective
ZOO 237	BIO elective
BIOL 250	SEC 302
BIOL 260	BIO 303
ZOO 277	BIO 342
ZOO 291	Determined by topic
ZOO 299	Determined by topic
ZOO 430	BIO 340
ZOO 505	BIO 350
ZOO 515	SEC 403 (plus CS ZOO 516)
ZOO 516	SEC 403 (plus CS ZOO 515)
Business and Economics	
BUS 101	BUA 202
BUS 110	BUS 102
BUS 194	General elective
BUS 201	BUA 300
BUS 202	BUA 301
BUS 204	BUA 302
BUS 210	BUA 101
BUS 242	BUA 217
BUS 243	BUA/ECO elective
BUS 297	Determined by topic

* *No HUA 203, 204 for full credit.*

** *CS ZOO 234 plus PHS 235 is equivalent to Green Bay HUA 203, 204.*

Center System Courses	UWGB Courses
BUS 299	Determined by topic
BUS 374	BUA 217
ECO 101	ECO 102
ECO 203	ECO 202
ECO 204	ECO 203
ECO 230	ECO 330
ECO 243	BUA/ECO elective
ECO 250	ECO elective
ECO 271	ECO elective
ECO 297	Determined by topic
ECO 299	Determined by topic
Chemistry	
CHE 100	No transfer
CHE 124	SEC elective
CHE 125	CHE 108
CHE 145	CHE 211***
CHE 155	CHE 212***
CHE 203	CHE elective
CHE 211	CHE elective
CHE 214	CHE elective
CHE 233	NSC elective
CHE 244	CHE 311
CHE 272	CHE elective
CHE 290	Determined by topic
CHE 299	Determined by topic
CHE 343	CHE 302
CHE 352	CHE 304, 305
CHE 363	CHE 303
Communication Arts	
COM 100	CPR elective
COM 101	CPR 166
COM 102	CPR elective
COM 103	CPR 133
COM 110	CPR elective
COM 130	COA elective
COM 131	THE 235
COM 150	COA 210
COM 160	CPR elective
COM 201	CPR 202
COM 202	CPR elective
COM 203	CPR 203
COM 204	CPR elective
COM 206	CPR elective
COM 220	CPR elective
COM 230	CPR elective
COM 231	THE 221
COM 232	THE 131
COM 234	THE 221
COM 266	CPR elective
COM 267	CPR elective
COM 268	CPR elective
COM 298	Determined by topic
COM 299	Determined by topic
COM 348	THE elective
COM 349	THE elective
Computer Science	
CPS 100	Elective
CPS 101	General elective
CPS 110	MAT 155
CPS 113	MAT 256

Center System Courses	UWGB Courses
CPS 111	(Faculty members will review computer science transfer courses individually. Center System courses do not necessarily parallel UWGB courses.)
CPS 130	
CPS 131	
CPS 133	
CPS 120	
CPS 210	
CPS 211	
CPS 213	MAT 256
CPS 231	See note above.
CPS 243	MAT 257
CPS 250	
CPS 251	
CPS 252	
CPS 253	
CPS 254	
CPS 255	
CPS 260	
CPS 270	MAT 351
CPS 291	Determined by topic
CPS 299	Determined by topic
Education	
EDU 100	EDU elective
EDU 101	EDU elective
EDU 200	EDU elective
EDU 223	EDU elective
EDU 251	Departmental review (3)
EDU 283	Departmental review (3)
EDU 300	EDU 410
EDU 330	PSYCH 315
Engineering	
EGR 100	No equivalent
EGR 106	CPR elective
GRA 102	SEC 105
GRA 113	SEC elective
MEC 201	SEC 313
MEC 202	SEC 314
MEC 203	SEC 316
English and Literature	
ENG 101	ENG 100
ENG 102	ENG 105
ENG 201	ENG elective
ENG 202	ENG elective
ENG 203	ENG 212 or 213
ENG 204	ENG 212 or 213
ENG 210	ENG elective
ENG 220	COA 160
ENG 250	ENG 104
ENG 260	ENG 214
ENG 261	ENG 215
ENG 262	ENG 216
ENG 263	ENG 217
ENG 264	ENG elective
ENG 265	ENG elective
ENG 266	ENG elective
ENG 267	ENG elective

Center System Courses	UWGB Courses
ENG 270	ENG elective
ENG 272	ENG elective
ENG 274	ENG 106
ENG 276	ENG elective
ENG 280	ENG elective
ENG 290	Determined by topic
ENG 299	Determined by topic
ENG 351	ENG elective
ENG 353	ENG elective
ENG 355	ENG elective
ENG 370	Determined by topic
ENG 380	Determined by topic
Foreign Language	
FRE 101	FRE 101
FRE 102	FRE 102
FRE 118	FRE elective
FRE 119	FRE elective
FRE 201	FRE 210
FRE 202	FRE 202
FRE 215	FRE elective
FRE 219	FRE elective
FRE 221	FRE 329
FRE 222	FRE 329
FRE 223	FRE 329
FRE 225	FRE 225
FRE 226	FRE 325
FRE 275	ENG elective
FRE 276	ENG elective
FRE 277	Determined by topic
FRE 291	Determined by topic
FRE 299	Determined by topic
GER 101	GER 101
GER 102	GER 102
GER 118	GER elective
GER 119	GER elective
GER 201	GER 201
GER 202	GER 202
GER 215	GER elective
GER 216	GER elective
GER 219	GER elective
GER 221	GER 329
GER 222	GER 329
GER 225	GER 225
GER 226	GER 325
GER 275	ENG elective
GER 276	ENG elective
GER 277	Determined by topic
GER 291	Determined by topic
GER 299	Determined by topic
SPA 101	SPA 101
SPA 102	SPA 102
SPA 118	SPA elective
SPA 119	SPA elective
SPA 201	SPA 201
SPA 202	SPA 202
SPA 210	SPA elective
SPA 221	SPA 329
SPA 222	SPA 329
SPA 225	SPA 225
SPA 226	SPA 325
SPA 236	HUM elective
SPA 266	ENG elective
SPA 275	ENG elective

*** *CS CHE 145 plus CHE 155 is equivalent to Green Bay CHE 211, 212.*

Center System Courses	UWGB Courses
SPA 277	Determined by topic
SPA 291	Determined by topic
SPA 299	Determined by topic
Geography	
GEO 101	GEO 202
GEO 104	EAR elective
GEO 110	GEO 102
GEO 115	GEO 215
GEO 120	EAR elective
GEO 121	REA elective
GEO 123	REA 222
GEO 124	EAR 202
GEO 125	EAR 200
GEO 130	SEC 102
GEO 277	GEO elective
GEO 291	Determined by topic
GEO 297	Determined by topic
GEO 299	Determined by topic
GEO 300	GEO elective
GEO 324	GEO elective
GEO 341	GEO 371
GEO 342	GEO 235
GEO 347	GEO elective
GEO 348	GEO elective
GEO 349	REA 382
GEO 350	SEC 303
Geology and Meteorology	
GLG 100	EAR elective
GLG 101	EAR 202
GLG 102	EAR 302
GLG 104	EAR elective
GLG 130	EAR elective
GLG 131	GEO 250
GLG 135	EAR elective
GLG 169	EAR elective
GLG 201	EAR elective
GLG 228	SEC 331
GLG 291	EAR elective
GLG 297	Determined by topic
GLG 299	Determined by topic
GLG 301	EAR 340
GLG 302	EAR 442
GLG 306	EAR elective
GLG 314	EAR 350
GLG 316	EAR elective
GLG 350	EAR elective
GLG 409	EAR 380
GLG 414	EAR 366
GLG 443	EAR 470
MLG 100	REA 222
History	
HIS 101	HIS 250
HIS 102	HIS 206
HIS 105	HUS 101
HIS 106	HUS 102
HIS 110	HIS elective
HIS 111	HIS 201 and/or elective (plus CS HIS 112)
HIS 112	HIS 201 and/or elective (plus CS HIS 111)
HIS 114	HIS elective
HIS 115	HIS 202
HIS 116	HIS elective
HIS 117	HIS elective
HIS 118	HIS elective
HIS 119	HIS 203
HIS 120	HIS 204
HIS 121	HIS 251
HIS 123	HIS elective
HIS 124	HIS elective
HIS 126	HIS elective
HIS 127	HIS elective
HIS 128	HIS elective
HIS 150	HIS elective
HIS 178	HIS elective
HIS 183	HIS elective
HIS 185	HIS elective
HIS 190	HIS elective
HIS 195	HIS elective
HIS 197	HIS elective
HIS 198	CA 210
HIS 203	HIS elective
HIS 211	HIS elective
HIS 213	HIS elective
HIS 215	HIS elective
HIS 289	HIS 310
HIS 290	HIS 311
HIS 291	HIS elective
HIS 293	HIS elective
HIS 295	HIS elective
HIS 296	HIS elective
HIS 297	HIS elective
HIS 299	Determined by topic
Interdisciplinary Studies	
INT 100	Faculty evaluation
INT 101	SCD elective
INT 102	SEC 102
INT 105	CPR elective
INT 195	SCD elective
INT 197	CPR/ART 243
INT 250	SEC 260
INT 291	Determined by topic
INT 294	General elective
INT 295	General elective
INT 296	General elective
Learning Resources	
LEA 100	No transfer
LEA 101	No transfer
LEA 102	No transfer
LEA 104	No transfer
LEA 105	No transfer
Lecture (University) Forum	
LEC 101	Social Science elective
LEC 102	No transfer
LEC 103	No transfer
Mathematics	
MAT 081	No transfer
MAT 091	No transfer
MAT 102	MAT elective
MAT 105	MAT 101
MAT 110	MAT 104 (plus CS MAT 113)
MAT 113	MAT 104 (plus CS MAT 110)
MAT 117	MAT 260
MAT 118	MAT elective
MAT 119	MAT elective
MAT 124	MAT 104
MAT 130	MAT 281
MAT 131	MAT elective
MAT 132	MAT 282
MAT 211	MAT 201
MAT 212	MAT elective
MAT 220	MAT elective
MAT 221	MAT 202
MAT 222	MAT 203
MAT 223	MAT 209, 305
MAT 230	MAT 242
MAT 232	MAT elective
MAT 240	MAT elective
MAT 262	MAT 320
MAT 271	MAT 309
MAT 272	MAT elective
MAT 299	Determined by topic
MAT 320	MAT 305, 320
Military Science	
MLS 101	MLS elective
MLS 102	MLS elective
MLS 201	MLS 221
MLS 202	MLS elective
MLS 251	MLS elective
Music	
MUS 070	Applied MUS 151
MUS 071	Applied MUS 242
MUS 072	Applied MUS 261
MUS 073	Applied MUS 164
MUS 074	Applied MUS 143
MUS 075	Applied MUS 163
MUS 076	Applied MUS 144
MUS 077	Applied MUS 145
MUS 078	Applied MUS 146
MUS 079	Applied MUS 153
MUS 107	MUS elective ****
MUS 115	MUS elective ****
MUS 121	MUS elective ****
MUS 130	MUS elective ****
MUS 131	MUS 101
MUS 132	MUS 101
MUS 136	MUS elective****
MUS 145	MUS elective****
MUS 147	MUS elective****
MUS 148	MUS elective****
MUS 154	MUS elective****
MUS 160	MUS elective****
MUS 170	MUS 101

**** *Applied music course number determined by instrument and proficiency level.*

Center System Courses	UWGB Courses
MUS 171	MUS 115, 151
MUS 172	MUS 152, 116
MUS 173	COA 120
MUS 174	COA 121
MUS 271	MUS 251
MUS 272	MUS 252
MUS 273	COA elective
MUS 275	MUS elective
MUS 276	MUS elective
MUS 280	MUS elective
MUS 281	MUS 331 and 1 cr. 332 (plus CS MUS 280)
MUS 295	Determined by topic
MUS 299	Determined by topic
Philosophy	
PHI 100	No transfer
PHI 101	PHI 101
PHI 102	PHI elective
PHI 103	PHI elective
PHI 106	PHI elective
PHI 201	PHI elective
PHI 202	PHI elective
PHI 210	PHI elective
PHI 211	PHI 111
PHI 220	PHI 208
PHI 226	PHI 207
PHI 240	PHI elective
PHI 241	PHI 102
PHI 242	PHI elective
PHI 248	HUA 205
PHI 253	PHI 211
PHI 258	PHI elective
PHI 291	Determined by topic
PHI 299	Determined by topic
PHI 348	PHI elective
Physical Education	
PED 120	Credits earned in certain physical education courses may be counted as degree credits. See current *Timetable* for statement policy.
PED 121	
PED 122	
PED 123	
PED 201	
PED 202	
PED 203	
PED 204	
PED 205	
PED 206	
PED 207	
PED 208	
PED 209	
PED 210	
PED 211	
PED 212	
PED 213	
PED 214	
PED 215	
PED 216	
PED 217	
PED 291	
PED 299	
Physics	
PHY 107	PHY SCI elective
PHY 110	PHY SCI elective

Center System Courses	UWGB Courses
PHY 120	Determined by topic
PHY 141	PHY 103
PHY 142	PHY 104
PHY 201	PHY 201
PHY 202	PHY 202
PHY 205	PHY elective
PHY 211	PHY 201
PHY 212	PHY 202
PHY 213	PHY elective
PHY 291	Determined by topic
PHY 299	Determined by topic
Political Science	
POL 101	POL 100
POL 104	POL 101
POL 106	POL elective
POL 110	POL elective
POL 116	POL elective
POL 199	POL elective
POL 201	POL elective
POL 206	POL 353
POL 210	POL elective
POL 213	POL elective
POL 219	POL elective
POL 220	POL elective
POL 221	POL elective
POL 223	Determined by topic
POL 225	POL elective
POL 243	PUA 102
POL 250	PUA elective
POL 260	POL elective
POL 275	POL elective
POL 298	Determined by topic
POL 299	Determined by topic
POL 308	POL elective
POL 324	POL 412
POL 352	POL elective
POL 354	POL elective
POL 385	POL elective
Psychology	
PSY 201	PSY 102
PSY 202	PSY 102
PSY 203	PSY elective
PSY 204	PSY elective
PSY 205	PSY 205
PSY 208	PSY elective
PSY 210	CSC 205
PSY 224	General elective
PSY 225	PSY 300
PSY 250	HUD 210
PSY 254	PSY elective
PSY 299	Determined by topic
PSY 411	Determined by topic
PSY 449	BIO 345
PSY 507	HUD 429
PSY 509	HUD 435
PSY 530	PSY 202
PSY 560	HUD 331
PSY 561	HUD 322
PSY 562	HUD 433
Sociology	
SOC 101	SOC 202
SOC 120	SOC 208
SOC 125	SOC elective

Center System Courses	UWGB Courses
SOC 130	SOC elective
SOC 131	SOC elective
SOC 134	SOC 203
SOC 138	SCD 241
SOC 160	SOC 375
SOC 170	SOC elective
SOC 250	SOC elective
SOC 291	Determined by topic
SOC 293	Determined by topic
SOC 299	Determined by topic
SOC 357	SOC 301
SOC 530	PSY 202

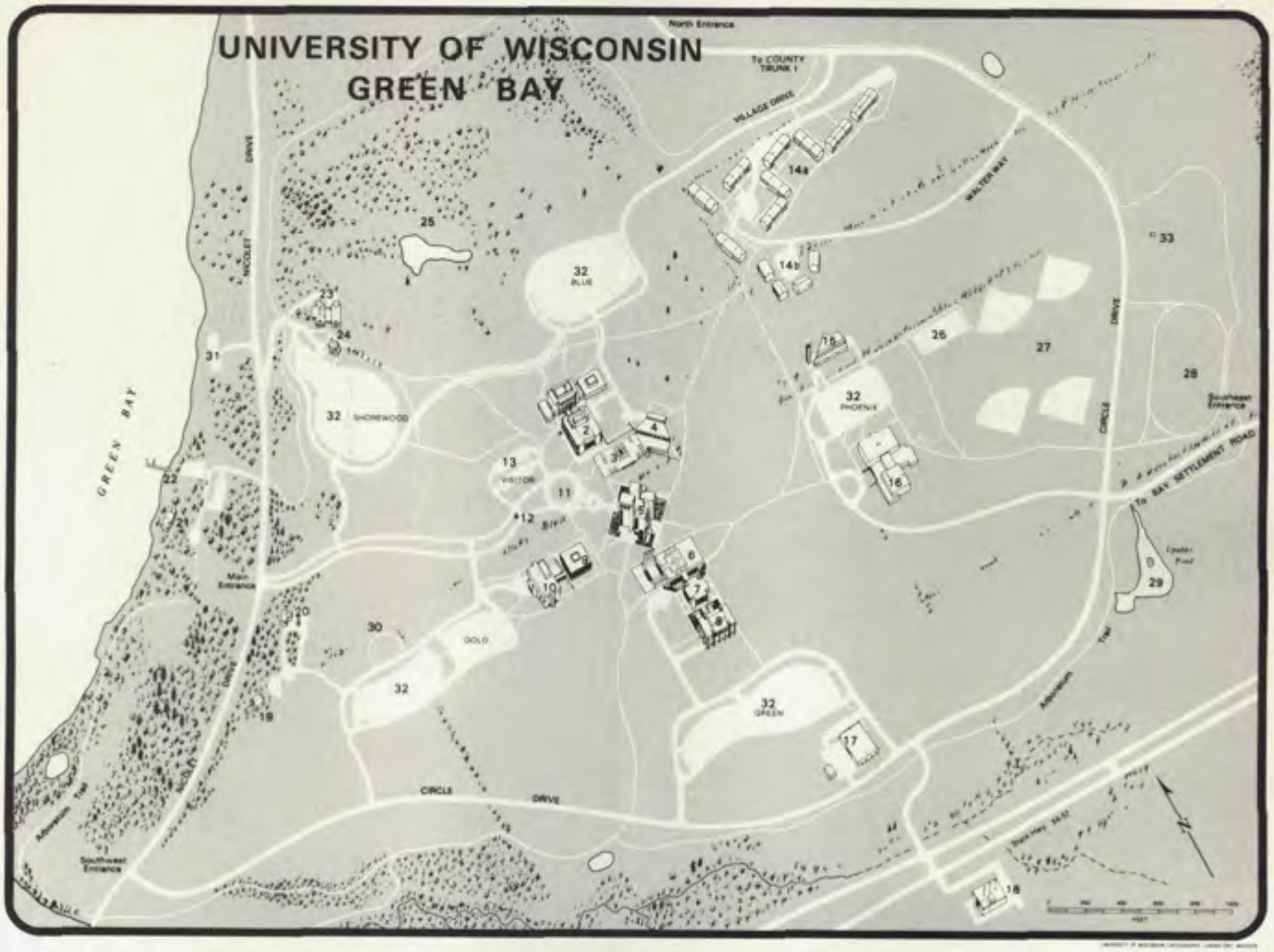
Course Abbreviations

ANT	Anthropology
ART	Art
BIO	Biology
BOT	Botany
BUA	Business Administration
CHE	Chemistry
COA	Communication and the Arts
COM	Composition
CPR	Communication Processes
CSC	Community Sciences
EAD	Environmental Administration
EAR	Earth Scienc
ECO	Economics
EDU	Education
ENG	English
FRE	French
GEO	Geography
GER	German
GRD	Growth and Development
HIS	History
HUA	Human Adaptability
HUD	Human Development
HUS	Humanistic Studies
MAT	Mathematics
MGS	Managerial Systems
MUS	Music
NSC	Nutritional Science
PHI	Philosophy
PHY	Physics
POL	Political Science
PSY	Psychology
PUA	Public and Environmental Administration
REA	Regional Analysis
SCD	Social Change and Development
SEC	Science and Environmental Change
SOC	Sociology
SSE	Social Services
SPA	Spanish
THE	Theatre
URS	Urban Studies

The designations "determined by topic" and "determined by content" mean that exact equivalent will be determined after individual consultation with Registrar's Office. Credit will be accepted.

Index

Map



Map Key

1. Studio Arts (SA)
2. Theatre Hall (TH)
3. Student Services (SS)
4. Student Union (University Commons)
5. Library Learning Center (LC)
6. Instructional Services (IS)
7. Environmental Sciences (ES)
8. Laboratory Sciences (LS)
9. Community Sciences (CS)
10. Wood Hall
11. Circle Entrance
12. Welcoming Booth
13. Visitor Parking
14a. Student Apartments
14b. Student Residence Halls
15. Ecumenical Center
16. Phoenix Sports Center
17. Physical Plant Center
18. Utility Control Center
19. Children's Center
20. Language House
21. Bayshore Center
22. Dock Facility
23. Shorewood Clubs
24. Pro Shop
25. Golf Course
26. Tennis Courts
27. Playing Fields
28. Soccer Field
29. Upahki Pond
30. Amphitheater
31. Communiversity Park
32. Parking
33. Weather Station