1974-76 Undergraduate Catalog
University of Wisconsin - Green Bay

ABOUT THE COVER

The cover design for this catalog is based on a photograph by Jerry Dell. The basic photograph, above, was transformed into a high contrast design by Dennis Thulin, who also devised the variations of it used as section title pages and colophons throughout the book.

Photographers have found this handsome tree to be intriguing subject matter. Depending upon what direction they aim their cameras, it can appear to be isolated in a vast country field or surrounded by modern campus buildings. In fact, it is located just east of the Creative Communication Building. (Photographs of the tree, taken from various angles, appear throughout the book.)

CREDITS

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Eleanor J. Crandall, Director
Virginia C. Dell, Editor
Dennis Thulin, Designer

PHOTO CREDITS

Some of the photographs in this catalog were produced by students for a class assignment in Creative Photography II, taught by Jerry Dell. Students whose work was selected for publication and the pages on which their photos appear are:
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Tom Knuth: 3, 6, 20, 23, 28, 32, 50, 54, 66, 69, 87, 103 (bottom left), 132, 137, 160, 168 (bottom left and right), 173, 174, 185.
Jack Markham: 91.

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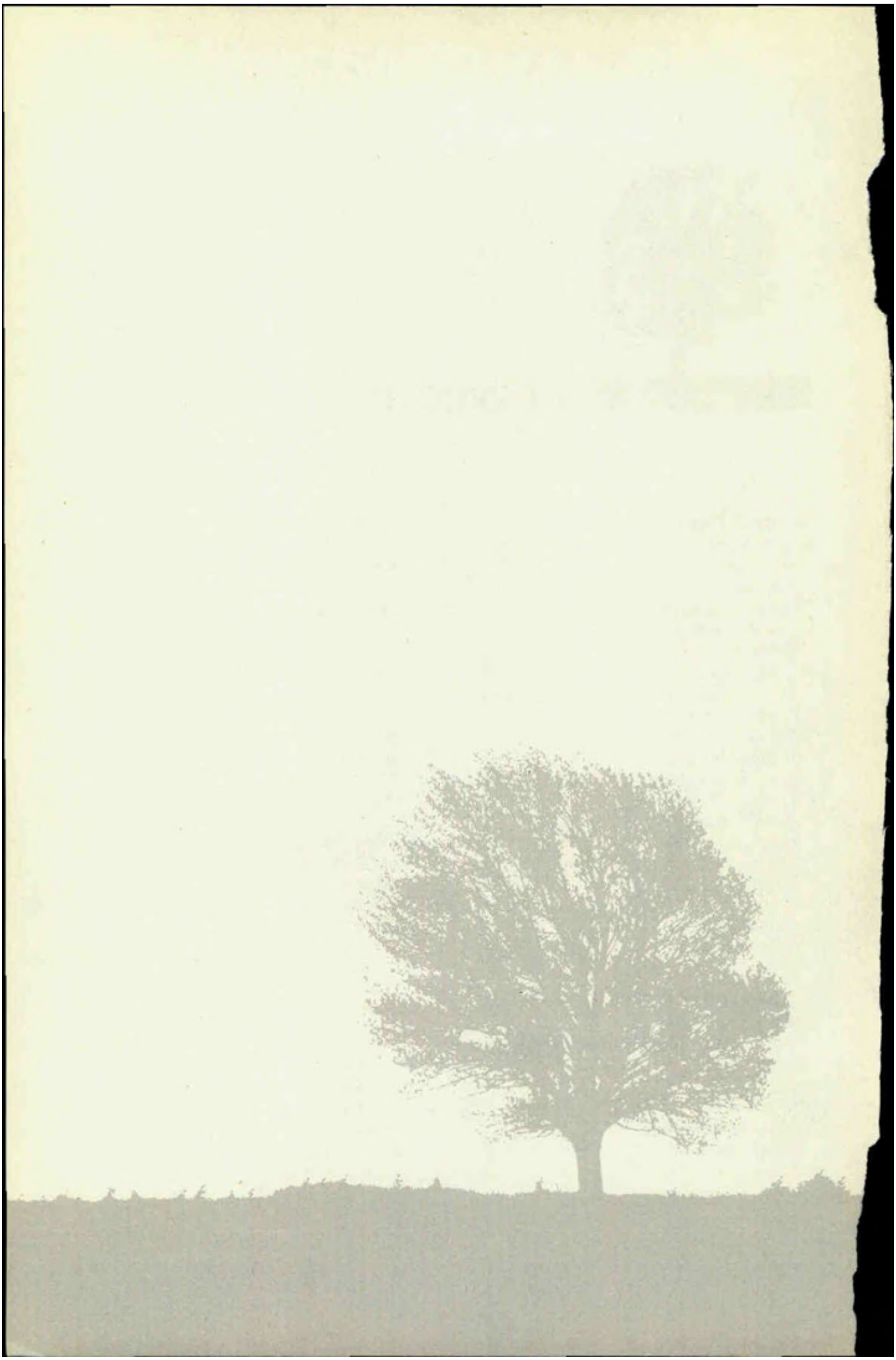


Introduction

The University of Wisconsin-Green Bay (UWGB) has a unique academic plan, a campus designed specifically to accommodate the academic plan, and an ideal location for carrying out that plan.

UWGB has a focus for all of its activities—the environment. A basic aspect of the UWGB academic plan is a commitment to preparing men and women who are concerned about the environment, whatever vocation they choose. At UWGB, "environment" is defined to include the bio-physical, social, cultural, and aesthetic spheres.

Because of this special focus, UWGB occupies a singular position in the University of Wisconsin System. UWGB has been designated to carry out a special mission; its mandate is to "offer a focused, institutionwide academic program that is innovative and substantially unique in both its goals and organization."

All of the courses necessary for basic preparation for a wide variety of professional, creative, business, administrative, and technical careers are available at UWGB. What makes UWGB distinctive is that its courses are presented in the context of this special plan, relating study in all fields to problems of the environment. Thus the UWGB graduate, whatever his or her chosen vocation, is unusually well prepared to deal with the greatest challenge facing the world.

The campus, located at the northeastern edge of Green Bay, Wisconsin, provides a harmonious setting for a university with UWGB's special focus. The 600-acre site slopes from an important geologic formation—the ridge of the Niagara Escarpment which creates Niagara Falls hundreds of miles to the east—to the waters of Green Bay. The gently rolling terrain formerly was farm land and a private golf course. Wooded sections of the campus have been designated as conservancy areas; some meadows are being returned to natural ground cover. Clusters of new trees and shrubs will increasingly enhance the site. From this setting are distantly visible the outlines and smokestacks of the mills and factories which are a major economic resource of Northeast Wisconsin. Not many miles away are the lakes and forests of Northern Wisconsin and the recreational and natural area of Door County. Thus, UWGB's location is most appropriate for the study of the relationship of humans to their environment.

UWGB's buildings are designed to accommodate the academic plan. An eight-story Library Learning Center is the center of the campus; buildings housing academic, student service, and instructional resource functions are clustered around that core. The oldest of the buildings opened in the fall of 1969 and construction has proceeded steadily until the basic academic plant is 75 percent complete.

Three more buildings are in the planning stage. They are a University Commons, a Physical Education building, and a central receiving, grounds, and maintenance building.

Privately owned and operated student apartment buildings are adjacent to campus property. Other campus facilities include a nine-hole golf course on the site of a former private course, a soccer field, tennis courts, other playing fields, a picnic area, and a student union located in the former golf course clubhouse. Facilities for water sports are planned.

UWGB began in 1965 when the Wisconsin Legislature authorized a new degree-granting campus of the University of Wisconsin to be located in northeastern Wisconsin. It was to be a four-campus institution, comprised of the existing two-year UW Centers in Manitowoc, Marinette, Menasha (Fox Valley), and Green Bay. The four-year university was to be located in Green Bay and the Center's building used for classes until a new campus could be built.

Three years of intensive research and planning for UWGB followed under the leadership of Chancellor Edward W. Weidner. What resulted was an academic plan shaped by some of the main concerns of the present era and by a commitment to providing relevant education centered around the student. When the plan was completed in early 1968, its primary principles were: a focus for the entire institution; an interdisciplinary approach; an organization around groups of related concerns rather than traditional disciplines; a problem orientation, and a belief in commitment and dedication to a better world on the part of the students, the faculty, and the University.

In July 1968, UWGB began operations in an administrative sense. When Academic Year One began 14 months later, the first buildings had emerged from construction scars on the campus site, the Chancellor's office was still in a converted farmhouse, and other offices and services were scattered in summer cottages, former homes, and rented commercial space. Five years later, at the end of the 1973-74 academic year, the campus was nearing completion and nearly all of the University's functions had moved to permanent locations.

The four-campus relationship continued until 1971, when merger brought into the University of Wisconsin System all of the state's degree-granting institutions. One effect was to detach from UWGB the two-year campuses at Manitowoc, Marinette, and Menasha. Informal close ties with those campuses remain.

The future of UWGB will be guided by a recently-completed Ten Year Plan assessing UWGB's past and outlining goals and objectives for the next ten years. These goals and objectives are built upon UWGB's special environmental mission.

Students are a more significant indicator of growth than buildings. Enrollment on the Green Bay campus for the first year was 1,357; for the fifth year it was nearly 4,000. Increasing numbers of students are coming from out of state and from other countries to study at UWGB.

UWGB has gained attention from journalists and educators around the world and is attracting not only students, but faculty and visitors from all parts of the country and the world.

It is the UWGB academic plan, primarily, that attracts students, faculty, and visitors.

Under this plan, each student at UWGB constructs his or her academic program around a broad problem area having to do with some aspect of environment, rather than around a traditional discipline. The problem may be related to the bio-physical environment, such as environmental control, or to

the impact of environment on humans, such as growth and development. It may be a problem of the social environment, such as urban analysis, or the processes of modernization. It may be a problem of the cultural environment, such as humanism and cultural change. Twelve of these broad areas have been defined. They are called concentrations, or majors.

Each student, then, chooses a concentration (major). The student may take courses in a variety of fields, as in a traditional university, but must relate the knowledge acquired to his or her area of concentration.

Within the concentration (major), the student may select a single subject field, such as biology, political science, or anthropology, as a co-major. The co-major at UWGB is called an option. In addition, a concentration (major) in almost any field may be accompanied by a professional minor—called a collateral at UWGB—that leads to a teaching certificate or credentials in business administration or other professional fields.

Many opportunities exist for students to shape their own educations at UWGB. A

student may even design a Personal Concentration if no existing concentration meets his or her needs. UWGB students also may choose independent study, work on projects in the community and region, choose guided travel in this country and others, or initiate their own courses. University Without Walls is an alternative degree program for highly motivated individuals who are interested in designing their own learning program based upon a broad spectrum of resources. All of these possibilities are discussed in greater detail elsewhere in this catalog.

Superficially, it may appear that UWGB is much like other universities. It trains business administration specialists, elementary and secondary school teachers, artists, musicians, actors, biologists, and sociologists. A student may select for intensive study a foreign language, English literature, philosophy, or history. All of the usual disciplinary courses can be found. There is much that is familiar at UWGB, but there is also much that is new.

The UWGB academic plan emphasizes applied liberal education and is based on three principles. The first is social responsibility. UWGB holds to the idea that there is a social responsibility to every job and discipline, that values must be applied to factual knowledge. Within the confines of the mission of a university, it is trying to make all disciplines, all professions, all subjects, as responsibly human as possible.

Equally important is problem orientation, which means that a student's education is related to real problems, carrying out the University's philosophy of knowledge put to use. Students and faculty identify and confront problems and have the opportunity to learn how subjects as diverse as chemistry, music, sociology, and biology can contribute to solutions.

The third principle is integrative education, which means that every part of the educational enterprise is related to every other part. Liberal education too often means that the student winds up with a narrow set of courses or a hodgepodge. UWGB's plan of applied liberal education is aimed toward coherence and is designed to liberalize and broaden.

Several distinctive elements have evolved from these principles: flexibility and student initiative; an orientation emphasizing the present and future instead of the past; off-campus learning in the "real world" through community action and practical experience; the opportunity to study in another culture; education for responsible employment and citizenship, and a close relationship between students and instructors.

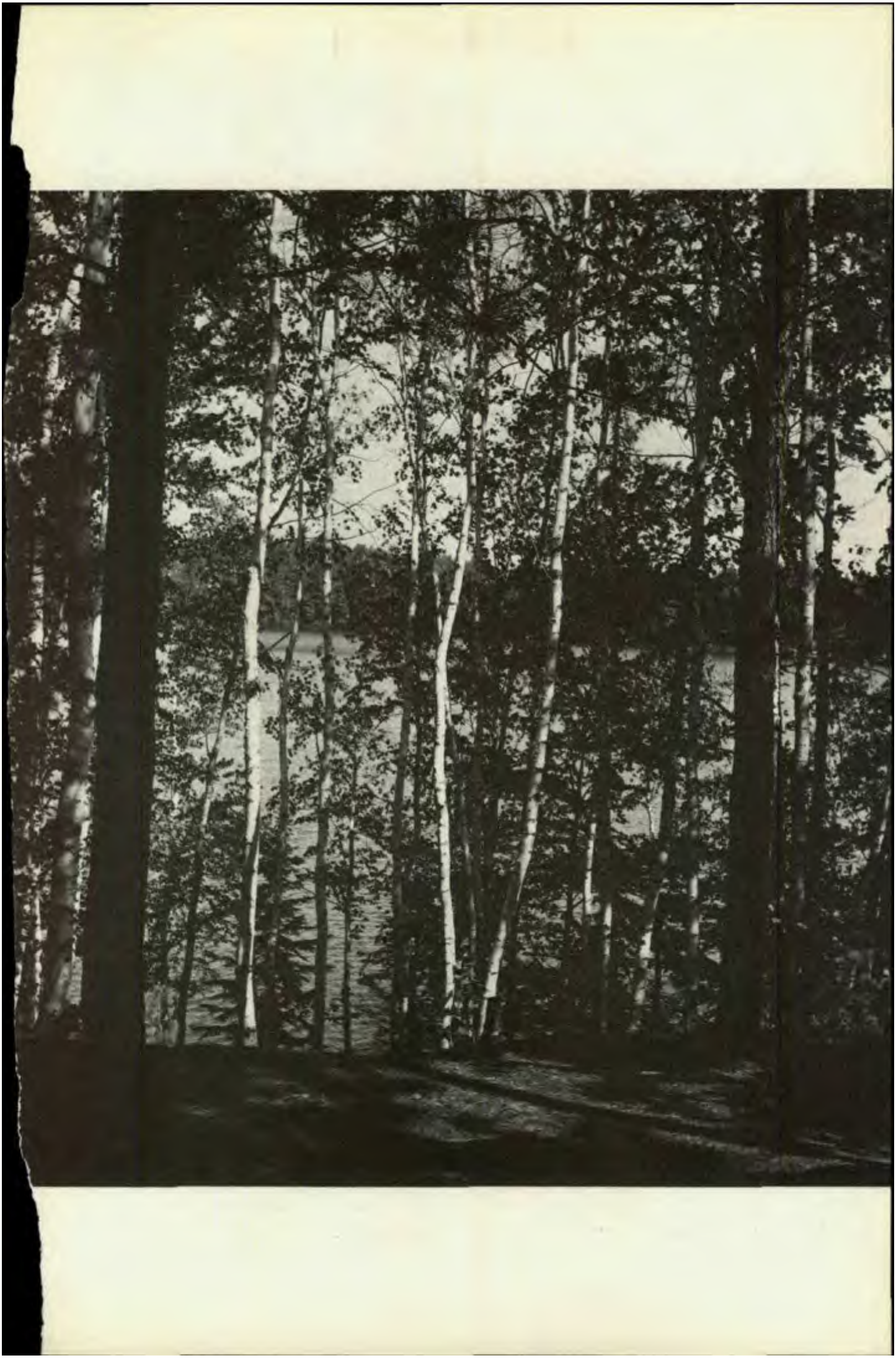
UWGB's innovative approach is being carried forward in a graduate program which began with the 1974 fall semester. The program leads to a Master of Environmental Arts and Sciences. The MEAS program is described in a separate publication.

UWGB recognizes the vital importance of a vocation in the life of every individual. Career education is a part of its philosophy. At the same time, it cautions against taking too narrow a vocational view of the educational experience offered at UWGB. Those students who are seeking purely technical training for specific jobs would be better advised to go to the appropriate technical or business school.

A university education has as its primary concerns the broadening of intellectual horizons, the development of cultural interests, the examination of value systems, and the disciplining of mental processes. To the high school graduate looking ahead to his or her mature role in society, these may seem to be "impractical" objectives. But the opposite is true.

Employers are enthusiastic about the qualifications of UWGB graduates. The students' experience in problem solving, application of knowledge to practical problems, exposure to working in the community, and an attitude of social responsibility are particularly praised by employers.

With rare exceptions, it is a mistake for a young person starting college to feel that he or she must make a definite and permanent decision about vocational plans. There are still too many exciting career possibilities the



young student has never considered, or of which he or she is only dimly aware. Furthermore, during a lifetime career, fields will open that are not now apparent to anyone. Experience shows that many educated persons today engage in several different careers in the course of their lives.

It is a fact that education can no longer be regarded as a process which occurs in youth to prepare for adulthood. Changes in society have made lifelong learning not only feasible for most men and women, but desirable and perhaps essential. More and more men and women who have been out of school for some time are returning to upgrade career skills or to prepare for new career fields; to acquire fundamental knowledge or to broaden knowledge; to grow toward self-understanding; or, simply to take courses in an area of interest.

It is important for a high school graduate planning a university education and a career to remember that education does not end with graduation from a university. University quality education is an experience that may be relevant or desirable at various times throughout life.

THE CAMPUS

The University of Wisconsin-Green Bay was created on the foundation of a freshman-sophomore UW Center established in Green Bay in 1933 by University Extension. From three freshman courses taught in rented rooms, it grew to more than 1,000 students by the time it was integrated in 1968 with the new four-year University. The Center's building on Deckner Avenue in Green Bay, built in 1960, was used for UWGB classes until a new campus could be built.

A 600-acre site just northeast of the City of Green Bay, occupied by farms and a private golf course, was chosen for the new University. Ground was broken in November, 1967. The comprehensive development plan called for clusters of academic buildings, housing groups of concentrations with related concerns and surrounding a central Library Learning Center.

The first group of three buildings, opened in 1969, was designed as a permanent home for the College of Environmental Sciences but was used temporarily by all of the colleges. The Library Learning Center was occupied

early in 1972. Its top two floors housed administrative and faculty offices; most of these are moving to other locations as other buildings are completed. Another cluster of three buildings, the College of Creative Communication, including a 485-seat theater, a fine arts gallery, a variety of studios, and other facilities, opened in September, 1973. A third complex, the College of Community Sciences, opened in the summer of 1974. One more group of buildings, the College of Human Biology, remains to be built to complete the basic academic plant.

The modern, excellently equipped buildings are related through design elements and materials, but they are not alike. The Library Learning Center, at the core, is the only brick building. Its eight-story height soars over the lower buildings of the academic clusters. The design, a basic pinwheel shape, provides excellent views of the entire campus and environs from the upper stories. The academic clusters are three and four stories high. The building nearest the Library Learning Center in each cluster provides an assembly hall or theater and a display or gallery space. The exteriors of these buildings are all basically concrete construction, but each group of buildings has a different accent material. One has steel rusted to a rich red-brown; another has copper sheathing; the third, painted steel. Two buildings are below ground.

The academic buildings are connected outdoors by plazas and walkways and indoors by a system of concourses which are partially below ground, punctuated by windows which open onto textured stairwells or landscaped areas. Both the outdoor and indoor spaces provide gathering places for people.

A new commons building, to be built adjacent to the academic buildings, will house an expanded food service.

Other campus facilities include three student activities buildings, one of them new and two formerly used by the private golf course. These buildings are the Shorewood Club West, with lounge and game rooms; the new Shorewood Club East containing a cafeteria and a dining room that can be used for meetings and social events; and the Pro Shop, housing student organizations.

On the bay shore, near the southwest entrance to the campus, is a renovated cottage which serves as the Human Development Center, a preschool that provides a training and observation facility for students in growth and development and early childhood education. Two other former residences on the west side of the campus house the Day Care Center, a service which is available to students and staff, and the Ecumenical Center, headquarters for an interfaith campus ministry.

Campus athletic and recreational facilities are varied. A nine-hole golf course was rebuilt from the previous 18-hole private course. A soccer field with team rooms and spectator areas serves one of the University's major varsity sports. The other major varsity sport, basketball, uses the facilities at Brown County Veterans Memorial Arena on the southwest side of Green Bay for games against major collegiate opponents.

Other facilities include tournament size color-surfaced tennis courts, baseball and softball diamonds, and other playing fields. In winter, the campus is popular with cross country skiers. The new physical education building will include a swimming pool and a gymnasium.

The Mahon Creek environs on the southwest corner of the campus have been designated a conservancy area. University-owned parcels along the bay shore have been cleared of deteriorated cottages and will be left to return to a natural state except for one area developed as a picnic site and another which will be developed for water sports. Areas along the Niagara Escarpment on the east boundary of the campus will be left natural as well.

Pedestrian and bicycle paths link the central buildings with the outlying areas. At the southwest campus entrance, the bicycle path links with a three mile city-constructed path which terminates at the city-owned Bay Beach wildlife sanctuary and recreation area.

Student housing is privately owned and operated. There is room for almost 500 students in one and two-bedroom apartments adjacent to the campus.

Except for some scattered residential areas in the campus vicinity, urban development has not spread from Green Bay to the campus. Green Bay city buses link downtown and the campus. Very near and clearly visible from the campus are fields, meadows, and farmsteads—the predominant features of the Northeast Wisconsin landscape.

THE COMMUNITY

Green Bay, discovered in 1634 by the French explorer Jean Nicolet, is Wisconsin's oldest European settlement. Nicolet sailed into Green Bay, 14 years after Plymouth Rock, and landed very near the present site of UWGB. Long before the French arrived, the area was the home of the Potawatomi, Winnebago, Menominee, Sauk, Fox, and Chippewa Native American people.

The first Europeans were fur trappers and missionaries, followed by lumbermen. Green Bay's strategic location at the mouth of the Fox River where it empties into Green Bay, connecting Wisconsin waterways with the Great Lakes, assured its early and continuing development as a trading center. With the completion of the St. Lawrence Seaway, Green Bay became an international port.

Today, Green Bay's 88,000 residents include descendents of the Native American groups, French, and English, as well as Belgians, Poles, Germans, Scandinavians, Dutch, and Irish.

Green Bay is at the eastern end of a densely populated valley that is one of the nations' largest paper producing areas. Other major Green Bay industries include meat packing, cheese manufacture, food processing, and metal working.

Perhaps best known for being the home of the Green Bay Packers, Green Bay also has a professional hockey team, the Bobcats.

Community resources include community theater and musical organizations; a growing public library system with a new central facility; daily and weekly newspapers; four television stations; four radio stations, and three hospitals. An educational television station, WPNE-TV, and a student-run radio station, WGBW-FM, operate from the UWGB campus. St. Norbert College, a coeducational Catholic-sponsored liberal arts college is in nearby DePere. The area also supports Northeast Wisconsin Technical Institute, and several business colleges.

In contrast to the industrialization of the city and sections of the Fox River Valley, most of the landscape in the Green Bay vicinity is farmland devoted primarily to dairying. The gently rolling landscape, marked by areas of rounded ridges and scooped valleys, is a testament to the last great ice age which covered Northeast Wisconsin. The City of Green Bay is located at the entrance to two areas of Wisconsin known for their natural beauty. To the north are the expanses of forests dotted with lakes that stretch all the way to Lake Superior. Northeast of Green Bay, the Door County peninsula juts into Lake Michigan. Door County is characterized by cherry and apple orchards, small farms, and tiny villages. It has long been a vacation spot and is known for its summer cultural activities.

Major urban areas are within easy traveling distance from Green Bay, as well. 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.

Green Bay is served by railways, highways, and airlines. The visitor can easily reach the city by automobile, bus, or plane.

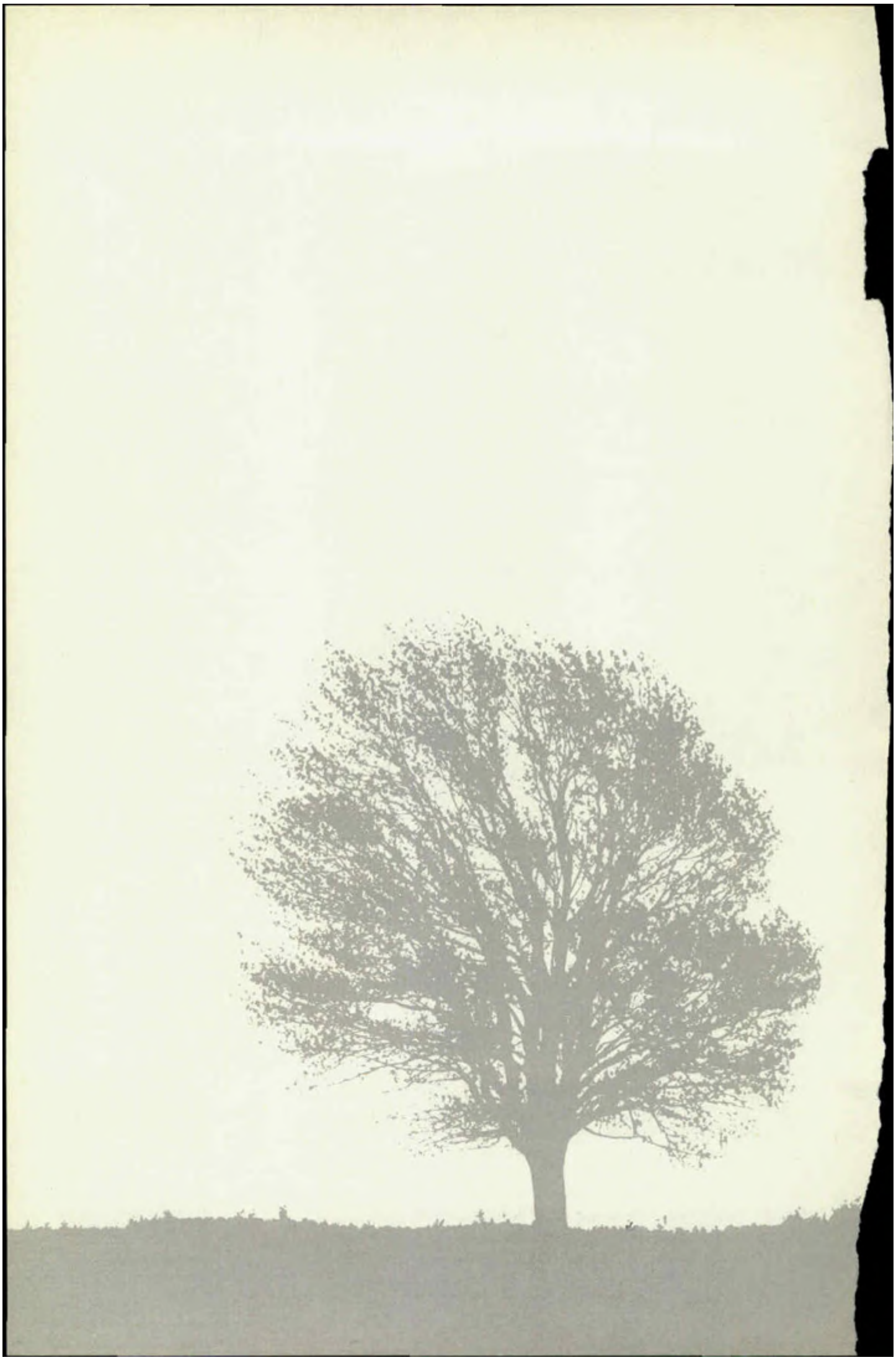
HOW TO USE THIS CATALOG

By reading this catalog carefully, you can learn much of what you need to know about the programs, facilities and services available at UWGB. Because the catalog has been prepared well in advance of the academic year, however, it may not contain some late information, such as additions to course listings, changes in fee schedules, or detailed information related to majors (concentrations), co-majors (options), or professional minors (collaterals).

Thus, while it might be possible for you to plan a program of study using nothing but this catalog, it is not recommended that you try to do so. Instead, after familiarizing yourself with the basic material, you should begin the planning of your individualized program with help from the Academic Advising Office. Before you begin the process of program planning, of course, you should have completed the steps necessary for admission to the University, as described in the section on admissions that appears later in this catalog.

Academic advising is available at every point in your educational program. Also available are brochures and handbooks describing specific programs in greater detail than is possible in this catalog.

These resources are designed to help you obtain maximum value from your educational experience at UWGB. We encourage you to use them.



The Academic Plan

AN INTEGRATED APPROACH TO KNOWLEDGE

UWGB's environmental focus provides an integrated approach to knowledge that pervades every facet of campus life. Not only are classroom activities and ideas made relevant but students also participate in a variety of activities outside the classroom, both on the campus and in the community, that are designed to enrich their educational experience.

The four colleges of UWGB—Community Sciences, Creative Communication, Environmental Sciences, and Human Biology—are organized around environmental themes rather than according to traditional disciplines. The names suggest the focus of each college and its particular area of teaching, research, and community outreach activity. The School of Professional Studies complements the theme colleges and is responsible for professional programs that relate to them.

Each student at UWGB selects a particular environmental theme to study in depth. Called concentrations, or majors, these areas of study cross disciplinary and college lines. The student also has the opportunity to study a second, more intensified, field when he or she selects an option, or co-major, along with a concentration. He/she is expected to relate work in the option—sociology, for example—to the broader area of the concentration—urban analysis, for example. The student who wishes to gain professional competence to complement the concentration or concentration-option has a third choice available in a variety of professional minors, called collaterals, and preprofessional programs leading to specialized or graduate work.

The student normally enters the college or school in which he/she expects to major at the beginning of the sophomore year. By the junior year the concentration or concentration-option and the professional collateral, if any, should be selected.

THE COLLEGES AND SCHOOL

The College of Community Sciences

The College of Community Sciences (CCS) offers programs focusing upon the role of men and women in the social environment and the processes by which they modify it. The college accents those areas of understanding and perception that serve to prepare contemporary students for effective careers and citizen participation in communities at all levels from the local to the international.

Programs emphasize the comparative aspects of the community sciences, relating the modes of analysis characteristic of the community sciences to the Northern Great Lakes region and to other parts of the nation and the world.

The Modernization Processes, Regional Analysis, and Urban Analysis concentrations make up the College of Community Sciences.

The College of Creative Communication

Because men and women are beings of many environments, our education should not confine us to a limited view of ourselves. A person is not only a social creature and an ecological organism, but also a seeker after aesthetic, intellectual, and spiritual fulfillment. Although it behooves us to accept the limitations and challenges of our animal ancestry, we must at the same time develop as profoundly as possible a unique self-awareness. UWGB believes that the traditional walls between disciplines, which too often give students narrow conceptions of themselves, are not only artificial and irrelevant but dangerous as well.

The unfortunate results of the traditional compartmentalized education are all around us. On religious and political grounds we have exterminated each other. On economic and technological grounds we polluted our water, poisoned our air, raped our land, and are well on our way toward annihilating ourselves through our single-minded and arrogant exploitation of our natural surroundings.

The College of Creative Communication (CCC) offers the dimensions of aesthetics and of values and some understanding of the ways in which they are perceived and transmitted. It offers the humane dimension that assigns meaning and significance to our biological, social, and scientific environments. In short, it offers the concepts of unity, truth, and beauty which are, or should be, the words that suggest the ultimate values of our human dimension.

Concentrations in the College of Creative Communication are Communication-Action and Humanism and Cultural Change.

The College of Environmental Sciences

The College of Environmental Sciences (CES) offers programs designed to develop the concept of ecosystems and to provide an understanding of the exchange of materials and energy between living organisms and their physical and chemical environment, the use and management of natural resources, and alterations of ecosystems due to air, water, and soil pollution. These programs seek to prepare students to participate in solving the problems of environmental quality and in managing natural resources.

CES contains the concentrations in Ecosystems Analysis and Environmental Control. A proposed merger of the two into a single concentration in Environmental Science is expected to provide additional flexibility in program planning for science oriented students.

The College of Human Biology

The programs of the College of Human Biology (CHB) are concerned with the theme of humans in relation to their environment. Alone, and in populations, we are subjected to many extensive and serious problems. Often under conditions of overcrowding and malnutrition, we must strive for healthy and meaningful growth and development. Of utmost concern is the ability to adapt to these environmental stresses which, although well-documented, are inadequately understood.

The role of CHB is to prepare students to work in these stress areas in response to the needs of our society. This preparation requires an understanding of biology and behavior at every stage of the life cycle.

Four concentrations make up CHB: Growth and Development, Human Adaptability, Nutritional Sciences, and Population Dynamics.

The School of Professional Studies

The School of Professional Studies is made up of a professional concentration in Managerial Systems and four collaterals (or professional minors).

Managerial Systems is designed for the student who wishes to focus on the fields of business or public administration.

Teacher certification is available through the professional collateral in education. The combination of this collateral with the appropriate concentration or concentration-option provides a program which results in certification

to teach at the elementary or secondary level in the public schools of Wisconsin, and, on a reciprocal basis, in some 35 other states. (Certification at the preschool and kindergarten level is available through the concentration in Growth and Development.)

Several preprofessional programs are offered through the professional collaterals in environmental administration, leisure sciences, and social services. Other preprofessional programs are described in a special section later in this chapter.

DEGREES OFFERED

UWGB offers ten undergraduate degrees:

Bachelor of Arts or Science, Environmental Sciences
Bachelor of Arts or Science, Human Biology
Bachelor of Arts or Science, Community Sciences
Bachelor of Arts or Science, Creative Communication
Bachelor of Arts or Science, Administration

UWGB also offers a graduate program leading to the degree, Master of Environmental Arts and Sciences (MEAS).

For graduation, 124 semester hours of degree credit and a cumulative grade point average of at least 2.0 are required. A semester's minimum load for a full-time student is 12 credits; the normal maximum load is 18 credits. Qualified students who wish to take more than 18 credits in any one semester must request permission on a petition prior to registration. An average semester load is 15 or 16 credits. Twelve credits are considered a maximum full-time load for graduate students.

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. Those falling below a 2.0 average 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.

CHOOSING A MAJOR

To graduate from UWGB, a student must meet the all-University requirements (described later) and complete a major: 30 to 36 credits of junior-senior level courses organized around an environmental theme. Three types of choices are available. A student may major in a concentration, a concentration-option, or—if no existing program meets his or her needs—may design a major in consultation with appropriate faculty members.

Choice 1—The Concentration

In keeping with the academic focus of UWGB, major *programs* are designed to give the student pan-disciplinary knowledge that *will* equip him/her to deal with various environmental problems. The theme colleges offer 11 such programs, called concentrations, and a professional concentration in Managerial Systems is offered by the School of Professional Studies.

Several major programs are jointly planned and administered by two or more concentrations. Students who desire special emphasis in Environmental Design or Environmental Health may do so by selecting one of these inter-concentration programs which are described at the end of the concentration section (or see index).

The student who selects this type of major is required to complete 30 credits of junior-senior level courses that reflect an interdisciplinary focus on an environmental problem. The student should seek the aid of a concentration adviser in planning the program.

Choice 2—The Concentration-Option

The student who wishes to combine his/her concentration with work in some depth in a specific discipline, profession, or field of knowledge—called an option, or co-major—may select a combination major: the concentration-option. The program must be approved by both the concentration adviser and the option chairperson.

The student normally is required to take 36 credits related to the concentration-option at

the junior-senior level. At least 12 of these credits must be in the concentration. The balance of the credits, normally 24, relate the option to the concentration. For example, the student who wishes to study the chemical aspects of water pollution might select a chemistry-physics option to complement his/her Environmental Control concentration. Similarly, a student might supplement the Urban Analysis concentration with an option in sociology.

The student who chooses the professional concentration in Managerial Systems also fulfills a cognate, which consists of courses approved by an adviser of one of the theme college concentrations.

These examples are illustrative only and should not be taken as limiting the possibilities for concentration-option combinations. The student is encouraged to design an individual program in consultation with the concentration adviser.

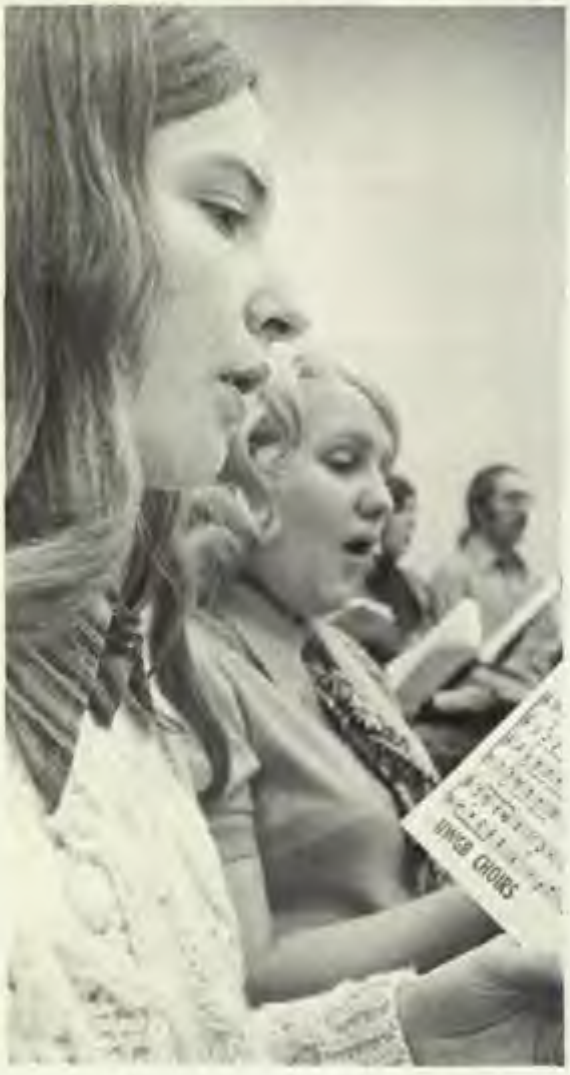
Choice 3—The Personal Major

While the concentrations provide a wide variety of program emphases, particularly when combined with the options, an occasional student may find that his/her interests direct him/her toward a problem which is not represented adequately in any single concen-

tration. Such a student may elect to design an individual program in the spirit of the *UWGB academic plan.*

In keeping with the academic plan, a personal concentration must be interdisciplinary; must focus on the application of competencies and knowledge to environmental problems; must not be overly specialized but may involve solving a problem in a specialized area if several academic disciplines are investigated and applied in reaching a solution; and must have a focus, such as a conceptual or applied problem to be understood or specific competencies to be mastered.

In planning a personal concentration, the student must determine his/her goals and how the educational opportunities of UWGB *can* help to reach those goals; define, clarify, and conceptualize educational objectives; and design an educational program that meets these goals and objectives. This program may consist of any combination of *regular courses, experimental courses,* independent study, internships, off-campus projects, and special programs, as long as the combination comprises a coherent program and contains a minimum of 30 credits at the junior-senior level.



The personal concentration must be feasible within the resources of UWGB, especially in regard to appropriate advisers, supervision, and materials. Costs for materials which the University does not have, adjunct faculty, consulting fees, and courses that may be taken off-campus are the responsibility of the student.

A personal concentration should be written during either the second semester of the sophomore year or first semester of the junior year, which is when most students declare a major. Writing it later than this may require the student to earn more than the minimum 124 credits needed for graduation and/or may delay graduation.

A student who wishes to develop a personal concentration should consult an assistant dean of the colleges, who will identify resource persons who can help devise a preliminary proposal and suggest faculty members who might serve as a personal adviser. The student then works with the adviser to develop the program in detail, after which it is submitted to the Personal Concentration Committee for review and approval.

In summary, the personal concentration is an alternative for the student whose educational objectives cannot be met by an existing concentration. It may be planned around any theme that is consistent with the University's commitment to interdisciplinary education and which focuses on problems of the physical, social, and cultural environments.

Professional Application

*The student may choose to emphasize pro*fessional application of his/her major by selecting either a collateral or a preprofessional program. These programs can be applied to either the concentration or the concentration-option.

Although the three types of majors described above have direct job relevance, there are several special applications that require some additional particular competence. To meet this need, a student may select a collateral (or professional minor) which supplements the major and provides him or her with a professional-specialist orientation.

Professional collateral courses are offered in education (leading to teacher certification at the pre-school, elementary, and secondary levels), environmental administration, leisure sciences, and social services. In most cases 18 credits are required in addition to the 30-credit concentration or the 36-credit concentration-option.

Preprofessional Programs

Three kinds of preprofessional opportunities are present at UWGB. First, regular concentration majors offer appropriate preparation for most graduate professional schools including law, medicine, dentistry, social work, music, and others.

Second, for the student desiring a bachelor's degree in engineering, or certain other applied fields, UWGB offers a special two-year preprofessional program.

Third, a student desiring both a liberal and a technical bachelor's degree can select a 3-2 plan leading to both a bachelor of arts (or science) degree at UWGB and a bachelor of engineering (or another applied field) at another institution. Normally three years are spent at UWGB, two at the other institution.

These programs are described in some detail in a later section.

THE GRADUATE PROGRAM

UWGB's new graduate program is as responsive to the variety of human talent as it is to the urgency of the environmental crisis.

The program, which leads to a Master of Environmental Arts and Sciences degree (MEAS), is personalized and problem-centered so that students can develop their abilities by concentrating on the environmental problem that most concerns and intrigues them.

Because almost no environmental problem of any scope can be solved within a single discipline, there is little danger that the student will be either isolated in a narrow specialization or cut off from vocational opportunities in the modern, shifting job market. The MEAS program is invigorated by interdisciplinary teamwork, and its graduates will be generalists, not technicians. Technical competence is not neglected, but it does not dominate.

By the same token, the student's chosen environmental problem is in no way limited to the physics and chemistry of pollution. At UWGB, it is understood that the arts and humanities, economics, the sciences of life and behavior, education, and communication all deal with the precious, controversial links between the person and the environment, both man-made and natural.

Prospective students must be prepared to take a large measure of responsibility for defining their objectives and planning their own MEAS programs. For this reason, the MEAS is particularly suitable for mature students as well as new graduates.

Before beginning his/her studies, the student submits a statement of aptitude and interest. On the basis of this statement, a faculty committee is selected to participate in the design of the individual study plan. Each plan follows this broad outline.

Formal coursework	12-15 credits
Assigned study	9-12 credits
"Thesis"	6 credits
Minimum requirement	30 credits

The formal coursework is selected from upper division courses and from courses specifically designed for advanced environmental study.

The assigned study can be completed in many ways. Some choose to master new skills—a mathematician may study sociology in order to apply mathematics meaningfully to that field, for example. Other possibilities are internships, field work, independent and

tutorial study, a program to deepen or broaden an existing skill, additional formal coursework, and credit transferred from other institutions. The only limitation is that the graduate committee agree.

The "thesis" is the organizing center and culmination of the MEAS program. But it is not necessarily the traditional report of basic research. In fact, students are encouraged to seek relevant publics for the materials they develop and translate their knowledge into forms that will reach beyond campus publics—perhaps an in-depth filmed documentary, a fine arts exhibit, or a position paper for environmental policy.

The University also encourages the appointment of a non-UWGB member on a student's graduate committee. Such a *member might be a representative* of local commerce or industry, a local educator, a member of a state agency, a faculty member from another university, or simply a concerned citizen.

Basic admission requirements and information on expenses and financial aids available to graduate students can be found in the appropriate section later in this catalog. The graduate program is described in detail in a separate publication.

A NOTE ON TERMINOLOGY

The reader of this catalog is reminded that a *concentration* at UWGB is equivalent to a *major*, an *option* is equivalent to a *co-major*, and a *collateral* is equivalent to a *professional minor*. From time to time the terms are combined, as in concentration major, to remind prospective students of the equivalency and help them become accustomed to the terminology of the UWGB academic plan.

ALL-UNIVERSITY REQUIREMENTS

An undergraduate education is a liberating experience. In the context of additional knowledge, this experience takes place as students develop their processes of thinking and review and reinforce their values and sense of commitment. To this end, UWGB has established certain all-University requirements.

Firmly required courses are few in number, however, and even within the general requirements the student may take most required courses on a pass-no credit basis, except the Liberal Education Seminars and those *courses* that are part of the concentration (major), option (co-major), and/or collateral (professional minor). The student may also be able to satisfy some of the requirements by special examination.

Prerequisites which indicate the level of proficiency required to carry a course are essentially advisory and will often be waived, allowing the student to register for the course by demonstrating proficiency and obtaining the consent of the instructor in advance.

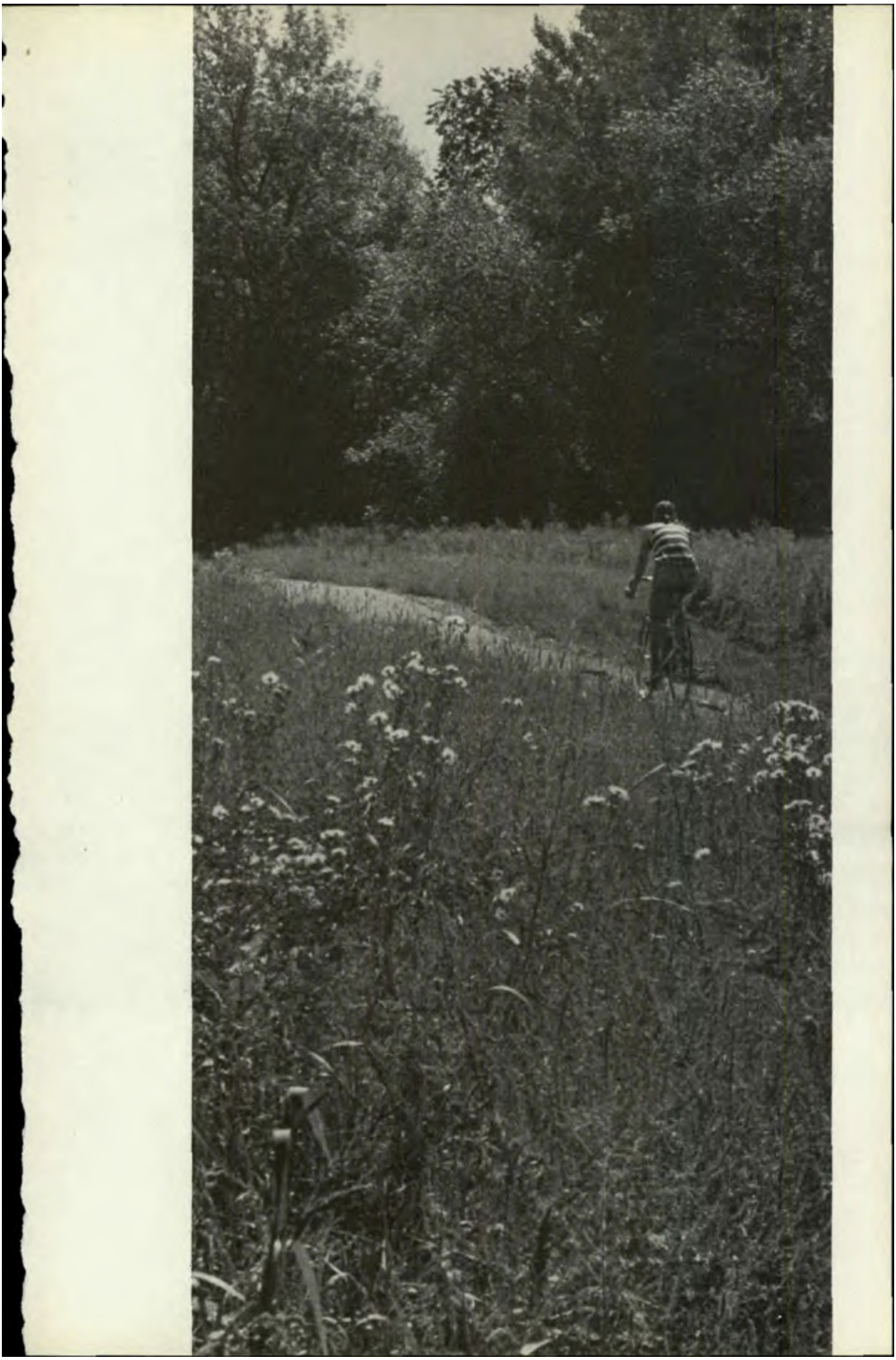
All-University requirements fall into two major categories: Liberal Education Seminars and distribution courses. In addition, many concentrations require mastery of certain tool subjects.

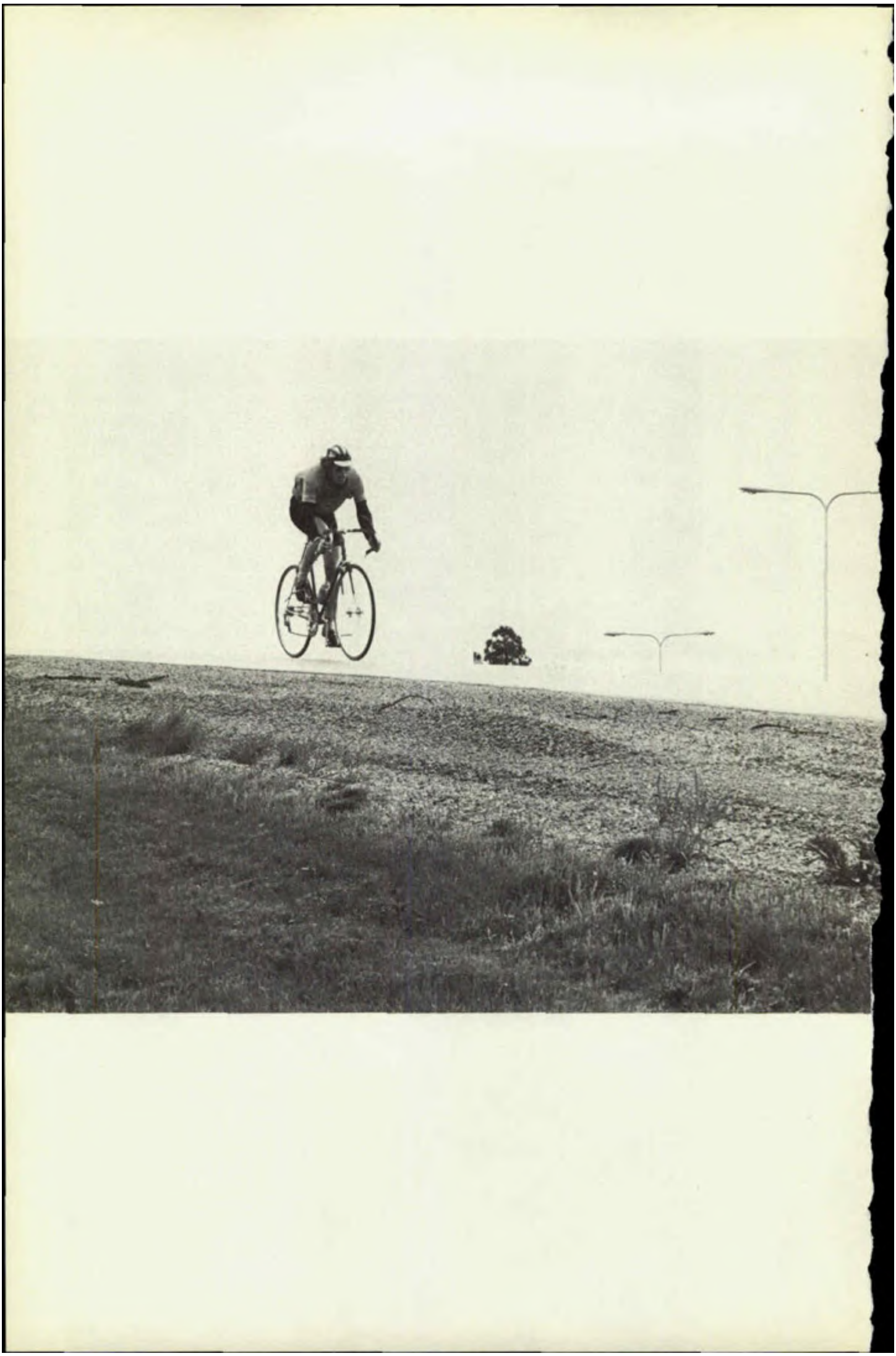
Liberal Education Seminars

The Liberal Education Seminars constitute a core program continuing throughout the *undergraduate experience* at UWGB. Within the program, each student is engaged in a variety of learning experiences which relate classic and contemporary concepts of values to contemporary environmental problems and to perennial human concerns.

As a freshman, the student has the opportunity to choose four seven-week *modules* from a list of topics such as: the human condition in world perspective, technology and human values, resource utilization and the American character, crises in communication, contemporary moral problems, and others. By the end of the year, the student has become acquainted with several faculty members and their perspectives on human affairs, has had an opportunity to explore something of the range and complexity of issues facing us as persons and as a nation, and has had a chance to sort out some of his/her own interests in regard to his/her own education.

During the intermediate years (sophomore and junior), the student has the opportunity





to learn how to usefully become involved in the community and in other cultures. Usually there is a project associated with this portion of LES, and the learner is its designer—taking major responsibility for the content and for developing skills in working with other persons and groups outside the University. The student also has the opportunity to make cross-cultural comparisons with fellow students, thus gaining further insights into the complex social world.

At the senior level, and after a great deal of learning experience within one of the concentrations, the student has a chance to integrate his/her knowledge and experiences with those of students from many other concentrations. Working with themes such as social consciousness and the scientist; culture, community, and environment in America; and others, the student can apply what he/she has learned to continuing issues in our culture and the world.

Students begin by analyzing common values and assumptions and synthesizing them into a generalized conceptual overview; return to the concrete by applying such conceptualizations to the theme; and, finally, go beyond prior assumptions by examining the nature and quality of the human condition from new perspectives.

LES is an 18 credit required program. The credits are distributed as follows: freshman—6 credits (two semesters); intermediate—9 credits (thematic packages, usually running two semesters plus January); senior—3 credits (one semester).

LES exists to ensure that the student doesn't settle too quickly for viewing things in life from only one perspective. Educated persons are all expected to make some contribution to the world, and to do so with knowledge and skill. In a traditional university, that knowledge and skill would be gained primarily through one department and discipline.

At UWGB, the student works within a concentration, which already brings several disciplines to bear upon a cluster of problems within one area of life. This interdisciplinary approach to education is made even broader in LES. The kinds of complex issues facing us do not find solution from narrow perspectives. In order to be effective citizens, we need as wide a range of awareness and sensitivity to human affairs as we can get. LES exists to help the student gain that kind of awareness.

Moreover, LES involves good reading and careful writing, critical thinking and creative imagination, thoughtful listening and articulate speaking—intellectual and social skills a person needs no matter what he or she does after graduation from college.

All 18 credits of the Liberal Education Seminars program must be taken for letter grades. Students are referred to the sub-program handbooks for a full listing of freshman modules, intermediate packages, and senior seminars, foreign travel programs associated with intermediate LES, and other details.

Distribution

A man or woman educated for today's world has broad intellectual interests and some background, at least, in environmental problems and disciplines. At UWGB, intellectual breadth is encouraged in a number of ways. Each of the theme colleges is broadly interdisciplinary. The Liberal Education Seminars bring together students and professors from all theme colleges in their consideration of ecological problems. And students may freely elect any course for which they are qualified.

In order to encourage as much breadth as possible in undergraduate education, the University requires a student to earn a minimum of five credits in each of the four theme colleges. Concentration courses and option courses may be used to fulfill the distribution requirement (see the note preceding the course listings). Any course for which the student is qualified may be chosen, although some of the theme colleges offer certain courses that are particularly appropriate. Distribution courses may be taken on a pass-no credit basis. Alternatively, the student can satisfy all or part of the requirement by examination.

The student should recognize that courses taken for distribution can be directly related

to work in his/her concentration or concentration-option. Academic advisers can help identify and take advantage of such relationships.

Tool Subjects

Every student must develop skills that enable him/her to acquire and use knowledge effectively. Each concentration has identified various skills that are especially useful to its students. Concentration advisers aid the student in selecting appropriate courses to develop and sharpen these skills.

Information about each concentration's tool subject requirements is available in the Academic Advising Office.

Residence Requirements

To graduate from UWGB, at least one year of residence (31 credits) in the junior or senior year is required, including at least half the advanced work in the student's concentration or concentration-option. Also required are at least the intermediate and senior Liberal Education Seminars.

The residence requirement does not imply that a student must live in Green Bay or must carry a full-time schedule of courses. One may 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 his/her senior year in residence, for reasons of the military draft, marriage, or whatever cause, can graduate from UWGB. Appropriate courses to be 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 Office of the Dean of the Colleges.

A student transferring to UWGB with less than 42 credits usually must meet all the requirements of the University. Any student transferring to UWGB with 42 credits or more is required to complete the intermediate and senior Liberal Education Seminars. A student transferring as a sophomore or a junior will normally be given credit for meeting the distribution and tool subject requirements if he/she has taken courses elsewhere that, although not equivalent, meet the spirit of the requirements.

INDIVIDUALIZED LEARNING

The student at UWGB has broad choice in program selection. Firmly required courses are minimal in number and some of the requirements are specifications of competence that can be met by special examination. Most courses outside the student's major can be taken on a pass-no credit basis.

The 298 and 498 series of courses permit individual work for all students. These courses must always be taken for a regular grade (not pass-no credit). Normally, a student cannot take more than one of these directed study courses per semester. The instructor's advance permission is always needed, as well as approval from the student's concentration chairperson and the concentration chairperson for the course.

A maximum of ten credits can be accumulated in 298 and 498 courses. Students must have a 2.5 cumulative grade point average or higher to take 298 courses. A cumulative grade point average of 2.0 or higher is required for 498 courses.

Selected topics courses, which carry the numbers 283X and 483X, are offered from time to time as a vehicle for experimentation and innovation by the concentrations and by the units of the School of Professional Studies. Students are encouraged to propose topics which might be presented in these series, particularly in the month of January, as well as to assist in estimating the extent of student interest and in planning the course.

All curricula are intended as suggestions only, not as inflexible guides. A student who wishes to propose his or her own major may do so. It is subject to the advice and approval of an academic adviser and the dean of the colleges. The student should consider all courses offered by the University as a pool from which to select those relevant to his/her objectives. Majors are normally interdisciplinary, cutting across college, concentration, and option lines.

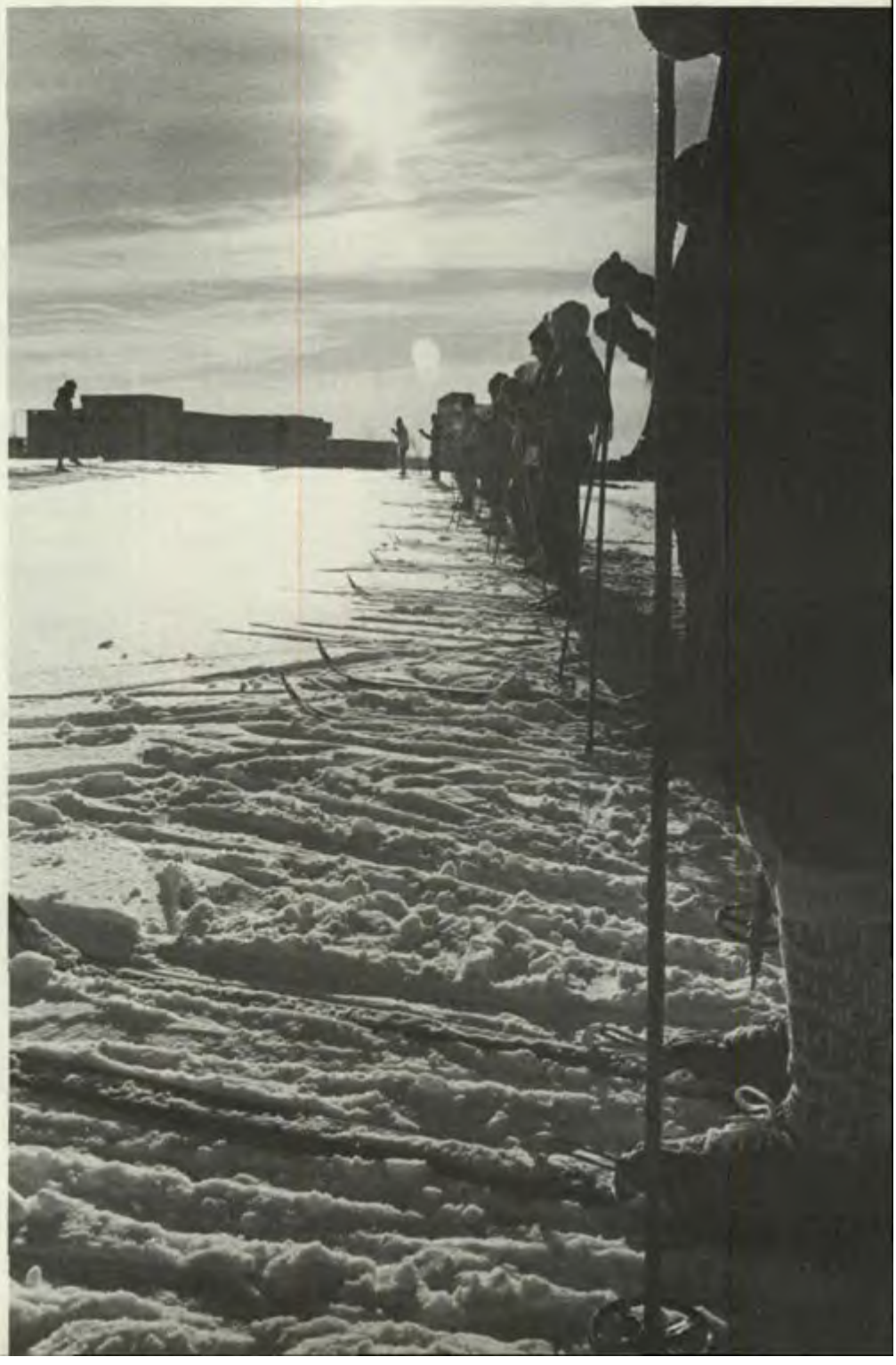
The cross-listing of a few courses in this catalog should not lead the student to conclude that other courses cannot be suitably worked into any particular major.

Prerequisites listed with course descriptions are essentially advisory and not firm requirements. They indicate the level of proficiency required to carry on a course. The student who believes he/she has the necessary level of proficiency without taking the suggested prerequisite should consult the instructor before entering the course.

SEEKING ACADEMIC ADVICE

The student cannot hope to take full advantage of the flexibility of the UWGB academic plan without seeking the advice of the faculty and staff. Such advice is available from a variety of sources.

General advice on program planning is available from the Academic Advising Office (for the student who has not declared a major) and from the concentration advisers (for the student who has). Option and collateral ad-



visers help the student fit these areas of study into his major program.

Information on preparing petitions to waive or modify academic requirements and regulations, on gaining credit by examination rather than by taking a course, and on participating in a variety of special study programs is available in a special publication prepared by the Academic Assistance Programs office.

The *Timetable* published each semester contains a list of academic regulations, as well as information about various forms the student will need to complete from time to time to insure steady progress toward a degree. This information should be consulted and followed carefully.

ACADEMIC CALENDAR

The University operates on a 4-1-4 semester plan, with the fall semester opening in late August or 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 held, along with special summer workshops and other academic programs of varying lengths.

The 4-1-4 plan offers the student the opportunity to graduate within three years if desired. This can be done by taking full course loads during each fall and spring semester, plus attending the interim period held 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 course loads during the regular semesters.

January Interim Period

UWGB's 4-1-4 calendar sets January aside as a month in which the student can concentrate on a single course or project emphasizing relevance, focus, intensive learning, and practical application.

January course offerings include: practica—small group programs (*in courses numbered* 195, 295, 395, and 495) focused on environmental problems and the practical application of skill and knowledge; special courses—innovative course offerings (numbered 283X and 483X) designed by faculty and students around a variety of ecological themes from interdisciplinary perspectives; intensive on-campus courses that provide total immersion learning experiences, as in foreign language speaking skills; other-culture experiences—month-long study or research in one of UWGB's community observatories or in national and international study tours; independent study—*individualized* instruction, study, or research (in courses numbered 298 and 498) under faculty supervision; developmental or extra elementary level work—especially in mathematics, English, and foreign languages, and particularly for freshmen and sophomores.

Some students complete their intermediate Liberal Education Seminars requirement during January by participating in a community observatory, an on-campus practicum, or independent research. Others obtain distribution or tool subject credits or broaden their knowledge and skill through independent study, practice, or research under faculty supervision and evaluation.

Program activities carry from one to four credits. A student preregisters for the January period when preregistering for the fall semester. 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 fee. Students are expected to pay their own expenses for off-campus programs. Some financial aids may be available for these programs.

January fine arts activities and lectures often relate to study themes. Many student organizations function and social activities continue during the month.

Summer Session

UWGB's summer session has its own set of course offerings. Most express UWGB's fund-

amental environmental and ecological themes, and some are selected to meet the educational needs of special groups. Regular academic and special courses, workshops, short courses, clinics, conferences, and inservice professional training programs are included.

These programs are intended to meet 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." UWGB's faculty will develop special offerings, so long as they express the University's environmental focus and are of high academic merit. Information on special course development can be obtained from the director of summer sessions.

Summer session courses are flexibly scheduled to allow students to work full time and earn college credit stimultaneously. Many are scheduled in late afternoon and evening hours, and some on a two-days-a-week basis. Most courses run for the full eight-week period. Others last from two to six weeks, depending on the subject matter and the number of credits involved.

Students from other colleges and universities can enroll in UWGB's summer session to take courses available only under its unique academic plan. Others enroll in courses that help satisfy graduation requirements at their home institutions. Adult students, both local and summer residents, also take advantage of the summer programs.

The recent high school graduate will find credit courses and other special programs available. Qualified high school students may enroll in appropriate courses and leave their college credits "in escrow" for later use. Recent high school graduates at marginal college entrance level may enroll in a "college try-out" program as special students and, if their work is of sufficient quality, be considered for regular admission.

Courses or workshops in personal development, counseling, composition and study skills, foreign languages, and basic mathematics are offered regularly. Tutorial assistance and individual or small group guidance are provided.

Studio experience in a variety of art forms is available at the Peninsula Summer Studios in Door County, with some courses carrying UWGB credit and others being offered in cooperation with University Extension and the Peninsula School of Art, Inc. Summer theater activities often find students working with area residents.

Some course offerings carry graduate level credit, in cooperation with University Extension and UWGB's new graduate program, which began in the fall of 1974.

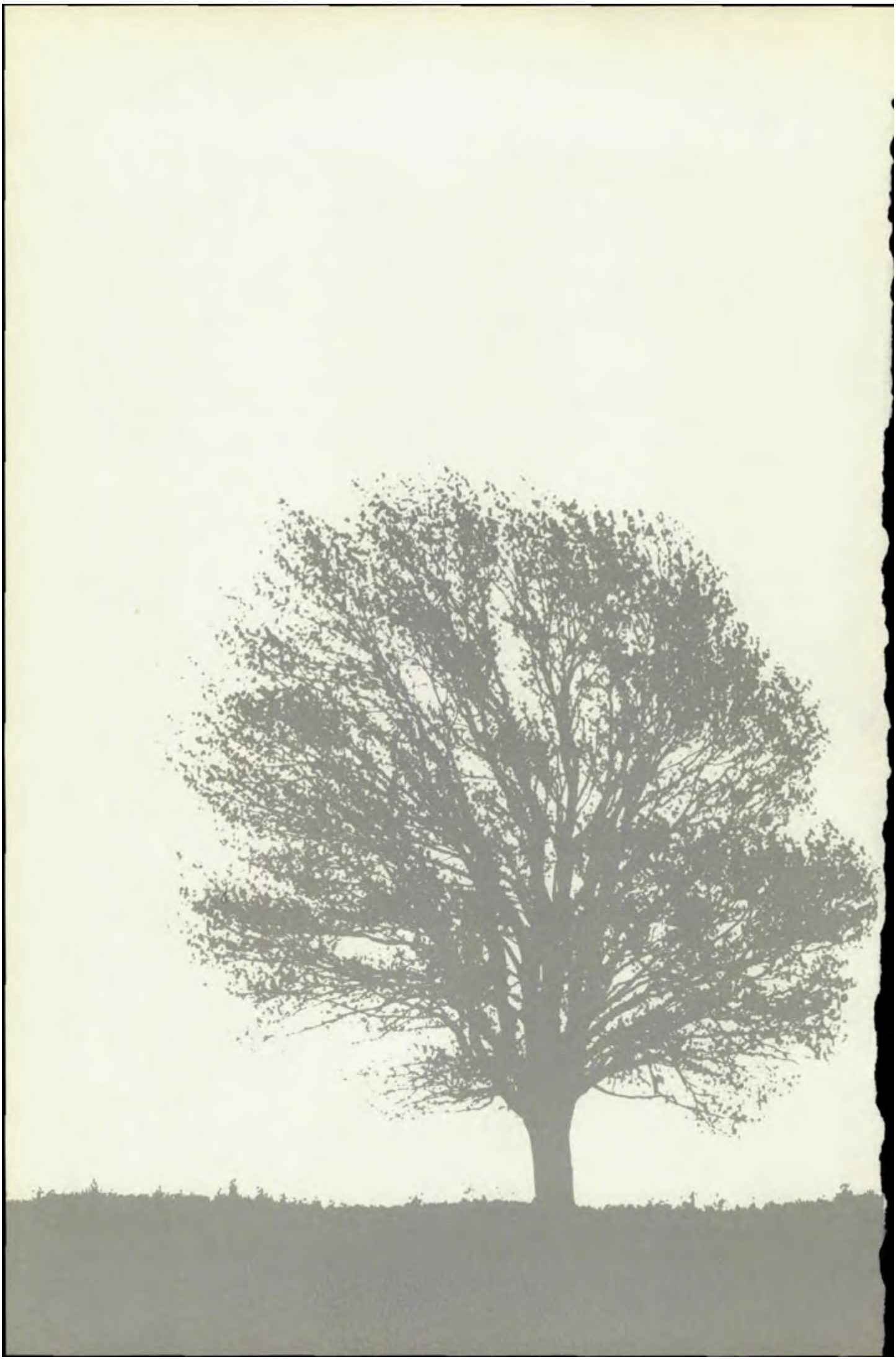
Summer housing is available in either the private Bay Apartments adjacent to the campus, or in nearby off-campus locations.

Clinics and workshops, one or two weeks in length, are popular with junior high and high school students and offer such activities as band and choral music, basketball, soccer, golf, reading skills, and drama. Many students commute to these clinics and workshops, but the Bay Apartments are available for those from greater distances.

Summer students find many opportunities to enjoy themselves through social and cultural activities and the area's outstanding recreational facilities.

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

Complete information on specific summer programs may be obtained from the director of summer sessions. Publications and announcements about the coming summer's programs are available in advance.



Concentrations

THE CONCENTRATIONS (MAJORS)

Each UWGB student must select an environmental problem area and build his or her academic plan of study around it. Eleven such areas have been formally identified for study within the theme colleges; another is located within the professional school. These problem areas are called concentrations (or majors).

The student has a choice of majoring in a concentration alone or of combining it with an option (co-major) and/or a collateral (professional minor) to intensify the focus with additional work in a discipline or professional area.

The student who chooses the concentration alone must complete 30 credits of concentration work at the junior-senior level and is given a generous amount of flexibility in organizing his/her program. (The Professional Concentration in Managerial Systems has additional requirements beyond the normal 30 credits.)

Some of the concentrations recommend certain core courses to fulfill part of the 30-credit requirement; others have no specific requirements. Some concentrations also require mastery of certain tool subjects.

The student can also develop his/her own concentration, focusing upon an environmental problem that is of particular interest to him/her, with the aid and approval of faculty members and the dean of the colleges. This personal major is described in an earlier section.

In formulating his/her plan of study, the student is encouraged to seek detailed help from the concentration chairperson and advisers who will help design a program to meet his/her individual needs.

Most students select a theme college or school by the time they are sophomores and select their concentrations by the end of the sophomore year. Each student must also meet the all-University requirements (Liberal Education Seminars and distribution credits). Once the student has narrowed the choice of concentrations to one or two, he/she should consult with the appropriate advisers in making a final selection and planning a specific program.

Concentration (major) programs are outlined on the following pages in alphabetical order. Abbreviations in the headings denote the theme college or school where each concentration is located.

Descriptions of option and collateral programs, which may be used to complement the concentrations, can be found on the pages following the concentration descriptions. Course descriptions can be found toward the end of the catalog.

Concentration in Communication-Action (CCC)

Professors: B. Grimes, M. Kazar, P. Mann, C. Nelson, W. Prevetti, R. Whaley.

Associate Professors: J. Abraham, R. Bauer, N. Blaisdell, T. Chavez, A. Cohrs, J. Frisch, L. Ives, D. Larmouth (chairperson), A. Matulis (on leave 74-75), D. O'Brien, R. Pum, R. Sherrell, J. Veilleux.
Assistant Professors: D. Damkoehler, R. Erwin, W. Jaeckel, E. Lauter, N. Makaroff, C. Nelson-Cole.

The concentration (major) in Communication-Action is concerned with the role and effects of all kinds of communications in the human environment, especially the backgrounds, practice, and applications of such areas as language, music, mass media, theater, photography, design, interpersonal communications, and the visual arts.

At UWGB, the fine arts are not isolated from critical human concerns; instead, the academic program recognizes the central role of values and aesthetics in all human choices, which together make up our environment and determine the quality of human life. The goal of the concentration is to educate its students in environmental values and aesthetics as well as for useful social action through communications.

The student concentrates part of his or her study on such general problem areas as the modern communications revolution, environmental design processes, or the arts and social change, or perhaps on an individually selected problem area. However, communications and the arts are not merely things to *study*, but to do, and the concentration encourages students to develop and use one or more artistic or communicative skill in the classroom, the studio, or in Communication-Action projects in the community.

Such studies and applications lead to many different career opportunities. Students work with their advisers to develop programs of study leading to careers in such areas as teaching, music, theater, commercial or fine arts, journalism, politics, law, government service, publishing, film, radio and television, creative writing, public relations, advertising, design, and communications. Preparation for advanced work in graduate or professional schools can be included among these objectives.

Personal and professional goals have much to do with the way the individual student organizes his or her plan of study. This may be done in three different ways:

1. The student may major in Communication-Action by completing a program of courses that leads to a broad understanding of the backgrounds, practice, and applications of the arts and communication processes in environmental problems.

2. The student may couple a more limited concentration program with a co-major in any of UWGB's disciplinary areas (options). Many students in Communication-Action have developed options in music, communication sciences, theater, *visual arts*, *literature* and language, philosophy, and history. Equally valid and promising combinations can be made, however, with such options as sociology, economics, psychology, political science, mathematics, biology, or geography.

3. The student may couple his/her concentration or concentration-option combination with a collateral (professional minor) in such fields as environmental administration, social services, and education. This kind of program enables a student to obtain professional certification in such teaching fields as art, music, literature (especially in the English-communication arts broad-field program), language, and history; or in such professional

fields as management, public relations, graphic arts, journalism, social service, and government service.

Many career opportunities, as well as opportunities for advanced study, are afforded by these three alternatives—some of which, like environmental design and aesthetic education, are just appearing on the horizon. The student's adviser can help him/her to plan the program appropriately, and such consultation is strongly recommended. Normally, as an introduction to the concentration program, the student is required to complete six hours of "tool subjects," which are usually selected from the concentration's program of freshman- and sophomore-level foundation courses.

Concentration in Ecosystems Analysis (CES)

Professors: J. Reed, D. Jowett, K. White.
Associate Professors: F. Fischbach, A. Goldsby, D. Girard, H. Huddleston, H. Harris, A. Loomer, M. Morgan, J. Norman, L. Schwartz, J. Wiersma, P. Sager (chairperson).
Assistant Professors: A. Mehra, C. Schwintzer, R. Simons, R. Starkey.

Our efforts to increase productivity and provide a better way of life have caused us to interfere with the equilibrium of the ecosystems that surround us. With increasing frequency and intensity, we attempt to intervene in the continuous movement of energy and materials and to meet our own needs by altering the processes of the ecosystems.

Examples of such alterations are the use of fertilizers and biocides to regulate biological productivity, and weather modification to alter the frequency and distribution of precipitation.

These modifications must be understood both qualitatively and quantitatively if we are to develop a wise strategy for the use and management of natural resources. They cannot be evaluated intelligently without a full understanding of their impact on the processes of the ecosystem. Inadvertent and unintelligent intervention may produce serious and irreversible changes that outweigh the benefits of ecological manipulation.

The concentration: (1) prepares individuals to make substantial contributions to the understanding of the dynamics of the ecosystem, (2) fosters awareness and interest in problems related to ecosystems, and (3) prepares individuals to contribute to problem solving, whether as informed citizens, business managers, politicians, educators, or researchers.

Career opportunities for the ecosystems analyst can be found in: federal and state agencies concerned with proper use and development of natural resources; industry, with particular reference to analysis and solution of environmental problems; federal and state park services; regional resource planning agencies; graduate study in biology, chemistry, ecology, earth science, mathematics, physics, regional planning, and land, water, and wildlife management. Taken with a collateral (professional minor) in education, this concentration prepares students for careers in teaching.

The Ecosystems Analysis major normally emphasizes a particular aspect of the study of ecosystems. To do so, he or she must develop both a sound and broad base for an interdisciplinary program and a particular set of intellectual tools with which to pursue the study.

Tools needed by the Ecosystems Analysis student include minimum proficiency in: (1) science and mathematics, (2) communication skills, and (3) social awareness. The student takes the following courses to meet the tool subject requirement:

Science and mathematics. Biology 202 and 203; Chemistry-Physics 110, 111, and 112 or 210, 211, and 212.* (Selection of 110, 111, and 112 will reduce the student's freedom in course selection in the junior and senior years, as well as admission into graduate schools); Earth Science 202; and 13-17 credits in mathematics at the 200-level or above, including a course in statistics (students with a professional minor in education may include 180).

*For more information about these and other references, by number, to specific courses, consult the chapter on course descriptions.

Communication skills. These include verbal and written communication and efficient use of library resources.

Social awareness. A keen sense of social responsibility and an awareness of the social and ethical implications of science are developed throughout the student's course of study and through selection of appropriate topics in the senior Liberal Education Seminar.

To develop a firm ecological base in their major, students generally will also take the following courses which constitute a curricular core in the concentration: Ecosystems Analysis 322, 323, and 424.

Courses are to be selected on the basis of the student's interests and career goals. For example, he or she might choose to develop a program in systems ecology, population ecology, community ecology, or physiological ecology. In any event, appropriate programs can be worked out in consultation with an adviser. Courses in such subjects as anthropology, economics, regional planning, geography, administration and management, public policy, and political science can be used to augment the student's program.

The proposed merger of the concentrations in Ecosystems Analysis and Environmental Control is expected to provide new curricular tracks in addition to those presently available. One objective is to develop alternative tracks allowing science oriented students to balance more effectively their environmental perspective with course work in socio-economic and political science areas.

Students who major in the concentration of Ecosystems Analysis may also relate their environmental studies to human health by completing an interconcentration program in Environmental Health Sciences. (described later in this section).

Concentration in Environmental Control (CES)

Professors: H. Day (chairperson), T. McIntosh, D. Moore.

Associate Professors: R. Cook, R. Lanz, K. Lee, J. Moran, V. Nair, C. Rhyner, T. Van Koevering, R. Wenger.

Assistant Professors: T. Abeles, N. Petrakopoulos, J. Pezzetta, S. Randall, N. Sell.

Among the most pressing problems that face us are those stemming from our use of and impact on natural resources. The problems include environmental pollution from human and industrial wastes; the conservation of resources such as fossil fuels, minerals, and wildlife; and the conflict of interests arising from multiple use of resources.

Environmental pollution and the demands on natural resources threaten the biosphere. Because we depend upon the productivity of the biosphere for subsistence and upon these resources to sustain civilization, we must develop an appropriate strategy for the wise use and management of the biological and physical resources. The concentration in Environmental Control prepares individuals for responsible decision making in regard to management of natural resources—air, water, land, wildlife—and the control of waste disposal and environmental pollution.

The student majoring in environmental control should complete the following core requirements by the end of the sophomore year: Biology 202 and 203; Chemistry-Physics 210, 211, and 212; Earth Science 202; Environmental Sciences 302; and 8-12 credits in Mathematics. Also recommended are: Environmental Sciences 310 and Environmental Control 460.

Problem areas related to this concentration which may help the student to develop a program include: (1) identification of the nature and distribution of air, water, and soil quantity and quality; (2) the engineering-oriented analysis of the production and control of our biophysical natural resources; and (3) the systems analysis of resource allocation to the rural-urban continuum.

Credits may be elected from groups of courses according to the area in which the student has chosen to concentrate, such as air, water, land, or natural resources. A student should, in consultation with an ad-

viser, work out the program that best fits his or her career goals.

Selected courses in *such subjects* as economics, regional planning, geography, administration and management, public policy, and political science may be used to augment study in the concentration.

The proposed merger of the concentrations in Ecosystems Analysis and Environmental Control is expected to provide new curricular tracks in addition to those presently available. One objective is to develop alternative tracks allowing science-oriented students to balance more effectively their environmental perspective with course work in socio-economic and political science areas.

Students who major in the concentration of Environmental Control may, if they wish to emphasize the relationship of their environmental studies to human health, complete an interconcentration program in Environmental *Health Sciences* and should refer to its description later in this section.

Concentration in Growth and Development (CHB)

Professor: R. Hartley (on leave 74-75).
Assistant Professors: T. Auger, J. Falk (acting chairperson), F. Hughes, R. Logan, J. Sorce.
Lecturers: S. Cannizzo, T. Hogan, L. Joscelyn, N. Moore, C. Ritcher.

To create conditions for the optimum development of individuals, we must understand the effect of the transactions between humans and their physical and social environment. The knowledge explosion of recent years makes us aware of effects we did not even suspect a relatively short time ago.

For example, we have become increasingly aware of the problems related to behavioral growth and development. Problems of intellectual development are now demanding attention as well as problems of emotional-social development.

Dealing with the problems of mental retardation, learning difficulties associated with various deprivations, socially ineffective and undesirable behavior, and the chronically disabling effects of neuroses and psychoses requires intensive and specific types of training. In addition, we are more and more cognizant of the importance of knowledge about the wellsprings of human functioning for any occupation dealing with people, e.g., teaching, nursing, work with preschool children, social service, recreation, and guidance. This concentration (major) prepares students to deal effectively with other persons, whatever their level of development.

The concentration, along with selected preprofessional courses, can prepare students for the following vocations and activities: early childhood education (nursery school or kindergarten), primary or elementary school teaching, child development specialist, parent education, group work with children and adolescents, counseling with older people, community counseling, and home visitation.

The concentration offers excellent preprofessional preparation for graduate study leading to social work, physical or occupational therapy and *rehabilitation*, clinical or counsel-

ing psychology, student personnel work, marriage counseling, therapeutic work with children, research or college teaching in the area of human development, public health education, and elementary school counseling.

The concentration is also an appropriate gateway to the teaching of psychology-sociology or family life education at the secondary school level, adult education, extension work, and work with various organizations serving youth and older people.

Recommended Preparatory Courses: One course in statistics and Human Adaptability 420 are required. A foreign language is advised for students planning to go to graduate school.

Candidates for certification in early childhood education should take Nutritional Sciences 232, Growth and Development 210, and First Aid. All students planning to take upper level courses in the concentration should take Growth and Development 210.

Required and Recommended Upper-level Courses: This concentration seeks to design a program for each student which will be most relevant to his or her interests and vocational objectives. The following concentration courses are required: 331, 332, 433, and 438. (Qualified students are advised to complete 331 during the sophomore year.) The remainder of the 30 required concentration credits are selected with the guidance of a faculty adviser.

For example, students planning to enter early childhood education as a vocation would include 333, 334, 431, 432, 435, 436, 441, 442, and 444.

Students desiring to enter elementary school teaching would take many of the same courses, excepting those specifically designed for preschool and kindergarten training.

Those wishing to prepare for community work such as social service, parent education, counseling of the elderly, or group work not involving young children might include such courses as 336, 429, 432, 435, and 437.

When relevant, courses in allied fields also can be used as part of the concentration, if approved by an adviser.

Students planning to enter graduate school for further work in psychology or in growth and development would take 331, 332, 337, 429, 431, 432, 433, 435, and 438, in combination with courses in experimental and other aspects of psychology and possibly other social sciences. Students should be aware that growth and development courses are included in the psychology option.

Special programs combining courses from Growth and Development and from other concentrations or from options with allied interests (such as those in the social sciences), can also be arranged for students needing such combinations to enter post-graduate professional programs, or to qualify for specific vocational placement.

Concentration in Human Adaptability (CHB)

Professor: H. Guilford, W. Kaufman (chairperson).
Assistant Professor: R. Stevens.
Lecturer: Elaine Langlois.
Clinical Lecturers: Sr. V. Bauer, J. Ford, P. Gohdes, T. Pharmakis.

The concentration (major) in Human Adaptability is concerned with our response to a stress or pressure. When a given response has become stable, we are said to have adapted to a specific stress.

Knowledge of our individual and group capabilities to adapt to stress can be systematized. It is this systematization that is the basis for the areas of study in human adaptability.

There are three principal areas of study. The first, *physiology*, is concerned with the responses of the living system itself which arise mainly from pressures of the physical and biological environment. The second, *psychology*, is concerned with the responses of the personality to emotional pressures. The third, *anthropology*, is concerned with our responses to human culture.

The student who majors in Human Adaptability may find careers at all levels of government or industry, in laboratories as a research technician or junior administrator, in agencies for welfare or social work, or in the sales of scientific instruments or books. The concentration also is appropriate for students following premedical, predental, or preveterinary programs and those preparing for entrance to graduate programs in biology, the health-related sciences, and paramedical fields.

The student majoring in Human Adaptability is encouraged to consult with an adviser as early as possible. He/she should prepare for biological study with courses in mathematics, physics, and chemistry.

Three intermingled but distinct plans are offered in the concentration; physiological, socio-psychological, and evolutionary-genetic. Students should consult with the concentration advisers for specific information.

Concentration in Humanism and Cultural Change (CCC)

Professors: J. Clifton, E. Havens (chairperson), F. Kersten, I. Korner, I. Sonenfield, S. Williams, L. Witherell.
Associate Professors: P. Abrahams, T. Churchill, O. Clark, P. Cooley, C. Crandall, T. Daniels, W. Herrscher, M. Murphy, T. Tasch, M. Thron.
Assistant Professors: J. Barger, G. Bigelow, F. Clements, K. Fleurant, D. Galaty, N. Gaworek, G. Greif, J. McHale, B. Mugane, J. Rodesch, M. Wallach.
Instructors: H. Geppert, M. Richen.
Community Lecturer: D. Steffenson.

This concentration (major) offers the modern student a modern style of liberal education. The phrase "liberal education" means "education appropriate for liberated and free men and women"; that is, men and women who have responsibility for their own lives and the life of their society—and, of course, the life of their environment.

The styles of liberal education current in the past are by no means irrelevant today. Yet the human crises of our time have taken some unprecedented forms. It is fitting, therefore, that a modern liberal education should focus on preparing the free and responsible citizen to cope with those new forms. Humanism and Cultural Change attempts to do this by concentrating on modern people's obligation to be engaged with, and responsible for, their total environment: the environment of thought, values, society, technology, and nature.

Liberal education has always been based on the humanistic point of view. But a new style of liberal education requires a new style of humanistic study. Therefore, this concentration seeks in its curriculum to go far beyond the traditional study of the humanities. For example, the program is doubly interdisciplinary.

First, it integrates the several traditional humanistic disciplines. In this respect courses are organized so that philosophy, history, literature, and the arts are not treated as separate categories, but as parts or extensions of one another.

Second, the major seeks to reintegrate the too long separated humanistic and non-humanistic dimensions of thought and action. It seeks to put back together what have been called "the two cultures," the humanistic and the scientific. In this respect the major examines what the scientist might call "the interface relationships" of the sciences and the humanities; and what the humanist might call the interrelationship of the human, the humane, and the natural.

In order to mount its thrust in these two interdisciplinary directions, the concentration is organized around the following broad environmental themes or program areas:

Human Values: Their Development Amidst the Collision of the Natural and the Man-Made Environments. These courses relate the physical sciences, the behavioral sciences, and technology to problems involving contemplative thought, ideas of value, and human expression. Emphasis is placed on the integration of the humane and the natural environments. The following concentration courses are included: 311, 313, 331, 375, and 429.

Ideas of Value: The Quality of the Human Environment as It Influences and Is Influenced by the Creation and Expression of Personal and Social Values. In these courses moral and artistic action is seen in the light of social and practical action. Emphasis is placed on the problem of the quality of life through these concentration courses: 302, 312, 376, 390, and 430.

The basic tool course and prerequisite for work in the concentration is 101, 102. Students electing this major are advised to take this two-semester course before the end of their sophomore year.

For students who wish to combine the concentration with a disciplinary option, three are especially appropriate: history, literature and language, and philosophy. Other appropriate disciplinary programs are anthropology, geography, mathematics, political science, psychology, and sociology.

Work in Humanism and Cultural Change is excellent preparation for most graduate study and law school, as well as for careers in teaching, diplomatic or foreign service, politics, sales and business, and for vocations associated with the social sciences and social services organizations.

Students interested in the broad range and flexibility of this major are urged to see the chairperson or the concentration adviser.

Professional Concentration in Managerial Systems (SPS)

Professor: G. Petrie.
Associate Professors: H. Jadwani (chairperson), J. Powers, D. Ward.
Assistant Professors: M. Close, V. Dilweg, P. Mulvihill, R. Obenberger, F. Sailer, K. Zehms.
Instructor: M. Troyer.
Lecturers: B. Coleman, C. Halverson, R. Williams.

The student who selects the professional concentration in Managerial Systems normally enters the School of Professional Studies as a first-semester sophomore and will earn the degree of Bachelor of Arts or Science, Administration.

As preparation for the concentration, the student should take Managerial Systems 202 and 204 in his or her sophomore year. The student should also complete Economics 202 and 203 as preparation for the concentration as well as for fulfilling the all-University CCS distribution requirement.

In the sophomore and junior years the student should complete the tool requirements: three quantitative courses and one course in communications. The quantitative courses include Mathematics 250 and 260 and a third course selected from Managerial Systems 217 or Mathematics 202, 204, or 251. The communications tool course can be selected from Managerial Systems 101, Communication Processes 133, or Literature and Language 212.

A universal requirement of all Managerial Systems majors is Managerial Systems 305. Next the student chooses six credits in four of the five fields within Managerial Systems: accounting and quantitative methods, finance, labor and personnel management, marketing and distribution, and organization and operations. In addition to this broad exposure in administration the student must take six additional credits in the field of principal interest.

Managerial Systems majors must also fulfill a cognate (or minor) which consists of 24 credits in one of the theme college concentrations or in public accounting. The latter cognate is designed to help prepare the student for the Certified Public Accountant examination and it conforms as nearly as possible to the statutes and regulations of the State Board of Accountancy. The student selecting the public accounting cognate should also take Economics 230 and Managerial Systems 305 and 306. To prepare for the C.P.A. examination, which is comprehensive in nature, the student is urged to take all of the courses in quantitative methods except Managerial Systems 216.

The choice of a theme college cognate should be made after consultation with an adviser in the concentration from which the cognate is to be drawn. The intermediate Liberal Education Seminar may be counted toward the cognate requirements.

Concentration in Modernization Processes (CCS)

Associate Professors: B. Baker, E. Haney, K. Kangayappan, J. Kolka, (on leave 74-75), H. Kolshus, C. Pollis.
Assistant Professors: A. Galt, J. Green, J. Lind, L. Nesberg, L. Smith, P. Wallach (chairperson).
Instructors: J. Brickley, W. Gerritsen.

The nature and effects of social change interrelate with our adaptation to, and uses of, the environment. The purposes of the Modernization Processes concentration are to study the nature of change in the world from socio-cultural and political-economic points of view. In doing so the concentration asks a number of general questions:

1. What historical processes produce the accelerated change the world has experienced over the last few centuries?

2. What kinds of world views precipitate these changes and what kinds of world views are produced by the changes?

3. What are the material causes and consequences of change?

4. What are the socio-cultural, political, and psychological correllates of change?

5. How may concerned people combat such problems of change as inequality, the population explosion, social dislocation, and ecological destruction?

Answers to these questions focus on both third world and highly industrialized societies. Each course takes a holistic view of its subject matter, incorporating the insights of several disciplines. The concentration views social science as a tool for gaining and communicating a refinable sense of understanding society and social change, not as a body of statically organized knowledge. Students are shown how to use conceptual and methodological tools of social science to provide their own answers to general questions like those above, and to questions in the context of specific problem oriented tracks with implications for future employment like those below:

Track System: The Modernization Processes track system is meant as a curricular guide for students. The tracks within it are not fixed, but may be modified, combined, or replaced with alternatives, in order to meet individual needs. Each student in Modernization Processes is required to complete the six-credit, two-course, core package: Modernization Processes 360 and 361 (offered

each semester). Then, having consulted the concentration adviser in order to work out a personally meaningful program, the student embarks upon a track which could have a focus close to one of the following topic areas:

1. Planning, Technology and the Environment. Environmental consequences of social processes.

2. International Development and Underdevelopment. Linkages between the so-called underdeveloped world and the developed world through institutions such as international organizations, politics, and multi-national corporations.

3. Social activism. Activist movements as a phenomenon, and social activism as a way of life.

4. Legal, Social, and Exchange Institutions of Change. Interactions between social processes and the institutions which reflect, form, and reform them.

5. Rethinking society. Alternative life styles and alternative social structures.

6. Women's Studies. The changing role of women in society, seen both as a phenomenon and as a goal.

7. Native American Studies. Past and present problems of Native Americans in Anglo-dominated North America. Understanding past and present Native American culture. (Note: The choice of Native American studies over other ethnic group orientations merely represents the presence in the concentration of appropriate personnel to structure such a track. Students wishing to concentrate in the study of other ethnic groups may do so, but the concentration cannot guarantee that it can provide instructional expertise.)

8. Poverty and Inequality. The causes and consequences of inequality for reasons of race, sex, ethnicity, class, etc., as well as inequality among nations and sectors of nations.

9. Individual and Social Change. The problems of the individual who is caught up in rapid social change.

The concentration reserves the right to modify the above list as its personnel fluctuates from year to year. The student should consult the latest edition of the *Modernization Processes Course Finder* for longer descriptions of the tracks and information about their vocational applications.

In order to personally tailor a concentration program which will be meaningful, the student is strongly advised to make early contact with the concentration adviser and to become acquainted with the other members of the faculty. The concentration of Modernization Processes has a strong tradition of close contact between student and faculty, and of student participation in appropriate areas of concentration business.

General vocational opportunities afforded by the concentration include preparation for professional schools in such areas as law, business and public administration, public health, or social work. It is excellent preparation for work with various private and public agencies engaged in community development in the U.S. and abroad.

The curriculum should also be interesting to those who are concerned with large scale change and anticipate a career that would require familiarity with change processes, or to those who seek a professional minor in one of the collaterals such as education, environmental administration, or social services. The concentration can also be particularly suitable for those wishing a 24-credit cognate to fulfill requirements for the professional concentration in Managerial Systems.

Concentration in Nutritional Sciences (CHB)

Professors: H. Benham, A. Doberenz.
Associate Professors: D. Deese (chairperson), E. McIntosh.
Instructor: D. Randall.

For a person to cope successfully with a changing environment, an adequate supply of food is a basic necessity. The food supply should be adequate not only in quantity, but in quality and aesthetic value. Educational programs are needed in all communities to

ensure that the right kinds of foods are consumed in the right amounts to assure adequate nutrition for each individual.

The University's academic focus is humans in the environment. Similarly an important, interdisciplinary, problem-centered concern of Nutritional Sciences is the environment within humans. Certainly, environmental factors or substances which enter and intercommunicate within this *milieu interieur* substantially affect the nutritional quality of life.

This concentration offers two major emphases: community nutrition and industrial nutrition.

The very existence of widespread malnutrition in the United States, coupled with numerous pleas from federal agencies, international organizations, and foundations, attests to the need for well-trained nutrition workers of a new kind, dedicated to community action. The program in **Community Nutrition** is intended to provide appropriate training by combining natural and social science courses with the development of skills in communication. This emphasis is appropriate also for preparation of teachers when combined with a collateral (professional minor) in education.

Methods for maximum utilization of the world's food resources must be explored, including improved methods of distribution, preservation, and achievement of greater palatability and nutritional value, particularly of low-cost foods. Emphasis on **Industrial Nutrition** prepares students to work as technicians or scientists in areas of food or nutrition research in university, government, and industrial laboratories.

When combined with appropriate courses in communications and social sciences, a program may be developed to prepare students for industrial careers in consumer relations, food evaluation, and product promotion. This emphasis can serve to fulfill requirements for entrance to graduate school and to provide a valuable background for professional schools such as medicine, dentistry, and pharmacy.

One health-related program may be completed by combining appropriate courses of the concentration with those recommended for the professional co-major in medical technology. Similarly, the interrelationship of nutritional sciences and health to environmental studies is now available through an interconcentration program in Environmental Health Sciences, described at the end of this section.

The Nutritional Sciences major must take appropriate courses to develop skills in deriving and interpreting data, and effective communication. The requirement includes a course in statistics, possibly computer science, and one or more courses in communication processes. Candidates for graduate school are advised to take calculus and a foreign language.

For distribution requirements, students in this concentration should select relevant courses in sociology, economics, psychology, political science, or anthropology in the social sciences and history and voice and speech in the humanities.

Students in both emphases should include Biology 202, 203, 302 and 303; Chemistry-Physics 300-301 or 303-305 and Nutritional Sciences 232, 302, 328, and 329.

Students in community nutrition are strongly advised to include Nutritional Sciences 421, 422.

Students emphasizing industrial nutrition are advised to take Chemistry-Physics 112 (212 for chemistry-physics co-major and graduate school candidates) and 311; Ecosystems Analysis 312; and Nutritional Sciences 346, 485-486, and 488.

Each student is encouraged to develop a relevant individualized program in consultation with concentration faculty advisers.

Concentration in Population Dynamics (CHB)

Associate Professors: N. Huber, (on leave 74-75) T. Mowbray (chairperson).
Assistant Professors: N. Durham, C. Ihrke, J. Maki, W. McAuley, D. Sager.
Lecturers: W. Macdonald, J. Westphal.

Community Lecturers: J. Green, H. Sandmire, J. Weidner.

Population Dynamics is the study of changes in the composition, distribution, and size of populations, of the factors that influence these changes and the influences that these changes have on the population's total environment, including in the special case of human populations the social, political, and economic environments.

Population Dynamics is thus an interdisciplinary science, concerned with a series of complex and interrelated processes, such as the numbers of individuals making up the population; the changes in numbers and distribution of individuals in the population; the rates of reproduction and mortality, and of gains or losses by dispersal; the various factors which influence the processes of gain or loss; the reactions, both internal and external, of the population to these influences; the relative importance and interaction of processes that tend to regulate abundance and distribution and those that simply change them; and the influences that these changes have on the population's total environment.

The major in population dynamics allows the student to obtain an understanding of the dynamics of populations through study in such subject areas as reproductive biology, behavioral biology, evolution and genetics, biogeography, population regulation theory, population management, social demography, human ecology, and related subject areas that deal with particular factors concerning human populations. The purpose of the major is to prepare individuals who can, through an understanding of these basic processes, work toward solutions to the many problems related to the dynamics of population.

Population Dynamics prepares students for careers in international, federal, state, and community agencies and foundations concerned with human population growth, its regulation, and its problems; international, federal, state, and private agencies dealing with the analysis, regulation, and management of plant and non-human animal populations; industry (with particular reference to predicting consumer needs and demands and the labor market); and graduate study in the areas of demography, public health, population biology, reproductive physiology, population regulation, and related areas.

Adding a collateral (professional minor) in education prepares the student for a career in teaching. The appropriate selection of courses can fulfill the requirements for entrance to professional schools such as medicine and dentistry. Students who major in Population Dynamics may, if they wish to emphasize the relationship of their studies to human health, complete an interconcentration program in Environmental Health Sciences described near the end of this section.

Normally, individualization of programs toward specific career goals takes place in the junior and senior years by careful selection of courses that meet concentration requirements. Faculty advisers are available to help the student plan his or her program.

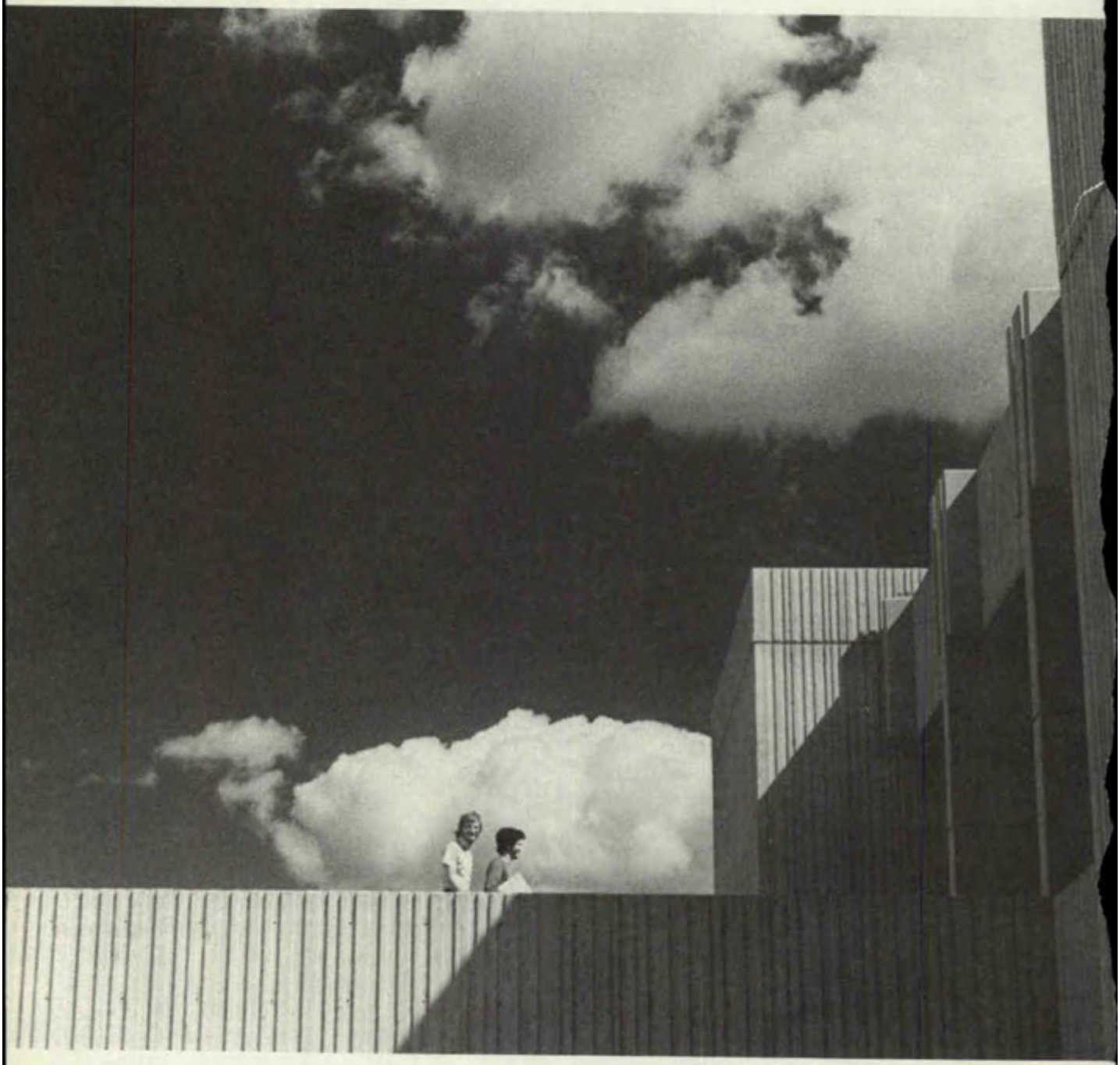
Concentration in Regional Analysis (CCS)

Professors: F. Byrne, D. Gandre, J. Murray (chairperson), W. Smith.
Associate Professors: W. Kuepper, I. Shariff.
Assistant Professors: L. Gorder, W. Laatsch.

Regional Analysis is concerned with the spatial relationships between humans and the environment. The definition of the regions of the earth, the characteristics of these regions, and the effects that regional characteristics of the environment, both physical and human, have upon us and our activities are the basic concerns of this major. We have, in many cases, abused the useful resources of the regions we inhabit. These abuses have developed into some of humankind's most serious problems: war, poverty, and the degradation of the environment.

This concentration develops the student's ability to qualify for employment in regional planning agencies at all levels; in other governmental agencies, such as park services and conservation services; and in business organizations.

The program is particularly useful when supplemented with courses in Managerial



Systems, especially in obtaining positions with consulting firms, real estate appraisal firms, and those firms engaged in providing transportation services. It can also serve as the basis for graduate study in geography, regional planning, economics, business administration, or for law school.

The concentration offers a core curriculum of a progressive series of selected courses to which the student adds courses that meet his or her special interests and needs from a wide selection. As supplements to the concentration, the student can pursue an option (co-major) in such disciplines as economics, geography, psychology, biology, or earth science, or a professional minor in a collateral such as education, environmental administration, or leisure sciences. Students majoring in Managerial Systems may elect to amplify that program by enrolling in a cognate in Regional Analysis.

The program is flexible. The student, with the counsel of an adviser, has a wide latitude of choice available. Two tool subjects are required: geography 350 and 355.

Concentration in Urban Analysis (CCS)

Associate Professors: F. Armstrong (chairperson), E. Knowles (on leave 74-75), R. Mendelsohn, N. Pollis, E. Swinerton (on leave 74-75), C. J. Yarbrough.
Assistant Professors: S. Bremer, L. Chenoweth, W. Haney, P. Johnsen (on leave 74-75), P. Kellogg, L. Lackey, D. Littig, C. Matter.
Instructors: R. Baba, J. Gould, T. Nichols.

Throughout human history, the city has been identified with civilization itself—the words city and civilization, in fact, both come from the same Latin word. Today, almost 75 percent of the population of the United States lives in cities. This fact alone illustrates how profoundly our modern urban culture affects the psychological, social, cultural, and physical aspects of our lives. Nor does its influence stop at the city limits, for the problems, priorities, and policies of the city vitally concern both urban and rural residents, in the United States and abroad.

The Urban Analysis faculty is drawn from a variety of disciplinary backgrounds, including psychology, political science, architecture, literature, sociology, history, computer science, and city planning. A focus upon the urban culture that defines our contemporary civilization provides an excellent way to give coherence to an interdisciplinary liberal education. The concentration organizes knowledge derived from the traditional disciplines in a way that makes it more accessible and functional for urban people.

The major in Urban Analysis examines the nature of urban life and the processes—physical, social, and cultural—by which cities emerge, persist, and change over time. Since the city is a complex but interrelated whole, made up of linked systems of people, resources, values, and styles of life, the program encourages a variety of perspectives and techniques to arrive at an integrated understanding of urban people and their environment.

Students in Urban Analysis are expected to share a concern for the quality of life and the relationships among people and to integrate experience with the insights of academic study. For example, students in the six-credit course, Community Project in Neighborhood Revitalization, act as the professional planning staff of a coalition of local churches attempting to rescue the near west side of Green Bay from the threat of blight. From this experience, students gain greater understanding of themselves, their cities, and their culture, learn to use a variety of analytical tools, and to participate more effectively as members of their communities.

The Urban Analysis program provides preprofessional preparation for careers in city planning, administration, social service, law, communications, and education. It is also a useful background for less-specialized careers in the private sector of the economy, as well as a solid foundation for graduate work in the social sciences. The curriculum is divided into three areas: Values, Institutions, and Ideologies; Behavior and the Environment; and Planning and Social Change.

While none of these three orientations alone comprehends all dimensions of urban life, in combination they offer a perspective from which students can explore and gain a comprehensive understanding of the problems and possibilities of city life.

The concentration asks each student to take at least one course in each of the three areas and to develop an emphasis (at least three courses) in one of the areas. Students are encouraged to count Urban Analysis 450 toward their area of emphasis. The remaining courses are determined through consultation with a concentration adviser. Students have wide latitude to pursue diverse interests in relation to the overall theme of the concentration. Hence the criterion for selecting courses is their applicability to the student's individual educational objectives.

Each of the three curricular areas supplies a coherent pattern of courses from which to develop an emphasis.

1. Values, Institutions, and Ideologies. Examination of the ways in which ideas, institutions, and cultural styles deriving from groups, classes, or nations relate to and affect urban life. This section of the curriculum, drawing especially from humanistic and social scientific perspectives, uses the city as the focus for exploring the development and implications of contemporary ideas and institutions. Courses include Urban Analysis 310, 313, 317, 370, 400, 414, 430, and 495.

2. Behavior and the Environment. Examination of the ways in which human behavior is related to the socio-cultural and bio-physical experience of living in an urban environment. This area of emphasis draws especially from biological and psychological perspectives, using the city as a focus for developing an understanding of the interaction between the natural and man-made environment. Courses include Urban Analysis 312, 325, 326, 335, 336, 337, 432, 435, and 440.

3. Planning and Social Change. Examination of the resources available to cities and the ways in which planning techniques and political structures may be used to facilitate desirable urban change. This area draws from planning theory and applied social sciences, using the city as a focus for developing an understanding of the problems and possibilities of planned social change. Courses include Urban Analysis 311, 350, 351, 360, 395, 421, 422, 444, and 445.

In addition, the following courses are particularly relevant for Urban Analysis students: Community Sciences 102, 201, 205, and 305; Mathematics 250; and Urban Analysis 295, 298, 484, 495, and 498.

Tool Subjects: Since advanced study in any area requires the use of specialized skills and analytical techniques, students in Urban Analysis are expected to acquire a proficiency (a minimum of 6 credits) in a tool subject relevant to their academic program. The specific requirement is individually determined in consultation with a concentration adviser. It may be fulfilled, for example, through training in linguistics, computer sciences, the visual arts, statistics, philosophical and literary criticism of values, or a foreign language.

Preparation: A student who wishes to major in Urban Analysis should see a concentration adviser as early as possible for advice in choosing distribution courses and tool subjects as well as concentration courses.

Students considering Urban Analysis should take Community Sciences 102. They are also advised to seek a broad general education during their first two years. In choosing courses to fulfill their distribution requirement, students are urged to begin building a broad but coherent and integrated foundation for later work in areas of their interest.

Interconcentration Program in Design Processes and Environmental Problems

Coordinators: R. Baba, D. Damkoehler, R. Lanz, W. Smith.

Environmental Design studies the shaping of settings for human behavior and the relationships between those settings and human functions. The design of the built environment and the interaction between humans and the vast variety of behavior settings found in this environment are the focus for the interconcentration program in Design Processes and Environmental Problems.

The program uses an interdisciplinary design team to deal with a broad spectrum of problems. This approach allows for the investigation and design of the chair as well as the neighborhood.

Students majoring in any of four concentrations—Communication-Action, Environmental Control, Regional Analysis, or Urban Analysis—receive intensive training in the process of environmental design by selecting appropriate courses and participating in a series of design workshops. Study covers such areas as urban planning, urban technological design, three dimensional design and drawing, properties of building materials, human living space, and designing the environment.

The workshops, offered at four levels of analysis, investigate the design of spaces for the individual, small groups, and communities, and culminate in an elective project. The student interested in environmental design should consult with an adviser in one of the four cooperating concentrations.

The program trains students for the emerging fields that relate the built environment to human behavior. Potential employment would be in design, architecture, and urban and regional planning. The training also prepares students for graduate work in these areas.

Interconcentration Program in Environmental Health Sciences

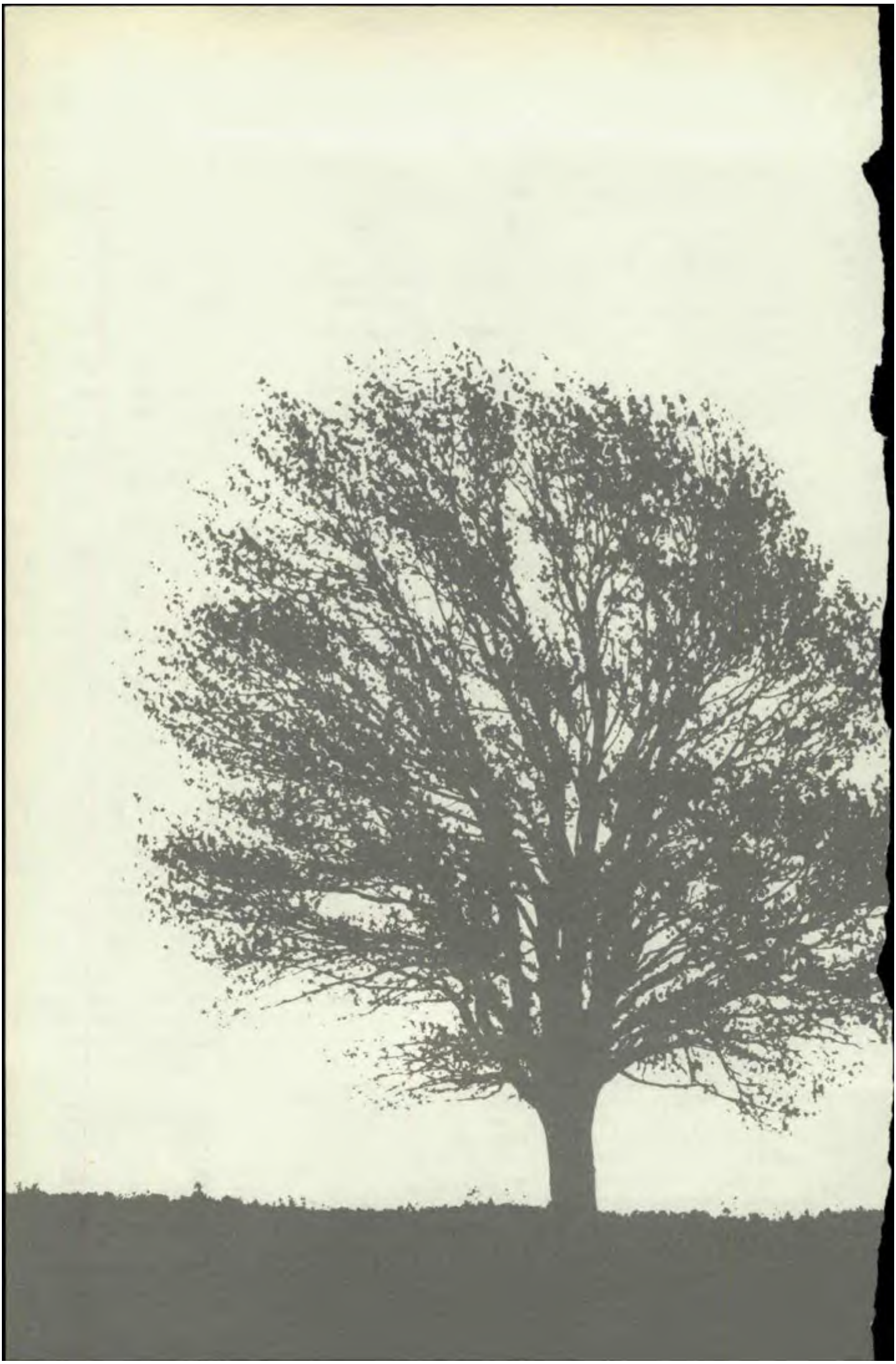
Chairperson: Fritz Fischbach

The area of Environmental Health is a science that is concerned with the biophysical interrelationships of human health and the environment. Basic study areas include: air and water quality, solid waste, noise, nutrition, physiology, pesticides, population, radiation, sanitation, and thermal stress.

Academic training related to these areas are included in the course offerings of five concentrations: Ecosystems Analysis, Environmental Control, Human Adaptability, Nutritional Sciences, and Population Dynamics. This program provides the student who majors in one of these concentrations the opportunity to relate his studies to his particular interest in Environmental Health.

A student enrolled in this program will acquire a background in the physical and biological sciences and mathematics as a prerequisite to taking courses in the health core area. Field experiences in a health related activity are a significant part of the program.

The program prepares the student for employment opportunities in industries involved with environmental health as well as governmental positions at the local, state, and national levels. The program also prepares the student for graduate training in environmental health. The student interested in Environmental Health Sciences should consult an adviser in one of the five cooperating concentrations.



Options and Collaterals

The Options (Co-Majors)

Students who wish to relate the environmental problem they are studying in their concentration to a specific discipline, profession, or field of knowledge may do so by pursuing a combination major—the concentration-option.

This major normally requires 36 credits at the junior-senior level. At least 12 of these credits must be in the concentration.

The remainder of the credits—normally 24—are made up of junior-senior level option or option-related courses. The courses should relate the option to the concentration.

It is recommended that the students consult with faculty advisers in both the option and concentration for help in selecting courses that meet their needs. Because all UWGB programs are designed to be interdisciplinary, students will find that certain courses outside their selected option often can be used to fulfill the option requirements.

Information about appropriate option and option-related courses is available from the option advisers. Before beginning concentration-option work, the student needs to obtain approval of the program from the option chairperson and the concentration adviser.

Most students enter their chosen theme college or school by the time they are sophomores and select their concentration-options by the end of the sophomore year. They must also meet the all-University requirements.

Students may select any option that relates to the environmental problem they plan to study in their concentration. The option programs available are described on the following pages. Some have specific course requirements; all make recommendations for areas of study that may be appropriate and suggestions that students can follow when working out individual programs with faculty advisers.

Option in Anthropology

Chairperson: Rajagopal Ryali

Anthropology is the study of cultural and biological variation among people as members of societies, viewed in both historical and contemporary perspective. Courses in anthropology relate to many areas in the concentrations.

As a co-major, anthropology offers a descriptive and comparative approach to the many ways people organize their social, political, religious, and economic lives. The life styles, belief systems, and modes of aesthetic expression of both Western and non-Western cultures are studied, with emphasis on the use of the comparative approach and the examination of non-Western cultures.

The anthropology student will find that the skills and capacities gained can be applied to a variety of vocational and professional inter-

ests, including government work at all levels, social service and related professions, museum and field work, education, and graduate work. Anthropology also offers useful applications for students interested in labor or personnel work dealing with various minority groups or ethnic backgrounds. Anthropology certification for a teaching major or minor is also available.

Option credit is often available for courses offered in such fields as human evolution, primatology, linguistics, rural-urban migration, and histories of non-Western peoples.

It is recommended that students planning an anthropology co-major include at least two 200-level courses as prerequisities to upper-level work. Anthropology 210 and 215 are highly recommended; 220 also is suggested.

Of the 24 required credits of junior-senior option or option-related courses, the following constitute the core course work in anthropology: Anthropology 301, 304, and 305; Communication Processes 301; and Population Dynamics 342.

The remaining nine credits must be obtained in one of the following elective tracks: social-cultural anthropology, cultural ecology, human biology, linguistics, or independent study. Selection of the track should be made in consultation with the option chairperson and adviser. Waivers of these requirements are allowed only in exceptional cases.

Option in Biology

Chairperson: Leander J. Schwartz

Biology offers students the opportunity to study micro-organisms, plant and animal structure, function, systematics, evolution, and biological resources. Courses emphasize men and women and the biosphere and can focus either on the human aspects or on the environmental aspects of biology.

For example, a student may combine biology with Population Dynamics if he or she is interested in the aspects of populations and their regulation. Those interested in biological adaptation to environmental stresses or in the biological aspects of growth and development, nutrition, or ecology, can combine biology with Human Adaptability, Growth and Development, Nutritional Sciences, or Ecosystems Analysis. With the assistance of a faculty adviser, the student also may combine biology courses with other concentrations. Students who wish careers in regional planning or urban development will find biology courses that support these areas.

Appropriate concentration-option courses may be combined with a collateral (professional minor) in education that leads to certification as a biology teacher at the secondary school level.

Certain courses in Ecosystems Analysis, Environmental Control, Human Adaptability, and Population Dynamics, in addition to those listed under biology, may be used to fulfill biology option requirements. The faculty adviser will help the student with suggestions for appropriate option courses.

Chemistry

Adviser: Ronald Starkey

Chemistry is fundamental to the study of the biophysical environment, the dynamics of ecosystems, and the metabolic processes of living organisms. It is a key discipline for understanding the processes that have led to environmental pollution and for developing remedies to restore and maintain the quality of the environment.

Students electing an option (co-major) in chemistry-physics and who want to plan a program with a chemistry emphasis must complete Chemistry-Physics 210, 211, 212; and a minimum of 24 credits according to the following scheme:

Required courses: Chemistry-Physics 302, 303, 304, 305, 311, 320 and 321. One or more courses from: Chemistry-Physics 330, 410, 413 and/or 417.

Additional courses which may be taken for chemistry emphasis: Chemistry-Physics 322, 323, 331, 418; Environmental Science 450; Environmental Control 424, 434; and Nutritional Sciences 328, 329, 485 and 486.

The student should seek the assistance of a faculty advisor in selecting courses that best meet his or her needs.

Option in Chemistry-Physics

Chairperson: Jack Norman

Chemistry-Physics is an interdisciplinary option that provides the student with fundamental and advanced concepts of the physical-chemical world. Chemistry and physics, being complementary, find a natural union in this option. Students pursuing this option will develop a more complete view of matter, energy, and their transformations as they pertain to the physical world and the human environment.

Students selecting the chemistry-physics option (co-major) must take the following courses:

Chemistry-Physics 210, 211, 212, 320, 321, and 417.

A minimum of 2 credits from the following laboratory courses must also be selected:

Chemistry-Physics 322, 323, 324, 325, and 418.

In addition, at least one course from each of the following groups must be selected:

Group I: Chemistry-Physics 300, 303, 311, and 410.

Group II: Chemistry-Physics 315 and 404; and Ecosystems Analysis 317.

Group III: Chemistry-Physics 405 and 413.

Group IV: Chemistry-Physics 330, Ecosystems Analysis 306 and 412, Environmental Control 424 and 434, and Environmental Science 450.

Students interested in a program with a chemistry emphasis or a physics emphasis are referred to separate descriptions under each heading.

Option in Communication Processes

Chairperson: Jack E. Frisch

Communication processes is concerned with speech, media, linguistics, photography and cinematography, rhetoric, and all other forms of communicative interaction. The central focus of these studies is a specific environmental situation: communications as a social process.

The option relates closely to the concentration in Communication-Action and to the broad-field certification program in the teaching of English and communication arts in the public schools. It also has particular relevance to mass communications; to careers in radio and television, journalism, government service, and other communications-oriented fields; and to concentration programs in Urban Analysis, Growth and Development, Modernization Processes, Humanism and Cultural Change, and Managerial Systems.

Students in the option program will generally include course work in communications theory, communications media, and courses in the applications of communications arts and sciences. Appropriate areas of study include voice and speech, linguistics, interpersonal communications, and various communication performance courses, as well as journalism, radio and television, mass communications, photography, and cinematography. Students are also encouraged to take supportive courses in such fields as psychology, sociology, anthropology, computer science, education, theater, mathematics, and visual arts, among others.

This flexibility of individual program development makes it imperative that students meet with the option adviser for specific course planning.

Communication Sciences also offers courses which are particularly suitable for distribution credit. In addition, students have opportunities for directed study in association with members of the UWGB staff as well as with community units dealing with communications.

Option in Earth Science

Chairperson: J. Herbert Huddleston

Earth science helps the student develop a detailed understanding of the abiotic components of his environment. When combined with the Ecosystems Analysis and Environmental Control concentrations, this option (co-major) helps students integrate their knowledge of the earth's physical environment with their knowledge of the biosphere to gain a more complete understanding of ecosystems and their complexities and interactions and of the environments in which humans and other organisms live and function.

The option is also appropriate for students majoring in Regional Analysis and Urban Analysis, as it provides information important for the understanding and inventorying of many natural resources. Such knowledge is especially pertinent to programs that deal with multiple land use planning or planning for wise use of a variety of natural resources.

When combined with foundation courses in chemistry, physics, and mathematics, the option provides essential background for graduate study in earth sciences.

Earth science provides appropriate training for careers in agriculture and related industries, city and county planning, marine technology industries, the Soil Conservation Service, the Forest Service, state and federal geological surveys, state or national park services, petroleum industries, and mining industries. Adding a collateral in secondary education can lead to certification to teach earth science in secondary schools.

All areas of the option program are built upon the introductory course, Earth Science 202. Students who are interested in a general curriculum in this field should take at least one course in each area of the earth sciences; general, soils, water, minerals and rocks, and structure and evolution. Students who wish to focus on a single area should select an adviser within that area who will assist in the development of a program that includes earth science and supporting courses from chemistry, physics, mathematics, and geography. And, students who are just plain curious about the physical environment in which they live and work can satisfy that curiosity through appropriate earth science courses.

Option in Economics

Acting Chairperson: Larry J. Smith

Economics involves the systematic study of the use of resources and the processes involved in production, distribution, and consumption of goods and services in the American and other economic systems. Undergraduate work involves analysis of how the economy has developed, how it is organized, and how it functions. Components of the economy such as households, businesses, and governments, as well as the pricing, development, use of resources, and regional and community development, are analyzed.

When related to an appropriate concentration, economics is oriented toward the analysis of contemporary problems and the determination of alternative economic approaches toward resolving those problems. It prepares students for active roles in business and industry, in governmental agencies, in various educational units, and in a host of community organizations. It is also appropriate undergraduate preparation for law school.

Students pursuing an option in economics are advised to take Economics 202 and 203 sometime during the first two years. Either or both of these courses also are recommended for distribution credits.

Students should work closely with faculty advisers in selecting economics courses that most closely relate the option to their chosen concentration.

Option in Geography

Chairperson: William J. Laatsch

Geography is concerned with the systematic study of the location, variations, and interrelations of the natural and cultural features of the earth. Such study can be applied to the identification and solution of contemporary problems, inasmuch as the problems of our life in communities are strongly influenced by the particular features of geographic location. Students choosing to co-major in geography are able to study spatial variations in terms of particular topics, or to consider a number of physical and human phenomena within a particular region or regions.

Faculty advisers will help students develop their geography course work. Typical courses relate to human geography, physical geography, regional geography, and research techniques and methodology. Appropriate courses from other areas can also be used to satisfy geography option requirements.

Option in History

Acting Chairperson: Norbert H. Gaworek

History endeavors to study systematically the cultural, political, and social aspirations, achievements, and failures of humanity. Through history we increase our understanding of the changes that have occurred in people and societies, and their relationship to the natural environment in which they existed. History helps us appreciate more keenly the commonality and diversity of culture and society and leads us to a more profound awareness of our own heritage. Since our judgments for acting in the present and planning for the future are invariable based on past events and experiences, history examines the formation of contemporary societies and emphasizes those phenomena which shed light on present and future choices.

The student choosing to co-major in history will find its offerings a particularly useful preparation for most of the professions,

especially education, law, journalism, theology, politics, government, and the broader aspects of business and social planning. In short, history provides a solid background for thinking about and resolving the problems of society.

Students should consult with an adviser to work out an appropriate option program of courses in history and related fields.

Option in Literature and Language

Chairperson: Louise R. Witherell

Literature and languages of the world as they reflect and express the human condition are the concern of this option. Its concerns include inherited literary and linguistic traditions as well as the contemporary order.

Literature and language are areas of major importance for teacher certification. In addition, the skills and capacities gained through a program in one or more of these option areas may be applied in a variety of vocations and professions in business, government service, and journalism. They are also appropriate preparations for certain areas of graduate work.

Students are advised to begin their English-American option work with six credits of survey courses, selected from Literature and Language 214, 215, 216, 217, 218, and 219. The remaining credits may be selected from any of the appropriate categories. One of these courses must be a seminar. Students planning option work in one of the foreign languages may begin at any appropriate level. Students desiring teaching certification in English or a foreign language should combine literature in that language, linguistics, and expressive use of the language. They are encouraged to seek the assistance of an option adviser and an adviser in the School of Professional Studies.

The literature and language curriculum is built on the "umbrella course" concept. This means simply that the faculty, in consultation with the students, determines the specific content for the courses in any given semester. For example, a course entitled Literature and Language 334, Literary Isms, may be English Romanticism one semester, and the next semester may be German Expressionism. Description of the course will appear in the *Timetable* and also on the student's transcript; a student is allowed, therefore, to take an umbrella course with the same number more than once, as long as the content of the particular course differs.

Option in Mathematics

Chairperson: Allison P. Loomer

The mathematics option is most readily useful for students who elect to specialize in ecological modeling within the Ecosystems Analysis concentration. They may already have programmed 18 credits in mathematics at the 300-400 level. Thus only six addition option credits applicable to systems ecology are necessary.

Students may also elect mathematics to prepare for graduate study. The Environmental Control concentration can be strengthened by courses in advanced calculus, differential equations (both ordinary and partial), and computer science.

Mathematics enables the student to gain additional mastery of concepts and techniques in probability, statistics, analysis, and computer science.

The student who co-majors in mathematics must take Mathematics 202, 203, and 206, and also should include 250, 308, 311, and 322.

Recommended for the student in the College of Community Sciences are 360 and 361. Environmental Control 315 may be used to fulfill option requirements.

Additional courses should be selected with the assistance of the student's adviser.

Option in Medical Technology

Chairperson: James H. Wiersma

UWGB cooperates with affiliated hospitals to teach the theory and techniques of medical

laboratory procedures that qualify students as medical technologists. The increasing use of clinical laboratory determinations in patient diagnosis and care has led to career opportunities for skilled medical technologists in hospitals, clinics, the U.S. Public Health Service, and medical research laboratories.

The medical technology student spends three years in residence at UWGB majoring in a concentration (e.g. Human Adaptability, Nutritional Sciences, Population Dynamics) and co-majoring in the medical technology option. In September of the junior year the student applies to an accredited one-year clinical program at an affiliated hospital. To be considered for the clinical program, he or she must have a minimum of 92 credit hours of course work with at least a 3.0 grade point average.

Upon successful completion of the program, the student receives a B.S. degree and is eligible to take the examination for certification by the Registry of Medical Technologists.

Minimal course requirements for acceptance into a clinical medical technology program include Chemistry-Physics 110, 111, and 112 (or 210, 211, and 212), 300, 301, and 311, and Biology 202, 203, and 302; Mathematics 260; and four additional credits in biological sciences.

Recommended courses include Biology 303, Human Adaptability 402-403, Mathematics 250, and Nutritional Sciences 328-329.

Students interested in entering this program should consult with the medical technology adviser before or during registration.

Option in Performing Arts

Music Chairperson: Robert Bauer
Theater Chairperson: Russell Whaley

The performing arts involve an effort at meaningful aesthetic communication between performers and their audiences and dedication to the improvement of our cultural environment. Courses emphasize dance, music, and theater.

The skills and capacities gained through this option will prove useful in the pursuit of many different occupations, including elementary and secondary teaching, and will add a meaningful dimension to participation in community endeavors.

Courses in the performing arts are arranged in the areas of music and theater, with course descriptions for dance listed under theater. Students are encouraged to relate one of these art forms to the others, and they must relate the whole to one of the concentrations.

Music. The study of music provides basic technical and theoretical work for students interested in pursuing career goals in teacher certification at the primary and secondary levels, performance, theory/history, composition, or entrance into graduate programs. A collateral in administration prepares for a career in industry or merchandizing. A curriculum in music therapy is being formulated and should be operational by the fall of 1975.

Students who wish to specialize in music take a placement examination in basic musicianship covering musical notation; fundamental skills of constructing and aurally identifying easy scales, intervals, and chords; and keyboard proficiency. Students who do not demonstrate necessary prerequisite skills are advised to take Music 101 before enrolling in the music theory/literature sequence.

It is recommended that students give special attention to the core curriculum in theory/literature (Communication-Action 151, 152, 251, 252, 351, and 352) and applied music at the 100 and 200 level to prepare for entrance into many 300 and 400 level courses.

Theater. The art of the theater is a communicative exchange by the theater artist and the audience. It is in this experiential collaboration that theater is unique among the arts. It is this same cooperative effort by performers and percipients that makes each performance of a theater piece an individual work of art. In performance there develops an exchange of emotional and informative ideas that makes theater the most immediate and participatory of the communication arts,

sharply illuminating the environment and the socio-humanistic qualities of life.

Student artists are developed through group and individual experience and instruction. A concerned appreciation for cooperative creativity is basic to the identification of individual artistic abilities, responsibilities, and contributions. Student's views are expanded to encompass their art, their community and their fellow humans. Through their art they gain an awareness of the strength of theater to entertain, to inform, and to move to action.

Theater students at UWGB are concerned with the practical techniques of performance and technical theater and with its aesthetics, history, and theory.

Instruction, studio, and performance experiences prepare students for graduate study and for careers in professional theater, television and film, or teaching. The program also welcomes students wishing a limited experience in any area of theater.

Dance. At the present time, dance courses are not offered in sufficient number to enable a student to specialize in this area of the performing arts. The courses that are being offered are, however, highly recommended for the student interested in specializing in theater. They can also be useful to the student with interest in music.

Option in Philosophy

Chairperson: Orville Clark

The study of philosophy makes students aware of the intellectual structure from which they perceive their world and in terms of which they may seek to live in or change their world. Philosophy begins with an appreciation of the Socratic dictum, "The unexamined life is not worth living," and moves through the critical analysis of ideas to a reflective consideration in depth of contemporary challenges to values, beliefs, being, and systems of thought.

Courses in philosophy include interdisciplinary emphasis on ethics, aesthetics, metaphysics, philosophy of language and literature, philosophy of science, contemporary philosophical movements, and social and political philosophy.

Students choosing to co-major in philosophy will find it useful in the pursuit of many

different occupations and a productive dimension of their active participation in University studies and community endeavors. This option is excellent preparation for graduate study in philosophy, law, fine arts, the physical and social sciences, and education.

Those selecting a philosophy option should take the history of philosophy sequence, 213, 313, 314, and must take senior level philosophy courses. They should work with a faculty adviser in developing their program.

Physics

Adviser: Anjani Mehra

Physics is the study of the processes and properties of matter and energy. Among the subject areas are atomic and nuclear structure and processes, optics, electricity and magnetism, and instrumentation. Physics plays a fundamental role in basic and applied scientific development. It is central to the related disciplines of chemistry, astronomy, mathematics, and engineering and is an essential complement of earth sciences and biology.

Students wishing to give a physics emphasis to an option (co-major) in chemistry-physics must complete Chemistry-Physics 210, 211, and 212 and a minimum of 24 credits of upper level courses distributed as follows:

Required courses: Chemistry-Physics 321, 404, and 417; and Ecosystems Analysis 317.

At least two credits selected from Chemistry-Physics 323, 324, 325, 418.

Additional courses selected from Chemistry-Physics 315, 320, and 405; Ecosystems Analysis 306 and 350; and Environmental Control 313 and 332.

Students should select courses with the assistance of a faculty adviser.

Option in Political Science

Acting Chairperson: C. Jarrell Yarbrough, Jr.

Political science involves the systematic study of political structures, processes, functions, and policies within particular political systems or within the framework of international relations. Undergraduate work in political science involves institutional, behavioral, and philosophical analysis and may focus on particular systems or emphasize comparative studies.

Like the other community sciences, political science is oriented to problems and their solutions and seeks to prepare the student either for an active role in administration and government, or for the equally significant role of a well-informed participant in the political process.

A wide variety of careers is open to students who co-major in political science. These include city management, foreign service, teaching, specialized overseas assignments, work with private and public agencies, and employment with the public services at all political levels.

A faculty adviser is available to help the student select appropriate courses to meet the option requirements.

Option in Psychology

Chairperson: Bela O. Baker

Psychology involves the scientific and systematic study of human and animal behavior, relating such behavior to both physiological and environmental conditions. It places a strong emphasis on human relations and the adjustment of the individual to society, focusing on the understanding, predicting, and influencing of social behavior.

Many different career opportunities are open to students who co-major in psychology. Business organizations, private and public agencies, and educational institutions seek persons with strong preparation in psychology.

In addition to the psychology courses, many concentration courses may be used to fulfill psychology option requirements. The student should consult the option adviser in selecting courses appropriate to his or her individual program.

Option in Sociology

Acting Chairperson: Lynne Lackey

Sociology is concerned with the systematic study of social patterns of human relationships, their origin, and consequences. The field is oriented toward the study of societal relationships, the institutional and functional framework of social organizations, and the components of personality determined by group membership. The emphasis in sociology is on the working relationships between basic concepts, theory, and research.

Many careers are open to those who choose the sociology option, including law, industrial relations, the ministry, education, and journalism.

The student should consult with a faculty adviser in selecting courses in sociology and related fields that best meet individual needs. Anthropology 310 or an upper division social psychology course approved by the option chairperson is required.

Option in Visual Arts

Chairperson: Thomas J. Tasch

The human is an image and form maker. From the paleolithic images on the cave walls, a record of the visual arts has continued to our own time, and although the motivation for these images appears to change from era to era, there is ample evidence to affirm the need of people to transfer their experiences into visual symbols.

The visual arts involve an effort at meaningful aesthetic communication between the creator and the spectator. Courses in the visual arts include emphasis upon two-dimensional and three-dimensional forms.

THE COLLATERALS (PROFESSIONAL MINORS)

While each of the concentrations and options helps prepare students for various career fields, either directly or through graduate school, there are several professional applications that require specific courses and training. Students interested in any of these areas can select a collateral (professional minor) which supplements their major concentration or concentration-option and provides them with professional specialist qualifications.

The professional collaterals in environmental administration, education (leading to teacher certification at the pre-school, elementary, and secondary levels), leisure sciences, mass communications, and social services are described on the following pages. Eighteen credits are required except in elementary education where, by state law, 29 credits are required. Students interested in a collateral should consult their concentration or concentration-option adviser and an adviser from the School of Professional Studies to work out an appropriate plan of study.

The Collateral in Education—Teacher Certification

Professors: M. Kazar, G. O'Hearn.
Associate Professors: J. Busch (chairperson), N. Sanders.
Assistant Professors: R. Bruland, D. Bryan, F. Evans, R. Presnell, R. Pum, P. Thompson, T. Van Koevering.

License to teach in the schools of the state of Wisconsin requires a bachelor's degree and completion of a program of instruction approved by the State Department of Public Instruction. UWGB offers approved programs leading to:

1. Early childhood education, nursery, and kindergarten certification. (See Growth and Development concentration.)

2. General elementary school certification, kindergarten through grade 6; grades 1-6; and grades 4-8.

3. Specialist certification in art (K-8 or K-12), music (K-8 or K-12) or reading (K-8, 7-12 or K-12).

4. Secondary school certification in areas including anthropology, art (visual arts), athletic coaching, biology, chemistry, broad field communication arts, computer science, conservation, drama, earth science, economics, English, French, general science, geography, German, history, mathematics, media (journalism), music (instrumental or choral), physical science, physics, political science, psychology, broad field environmental science, broad field social studies, sociology, Spanish, and speech.

The *Handbook on Teacher Certification*, available from the education faculty office, contains a complete description of these programs.

Completion of an approved program and a recommendation from the faculty in education results in licensing as a teacher in the State of Wisconsin and, through a reciprocity agreement, in more than 35 other states.

Admission to the Teacher Certification Program. Any student who is in good standing can seek admission to the teacher certification program in addition to regular degree work. Teacher certification is then carried on collaterally to the regular degree program. The additional course work becomes an integral part of the student's program, but requires careful planning so as to meet the State requirements for certification as well as all degree requirements.

Teacher certification is a cooperative responsibility of the education collateral and the various concentrations and options. While pursuing the degree requirements, including a chosen concentration or concentration-option, the student plans a program to concurrently meet the requirements of the Wisconsin Department of Public Instruction for teacher certification as approved for UWGB. These include the academic requirements of the selected teaching major(s) and minor(s), the professional education requirements for a collateral in education (professional minor) and the required tool subjects in human relations and reading.

The student entering the teacher certification program should indicate this intention by completing the collateral information on the Registrar's forms during registration and should also fill out a plan for certification with the assistance of an adviser from the education faculty.

The faculty in education is reviewing entrance requirements to the education collateral. Currently there are no mandatory requirements for admission to the program other than being a student in good standing. This may soon be changed. Information on any changes is available from the faculty.

Secondary School License. For a secondary school license, an approved program for a teaching major must be completed. Optionally, the student may be certified in additional teaching areas by completing the requirements for one or more additional teaching majors and/or minors. The teaching major or minor in a discipline includes freshman and sophomore work. The student also pursues advanced work with an environmental focus in a concentration. Specific requirements for each teaching major are described in the UWGB *Handbook on Teacher Certification.*

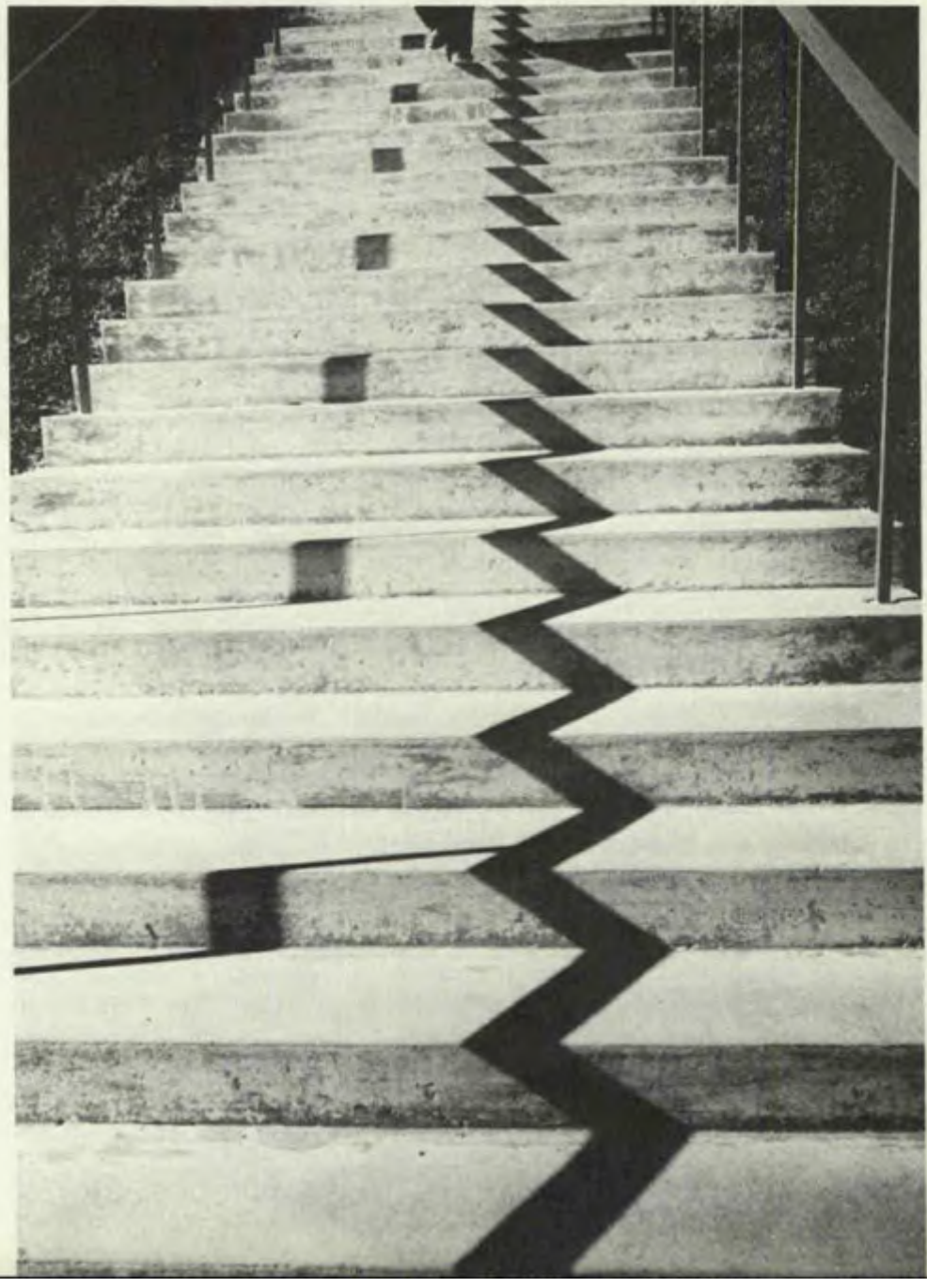
The student should consult with an education faculty adviser in planning the program to meet these requirements.

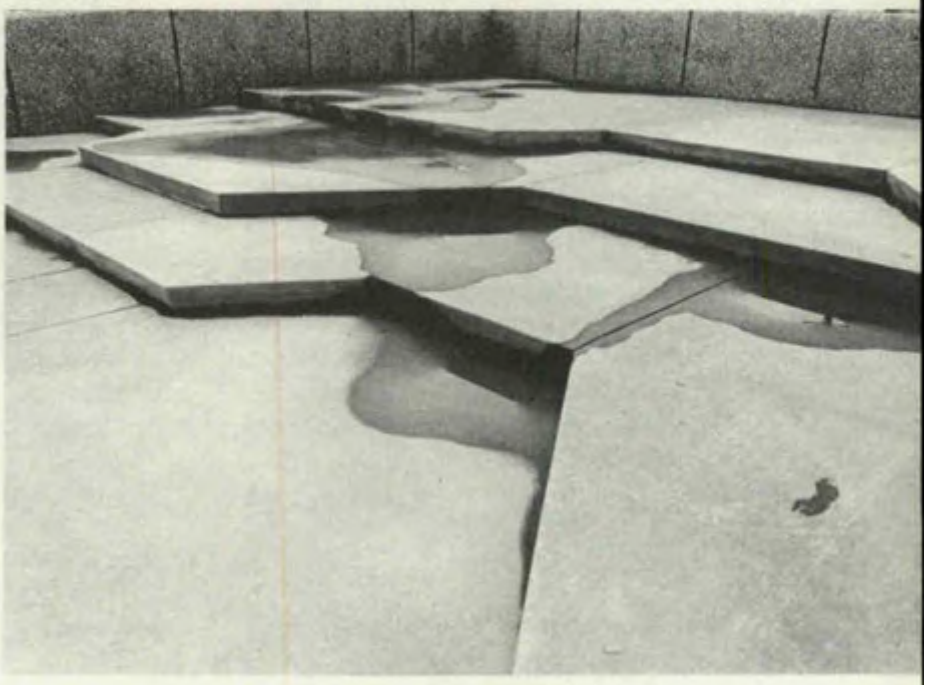
The following requirements must be completed for secondary school certification:

Professional education totaling a minimum of 18 credits:

1. Educational psychology of teaching and learning, such as Psychology 338 or Growth and Development 210 or 332.

2. The teaching methods course in the appropriate subject area, selected from Education 310, 311, 312, 313, 314, 316, or 317. For the student who desires to be licensed in two majors or a major and a minor in different subject areas, the methods course in each area is required.





3. A minimum of four elective credits selected in consultation with the student's education collateral adviser from education courses approved to meet this requirement.

4. A minimum of eight credits in student teaching (Education 403) or internship at the secondary level in the major teaching area or major and minor teaching areas. (See description of student teaching on the next few pages.)

Statutory requirements: Wisconsin Statute 118.19(6) specifies: "In granting certificates for the teaching of courses in economics, social studies, and agriculture, adequate instruction in cooperative marketing and consumers' cooperatives shall be required. In granting certificates for the teaching of courses in science and social studies, adequate instruction in the conservation of natural resources shall be required."

The requirement for instruction in cooperative marketing and consumers' cooperatives may be met by taking Economics 203 or Regional Analysis 205.

The requirement in conservation of natural resources may be met by taking Economics 305, Ecosystems Analysis 322 **and** 323, Environmental Science 302 **or** 303, or Regional Analysis 410.

The statutory requirement is in addition to the required 18 credits of professional education.

Tool Subject requirements in human relations and reading:

1. Human relations. To fulfill the requirements in human relations preparation as specified by the Department of Public Instruction Administrative Code, all candidates for teacher certification at UWGB must complete a program which contains five elements:

a. A foundations course in human relations and institutional racism, sexism, and prejudice.

b. An intensive study of interpersonal dynamics (one course).

c. An intensive study of the values, life styles, and contributions of at least one identifiable subcultural group in American society (one course).

d. Supervised field experience involving working with a subcultural group other than one's own.

e. Direct study of the reflections of prejudice and ways to deal with those reflections in various instructional materials, which are included in all education methods courses.

To evaluate the achievement of this human relations program, an annual survey assessing knowledge, attitudes, and practices in the area of human relations is administered to all students completing a teacher certification program. Participation in the survey is mandatory, but individual students are not identified nor evaluated.

A list of the UWGB courses which have been approved to meet the various requirements of this program are published each semester. Because of the variable content of many courses which relate to this program, e.g., umbrella courses, selected topics courses, January Practica, Liberal Education Seminars, etc., it is imperative that the student consult the approved course list for the semester in which he or she will be enrolled.

Each student must have the record of his or her completion of the human relations requirements approved by an education collateral adviser.

2. Reading. To meet the requirements of the Department of Public Instruction Administrative Code, Education 318, Reading and Study Skills in the Secondary School, will be required of students completing teacher certification at the secondary school level after September I, 1975.

The tool subject requirements are in addition to the 18 credits of professional education required for the education collateral.

Elementary School License. The collateral in education offers a program preparing tea-

chers for general elementary certification in grades 1-6, which may include kindergarten certification, and another for grades 4-8. An early childhood and kindergarten certification program is offered by the Growth and Development concentration. To be eligible for general elementary school certification, the student must acquire subject matter proficiency in social studies, art, science, mathematics, and music, as well as proficiency in English. The *Handbook on Teacher Certification* contains a description of these requirements. In addition to the required subject matter proficiency, the following requirements must be completed for general elementary school certification:

Professional education totaling a minimum of 29 credits as approved by the Wisconsin Department of Public Instruction:

1. One course in educational psychology of teaching and learning, such as Psychology 338 or Growth and Development 210 or 331.

2. All of the following education courses: 302, 303, 304, 305, 306, 307, and 309.

3. A minimum of 8 credits of student teaching (Education 402) or internship at the elementary school level.

Tool subjects in human relations as specified for the secondary school license are also required for licensure at the elementary school level.

Candidates for general elementary certification may also be recommended for certification in one or more subject areas by completing the requirements of an approved teaching

minor (or major) in that subject area. This is particularly recommended for candidates interested in teaching at the middle school level.

Specialist License. To meet the requirements for certification in the special fields programs offered by UWGB (K-8 or K-12), the student must complete the approved teaching major (or certification sequence for reading teacher certification) as described in the *Handbook on Teacher Certification*. Additionally the following requirements must be met:

Professional education totaling a minimum of 18 credits:

1. A minimum of one course in the educational psychology of teaching and learning approved for the grade level(s) of certification sought.

2. The teaching methods course in the subject area approved for the grade level(s) of certification sought.

3. A minimum of two elective credits selected in consultation with the student's education collateral adviser from the education courses approved to meet this requirement.

4. A minimum of 8 credits in student teaching (Education 402 and/or Education 403) or internship in the subject area of certification. For certification in grades K-12, student teaching at both the elementary and secondary levels are required.

Tool subjects in human relations and reading as specified for secondary certification are required. For students completing specialist certification at the elementary school level only, Education 307 or 318 may be taken to meet the tool subject requirement in reading.

Student Teaching for Elementary or Secondary Certification. Student teaching or teacher internship is required for elementary or secondary certification and is customarily taken in the student's senior year. Application for the teacher internship program must be submitted to the director of student teaching by February 1, preceding the academic year in which the student wishes to intern. Applications for student teaching are due by March 1 preceding the academic year of the student teaching.

Students should refer to the *Handbook* as well as consult with their faculty advisers in education or the director of student teaching for specific information on these programs and for eligibility requirements. Placement of student teachers may be limited by the availability of supervisory personnel, student teaching positions, or internships. Students who register by the deadline dates are given priority.

Waivers and Pass-No Credit. Waivers of courses in the education collateral are seldom possible because the requirements for certification are defined by the Wisconsin Department of Public Instruction. Courses in education necessary for certification, other than student teaching, cannot be taken on a pass-no basis. Student teaching is offered on a pass-no credit basis only.

The Collateral in Environmental Administration

Professor: G. Petrie.
Associate Professors: H. Jadwani, J. Powers, D. Ward (acting chairperson).
Assistant Professors: M. Close, V. Dilweg, P. Mulvihill, R. Obenberger, F. Sailer, K. Zehms.
Instructor: M. Troyer.
Lecturers: B. Coleman, C. Halverson, R. Williams.

This professional minor in administration is designed to assist theme-college concentration and concentration-option majors. It is not open to majors in Managerial Systems.

To complete the collateral requirements, the student must select 18 credits from the appropriate courses in administration. This selection should be made in consultation with a collateral adviser and may include courses from (1) accounting and quantitative methods, (2) finance, (3) labor and personnel

management, (4) marketing and distribution, and (5) organization and operations. The courses chosen may be tailored to the career needs of the student.

Examples of the application of the collateral include combining it with a Communication-Action-Music program to form a music-marketing program. Combining Ecosystems Analysis or Environmental Control with the collateral may form the basis for an environmental management career. Additional program examples may be obtained by consulting with the collateral chairperson.

The Collateral in Leisure Sciences

This curriculum provides education for the leisure service professions including management, supervisory, and leadership positions in public park and recreation systems, private agencies and recreational enterprises, and resource planning agencies and firms. Leisure Sciences may be combined in various ways with several concentrations. Three of the courses, for example, are cross-listed in Regional Analysis.

The Collateral in Mass Communications

Associate Professor: D. O'Brien (chairperson).

This field is concerned with the application of communications insights and skills to the mass communications media: primarily newspapers, magazines, radio, and television. In consultation with an adviser, the student chooses 12 credits from among the courses in mass communications and six credits selected from such related areas as administration (especially public relations and advertising), communication processes, political science, and social psychology.

The Collateral in Social Services

Professor: I. Korner (chairperson).
Assistant Professor: D. Galaty.
Lecturers: R. Jansen, C. Weberg, R. White.

Fulfilling this collateral prepares the student for a variety of social service activities in public and private settings. The thrust of the collateral's education is away from preparing the student for a primary career in traditional social work (public or private mental health agency or welfare agencies) and towards expertise in psycho-social ecology (various community agency exposures, psychological first aid, crises control competence, organizational planning, social advocacy, group work, personnel work, and human relationship skills).

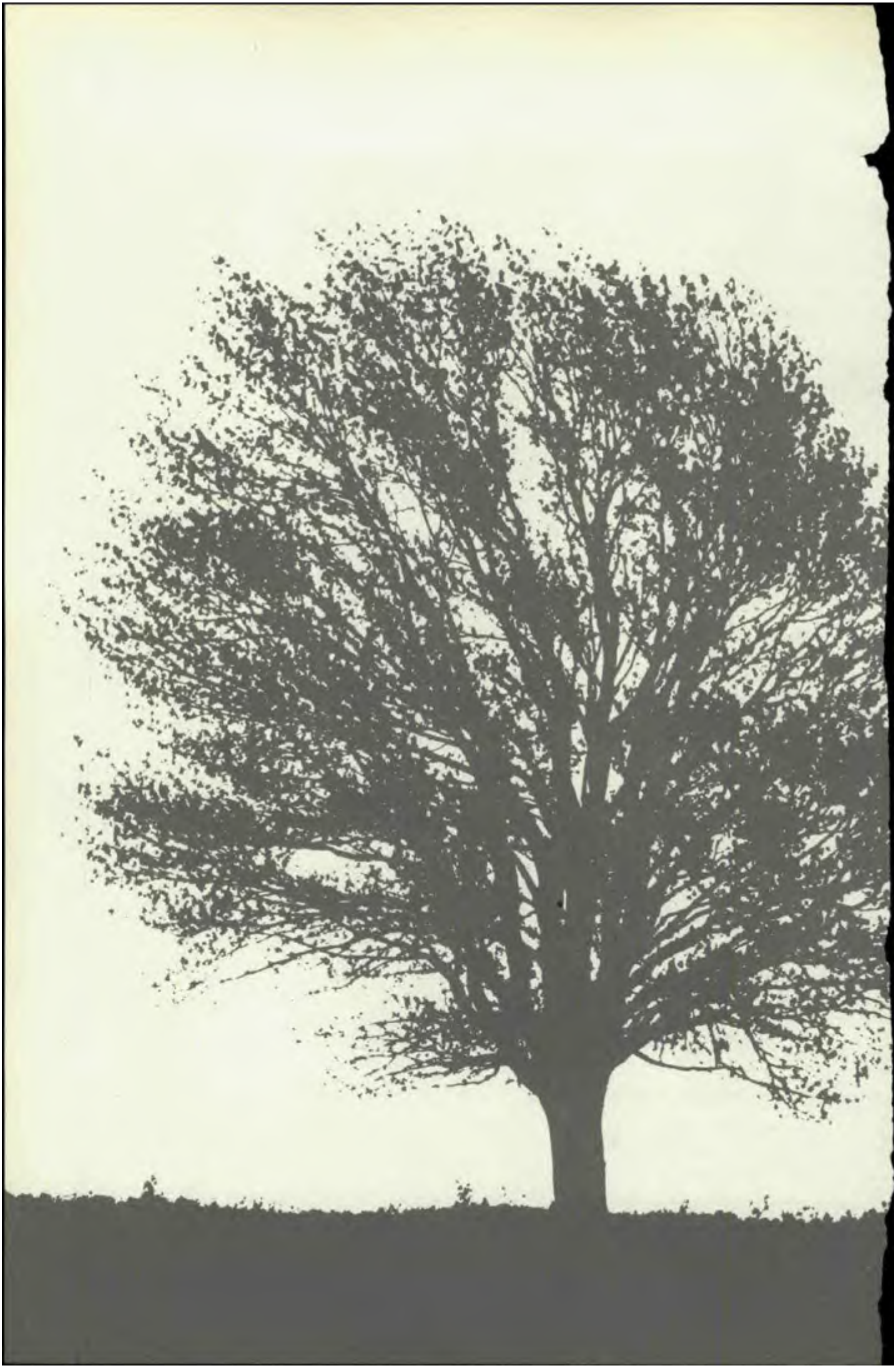
Teaching stresses methods of human cooperation utilizing student-teacher relationships and team placement in community training settings. These and other potential group approaches to learning are utilized.

The program is taught in one academic year coordinating training in a community agency with classroom skill and theory development. The student may elect to emphasize training in mental health or change agentry work. Exposure to both orientations is a basic part of the program.

Mental Health training focuses on programs designed to meet community needs. Methods of individual, group, and environmental intervention are developed.

The **Change Agentry** training emphasis is on improving social institutions and bureaucracies, large and small, to make them more favorable and benign habitats for individuals and small groups.

The collateral program is demanding, requiring 8 hours of class work and 10 hours of field experiences each week. It is recommended that students not take more than 6 credits per semester in addition to the 10 or 11 credits of the collateral. Part-time work by the student should be arranged around collateral field placement and scheduling.



Preprofessional Programs

PREPROFESSIONAL PROGRAMS

Three kinds of preprofessional opportunities exist at UWGB. First, regular concentrations (majors), options (co-majors), and collaterals (professional minors) offer appropriate preparation for most graduate professional schools such as law, medicine, dentistry, social work, and music.

Second, for students desiring a four-year bachelor's degree in engineering, or certain other applied fields, UWGB offers two years of preprofessional work.

Third, students desiring both a liberal and a technical bachelor's degree can select a 3-2 plan leading to both a bachelor of arts (or science) degree at UWGB and a bachelor of engineering (or another applied field) at another institution. Normally, three years are spent at UWGB, two at the other institution.

The following listing is typical of the kinds of preprofessional programs available. It is by no means exhaustive and students may be able to develop other programs to meet their individual needs. The student interested in pursuing a preprofessional program should consult an appropriate adviser.

Agricultural Science

UWGB provides adequate basic preparation for the prospective student in agricultural science. The student would ordinarily take two years at UWGB, transferring at the beginning of the junior year to a school or college of agriculture. In the freshman and sophomore years, such a student is advised to register for courses in biology, nutritional sciences, earth science, ecosystems analysis, and chemistry-physics.

The student should obtain a copy of the catalog of the agricultural college he or she intends to enter, and be guided by its recommendations for freshman and sophomore studies.

Architecture

Instruction in architecture more and more is offered only at the graduate level. Preparation should be guided mainly by the requirements and recommendations set forth in the catalog of the architectural school of the student's choice. Nevertheless, it may be pointed out that architecture combines the study of science, mathematics, and art. A proper concentration-option combination can be easily worked out with an adviser.

City Planning and Community Development

Graduate professional instruction in city planning and community development is available at many universities. The student is advised to obtain a catalog from the institution of his or her choice, and be guided primarily by its requirements and recommendations.

The degree requirements of UWGB are flexible enough that the student, in consultation with an adviser, may construct a suitable preparatory program. No individual can be expected to master all the subjects and skills desirable in this profession, particularly in an undergraduate program. For a good start, the

student is advised to consider the concentration in Urban Analysis, options in economics and political science, and the professional collateral in environmental administration.

Engineering

UWGB provides the prospective engineering student with an opportunity to obtain a fundamental background for entry into an engineering school. An integrated basic program is provided in mathematics, chemistry-physics, and engineering. The student may follow either the 2-2 or the 3-2 program described earlier. Courses accredited by the College of Engineering at the University of Wisconsin-Madison and the University of Wisconsin-Milwaukee are available at UWGB.

A student should select as early as possible the engineering school he or she plans to attend. Then, in consultation with an adviser, the student should adjust his or her program to meet the transfer requirements for the engineering field of his/her choice. A strong high school background in mathematics and physics is essential. The following courses are recommended for pre-engineering and should be completed by the end of the sophomore year: a freshman course in written and oral communication; Chemistry-Physics 110, 211, 212 and Mathematics 202, 203, 206 and 308.

The need for a modern foreign language and Environmental Control 102, 313, and 314 depends upon the choice of engineering school and field of engineering.

Students studying under the 3-2 plan must take the freshman and intermediate Liberal Education Seminars and meet all the other University requirements for graduation.

Health Professions

Medicine. Although colleges of medicine differ in their specific entrance requirements, all of them emphasize the importance of exceptional ability, high aptitude in science, and outstanding achievement in premedical college education. A student who plans to apply for admission to a particular college of medicine should become familiar with the requirements of that college and make certain that the courses for which he or she registers will meet those requirements.

The minimum requirement for admission to colleges of medicine is 90 credits of college work. However, almost all the leading medical schools require a bachelor's degree, and it is desirable in order to meet the competition presented by well-qualified candidates.

All medical colleges specify certain subjects. The following list is representative, although not applicable in every case: Biology 202 and 203; 6 credits of advanced biology, 15 credits of chemistry-physics, 8 credits of organic chemistry, 4 credits of analytical chemistry, 6 credits of English literature and language, and 6-8 credits of mathematics.

Physical chemistry and mathematics through calculus provide a useful background and allow a better understanding of the basic concepts of human biology.

In addition to evidence of academic competence, other qualifications for admission are considered. Special attention is given to letters from college professors, premedical committees, and impressions gained from personal interviews.

Applicants are almost always required to take the Medical College Admissions Test preferably not later than the October preceding the desired year of admission. Students should consult the UWGB premedical adviser regarding the formulation of their programs.

Undergraduates wishing to enter the University of Wisconsin-Madison Medical School after the third year should see the UW catalog, part 1, or consult the premedical adviser.

Dentistry. The minimum requirement for admission to colleges of dentistry is 60 credits of college work. Almost all the leading dental colleges, however, require completion of a minimum of 90 credits. All dental colleges specify certain subjects. A representative list would include Biology 202 and 203, 15 credits of chemistry-physics, 10 credits of advanced biology and chemistry, and 6 credits of literature and language. In many cases, the student is advised to take more than the minimum amount of work in the subjects represented in the prerequisite sciences.

Electives should emphasize those subjects that will afford the student the broadest possible background. In any case, the student should examine the catalog of the dental school to which he or she plans to seek admission and, with an adviser, formulate a program of courses accordingly.

Nursing. For the student who desires to prepare for a professional career in nursing or nursing science, a choice may be made between two programs. The first, conducted in collaboration with the Bellin Memorial Hospital School of Nursing in Green Bay, leads to the R.N. diploma. The other, con-

ducted in collaboration with the schools of nursing at the Madison, Milwaukee, Eau Claire, and Oshkosh campuses of the University of Wisconsin, leads to the B.S. degree in nursing.

1. **The Diploma Program at Bellin Memorial Hospital School of Nursing.** This program prepares the student for certification as a registered nurse. In addition to the professional training offered at Bellin, the following university courses or their equivalents are required: 12 credits in biology, 5 credits in general chemistry, 6 credits in psychology, and 3 credits each in growth and development, nutritional sciences, and sociology. The student must also demonstrate proficiency in English composition. Other courses, some of which may be required, bring the total credits earned to 42.

To participate in this program, the student must be admitted both to the Bellin School of Nursing and to the University. Separate application blanks are required by the hospital nursing school and the University. For further information, write to the Director of the Bellin Memorial Hospital School of Nursing, 733 South Webster Avenue, Green Bay, Wisconsin 54301.

2. **The Baccalaureate Program.** The schools of nursing of the University of Wisconsin offer programs leading to the bachelor of science degree in nursing and prepare the high school graduate with no previous experience in nursing for registration as a professional nurse. Normally one year may be taken at UWGB; UW-Milwaukee students may take two years. The remainder is offered at the schools of nursing on the Madison, Milwaukee, Eau Claire, and Oshkosh campuses. Under this plan the B.S. degree earned is that awarded by the school of nursing.

Required courses are listed in the catalogs of the respective schools. Each student must apply to the school of nursing which he or she wishes to attend for admission to the last two or three years of the nursing program. Admission is based on qualifications for nursing, grade point average, educational facilities of the school, and other relevant factors.

Registered nurses who wish to obtain a bachelor's degree may be admitted to the program described above. Advanced standing for previous work in a diploma or associate degree program may be earned through examination and satisfactory performance in an introductory required nursing course. The appropriate school of nursing should be consulted early for program planning.

Pharmacy. The University of Wisconsin-Madison pharmacy program offers the bachelor's degree after completion of five years of work—two years of prepharmacy which may be completed at UWGB, and three years in the School of Pharmacy on the Madison campus. Basic requirements of the prepharmacy program are 60 semester hours including Biology 202 and 203; Chemistry-Physics 110, 111, 112, 302, 303, 304, and 305; 3 credits in economics; 6 credits in written and oral communications; and 8-9 credits in mathematics, including Mathematics 202.

Veterinary Medicine. A student interested in seeking admission to a professional school of veterinary medicine should obtain catalogs from the schools to which he or she might apply. The University of Wisconsin does not grant a degree in veterinary medicine.

The student interested in veterinary medicine should consult an adviser as early as possible to work out a course program that will satisfy the admission requirements of the school of his/her choice. While admission requirements vary, the following requirements are typical.

A minimum of two years (60 credits) of prescribed preprofessional college work is required, in which the student must have attained a stipulated grade point average, which ordinarily is higher than the 2.0 level. Typically, credits include Biology 202 and 203; Chemistry-Physics 110, 111, 112, 302, 303, 304, and 305; 6 credits in written and oral communication; 4-5 credits or college algebra and trigonometry; and 3 credits of introductory political science.

Because of limited facilities, admission to a college of veterinary medicine is on a competitive and selective basis. A pre-admission

conference with members of the veterinary faculty or admissions committee is usually required. High school records, scholastic attainment in preprofessional course studies, aptitude, character, and personality are given preference.

A student in veterinary medicine who wishes to receive both the degrees of doctor of veterinary medicine and bachelor of science must take at least three years of work in the curriculum at UWGB. The student's program must have the approval of the dean of the colleges and preliminary approval of the veterinary medical school of his or her choice. The professional curriculum extends over a period of four years and leads to a degree of doctor of veterinary medicine.

Home Economics

The student interested in obtaining a bachelor's degree in home economics may usually attend UWGB during the freshman and sophomore years, transferring to a school of home economics at the beginning of the junior year. The preprofessional student in home economics should obtain a copy of the catalog of the school of his or her choice and plan the first two years with a faculty adviser. The following freshman and sophomore courses are typically required: Chemistry-Physics 108, Economics 102, Human Adaptability 104, Nutritional Sciences 232, Psychology 102, Sociology 202, 18 credits of literature and other humanities, and one semester of physical education.

Law

Graduation from an approved college is a prerequisite for admission to virtually every law school. Occasionally admission is granted to exceptional students who have completed at least the first three years of work leading to a bachelor's degree and whose academic record and aptitude for law study are especially promising.

In the words of the Law School of the University of Wisconsin-Madison, "it is impossible to recommend a precise course of study or list of courses for all persons intending to study law. In fact, since law touches every facet of human life, the law school looks for diversity in educational background ...."

The Association of American Law Schools has the following observations concerning desirable areas of pre-law study. The lawyer must be able to communicate effectively in oral and written expression. The mastery of logic should be pursued. Courses in the social sciences, history, physical sciences, philosophy, and accounting also are recommended.

Finally, law schools recommend that attention be paid to three principles: excellence of instruction, which means studying under the best teachers; pleasure, which means studying those subjects the student will like when he or she has worked hard at them; and depth, particularly if this involves a major writing project.

The pre-law student is urged to purchase the handbook entitled "Law Study and Practice in the United States," which may be ordered from the publisher, West Publishing Company, St. Paul, Minnesota 55102. After studying the handbook, the student should plan a program with a faculty adviser.

Undergraduate students with grade point averages well above 3.0 and scores on the Law School Admissions Test in the upper tenth percentile may be admitted to a combination program in which the student transfers to the college of law from UWGB at the end of three years of work, obtaining a bachelor's degree from UWGB when he or she completes the requirements for the degree of doctor of law (J.D.).

Social Work

Accredited schools of social work offer a two-year program of graduate study leading to the degree of master of social work. Admission to the graduate program is based on scholarship and personal qualifications for the profession. At the undergraduate level, eight semester courses in the social sciences are recommended, including such areas as anthropology, business, economics, psychology, geography, history, philosophy, political

science, or sociology. The professional collateral in social services is also advised.

Theology

All accredited theological seminaries and divinity schools require the bachelor's degree or its equivalent for admission. The American Association of Theological Schools, the accrediting agency, strongly recommends the liberal arts course as the best background for admission, and suggests the following undergraduate courses: 18 credits of literature, composition, and speech; 9 credits each of philosophy, religion, and history; 6 credits of natural science; 18 credits of social science; and reading knowledge of a foreign language.

The pretheology student will find that satisfying the general degree requirements at UWGB will almost automatically fulfill admissions requirements for graduate schools in theology, with the exception of the course work in religion.

Water Resources and Hydrology

The Environmental Control and Ecosystems Analysis concentrations provide the basic background required for entry into graduate hydrology programs. The student, with the help of an adviser, can build a program which will focus on his/her special interests. Such a pregraduate hydrology program can relate to geology, engineering, soils, meteorology, economics, or administration

COLLEGE AND UNIVERSITY TEACHING

The teaching profession in institutions of higher learning differs markedly in its education requirements from the teaching profession at the elementary and secondary level. To enter the ranks of the academic profession, emphasis is placed entirely upon mastery of the subject matter field the prospective professor wishes to teach.

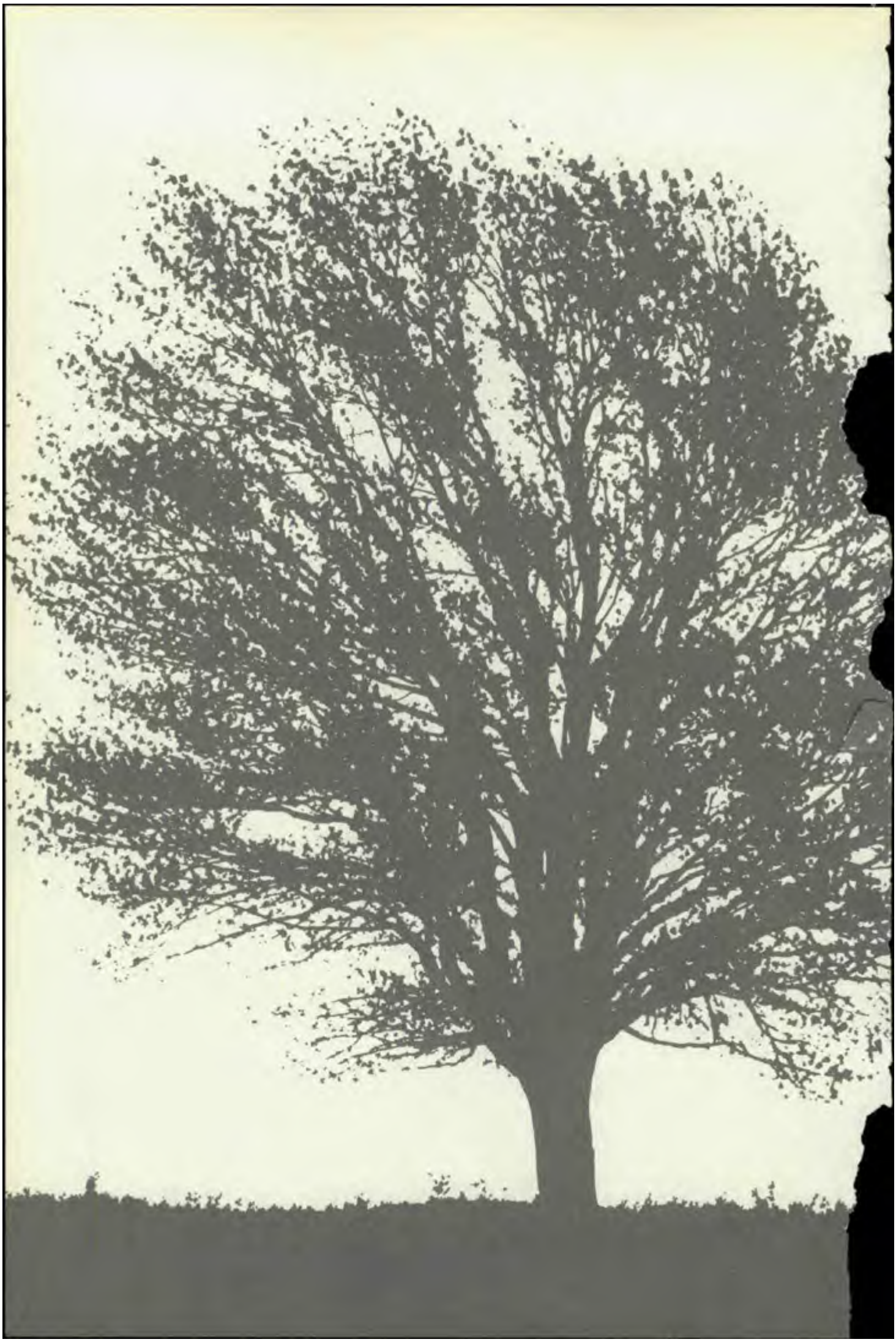
There are no professional courses in teaching methods or in practice teaching. Instead, it is expected that the student will obtain a bachelor's degree in the field in which he or she wishes to teach. Subsequently the student enters a graduate school and pursues a program of graduate study leading to the master's or doctoral degree.

While at one time the master's degree was enough, the trend is strongly toward obtaining what is called a terminal degree, which means the highest degree attainable in the field. In most fields, it is the Ph.D. degree, but in some fields, such as fine arts, another degree is considered to be terminal.

For admission to a graduate school, the applicant's credentials are ordinarily examined by a committee of professors in the area the applicant wishes to pursue. In deciding whether or not to admit the applicant, the committee looks primarily to the grade point average he/she has attained.

Excellent grades are especially important in the area of choice. Other things being equal, the student should have taken a considerable amount of work in that area. At UWGB, this means that the student should have chosen an option (co-major) or collateral (professional minor) in that discipline or field. A student with an exceptionally high grade point average may be admitted, even though he or she does not have adequate preparation in the discipline, in which case he/she will probably be required to take some undergraduate courses in preparation for graduate work.

The student interested in pursuing an academic career should write to the Educational Testing Service, Princeton, New Jersey 08540, to obtain a copy of the handbook describing the nature and components of the Graduate Record Examination. Almost all graduate schools in the United States require applicants to take this examination. For information on the dates and times when the GRE is given in Northeastern Wisconsin, contact the UWGB director of placement.



Enrichment and Resources

A VARIED EDUCATIONAL EXPERIENCE

The educational program at UWGB combines the world of books and instruction with the world outside the classroom in a way that encourages the student to develop a sense of wholeness. Curricular and co-curricular programs act together to enrich and extend the academic plan of UWGB so that the student's involvement is rich and varied. These programs are designed to meet the needs of a wide range of students. Each student can select the resources that meet his or her particular intellectual, social, and physical needs.

SPECIAL PROGRAMS

UWGB has developed special academic programs to meet the needs of particular students. The programs are described below.

Honors Program

The honors program identifies students who combine high academic achievement with willingness to make their talents available to other members of the University community. The freshman with grades in the top 10 percent of the entering class, and the sophomore, junior, or senior with at least a 3.5 cumulative grade point average is invited to apply if he or she has demonstrated outstanding achievement through two semesters of academic work and has participated actively in the life of the University community. To stay in the program, the student must maintain a 3.25 cumulative grade point average. Freshman members must reapply for membership as sophomores.

Members of the honors program are encouraged to serve on the Environmental Action Committee, concentration advisory committees or comparable groups, and to help as tutors and assistants in the special learning programs.

Graduating With Distinction—Senior Distinction

A student with a cumulative grade point average between 3.25 and 3.49 is graduated *cum laude;* between 3.5 and 3.74, *magna cum laude;* and between 3.75 and 4.0 *summa cum laude.* For the *magna* and *summa* ranks, completion of a senior distinction project is required. This project can be a thesis, special research, or creative work, and is related to the student's concentration program.

Educational Opportunities Program

This program is designed for a limited number of students who do not meet the normal entrance requirements of the University. It is based on a special advisory/tutorial relationship between the student and members of the UWGB faculty and staff. This relationship includes weekly counseling and academic learning skills sessions, in addition to closer faculty-student-staff instructional efforts. This is to assure that the student is aware of all of the resources of the University, that his or her academic efforts are as fruitful as possible, and that he/she is informed on the academic alternatives available.

A student can seek admission to UWGB under the educational opportunities program if he or she shows good potential for academic success. Such potential may be verified by a recommendation from a high school adviser or teacher or member of the community.

Freshman enrollees in the educational opportunities program should be aware that a leading objective of the program is to assure that they will be able to complete the sophomore, junior, and senior years.

Skills Learning Program

The skills learning program is designed for students who need to strengthen their reading, composition, study, and mathematics skills. The Skills Learning Program Office is always open to students who wish assistance in these areas on a walk-in basis. Students also may be referred to the program through placement tests or by faculty members. Most work in the program is on a tutorial and small group basis, scheduled at the convenience of the student. Non-credit workshop projects on topics of particular interest to the student can be arranged.

OFF-CAMPUS STUDY

At UWGB, problems are observed firsthand and experienced, not just studied through books or in the classroom, laboratory, or studio. Major opportunities for off-campus study are presented in the intermediate sections of the Liberal Education Seminars. In relation to the section theme, a project is done in the Northern Great Lakes region plus some form of significant involvement in another culture, either through simulation and study or through travel-study to other parts of the United States or abroad.

Students who participate in VISTA, the Peace Corps, or similar programs may receive credit or waiver of requirements if the experience relates thematically to one of the intermediate LES sections. In addition to the seminars, which are required of all students, possible

off-campus programs for credit include special practica during the January interim period. Volunteer off-campus service opportunities are also available. These normally do not carry academic credit.

LIFELONG LEARNING

The Office of Adult Education serves as the doorway back to school for the community people who want to continue their education. The staff offers advice to all returning adults, whether they are part-time or full-time students, taking classes on campus or off. In 1973-74, 25 percent of the total student body were 25 years of age and older.

Courses Available to Adults

All courses at UWGB are open to returning adult students. Many courses are scheduled during the late afternoon and evening hours to meet the needs of those unable to come during the day. Courses are scheduled in off-campus locations including Door, Shawano, Manitowoc, and Keshena counties to provide opportunities for people in those areas to continue their education.

TV credit courses available on Channel 38, a newspaper credit course printed in area papers, independent study, credit for experience, and the opportunity to gain credit by examination are unique ways for older students to work toward a degree even though they may have other major responsibilities.

Non-Credit Opportunities

A variety of non-credit courses are offered by the Office of Adult Education for those not interested in pursuing a degree. This last year there were courses such as Personal Growth for Women, Zen and Yoga, Extra Sensory Perception, Career Exploration and the Job Market, Getting at the Roots of the Environmental Crisis, Sensitivity to Children, and Fly Tying, among others.

Auditing

Recent action by the Board of Regents provides the opportunity for older students to audit (take credit courses without credit) courses at one half the usual cost. Senior citizens may audit courses free of charge.

Scholarships

Students taking at least 6 credits may apply for financial aid through the Financial Aids Office. Some scholarships are available for persons with financial need who want to take only one credit course at a time.

Day Care Center

UWGB provides a Day Care Center for 2 to 5-year-old children of students who attend UWGB. It gives an opportunity for children to grow and learn in a unique environment where the staff is certified and where parents participate in the learning experience as well.

University Without Walls

The University Without Walls (UWW) is an alternative approach to a baccalaureate degree at the University of Wisconsin-Green Bay. UWW goes beyond the traditional concept of the classroom as the place of learning and beyond the idea of a fixed curriculum or time span for obtaining a degree. This program is intended for the motivated person, who for one reason or another, cannot attend an on-campus university program. The obstacle to an education might be distance from a university, family or job responsibilities, or unavailability of the degree desired.

The program is not "an easy way out." In many ways, it is more difficult than attending university classes because this alternative program places the responsibility for learning with the student. The student designs his/her own educational plan and actively participates in planning the content of each learning experience. The UWW program is not for everyone. It is for the self-directed student who desires an individualized program of study.

UWW-UWGB is one of 34 colleges and universities throughout the United States affiliated with the Union for Experimenting Colleges and Universities.

Conferences, Seminars, and Workshops

UWGB regularly conducts seminars and conferences to highlight the ecological focus of the University. Through these offerings, nationally known individuals, as well as leaders from Wisconsin, are able to make contributions toward this goal. Students, faculty, and area citizens are encouraged to participate.

During 1973-74, UWGB held an air quality workshop for high school seniors, the Governor's Commission on the Status of Women conference, the Ethics for Environment conference, an American Association of Higher Education conference and an "Upward Bound" Program conference. Conferences of this type truly contribute to UWGB's philosophy of communiversity.

UWGB As Communiversity

The concept of "communiversity," the community and the University working together in common purpose, has been a guiding force for UWGB since its inception. Community residents were active in establishing the University and in helping to design the academic plan.

Concerned community residents continue to show their interest in UWGB in a number of very active ways. Two of the newest community groups working with the University are the Visiting Committee, a sympathetic but independent review group which makes recommendations to help UWGB move toward its stated objectives as efficiently as possible,

and the Founders Association, which is made up of persons actively interested in the University's growth and development. UWGB's Community-University Relations Committee is comprised of students, faculty, and community members who deal with a variety of issues relating to the relationship between the University and the Northeast Wisconsin community. Other groups advise and support specific programs, such as the Varsity Club, which supports sports and the Adult Education Advisory Committee, which advises the Office of Adult Education. UWGB's Alumni Association has taken an active role.

The communiversity spirit is carried out as UWGB students and faculty study and work in the community and as community residents come to campus as students, visitors, guest professionals, and resource persons.

Some examples show the diversity of ways in which the University and community interact:

—A study of the Kewaunee River watershed involves high school students and older residents of the watershed area as well as UWGB faculty and students.

—UWGB students volunteer, without credit, to serve as nursing home visitors, provide enrichment activities for economically disadvantaged children, participate in children's theater, and other activities.

—Advanced accounting students each year provide a free income tax advisory service.

—UWGB administers federal funds for and faculty and students are actively involved in educational development projects in several Wisconsin Native American communities.

—Senior citizens take courses on campus free of charge as "guest students."

—Hundreds of high school students come to the campus each summer for workshops in music, art, and science.

—Credit and non-credit courses are offered each semester in Green Bay and in several outlying locations.

—A UWGB-sponsored ensemble of entertainers travels all over the state to present programs based upon Wisconsin's pioneer heritage.

—Students and faculty are active in Co-Care, a community organization serving a deteriorating neighborhood in Green Bay.

—Thousands of community residents come to the campus to attend musical and theater programs, art shows, seminars, and other activities each year.

These are only a few of the ways in which UWGB is currently carrying out its commitment to communiversity.

In his convocation address which formally opened the new campus more than five years ago, Chancellor Weidner expressed UWGB as "...a university built upon the principle that a campus is integrated into the fabric of society. It is based upon the principle that young adults have a major stake in what happens in this world, and much to contribute to the shaping of what happens. It is based upon the reality that in this region the community and the University are one." Future students at UWGB will have the opportunity to participate in carrying forward these principles.

STUDENT LIFE PROGRAMS

The goal of co-curricular programs is to help students integrate their intellectual and emotional experiences. The most effective co-curricular programs are those initiated by students themselves. Student-initiated organizations at UWGB include political clubs, environmental action groups, social and service groups, and recreational clubs concerned with such activities as skiing and bicycling. The staff of the Office of Student Life Programs assists established student organizations and helps create new organizations where there is interest.

Student artistic accomplishment in music, theater, dance, and the visual arts is advanced by play productions, art fairs, and other performance activities.

Informal relationships between students and faculty are enhanced in various ways, including discussion group meetings in faculty homes.

Volunteer Programs

Students are encouraged to become involved in the community outside the University, reflecting UWGB's emphasis on the relevance of classroom education to area problems. This is accomplished in part by such volunteer activities as tutoring, working in neighborhood centers, and helping mentally retarded and emotionally disturbed children. Volunteer programs are coordinated through the Student Life Programs office.

Shorewood Club

The UWGB student union, the Shorewood Club, overlooks the waters of Green Bay. Here students, faculty, and staff gather for informal meetings, seminars, and other activities.

Dances, receptions, and similar activities are held here. Food service is available during the morning and early afternoon hours.

The Shorewood Club also provides a center where students who live on campus can meet informally with those who commute. The activities program is designed to bring all students together. The student center is governed by the Shorewood Board, with members being elected by the students.

Club facilities include a building that is used primarily as a dining and assembly hall. It also accommodates film showings, informal theater productions, weekend dances and other activities.

Housing—Campus Apartments

Privately owned apartment-style residences adjacent to the campus provide living-learning experiences for UWGB students. The dynamic relationship that exists between the student's academic development and his learning environment is supported by various residence programs based on these housing units.

The private developer cooperated with UW-GB by constructing housing that complements the academic program, by combining arrangements for study privacy with opportunities for small group relationships. The standard four-student apartment contains two double bedrooms, a common living-study area, modest kitchen facilities and a bathroom.

Services offered in the student apartments include counseling and tutoring and a student-operated food store. A coffee house, operated by resident and commuter students, is located in the basement of one of the buildings.

Students can arrange their residence patterns for such purposes as creation of a learning community academic program under faculty guidance, foreign language houses, leadership training groups, special learning program workshops, and planning groups for "off-campus" of "other-culture" experiences.

Off-Campus Housing

UWGB students are not required to live in campus housing. Many students live at home or in private residences. Students who choose to live in private off-campus housing are eligible for and are encouraged to participate in all programs available to on-campus students. The Office of Student Life Programs maintains a current listing of a limited number of private rooms and apartments available to students.

INTERCOLLEGIATE ATHLETICS

UWGB's men's and women's intercollegiate athletic teams currently compete in basketball, golf, and tennis. Also, the women's intercollegiate teams compete in field hockey and men's teams compete in soccer. All home basketball games are played in the Brown County Veterans Memorial Arena in Green Bay, home contests in golf, soccer, field hockey, and tennis are played on the campus.

Opponents include a number of NCAA Division I universities. UWGB follows the rules of the National Collegiate Athletic Association (Division II) in determining the eligibility of student-athletes and the conduct of students in athletic events.

As the university, the budget, and interest in the athletic program grow, the number of intercollegiate sports offered will increase. Meanwhile, in addition to the varsity sports for men and women, the University offers a wide variety of intramural activities and club sports, enabling many students to enjoy athletic participation.

During the first five years of the intercollegiate program, the athletic teams have compiled outstanding records. The soccer team has won three District 14 (Wisconsin) championships while the basketball team has won 108 games and lost only 32. The basketball team has won one District 14 title and was invited to play in the NCAA Division II Great Lakes Regional District Playoff.

INTRAMURAL ACTIVITIES

UWGB encourages each student to participate in at least one intramural activity. These activities can be individual, dual, or team oriented, and are coeducational whenever feasible. They include:

Fall: Archery, flag football, golf, soccer, tennis, softball.

Winter: Badminton, basketball, bowling, fencing, handball, swimming, table tennis, volleyball, weight lifting, and wrestling.

Spring: Golf, tennis, softball, and broomball.

The intramural program is organized and administered by the Department of Intercollegiate Athletics, Intramurals, and Recreation.

STUDENT DEVELOPMENT CENTER

The Student Development Center offers counseling to students who need assistance with personal and emotional problems, vocational choice, and skill development. Trained counselors are available at all times. Vocational interest and personality tests are administered as part of the center's counseling program.

Counseling

Both individual and group counseling are utilized to help students make decisions that affect their educational, vocational, and personal-social development and adjustment. While students generally make sound decisions in these areas, the Student Development Center staff is ready to assist those who want help. Students using the center are provided with a confidential setting where they can explore their plans and goals. Students requiring long-term counseling or those with severe emotional problems are helped to find appropriate community resources and agencies. Peer counselors trained in friendship counseling skills are available to students who wish help from someone their own age.

Human Relations Training

Counseling groups on such topics as human relations, self-understanding and human potential are conducted regularly by the Student Development Center staff for students who desire this kind of experience.

UNIVERSITY HEALTH SERVICE

The University Health Service exists to care for illness and injury on campus and to aid students in developing physical and mental health care patterns that will equip them for productive lives. The Health Service offers free medical service daily on a walk-in basis.

In addition to the treatment of minor illness or injury, the Health Service provides referral information for students to doctors and dentists in the Green Bay area; dispenses commonly used medications approved by the medical consulting staff; provides information on nutrition, dieting, and other health topics; and assists handicapped students with reserved parking and other services.

All UWGB students are urged to obtain health insurance to cover emergencies that may arise throughout the year. Students not covered under a family policy may obtain coverage through the policy offered and coordinated through the University Health Service. Insurance coverage is mandatory for intramural sports participation.

A physical examination is required of all students enrolled for 8 credits or more. A medical report form is mailed to students with their acceptance letter.

PLACEMENT AND CAREER INFORMATION

The Office of Placement and Career Counseling provides comprehensive career advice and placement services. These services are designed for all UWGB students and for alumni desiring new positions.

The placement office brings to the campus employers from business, industry, government, and education, to provide students with a wide range of job opportunities.

In conjunction with the Student Development Center, a student can take advantage of individual or group counseling sessions to assist him or her in reaching a career decision based on a full appreciation of his/her potential and the reality of the times. The office assists students in finding appropriate careers in light of employment needs, trends of society, and individual abilities and preferences. Students are helped to make contacts and prepare resumes for job interviews.

The office maintains a current career resource library containing current information on careers and prospective employers. Catalogs and materials are available on graduate and professional schools and on undergraduate and two-year technical programs. Applications and information about examinations for admissions to graduate and professional schools and current graduate school financial aid information are available.

The office publishes the *Focus* Newsletter which contains current information about careers, employment trends, salaries, and other relevant material.

A *Directory of Candidates* is published twice a year which contains mini-vitae of graduates; it is mailed to over 900 businesses, industries, governmental agencies, and school districts in the state and nation to assist UWGB graduates in finding appropriate employment. Also, vacancy notices listing current job openings are published weekly by the office.

Seniors also may have video taped interviews sent to prospective employers who request them and who are located at a distance which would make in-person interviews difficult and expensive to arrange.

RESOURCES

Office of Instructional Services

The Office of Instructional Services supports the educational and administrative functions of the University through a full complement of media services including audiovisual, computing and data systems, and libraries, and the work of the curator of art.

Computer Services

The staff of Computer Services supports the academic program, research for faculty members, and administrative requirements for University offices. Consulting services are offered to students and faculty in such areas

as program design, software availability, program testing, and use of basic machines. A test scoring machine, to facilitate the scoring and analysis of examinations, is available.

The UWGB computer system features a Xerox Sigma 6 and is augmented by a link to the UW-Madison Academic Computer Center's Univac 1110. A system of remote terminals exists on the Green Bay campus.

Curator of Art

The curator of art serves as custodian and distributor of UWGB's art collection, including contemporary work of artists enjoying national and international reputations, as well as artists residing in the Upper Great Lakes region. Paintings, sculpture, watercolors, prints, drawings, ceramics, and photography are some of the art forms owned by the University. The curator of art arranges exhibits, critiques them, acts as liaison to museums, and appears on educational television programs to talk with visiting artists.

Educational Communications

UWGB instructional materials in both aural and visual formats have won national attention. In cooperation with faculty members, the Educational Communications staff has produced programs now being telecast from coast to coast, transmitted by national network facilities, and which are winning awards in national competitions.

Educational Communications staff members and students create graphics, photography, film, audio, and television materials which meet the demand for up-to-date practical instructional tools. These materials are distributed through closed-circuit transmission and cassette technology. A multi-channel switching system routes instructional television programs to classrooms and carrels; all learning stations (including 200 carrels on the plaza level of the Library Learning Center) are served by audio and video cassette playback equipment.

These materials are used outside the classroom as well. Nationwide distribution of such television courses as "Family Risk Management" and "The Consumer Experience" has brought UWGB college credit instruction to thousands of students beyond Wisconsin.

Cultural and educational needs of Northeast Wisconsin residents are met through UWGB's 3000 watt noncommercial stereo FM station, which presents a variety of music formats, campus and community news, and features in a student-operated setting. UWGB also provides studios and operates control facilities for public television Channel 38, under an agreement with the licensee, Wisconsin Educational Communications Board. Time on WPNE-TV is used by the University for public affairs and instructional programming. Local radio broadcasts also originate daily from UWGB over the state FM network through WPNE-FM, another ECB station.

Library

The Library Learning Center is thoroughly contemporary and serves as the intellectual heart of the campus. It employs the latest developments in library automation and planning; has an attractive and practical design; is centrally located; provides a warm, pleasant atmosphere, comfort, and convenience for users and staff; and is stocked with books, periodicals, and a full range of resource materials in all forms.

The collection is growing rapidly. In the spring of 1974 it included approximately 200,000 books, 18,000 reels of microfilm, more than 500,000 microprint cards, and other library materials essential for research and study. The periodical subscription list has about 4,000 titles, with backfiles of most of them on microfilm or in bound volumes.

The library is a full depository for United States government publications and for Wisconsin documents. The Canadian government has designated UWGB as one of the few U. S. depositories for its documents. A complete set of United Nations documents of foreign countries is maintained on microprint.

In addition, the library is a depository for Wisconsin and Michigan maps of the U. S. Geological Survey and a full depository for the Department of Defense Map Service. The library also has been named an Area Research Center of the Wisconsin State Histori-

cal Society, and houses historical manuscripts and archives of Northeast Wisconsin counties and municipalities.

The library's open stack arrangement brings readers and books together quickly and pleasantly. Carrels, tables, and group study rooms are provided in close proximity to the collections.

Resources of University Libraries in Madison and Milwaukee are available through the Wisconsin Interlibrary Loan Service (WILS), aided by a microfilm copy of the UW-Madison campus Memorial Library public catalog. The UWGB library is also an active member of NEWIL, an organization of Northeast Wisconsin libraries sharing resources. Faculty and students with advanced standing can obtain materials from other libraries throughout the country and the world through the international TWX network.

OFFICE FOR EDUCATIONAL DEVELOPMENT

The Office for Educational Development (OED) reflects UWGB's commitment to excellence in its academic functioning. It was established to study the effectiveness of educational programs and to contribute to their improvement.

The primary activity of OED is a student monitoring program designed to measure the progress of students toward instructional and personal goals. This program includes the placement testing of incoming freshmen, progress tests at the end of the sophomore and senior years, and the follow-up of graduates. The emphasis of the testing programs may vary from year to year, but they are designed to provide the balanced information needed to evaluate intellectual, personal, and social development, and growth in readiness to assume civic responsibilities.

In a second major program area, student comments about their courses are systematically collected, analyzed, and reported back to the faculty. The reports are in two forms; individually, so that the instructor may profit from the student feedback; and in grouped form, so that general programs can get the benefit of student reports. These surveys are undertaken toward the end of each term.

A third major activity of the OED is to help instructors improve their teaching skills. Intensive, practical programs are offered each year which focus on selected aspects of teaching.

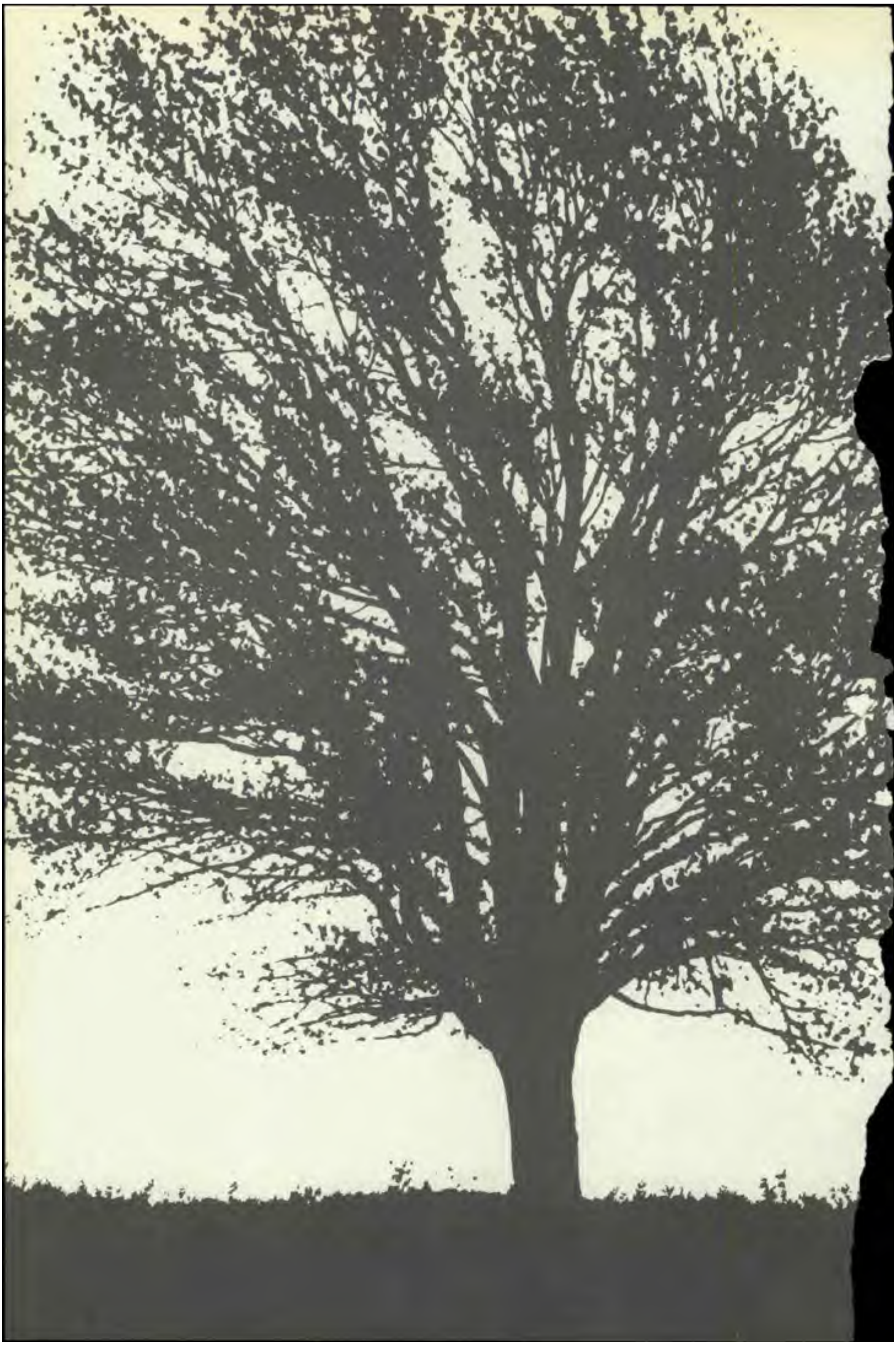
Other OED programs are designed to take soundings on the "social climate" of the campus; contribute to the planning, evaluation, and improvement of new courses; and study local introduction of unfamiliar educational technology. An Educational Testing Center has been established in the OED.

Students at UWGB are expected to cooperate with the OED, as responsible members of the campus community. When it seems appropriate, participants in OED studies are assured of anonymity. Even when identification data are elicited, the privacy of individual responses is scrupulously safeguarded.

LECTURES AND PERFORMANCES

A student-faculty committee and staff director comprise the Office of Lectures and Performances. It is the responsibility of this office to book all professional performing arts programs and lectures. Guest artists and groups in music, drama, and dance provide opportunities for students, faculty, and community residents to see and hear professional performances, and thus complement the University's instructional program.

The office works closely with the instructional program to lend production support for on-campus shows. Through its Talent and Speakers Bureau, appearances and tours of University-based performing groups are arranged. The office also sponsors daytime programs through its Concourse University series.



Admissions, Expenses, and Financial Aids

GENERAL PHILOSOPHY

While UWGB has basic admission requirements, a philosophy of "personalized admissions" dictates that each applicant be considered as an individual. Total experience through and since high school and special circumstances or social-economic backgrounds are always considered. Appropriate innovative programs and courses taken through non-traditional curricula are given full and positive consideration. Therefore, students who do not meet the basic requirements but who feel they meet the spirit of this admission philosophy are encouraged to apply.

Admissions Procedures

An application should be submitted no later than August 1 for the fall term, December 15 for the January interim period, January 10 for the spring term, or May 15 for the summer session. There is no application fee.

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 an admissions counselor in making the best possible evaluation of their potential for achievement.

Every new student is required by University of Wisconsin regulations to submit a medical report form to the University Health Service before registering. The form is mailed to the student with the permit to register.

Freshman Admission Requirements

A high school graduate who wishes to qualify for admission as a degree candidate should normally fulfill the following requirements:

1. Be graduated from a recognized high school or equivalent (as defined in UW System Policy).

2. Rank in the upper half of graduating class.

3. Present 16 units of high school preparation, or needed requirements for graduation as defined by the high school. Unit distribution is as follows:

English	3 units
Mathematics (not general math)	1 unit
Science	1 unit
Social Studies	1 unit
Academic Electives	6 units
From the areas of	
English	
Speech	
Foreign Language	
Social Studies and History	
Sciences	
Mathematics	
Other Electives	4 units
TOTAL	16 units

Students who do not meet requirements 1, 2, or 3 may apply and will be considered individually for admission. Several options, including summer and academic year trial programs, are available.

Transfer Admission Requirements

The student who has attended any kind of school after high school graduation will complete the Undergraduate Student application and should fulfill the following requirements:

1. All transfer and advanced standing students should have a 2.0 grade point average (on a 4.0 system).

2. Students with fewer than 15 credits may be requested to submit a high school transcript.

3. Students with less than a 2.0 grade point average may be considered for admission if (a) they would have met UWGB basic freshman admission requirements, and (b) they would not have attained a "drop" action had they earned the same grade point average at UWGB.

A prospective transfer student must request all schools he or she has attended since high school to forward an official transcript directly to the Office of Admissions and certify as to his/her honorable dismissal. Included are nursing, business, and vocational and technical schools, as well as other colleges and universities. Excepted are training schools attended as part of military service. The student must submit the records whether or not the work was completed and regardless of his/her desire to request UWGB credit for the courses.

UWGB is flexible in regard to the transfer of credits from other institutions. At the time of admission, credits for work completed elsewhere are evaluated. For students with work in progress, the evaluation will be mailed after final grades from the other institution are received. The evaluation indicates courses and credits accepted by UWGB to fulfill UWGB requirements. The accreditation status of the previous institution and the quality of student achievement are determining factors for transferring courses and credits. UWGB also evaluates College Level Examination Program scores and United States Armed Forces Institute courses for possible credit.

The official evaluation should be used when planning a program at UWGB. By following this procedure, the student will avoid enrolling in duplicate courses which could result in loss of credit. A credit evaluator in the Office of the Registrar should be consulted for information concerning an evaluation.

Students who have had some college experience before coming to UWGB must meet some or all of UWGB's graduation requirements, depending on previous work and class standing upon entrance. The credit evaluation will indicate which requirements have been partially fulfilled at the time of entrance.

A student transferring to UWGB as an advanced freshman (23 or fewer credits) must fulfill all requirements of the University and his or her major.

A student transferring with between 24 and 41 credits usually must fulfill all requirements except freshman Liberal Education Seminars (LES).

A student transferring with 42 credits or more must take senior LES and intermediate LES; normally, the student will be given credit for having met UWGB distribution and tool subject requirements if he/she has taken courses elsewhere that, although not equivalent, meet the spirit of the requirements.

Students who have satisfied the basic degree requirements of the college or university from which they are transferring can substitute those requirements for UWGB's basic degree requirements.

Students coming to UWGB from two-year institutions may transfer up to 72 credits of lower division (freshman and sophomore level) course work only. All UWGB students must take a minimum of 52 credits in upper level courses in order to graduate.

Current information on residence requirements and graduation procedures can be found in the *Timetable* published for each semester.

Early Admission for Superior High School Students

UWGB permits superior students to begin college work before graduation from high school. Selection for early admission is based on the individual's high school record, social maturity, and educational plans. Scholastic ability is measured by the high school record. Consideration is given to recommendations of the student's high school principal and counselor.

A student seeking early admission should have completed the 11th grade. Students wishing to enroll in UWGB courses while still attending high school should apply as "high school specials." The recommendations of the high school principal and counselor are considered for this type of admission also.

Adult Students and Veterans

UWGB provides many opportunities for adults who have never pursued higher education and for those who have 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 Office of Adult Education.

Summer Session—Open Admission

Students enrolled at another college or university and high school students who have completed the 10th grade can 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 these institutions will accept credits earned at UWGB. Credits earned by high school students are held in escrow.

Recent high school graduates whose academic records are at the marginal college entrance level may enroll for Summer Ses-

sion Only college work on a trial basis to demonstrate their ability to carry college-level work successfully.

Continuing students who were registered at UWGB the preceding term and are eligible to continue do not need a permit to register. Students previously enrolled at UWGB, but *returning after an absence* of a semester or more, must reapply. Students from other University of Wisconsin campuses and other colleges or universities who plan to enroll for summer session and continue at UWGB in the fall should request the Undergraduate *Student Admission Application form. (See the* index for additional information on summer session.)

Educational Opportunities Program

The Educational *Opportunities Program* (EOP) is designed for a limited number of students in need of special resources at UWGB as indicated at the time of admission. The program includes prescribed coursework and weekly contact with academic counselors. Tutorial assistance and skill development in reading, writing, mathematics, or study skills are provided as needed.

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 conditional student is possible for those not meeting the minimum requirements. Evidence of success as a conditional student will gain admission to the degree program. 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 4-point scale.

Candidates for entry are required to 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.

3. Three confidential letters of recommendation.

4. Such additional evidence as the applicant may deem helpful to the admissions committee. Recent graduates are urged to submit Graduate Record Examination Quantitative and Verbal scores, or Miller Analogies Test scores.

EXPENSES

Semester Fees and Tuition

Legal residents of Wisconsin, with certain exceptions, are charged fees only. Nonresidents are charged a combination of fees and tuition. 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 can be found in the *Timetable* for the current semester.

Fees for UWGB students are determined by a three level fee schedule (Level I—freshmen and sophomores, Level II—juniors and seniors, Level III—graduate students) and by state residency classification as determined by the Office of the Registrar. A student's level is determined by the number of credits the student has earned to date. A part-time undergraduate student may register for 11 credits or fewer on a per credit basis. A part-time graduate student may register for 8 credits or fewer on a per credit basis. Wisconsin residents pay from $22 to $40 per credit, depending on their level; nonresident students pay from $70 to $132 per credit.

Semester Fees for Full-time Students

Level	Wisconsin Resident	Nonresident
I	$265	$ 837
II	$301	$1000
III	$361	$1188

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 appropriate summer session publications well in advance.

STUDENT FINANCIAL AIDS

The primary objective of the Office of Student Financial Aids is to assure that no academically qualified student is denied an education at UWGB for lack of financial resources. Financial aids in a variety of forms are available to qualified students. By completing a single application, a student is automatically considered for all types of aid for which he or she may qualify. The financial aid office can provide detailed information and any additional forms that may be required for certain aid programs.

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.

Expenses for Academic Year

	Commuter student living at home	Resident student living on campus
Books and Supplies	$150	$ 150
Room and Board	$540 (board only)	$1250
Travel and Miscellaneous	$595	$ 545
Total costs to be added to tuition	$1285	$1945

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 additional costs are for fees and books, a total of about $100. Transportation costs depend on whether the student lives in Green Bay or commutes from a more distant residence.

Financial Aid Application Procedures

Forms. For new or transfer students an application for financial aid is initiated by completing the Financial Aid section on the Admissions Application which is available from most state high school guidance offices or from the UWGB Admissions Office. Students who submit applications, are considered for all the 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 have a permit before UWGB can make an offer of aid.

A Parents' Confidential Statement, completed by the parents of the applicant, must also be sent to the agency listed in the instructions if the student is a dependent. Students who have lived independently and away from home for several years should contact the financial aid office to request the "Self Supporting Application" which would be filed in place of the parents' financial statement.

Deadlines. The application priority date for a scholarship, grant and/or a combination of assistance is March 1 for high school seniors and new transfer students and February 15 for continuing students. High school seniors and new transfer students are notified between April 15 and May 15 of action taken on their applications. Continuing students are notified between May 15 and June 15.

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. Students applying after the priority dates will be notified of their awards as soon as they can be processed.

Parents' Confidential Statement. To help judge student need and award aid fairly, the University asks parents of dependent students to fill out a confidential statement of their income, assets, and liabilities. 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.

Students are expected to commit a substantial amount of their own resources toward education expenses before they request assistance. Also, students are expected to save some funds ($300 to $600) from summer

employment which can help meet academic year costs.

Aid Awards. Rarely can students meet all their expenses through one type of financial aid. Most students can meet only one-third to one-half of their expenses through summer and part-time work. Very few loan or scholarship 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.

Before a student is offered any grant aid, a set amount of self-help aid, in the form of employment or loans, is offered. Financial need above the "self-help level" is met by some type of grant aid. The common level of self-help aid may vary according to the amount of grant aid available for a given year. Also, the self-help level will increase yearly as the student progresses through college. This means that freshmen students will be expected to borrow or work less than juniors or seniors.

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 as a half-time student, and must maintain a satisfactory academic level. To be eligible for Wisconsin loans and grants, the student must also be a resident of Wisconsin.

Types of Financial Aid

Scholarships. Nearly all scholarships are awarded on a merit-need basis. Awards to prospective freshmen will be made on the basis of scholastic achievement and financial

need. Awards to continuing and transfer students are made on the basis of the student's college cumulative grade point average. The basic types of scholarships are described below.

UWGB Nonresident Fee Remission Scholarships. These awards to nonresident students are a remission of the nonresident portion of fees at the University. They are not cash awards. Recipients pay only the resident portion of tuition. Eligibility is determined by scholastic ability and financial need. The number of such scholarships is limited by legislation.

Wisconsin High School Honor Scholarships (incoming freshmen, Wisconsin residents only). These are one-time cash awards with a variable stipend from $100 to $800, according to the need of the recipient. The scholarship recipient is selected by the high school. The actual amount the student is awarded varies according to financial need. It is given in recognition of the student's outstanding record in high school and *is not renewable*.

UWGB Private Scholarships. These are scholarship awards that vary according to the need of the recipient. They are made available through private donations to the University and awarded on the basis of scholastic ability and financial need.

Grants. Grants, like scholarships, consist of gift aid which does not have to be repaid. The main criteria for grants is the amount of demonstrated financial need. The main types of grants are:

Basic Educational Opportunity Grants (BEOG). These federally funded grants are made to needy students through a special application procedure. Eligible students are entitled to receive grants ranging from $50 to $1,400 (determined by a federal schedule). These grants are intended to serve as the "foundation" for other aid awards. All students who wish to apply for financial aid are strongly urged to apply for these grants. The application forms are available from financial aid and high school counselors' offices.

Supplemental Educational Opportunity Grants (SEOG). These federally funded grants are made to students who have exceptional financial need and are not based on the student's academic record. To accept a Supplemental Educational Opportunity Grant, however, the student must also accept an equal or greater amount of aid from other categories offered. *A student may not accept the SEOG grant alone.* SEOG awards may not exceed $1,500 in one year or a total of $4,000 for undergraduate education.

Wisconsin Higher Education Grants. These state grants are awards based upon need and do not have to be repaid or matched by other aid. The grant funds have been appropriated by the State of Wisconsin. Students must carry at least 12 credits to be eligible.

Wisconsin Indian Student Assistance Grants. Grants of up to $1,500 per year are awarded to students of at least one-fourth Native American descent who are residents of Wisconsin and enrolled on a full-time basis. The actual amount of the grant is based upon financial need. Additional funds on a matching basis to the state grants are available to most Indian students from the U. S. Bureau of Indian Affairs. These grants may be received for up to five years of study.

Wisconsin Talent Incentive Grants. A limited number of awards of up to $1,000 may be used for up to two years by students who are considered nontraditional or disadvantaged. The size of the award is based upon financial need and is determined by the State Higher Educational Aids Board.

Loans. In some cases it is advisable to borrow to finance an education. Caution is advised in borrowing, however, and generally students should not rely primarily on loans to finance their education. Students are usually advised not to borrow more than half of what they need to meet expenses. The four main loan programs are:

National Direct Student Loan Program. Under the Education Amendment of 1972, students in good standing and with financial need may be awarded a National Direct Student loan. An undergraduate may borrow a total of $2,500 during the first two years of school. Students who have not previously borrowed during the first two years, may borrow a total of $5,000 during the last two years. In no case may the student accumulate more than $5,000 in loans during the undergraduate program.

A borrower may have up to 10 years and 9 months after he or she ceases to be at least a half-time student to repay a loan. Repayments with interest of 3 percent a year begin nine months after a student receives a degree or permanently leaves the institution. The University bills on a quarterly basis and a minimum yearly repayment of $180 is required.

Previous cancellation provisions for teaching have been changed for new NDSL borrowers after July, 1972. Cancellation of all or a portion of the loan is now limited to combat veterans, teachers of the handicapped and mentally retarded, teachers employed in schools in low-income areas, and pre-school teachers in Head Start programs. Deferments of up to three years on all interest and repayments may be obtained while on active duty in the Peace Corps or VISTA.

Wisconsin State Student Loans. Wisconsin residents with financial need may be eligible to borrow from this program. In order to receive this loan the student must pay an insurance fee equal to .5 percent of the amount requested. The State Higher Educational Aids Board automatically deducts the fee from the amount requested. The student is liable for repayment of the total amount requested which includes the loan amount received and the fee.

Borrowers under this program may borrow up to $2,500 per fiscal year as undergraduates with a maximum accumulation of $7,500. There is no interest as long as the student is in school on at least a half-time basis. Nine months after the student ceases to attend school at least half time, repayment and interest commences at 7 percent simple interest per year.

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 $360. Deferments of up to three years may be obtained for active duty service with the Armed Forces or the Peace Corps.

Wisconsin Guaranteed Loan Program. Residents of Wisconsin may also borrow through the Wisconsin guaranteed student loan program. Loans under this program come 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 Wisconsin Higher Education Corporation (a subsidiary of the Higher Educational Aids Board) and the University.

Students whose family adjusted income is less than $15,000 will automatically qualify for this interest free loan up to $2,000 per year without having to file a parents' financial statement. Only for larger loans or for interest benefits to families with adjusted incomes greater than $15,000 will a demonstration of financial need be required.

Depending upon the toal amount borrowed, the student has up to 10 years to repay the loan at 7 percent interest, after he or she has permanently left school. The undergraduate may borrow up to $2,500 per fiscal year with a maximum accumulation of $7,500.

Nonresident students may obtain guaranteed loans from lending institutions in their home states.

University Short-Term Loans. These loans are made from funds established by gifts to the University and are generally granted only to full-time students in amounts up to $300 per academic year. Repayment usually is expected within the same semester that the loan is taken out. The loans are generally interest free. Loans are usually made only for emergency situations.

Student Employment. All enrolled students and their spouses are eligible to 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 arrive on campus.

Many students work on the campus or in nearby communities. In addition, federal funds are available under the work-study program for the employment of full-time students who have substantial financial need.

Most academically able students can, without undue strain, carry a full load of coursework while holding a part-time job of 10 to 20 hours a week. Some students find they earn better grades while working part time because they budget their time more wisely.

While previous work experience is taken into account, the possession of needed skills is even more important in obtaining a job. The rate of pay for student jobs on and off campus generally ranges from $1.90 to $3 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	$1.90/hour
10	$646
12	$775
15	$965

Veterans Educational Assistance Program. The primary source of information for all 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 or she now claims residence. The veteran may also seek assistance from the Office of the Registrar.

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 by every veteran who wishes to be certified for benefits for the ensuing term.

Students who think they may be eligible for such financial assistance should write or call their county Veterans' Service office. Eligible students 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 registration card must be filed by every student who wishes to be certified for benefits for the ensuing term.

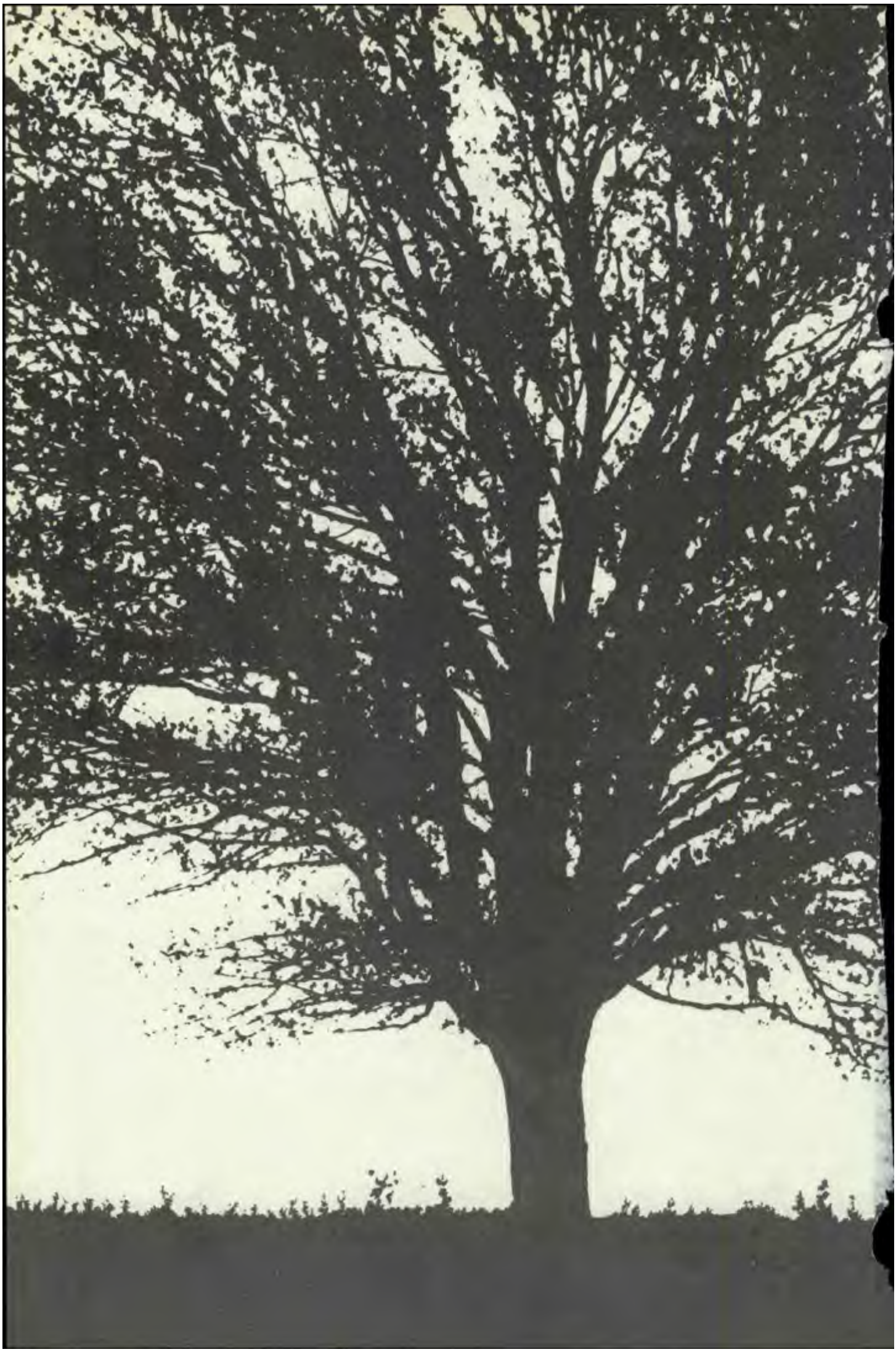
War Orphans Educational Assistance. The War Orphans Educational Assistance Act provides educational benefits for children of permantly disabled veterans, as well as children of deceased veterans. The veteran must have died or become disabled as a result of service in the armed forces during the Spanish-American War, World War I, or since September 15, 1940.

Financial Aid for Graduate Students

Financial aid in the form of teaching assistantships, which carry a stipend of $2,800 and provide eligibility for waiver of out-of-state tuition, are available to graduate students. Other forms of financial aid such as work-study or student loans are also available to graduate students.

Financial Aid Counseling

Counseling is available before and after admission to all students applying for financial assistance at UWGB. Financial counseling is also available for married students or those planning marriage. Students who have special problems or questions concerning financial aids are encouraged to make use of this service.



Course Descriptions

COURSE DESCRIPTIONS

This chapter gives descriptions of all courses currently offered at UWGB. The list is alphabetical, with the following categories being used for headings: theme colleges, concentrations, options, disciplines within options (listed alphabetically with the options), collaterals, Liberal Education Seminars, January Practica, and physical education. The following abbreviations are commonly used throughout:

(The abbreviation listed with each category, except for options, indicates the college or school within which it is housed. Options are not housed within colleges, but the college designation after the option title indicates the grouping of courses for purposes of the distribution requirement.)

Courses are not normally cross-listed. Furthermore, the cross-listing of a few courses should not lead the student to conclude that other courses cannot be suitably worked into a program of study.

Prerequisites are to be considered as essentially advisory and not as firm requirements. They indicate the level of proficiency required in order to carry on a course. The student who feels he or she has the level of proficiency necessary without taking the suggested prerequisites should consult the instructor before enrolling. The instructor's opinion is advisory only, but should be useful in assisting the student to make a decision.

Curriculum Area Numbers

The curriculum area number listed with each category is used for identification and record keeping. The student will need to combine the curriculum area number with the course number to complete his registration forms, for example. For record keeping, Biology 303, Genetics, would be listed 204-303. The first three digits refer to the curriculum area; the last three to the course number. The six-digit number also is used to refer to course prerequisites.

Courses are listed numerically by curriculum areas in the following section, as well as in the current *Timetable*, which publishes courses available each semester and for the January and summer sessions. A list of curriculum area numbers follows:

156 Anthropology (CCS)
204 Biology (CHB)
226 Chemistry-Physics (CES)
242 Communication-Action (CCC)
246 Communication Processes (CCC)
255 Community Sciences (CCS)
296 Earth Science (CES)
298 Economics (CCS)
301 Ecosystems Analysis (CES)
302 Education (SPS)
356 Environmental Control (CES)
362 Environmental Sciences (CES)
416 Geography (CCS)
426 Growth and Development (CHB)
448 History (CCC)
478 Human Adaptability (CHB)
480 Human Biology (CHB)
485 Humanism and Cultural Change (CCC)

510 January Practica
532 Leisure Sciences (SPS)
538 Liberal Education Seminars
552 Literature and Language: English-American (CCC)
553 Special Learning Programs—English
554 Literature and Language: French (CCC)
556 Literature and Language: German (CCC)
557 Literature and Language: Italian (CCC)
558 Literature and Language: Spanish (CCC)
575 Managerial Systems (SPS)
595 Mass Communications (SPS)
600 Mathematics (CES)
601 Special Learning Programs—Mathematics
628 Medical technology
662 Modernization Processes (CCS)
694 Nutritional Sciences (CHB)
705 Performing Arts: Music (CCC)
707 Performing Arts: Music-Applied (CCC)
709 Performing Arts: Theater (CCC)
736 Philosophy (CCC)
740 Physical Education: Men (CHB)
741 Physical Education: Women (CHB)
742 Physical Education: Coed (CHB)
778 Political Science (CCS)
779 Population Dynamics (CHB)
820 Psychology (CCS)
834 Regional Analysis (CCS)
892 Social Services (SPS)
900 Sociology (CCS)
930 University Without Walls
938 Urban Analysis (CCS)
957 Visual Arts (CCC)

COURSES WITH VARIABLE CONTENT

Many academic divisions of the University offer courses with variable content to provide the student with opportunities for individual work and the exploration of unusual, specialized, or topical subjects not ordinarily included in the curriculum. General descriptions of such courses are provided here, and they are cited only briefly by number and title in the course lists of the units offering them. Information on how to develop such courses can be found in a separate publication which is available from the Academic Advising Office.

283X, 483X Selected Topics 1-4 cr.
Courses and seminars presented by the concentrations of the theme colleges and several units of the School of Professional Studies 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 of 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.

When offered, the title and number of credits is announced in the *Timetable* under the heading of the unit which is sponsoring it. Further information can be obtained from the sponsoring unit or the instructor. Courses of an introductory nature 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 Directed Study 1-4 cr.
Offered on a tutorial 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.

Normally a student can take only one directed study course per semester. A cumulative grade point average of 2.5 or higher as of the previous semester is required for enrollment in 298 courses. A cumulative 2.0 grade point average is required to enroll in a 498 course. The instructor's advance permission in writing is always needed for registration. Directed study must be taken for a grade and not on a pass-no credit basis. A maximum of 10 credits can be accumulated in 298 and

498 courses without petitioning for special permission.

484 Senior Distinction Project 3 cr.
Each concentration offers the qualified student the opportunity to undertake a project to qualify for graduation with distinction. Such a project—normally a thesis, research, or other creative activity—is carried out in the senior year with the consent of the concentration adviser. Information concerning specific details is available from the concentration advisers and chairpersons. The student is encouraged to register in the first semester of the senior year.

156 ANTHROPOLOGY (CCS)

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.

156-210 Introduction to Cultural Analysis 3 cr.
A review of major concepts, methods, and approaches of cultural and social anthropology as applicable to comparative evaluation of contemporary problems of culture and communities. P: 156-100 or 255-102 recommended.

156-215 Prehistoric Man and His Surroundings 3 cr.
Human biological and cultural evolution, with special emphasis on prehistoric archaeology and prehistoric ecology. Offered in two versions: classroom and field. Both versions may be taken for credit. See *Timetable*. P: soph st.

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, 156-100, or 255-102.

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, Northern Great Lakes Region, and the cultures of American Indians, Afro-Americans, and European peasantries. Course 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 man, 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.

156-310 Culture and Personality 3 cr.
A critical survey of the field of culture and personality and of the principal concepts and methods used in studying the relationship of the individual to his/her culture. P: jr st or cons inst.

156-330 Expressive Culture 3 cr.
A critical analysis of the meanings and functions of such expressive cultural systems as primitive and folk art, oral literature, and primitive and folk music. Special emphasis is placed on why, what, and how these systems communicate within the context of human culture in general and in particular cultures. The generalizations derived from such analyses are applied to contemporary themes such as the problems of minority cultures within the United States and elsewhere. P: jr st.

156-402 Comparative Social Structures 3 cr.
Research procedures and theories in the cross-cultural examination of social categories, groups, and classes; their interrelationships with cultural and ecological factors. P: jr st and one course in anthropology or cons inst.

156-405 Anthropology of a Selected Institution 3 cr.
In-depth analysis of an institution in human society. Institutions may include political systems, economic systems, law and warfare, religion, and kinship. Course may be taken for credit each time a different institution is studied. See *Timetable* for offerings. P: jr st and one course in anthropology or cons inst.

204 BIOLOGY (CHB)

204-202 Biology of Cells 4 cr.
An introduction to biological principles; cells as the fundamental units of living organisms. Includes laboratories.

204-203 Biology of Organisms 4 cr.
An introduction to biological principles; structure and function of organisms and their relationship to the environment. Includes laboratories.

204-240 Plants and Civilization 2 cr.
The economic importance of plants in the development of civilization and in modern agriculture and industry. Emphasis is on historical and modern cultural aspects.

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 226-108 or 226-110.

204-303 Genetics 3 cr.
Mechanisms of heredity and variation, their cytological basis and their implications in biology. P: 204-202.

204-306 Principles of 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.

204-317 Structure of Seed Plants 3 cr.
The anatomy of seed plants with special emphasis upon tissue differentiation and structure. P: 204-203.

204-320 Field Botany 3 cr.
Identification and natural history of plants indigenous to Northeastern Wisconsin. P: 204-203.

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.

204-344 Vertebrate Zoology 3 cr.
The taxonomy, general biology, ecology, be-

havior, and special adaptations of chordate animals. P: 204-203.

204-345 Animal Behavior 3 cr.
The biology of animal behavior patterns; the behavioral interactions of animals with their environment. P: 204-203.

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.

204-350 Field Zoology 3 cr.
Field collection and laboratory identification of aquatic and terrestrial invertebrates and vertebrates of the region with analysis of their structure, behavior, and habitats. A collection is required. P: 204-203.

204-355 Principles of Entomology 3 cr.
The biology and habits of insects and their interrelationships with humans. Includes general anatomy, physiology, embryology, and classification of insects. Field collection is required. P: 204-203.

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.

See also relevant courses in other areas including:

301-311 Plant Physiology 4 cr.
301-314 Plant Taxonomy 3 cr.
301-315 Mycology 3 cr.
301-322 Ecosystems Analysis I 4 cr.
301-323 Ecosystems Analysis II 4 cr.
301-403 Limnology 3 cr.
301-424 Ecosystems Analysis III 3 cr.
356-363 Forest and Plant Pathology 3 cr.
362-302 Principles of Ecology 3 cr.
362-303 Conservation of Natural Resources 3 cr.
478-301 Adaptive Mechanisms 3 cr.
478-302 Comparative Physiology 4 cr.
478-402, 403 Human Physiology 5 cr.
478-413, 414 Neurophysiology 5 cr.
478-420 Human Growth, Development, and Senescence 2 cr.
478-430 Environmental Physiology 2 cr.
779-312 Evolutionary Processes 3 cr.
779-318 Vertebrate Reproduction 3 cr.
779-330 Biological History of Wisconsin 2 cr.
779-342 Human Evolution 3 cr.
779-350 Human Sexual Behavior and its Function 3 cr.
779-401 Agricultural Genetics and World Food Production 3 cr.
779-402 Population Biology 4 cr.
779-450 Biogeography 3 cr.

CHEMISTRY (CES)

Chemistry courses are listed under Chemistry-Physics. Students who wish to pursue an option in Chemistry-Physics with an emphasis in chemistry will find the following courses relevant.

226-108 General Chemistry 5 cr.
226-110, 111, 112 Fundamentals of Chemistry-Physics I, II, III 5 cr. ea.
226-210, 211, 212 Principles of Chemistry-Physics I, II, III 5 cr. ea.
226-300, 301 Bio-Organic Chemistry (with laboratory) 3-4 cr.
226-302, 303 Organic Chemistry I, II 3 cr. ea.
226-304, 305 Organic Chemistry Laboratory I, II 1 cr. ea.
226-311 Analytical Chemistry 4 cr.
226-320, 322 Thermodynamics and Kinetics (with laboratory) 3-4 cr.
226-321, 323 Structure of Matter (with laboratory) 3-4 cr.
226-330, 331 Biochemistry (with laboratory) 3-4 cr.
226-410 Inorganic Chemistry 3 cr.
226-413 Instrumental Analysis 4 cr.
226-417, 418 Nuclear Physics and Radiochemistry (with laboratory) 3-4 cr.
356-424 Environmental Biogeochemistry 3 cr.
356-434 Water Chemistry 4 cr.
362-450 Air Pollution Chemistry and Meteorology 3 cr.
694-328, 329 Nutritional Biochemistry (with laboratory) 3-4 cr.

226 CHEMISTRY-PHYSICS (CES)

226-108 General Chemistry 5 cr.
For students who will take only one semester

of general chemistry. Chemical principles, general inorganic chemistry, and fundamentals of organic chemistry. Does not serve as prerequisite for 226-111 or 211. (Full credit will not be given for both 226-108 and 226-110 or 226-210.)

226-110 Fundamentals of Chemistry-Physics I 5 cr.
Concepts and language which emphasize the qualitative understanding of the structure of physical and biological matter through Newton's laws, atomic theory and molecular bonding. Students planning a preprofessional program in engineering or an option in chemistry-physics must take 226-210. P: 600-101 or equivalent. (Full credit will not be given for both 226-108 and 226-110 or 226-210.)

226-111 Fundamentals of Chemistry-Physics II 5 cr.
Fundamentals of energetics as applied to physical and biological systems. Thermodynamics, kinetics, and equilibrium. Studies of energy and information transfer with sound and light. Students planning a preprofessional program in engineering or an option in chemistry-physics must take 226-211. P: 226-110.

226-112 Fundamentals of Chemistry-Physics III 5 cr.
Electricity and magnetism, chemical and physical properties of selected elements and compounds, radiochemistry, and selected integrated topics. Students planning a preprofessional program in engineering or an option in chemistry-physics must take 226-212. P: 226-111.

141 Astronomy 3 cr.
See 301-141.

226-160 Supplementary Physics 3 cr.
An introduction to Chemistry-Physics 112 or 212 for transfer students who have taken one year of chemistry. P: one year of college chemistry.

226-210 Principles of Chemistry-Physics I 5 cr.
Concepts and language of physical science, chemical changes, elementary laws of mechanics, atomic theory, chemical bonding, and the states and structure of matter. P: concurrent registration in 600-202. (Full credit will not be given for both 226-108 and 226-110 or 226-210.)

226-211 Principles of Chemistry-Physics II 5 cr.
Thermodynamics, chemical kinetics and chemical equilibria, motion, systems of forces, oscillations, gravitation, and mechanics of fluids. Recommended for student pursuing CES concentrations; options in earth science, chemistry-physics, or mathematics; preprofessional program in engineering; or preparing for graduate studies in the natural sciences. P: 226-210, and concurrent registration in 600-203.

226-212 Principles of Chemistry-Physics III 5 cr.
Wave motion, sound, geometrical and physical optics, electricity and magnetism, chemical and physical properties of selected elements and compounds, nuclear physics, radiochemistry, and selected integrated topics. Recommended for students pursuing CES concentrations, options in earth science, chemistry-physics, or mathematics; preprofessional program in engineering; or preparing for graduate studies in the natural sciences. P: 226-211.

226-300 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. P: 226-112 (or 226-108 and cons inst).

226-301 Bio-Organic Chemistry Laboratory 1 cr.
Optional laboratory course to accompany 226-300. P: credit or concurrent registration in 226-300.

226-302 Organic Chemistry I 3 cr.
Aliphatic and aromatic hydrocarbons and their derivatives. Structure and properties of organic compounds, mechanisms, spectroscopic studies of organic compounds, stereochemistry, saturated and unsaturated aliphatic hydrocarbons, benzene and aromatic substitution reactions, alkyl halides and al-

cohols. P: credit or concurrent registration in 226-112 or 212.

226-303 Organic Chemistry II 3 cr.
Aromatic compounds and their chemical reactions, ethers, carboxylic acids, aldehydes and ketones, amines, phenols, aryl halides, glycols and epoxides, derivatives of carbohydrates, amino acids, proteins, natural products. P: 226-302.

226-304 Organic Chemistry Laboratory 1 cr.
One three-hour laboratory per week. Basic techniques and syntheses in organic chemistry. P: credit or concurrent registration in 226-302.

226-305 Organic Chemistry Laboratory 1 cr.
One three-hour laboratory period per week. Intermediate level instrumental techniques and syntheses in organic chemistry. P: credit or concurrent registration in 226-303 and 304.

306 Biophysics 3 cr.
See 301-306.

226-311 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 titrations, oxidation-reduction titrations, precipitation titrations, and complexometric titrations. Introduction to instrumental analysis, spectrophotometric and electroanalytical methods. P: credit or concurrent registration in 226-112 or 212.

313 Mechanics I 3 cr.
See 356-313.

314 Mechanics II 3 cr.
See 356-314.

226-315 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 fluid dynamics: introduction to acoustics. P: 226-212 and 600-206.

317 Electromagnetic Radiation 3 cr.
See 301-317.

226-320 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: 226-212.

226-321 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: 226-320 or 226-212 and cons inst.

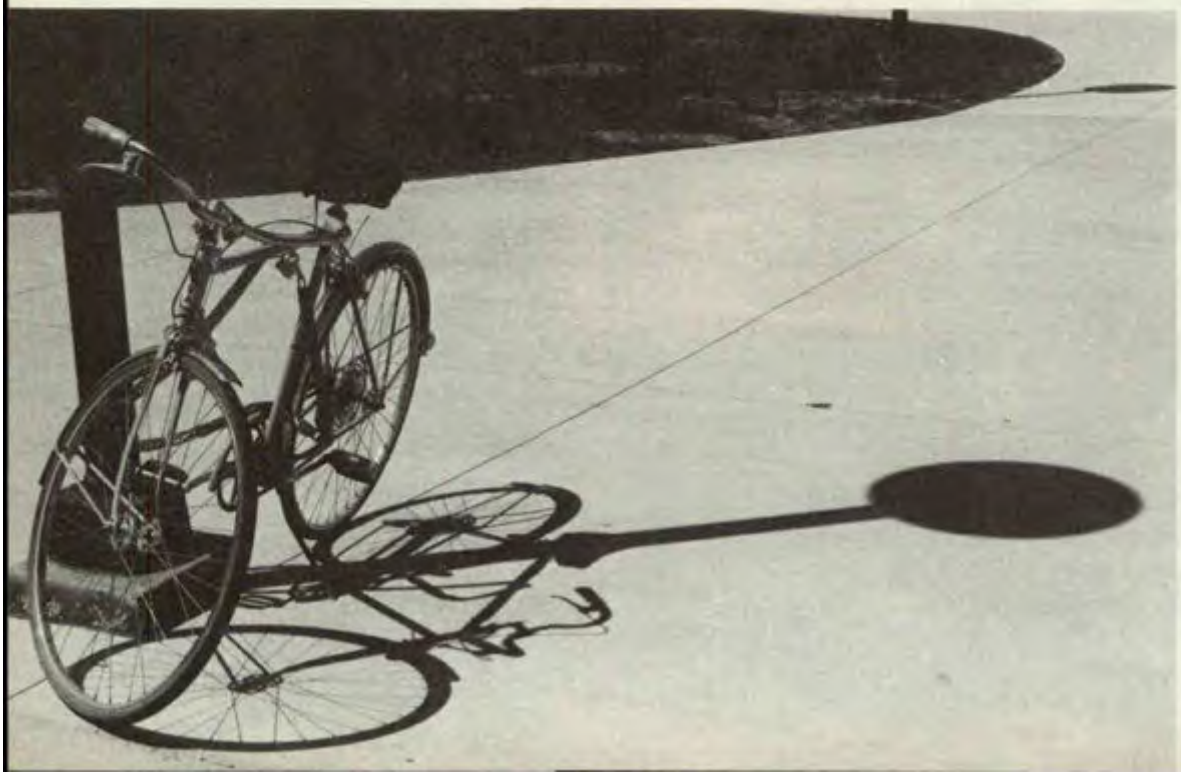
226-322 Thermodynamics and Kinetics Laboratory 1 cr.
One three-hour laboratory per week. P: credit or concurrent registration in 226-320.

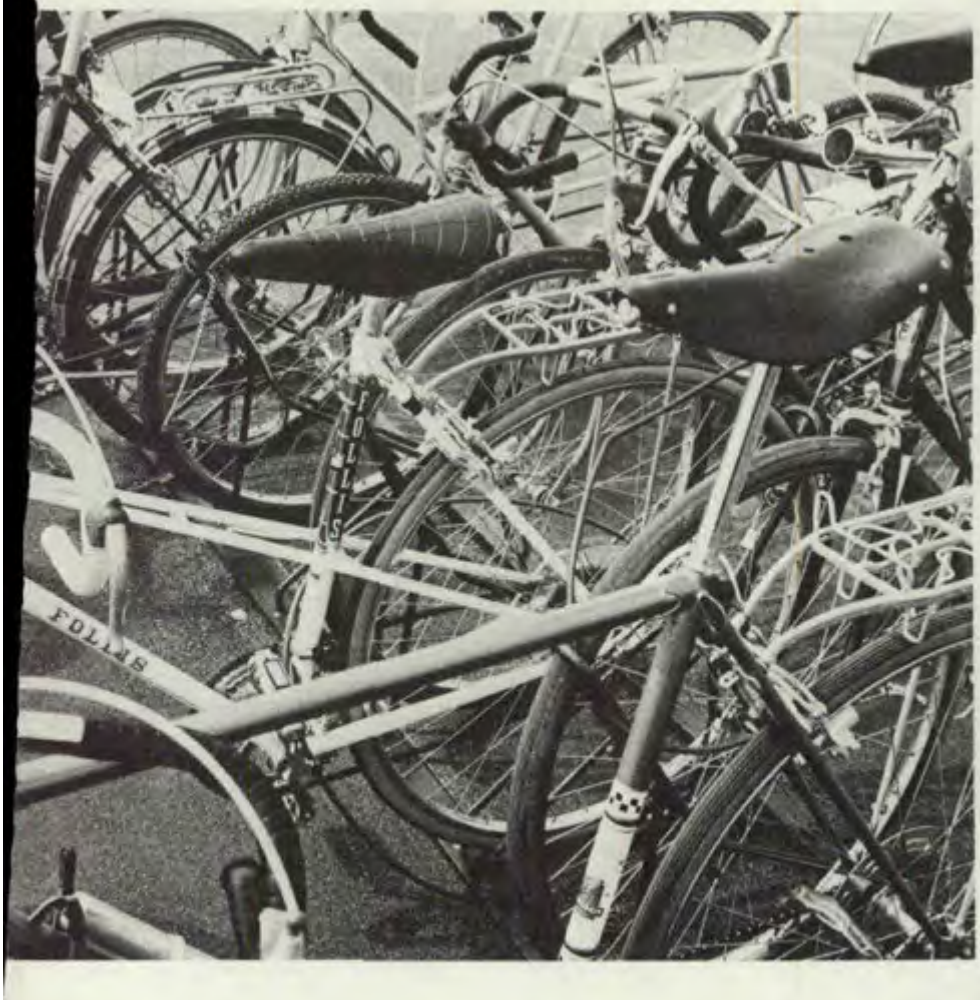
226-323 Structure of Matter Laboratory 1 cr.
One three-hour laboratory per week. P: credit or concurrent registration in 226-321.

226-324 Advanced Physical Laboratory* 2 cr.
Experience with important research techniques and apparatus with emphasis on independent work; x-ray diffraction, nuclear magnetic resonance, multichannel analyzers, luminescence, noise and vibration measurements, atomic absorption, microwaves, and classical experiments for determining physical constants. P: cons inst.

226-325 Advanced Physical Laboratory* 1 cr.
Same as 324, but fewer experiments are performed. P: cons inst.

*Divisional Committee approval is pending.

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328 Nutritional Biochemistry 3 cr.
See 694-328.

329 Nutritional Biochemistry Laboratory 1 cr.
See 694-329.

226-330 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: 203-202 or 203, 226-303 and 305 or cons inst.

226-331 Biochemistry Laboratory 1 cr.
One three-hour laboratory per week. P: credit or concurrent registration in 226-330.

332 Fluid Mechanics 3 cr.
See 356-332.

350 Meteorology 3 cr.
See 301-350.

226-404 Electricity and Magnetism 3 cr.
An advanced approach to electrical and magnetic phenomena; plasmas, waveguides, electrical energy generation and transmission, Maxwell's equations and electromagnetic waves, electric and magnetic properties of matter. P: 226-212, 600-206.

226-405 Electronics for Scientists 3 cr.
Fundamentals of electronics, electronic elements, basic circuits; combinations of these into measurement and control instruments. P: 226-212.

226-410 Inorganic Chemistry 3 cr.
A survey of the elements including coordination and organo-metallic compounds. Modern bonding theories, group theory, and periodic properties are extended and applied to actual chemical systems and reactions. General acid-base theory and nonaqueous solvent systems are discussed. Special topics of current interest are included. P: 226-321.

412 Bioenergetics 3 cr.
See 301-412.

226-413 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, electroanalytical methods, chromatographic methods, and radiochemical methods. P: 226-311 and 321.

226-417 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: 226-212.

226-418 Nuclear Physics and Radiochemistry Laboratory 1 cr.
One three-hour laboratory per week. P: credit or concurrent registration in 226-417.

424 Environmental Biogeochemistry 3 cr.
See 356-424.

434 Water Chemistry 4 cr.
See 356-434.

450 Air Pollution Chemistry and Meteorology 3 cr.
See 362-450.

242 COMMUNICATION-ACTION (CCC)

242-100 Man's Visual Images I: The Modern Arts 3 cr.
The more expressive contemporary visual arts (painting, sculpture, graphic arts, and popular arts) are examined from the standpoint of the creative artist, with emphasis upon interpretations of the sociological circumstances of the time. Artists may be of various minds at various times concerning their social environment, but they inevitably respond to social conditions, and these responses, conscious or subconscious, find their way into creative work. Normally includes one or more field trips to regional art centers.

242-101 Man's Visual Images II: The Modern Arts 3 cr.
An examination of the functional contemporary arts, community-planning and architecture, interior design, sculpture, product development, and communication design, with special emphasis on the study of these arts in relation to the creative artist and his/her

times. Basic aesthetic and technological concepts are stressed. Normally includes one or more field trips to regional art centers.

242-120 Understanding Music 3 cr.
Techniques for intelligent listening to any music, but especially serious or "classical" music. From a solid background in such elements as melody, harmony, rhythm, and texture, the student is led into such topics as style, taste, and form in order to learn how to understand the language of music.

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 basic repertoire of musical compositions of various forms and styles.

242-140 Introduction to Theater: Film 3 cr.
Develops an ability to criticize contemporary film. Analysis of film acting, film aesthetics, and the relationship of film to theater production.

242-151, 152 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 performing arts: music major should enroll concurrently in 705-115 or 116. P: some previous background in music or 705-101. Must be taken in sequence.

242-160 Introduction to Language 3 cr.
Introductory study of language and communication, including structure, social variation, and historical change in language; types of languages in the world; meaning, symbolism, and change of meaning; language and world view; and the use and misuse of language in education, politics, and other areas of discourse.

242-200 History of the Visual Arts I: 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.

242-201 History of the Visual Arts II: Renaissance to Contemporary 3 cr.
A broad survey of the visual arts in the Western world beginning in the early Renaissance and ending in the contemporary period.

218 Introduction to World Literature I 3 cr.
See 552-218.

219 Introduction to World Literature II 3 cr.
See 552-219.

242-220 Appreciation of Non-Western Music 3 cr.
Introduction to musical cultures of the Orient, India, Africa, and Eastern Europe from the standpoint of tonal and rhythmic usages, musical repertories, and influence upon Western music in the 20th century.

242-241, 242 Introduction to Theater History I, II 3, 3 cr.
The history and significance of theater; the origin and development of theater art and craft; functions and significance of theater in the different cultures in which theater has thrived.

242-251, 252 Literature and Styles in Music I, II 3, 3 cr.
Musical literature and composers seen in historical context. Music and musical attitudes are viewed in the perspective of other arts, as well as in relation to the social and political environment. Students do some "composing" in various styles. P: 242-152.

242-283X Selected Topics in Communication-Action 1-4 cr.
See page 96.

242-298 Directed Study 1-4 cr.
See page 96.

242-301 Communication-Action 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.

242-302 Action Training (Intensive) 4 cr.
Training in the techniques and backgrounds of successful anti-poverty projects in the

University Year for Action Program. P: membership in the University Year for Action Program.

242-305 American Documentary Theater I: A Community Voice 3 cr.
Research and study of various backgrounds of a major theme which affirms in dramatic form the principles of American democracy and which reveals problems in American life such as pollution, conformity, and racism. Involves development of historical materials into suitable popular theatrical form.

242-306 American Documentary Theater II: A Community Voice 3 cr.
Normally, students complete the documentary script begun in 242-305 and, together with members of the theater staff, place the work into production.

310 Criticism of the Performing Arts 3 cr.
See 485-310.

242-320 Communications: Extensions of Consciousness 3 cr.
Communicative systems as extensions of human consciousness: the analysis of media (e.g., speech, writing, clothing, transportation, housing, mathematics and economics, radio, television, and film) as logical and illogical adaptations of human sensory energy; particular focus on people's image of themselves, others, and the world, as that image affects their communicative attitudes, behaviors, and uses of language.

242-323 Language and Human Conflict 3 cr.
Language as cause and consequence of racial, social, ethnic, and global conflict, including language and world view, language and nationalism, language variation and cultural isolation, cultural differences in body language, linguistic interference, and international languages.

242-324 Psycholiguistics 3 cr.
Verbal behavior that integrates the linguist's view of languages as a structure of symbolic signs-patterns and the psychologist's view of language as learned behavior. Adaptable to the needs of those interested in applied linguistics (such as language teaching).

242-328 Cultural Cross-Communication I: Ideology and Values 3 cr.
Cultural conflict and cultural influence and enrichment that arise when differing ideologies and value systems come into contact.

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.

242-351, 352 Literature and Styles in Music III, IV 3, 3 cr.
Musical literature and composers seen in historical context. Music and musical attitudes are viewed in the perspective of other arts, as well as in relation to the social and political environment. Students do some "composing" in various styles. P: 242-152.

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 The Phenomenon of Style I: Traditional 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 The Phenomenon of Style II: Avant-garde 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.

395 The Individual and His Culture: The Film-maker's View 3 cr.
See 485-395.

242-401, 402 Designing the Environment I, II 3, 3 cr.
The natural and man-made world as an integrated design phenomenon. Emphasis on people's attempts to make their environment reflect their aesthetic and personal values.

242-471, 472 Styles of Expression: The Arts and Technology I, II 4, 4 cr.
A lecture/discussion/laboratory experience designed to explore the interrelationships among science, technology, and the plastic and performing arts. The influence of technology on the arts as well as the effects of the arts and humanities on the scientific vision are also explored. A project-oriented laboratory provides an opportunity to examine and put to artistic use a broad range of technological tools such as lasers, electronics, chemicals, computers, etc.

242-483X Selected Topics in Communication-Action 1-4 cr.
See page 96.

242-484 Senior Distinction Project 3 cr.
See page 97.

242-495 Styles of Expression: The Arts and Technology, Special Projects 3 cr.
An intense laboratory experience in a particular form of technology which has special applications to both the plastic and performing arts. The technique is approached both from a philosophical and a methodological format with the object of creating environments and projects reflecting the uniqueness of the medium being explored.

242-498 Directed Study 1-4 cr.
See page 96.

246 COMMUNICATION PROCESSES (CCC)

246-133 Voice and Speech I 3 cr.
Problems of voice production, voice quality, enunciation, and articulation.

246-134 Voice and Speech II 3 cr.
Voice production, voice quality, speaker presence, and the basics of public speaking.

246-143 Introduction to Creative Photography 3 cr.
The creative process in photography is studied to develop visual perception through active participation in discussions and photographic exercises.

246-166 Fundamentals of Interpersonal Communications 3 cr.
Basic principles of personal interaction as a basis 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.

246-202 Media I: 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. P: soph st.

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.

246-320 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.

246-325 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.

246-333 Public Speaking and Speech Composition 3 cr.
A study of various types of speeches likely to confront an individual in his personal and professional life. Developing skill in composition and delivery and in the application of sound criteria for evaluating speeches of others. Speaking situations and types of speeches studied cover a variety of professional and general categories. P: 709-233.

246-334 The Oral Tradition 3 cr.
The oral interpretation of literature, especially narrative and lyric. The history, method, and influence of the oral tradition from Homer's Iliad to Bob Dylan and the contemporary folk song. Special attention to the analysis of meaning, metre, and motion, and to the nature of oral language; practice in the presentation of those nondramatic forms of literature most suited to oral performance.

246-343 Creative Photography II* 3 cr.
Emphasis upon black and white photography and darkroom printing techniques. P: 246-143 or equivalent experience.

246-430 Mass Media and Society 3 cr.
Analysis of the media as persuaders, informers, entertainers; public opinion, readership, and audience studies; communication theory; legal aspects; critical examination of mass communication in the changing social environment.

See also relevant courses in other areas including:

156-310, Culture and Personality, 3 cr.
242-100, 101, Man's Visual Images, I, II, 3, 3 cr.
242-323, Language and Human Conflict, 3 cr.
242-324, Psycholinguistics, 3 cr.
242-471, 472, Styles of Expression: Man and Technology I, II, 3, 3 cr.
302-318, Reading and Study Skills in the Secondary School, 3 cr.
426-431, Cognitive Development and Facilitation in Childhood and Adolescence, 3 cr.
478-413, 414, Neurophysiology (with laboratory), 3-4 cr.
485-207, Philosophy and Language, 3 cr.
552-212, 213, Introduction to Creative Writing: Fiction and Poetry, 3, 3 cr.
575-325, Theory and Practice in Public Relations, 3 cr.
575-423, Principles of Advertising, 3 cr.
575-428, Applied Motivational Research, 3 cr.
595-202, Media II: Newswriting Laboratory, 3 cr.
595-320, Advanced Reporting, 3 cr.
595-325, Specialized Writing, 3 cr.
600-250, 251, Computer Science I, II, 3, 3 cr.
709-225, 226, Intercurricular Theater I, II, 3, 3 cr.
778-302, Community Political Behavior, 3 cr.
820-202, Introduction to Social Psychology, 3 cr.
820-309, Psychology of Motivation, 3 cr.
820-335, Psychology of Attitudes and Public Opinion, 3 cr.
820-438, Group Dynamics, 3 cr.
900-203, Minority Groups, 3 cr.

*Divisional Committee approval is pending.

255 COMMUNITY SCIENCES (CCS)

255-102 Man and His Social Environment 3 cr.
Introduction to concepts and concerns of the community sciences through an interdisciplinary focus on problems and opportunities of humans and their social environment.

255-205 Social Science Statistics 3 cr.
Application of statistics to problems of the social sciences, particularly those problems pertaining to regional analysis, urban analysis, and modernization processes. Application of statistical techniques in problem definition; hypothesis construction; and data collection, processing, and evaluation. P: soph st.

255-305 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 Community Sciences.

296 EARTH SCIENCE (CES)

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. Field trips.

296-302 Geologic Evolution of the Earth 4 cr.
The physical history of the earth during geologic time; the history of plants and animals with particular emphasis given to the adaptations made by earlier life forms to the changing conditions of the physical environment. Field trips. Offered spring semester. P: 296-202 or cons inst.

296-310 Paleobiology* 4 cr.
Descriptions are made of the plants and animals that contribute to the many life assemblages in the earth's ancient environments and of the relationship of the biota to the varied facets of the physical-chemical environment. Local field trips. Offered alternate spring semesters. P: 296-302 or cons inst.

296-340 Minerals, Rocks, and Mineral Resources 3 cr.
The descriptions and the classifications of the most important rock-forming minerals and the most commonly occurring rocks are presented. The uses made of these components of the earth's physical environment are emphasized. Local field trips. Offered spring semester. P: 296-202.

296-350 Field Geology* 4 cr.
Description of the standard field techniques employed in geologic mapping, measuring sections, and collection of rock and fossil specimens; integrated application of these techniques to the solution of field problems. Offered alternate fall semesters. P: 296-202, 296-302 recommended.

296-402 Introduction to Stratigraphy and Sedimentology* 3 cr.
Principles of physical stratigraphy including the formation, composition, sequence, and correlation of layered rocks. The methods and techniques employed in the study of sedimentary processes, sedimentary environments, and stratigraphic relationships are discussed and the concepts applied to the interpretation of local exposures and outcrops of stratified rocks. Lectures and one field trip. Offered alternate spring semesters. P: 296-202 and either 296-302 or 301-331.

296-441 Earth Resources I: Minerals 4 cr.
Knowledge of the relationship of mineral structures to energy distribution provides a framework for carrying the study of minerals beyond chemical classification. The relationship of crystallography to minerals; description of the principal rock-forming and ore minerals; recognition of minerals in hand specimens. Offered alternate fall semesters. P: 226-112 and 296-202.

296-442 Earth Resources II: Rocks 4 cr.
Study of igneous, sedimentary, and metamorphic rocks related to classification, genesis, and distribution; introduction to optical methods of identification; identification of hand specimens and field occurrences. Offered alternate spring semesters. P: 296-441.

*Not offered in 1974-1975

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. One weekend and one or more local afternoon field trips required. Offered alternate spring semesters. P: 296-202 (302 recommended).

See also relevant courses in other areas, including:

301-141, Elementary Astronomy, 3 cr.
301-331, Introduction to Oceanography, 3 cr.
301-350, 351, Meteorology (with laboratory), 3-4 cr.
301-420, Soil Classification and Geography, 3 cr.
356-320, 321, The Soil Environment (with laboratory), 3-4 cr.
356-330, Hydrology, 3 cr.
356-424, Environmental Biogeochemistry, 3 cr.
362-303, Conservation of Natural Resources, 3 cr.
416-353 Air Photo Interpretation, 3 cr.

298 ECONOMICS (CCS)

298-102 Economics and the Modern World 3 cr.
An introductory study of the economic system; economic institutions; economic growth; emphasizes contemporary problems such as the economics of war and peace, pollution abatement, poverty, etc.

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.

298-230 Money and Banking 3 cr.
An analysis of money as an economic institution, and of the organizational structure of the banking system in the U.S. P: 298-202.

298-303 Money, Income and Prices 3 cr.
An analysis of the process by which the management of money supply influences the allocation of resources. P: jr st and 298-230.

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.

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.

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 and 203.

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 con-

cepts regarding location, spatial organization, and planning for regional development. P: 298-202.

298-402 Resource Economics Analysis 3 cr.
Application of tools and concepts in current economic decision-making with special emphasis upon common property resource 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: sr 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.

301 ECOSYSTEMS ANALYSIS (CES)

301-141 Elementary Astronomy 3 cr.
An introduction to the universe; a study of the *solar system, stars, galaxies,* and universe. Two lectures and one two-hour laboratory in a planetarium per week. Field trips.

301-283X Selected Topics in Ecosystems Analysis 1-4 cr.
See page 96.

301-298 Directed Study 1-4 cr.
See page 96.

301-306 Biophysics 3 cr.
The application of physical principles to the understanding of biological phenomena; the physical basis of life; inter- and intra-cellular processes; the role of mechanics, light, electricity, and sound in biology; the physical basis of vision, muscle, hearing, nerves, and brain function; the physical factors in the relationship of an organism to its environment. P: concurrent registration in 204-203 and 226-212 or equivalent or cons inst.

301-311 Plant Physiology 4 cr.
General physiology of vascular plants; nutrition and metabolism; plant growth and development; natural and synthetic growth regulators; transport systems. P: *204-202, 203* and 226-112 or 212.

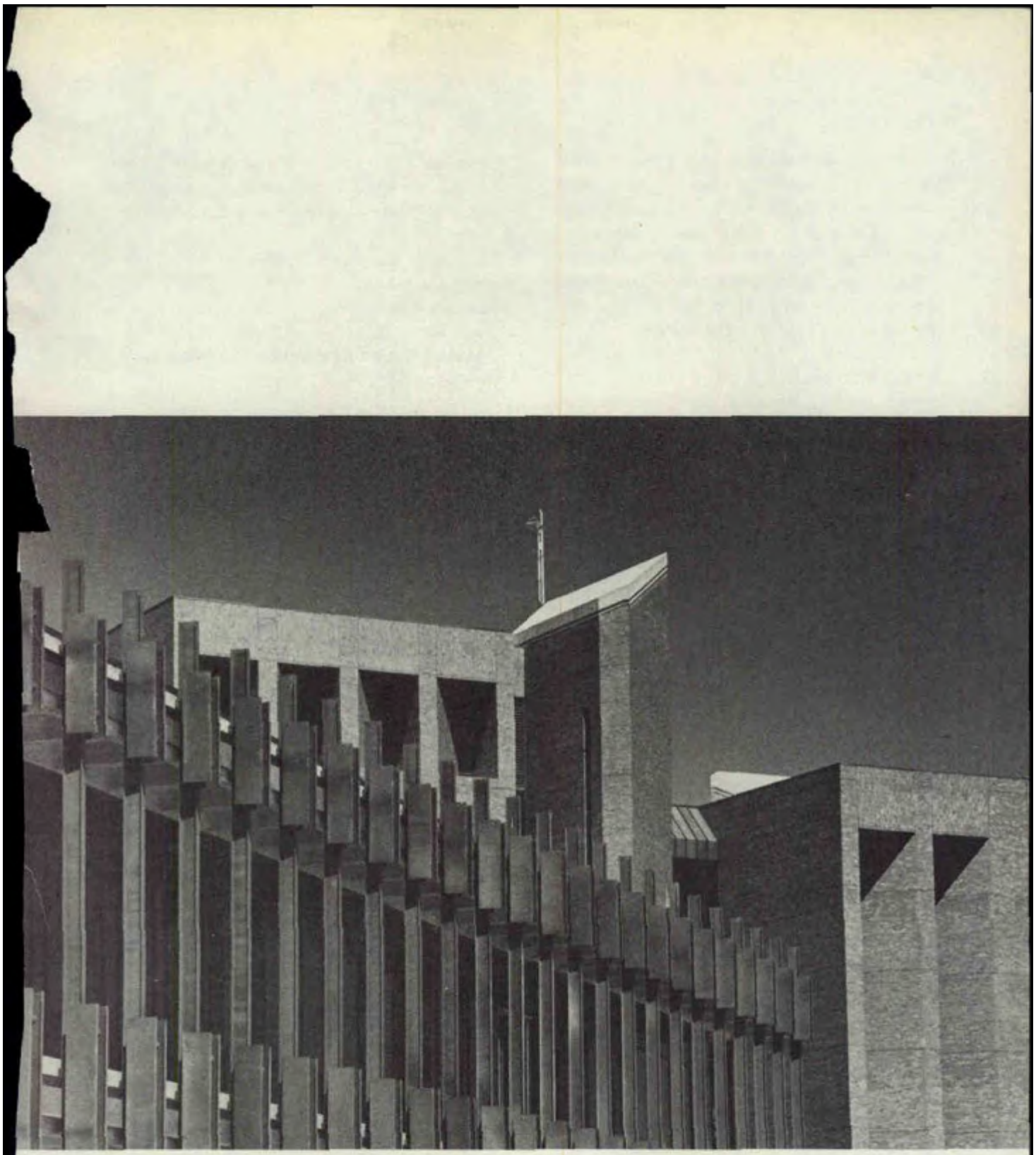
301-314 Plant Taxonomy 3 cr.
A laboratory, field, and discussion course in identification and classification of plants of North America including flora of Wisconsin. P: 204-203.

301-315 Mycology 3 cr.
Introduction to mycology with emphasis on morphology and taxonomy of lower and higher fungi; laboratory techniques involved in collection, isolation, culture, and identification; field trips; mycological literature. P: 204-202.

301-317 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 measurement of electromagnetic radiation. Selected practical topics from several disciplines may include solar radiation, atmospheric optics, photochemistry, and plant growth chambers. P: 226-112 or 212.

301-322, 323 Ecosystems Analysis I, II 4, 4 cr.
A rigorous scientific treatment of the dynamics of ecosystems, emphasizing those fundamental 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. Laboratories involve field trips, environmental data collection and *laboratory analysis, and an introduction* to systems analysis. To be taken in sequence. P: 204-203, 226-112 or 212, 600-260, and 296-202. (Credit will not be granted for both 301-322, 323 and 362-302.)

301-331 Introduction to Oceanography 3 cr.
An analysis of the 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 are discussed. Field trip. P: 204-203, 226-108 or 226-110, and 296-202.

301-350 Meteorology 3 cr.
Introduction to atmospheric processes, their nature, and their measurement. P: 226-212.

301-351 Meteorology Laboratory 1 cr.
P: concurrent registration in 301-350.

301-403 General Limnology 3 cr.
An introduction to the 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 the characterization of the aquatic environment. P: 204-203 and 226-110.

301-412 Bioenergetics 3 cr.
Energy biology, a thermodynamic and kinetic view of energy and energy flow through biological systems. The results are applied to problems in human biology, terrestrial ecology, and trophic ecology. P: 204-202, 203, and 226-112 or 212.

301-420 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: 296-202, and cons inst.

301-424 Ecosystems Analysis III 3 cr.
Senior level capstone course for majors in Ecosystems Analysis. Field analysis of biological and physical factor relationships in the functioning of a specific ecosystem. Such elements as water, air, soil, plants, and animals are studied to determine significant relationships, expressed as simple models and adjusted by the possible responses of *the system to external stresses.* A variety of physical, biological, and mathematical techniques are used by students organized into interdisciplinary teams. P: 301-322 and 323.

301-483X Selected Topics in Ecosystems Analysis 1-4 cr.
See page 96.

301-484 Senior Distinction Project 3 cr.
See page 97.

301-498 Directed Study 1-4 cr.
See page 96.

Relevant courses in other areas include:

226-315 Mechanics III 3 cr.

302 EDUCATION (SPS)

302-201 Analysis of Learning Environments 2 cr.
An investigation of major variables affecting teaching and learning in the schools: the teacher and his/her teaching behavior, the student, alternative school structures, the curriculum, and instructional processes. Approximately 30 hours are spent in the schools investigating aspects of the learning environment. P: soph st.

302-203 Introduction to Environmental Education in the Schools 2 cr.
The study of environmental education: philosophies, curricular materials, and related instructional strategies. Direct involvement in local schools at the grade level and in subject matter appropriate to the student's area of anticipated certification. P: soph st.

302-204 Values in Conflict: School Experiences of Minority Background Children 3 cr.
Examines differing explanations about why minority background children often do poorly in school, and what is being done to improve the situation. The historical and current values and life experiences of several major U. S. minorities (Amerindian, Spanish surname, and Black) are explored and contrasted with the dominant middle class white cultural values permeating typical classrooms. Resultant conflicts are examined. Ethnocentrism and social class bias as

reflected in teacher expectations and instructional materials are also considered. Students are expected to examine their assumptions and attitudes about minorities, thereby reducing their ethnocentrism and learning to 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 the operation of projecting, recording, and duplicating equipment and on the basic preparation of instructional materials. P: cons inst.

302-283X Selected Topics in Education 1-4 cr.
See page 96.

302-298 Directed Study 1-4 cr.
See page 96.

302-302 Elementary School Teaching Methods in Social Studies 3 cr.*
Teaching methods in the social studies. P: jr st.

302-303 Elementary School Teaching Methods in Art 2 cr.*
Teaching methods in art. P: jr st.

302-304 Elementary School Teaching Methods in Music 2 cr.*
Teaching methods in music. P: jr st and required competency in music fundamentals.

302-305 Elementary School Teaching Methods in Mathematics and Science 4 cr.*
Teaching methods in mathematics and science. P: jr st, 600-180 recommended.

302-306 Elementary School Teaching Methods in Physical Education 2 cr.*
Teaching methods in physical education. P: jr st.

302-307 Elementary School Teaching Methods in Reading 3 cr.*
Teaching methods in developmental reading. P: jr st.

*These courses are required for an elementary school teacher's license in Wisconsin.

**Divisional Committee approval is pending.

302-308 Children's Literature: Contemporary Practices in the Elementary Schools 3 cr.
Examines current practices in the elementary school which produce an effective children's literature program. Includes analysis of current children's books; development of units of instruction 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 evaluation of content, methods, and effect on students.

302-309 Elementary School Teaching Methods in Language Arts* ** 2-3 cr.
Examines the nature of language arts, the impact of linguistics, the child and the language arts program, methods and materials, environmental concerns and language arts, and evaluation procedures. Participation in a field experience. P: jr st.

302-310 Secondary School Teaching Methods in Communication Arts 3 cr.
Examination of the nature of communication arts; how to teach them, environmental concerns in the communication arts, methods and materials, the nature of the secondary school student, evaluation procedures, and the professional responsibilities of the teacher. Required for a license certifying the student to teach English plus drama, media (journalism), or speech. P: jr st and appropriate preparation in communication arts.

302-311 Secondary School Teaching Methods in Foreign Languages 3 cr.
For students who wish to be licensed in Wisconsin for the teaching of foreign languages in secondary schools. P: jr st and appropriate preparation in foreign languages.

302-312 Secondary School Teaching Methods in Social Studies 3 cr.
For students who wish to be licensed in Wisconsin to teach one or more of the social studies in secondary schools. Fields included are history, political science, economics, geography, psychology, sociology, social problems, civics (citizenship), and other social studies. P: jr st and appropriate preparation in social studies.

302-313 Secondary School Teaching Methods in Mathematics 3 cr.
For students who wish to be licensed to teach mathematics in Wisconsin secondary schools. P: jr st and appropriate preparation in mathematics.

302-314 Secondary School Teaching Methods in the Sciences 3 cr.
For students who wish to be licensed to teach one or more of the sciences in Wisconsin secondary schools. Fields included are biology, chemistry, earth science, environmental science, general science, and physics. Appropriate differentiations are provided for the teaching of the several disciplines. P: jr st and appropriate courses in science.

302-316 Secondary School Teaching Methods in Art 3 cr.
An introduction to the teaching of art for students who wish to be licensed to teach art in Wisconsin secondary schools. Study includes principles of art teaching methods, procedures and strategies; the motivation and evaluation of art learning experiences; creativity and visual perceptual awareness techniques; curriculum development in art; and the role of the art teacher in the secondary school. P: jr st and appropriate preparation in art.

302-317 Secondary School Teaching Methods in Music 2 cr.
For students who wish to be licensed to teach instrumental music, vocal music, or both in Wisconsin secondary schools. P: jr st and the appropriate courses in music.

302-318 Reading and Study Skills in the Secondary School 2-3 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. Students may take a field tutoring experience for the third credit. P: jr st.

302-319 Adolescent Literature in Secondary School Reading 3 cr.
Examines current 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 evaluation of adolescent literature and literature programs.

355 Theory and Practice of Human Relations Skills 3 cr.
See 892-355.

302-395 Practicum: Perspectives in Education for Minority Background Students 3 cr.
By means of films, field trip observations, and presentations by minority background resource people, the life styles and school experiences of Black, Spanish surname and Amerindian children are examined. Offered in January.

302-402 Student Teaching in the Elementary School 4-12 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. Offend on a pass-no credit basis only.

302-403 Student Teaching in the Secondary School 4-12 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 which are 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 construction of tests and measurement systems, statistical procedures applied to classroom data, monitoring and assessment of individual and group learning situations, use and interpretation of data from standardized tests. Students may participate in a task force student-initiated project for the third credit. P: jr st.

302-407 Developing Environmental Education Materials for the Schools 2-3 cr.
Developing instructional materials and strategies to integrate environmental concepts, problem identification, and problem solving strategies into elementary and secondary programs. A variety of environmental education materials and methods are considered. Emphasis on designing, using, and evaluating instructional materials for children—with children and their teachers in schools. P: jr st.

302-483X Selected Topics in Education 1-4 cr.
See page 96.

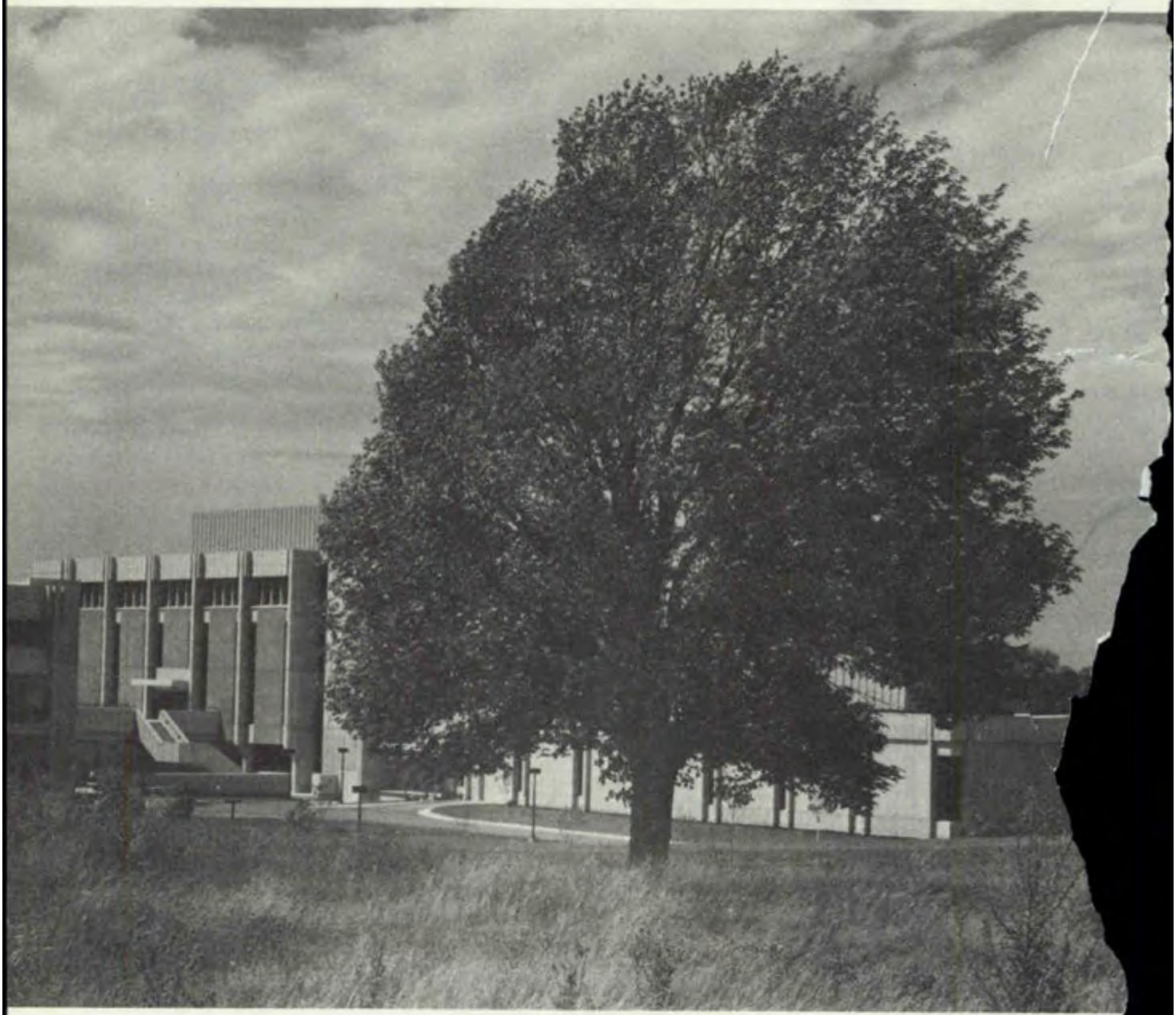
302-498 Directed Study 1-4 cr.
See page 96.

356 ENVIRONMENTAL CONTROL (CES)

356-102 Three Dimensional Drawing Concepts* 3 cr.
Orthographic projection and its application to analysis and solution of three-dimensional problems involving points, lines, planes, and solids; axonometric projections for pictorial representation with engineering applications. P: 600-101.

356-272 Introduction to Analog Computer Simulation 2 cr.
Programming and operating an electronic analog computer. Solutions of differential equations. Simulation of linear and nonlinear systems. Automatic control of analog modes with logic signals.

*Divisional Committee approval is pending



356-283X Selected Topics in Environmental Control 1-4 cr.
See page 96.

356-288 Man and Wildlife 2 cr.
An introduction to the wildlife resource stressing the interrelationship with modern society and the importance to humans. Cultural, recreational, and biological aspects of the resource are emphasized.

356-298 Directed Study 1-4 cr.
See page 96.

356-311 Mechanics of Materials 3 cr.
Stress and strain, torsion, bending of beams, shearing stresses in beams, compound stresses, principal stresses, deflections of beams, statically indeterminate members, columns. P: 356-313.

356-313 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.

356-314 Mechanics II 3 cr.
Laws of friction and impending motion, moments of inertia, virtual works, 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: 356-313.

315 Mechanics III 3 cr.
See 226-315.

356-318 Engineering Systems and Automatic Control 3 cr.
Basic laws of system components, analogies, system transfer functions, block diagrams, transient and steady state response characteristics, use of analog computer, feedback and automatic control, frequency response, stability. P: 226-212; 600-308 recommended.

356-320 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: 226-108 or 110; 296-202 recommended.

356-321 The Soil Environment Laboratory 1 cr.
Laboratory and field study of physical, chemical, and biological properties of soils. P: credit or concurrent registration in 356-320.

356-327 Urban Technological Design 3 cr.
Develops an awareness and understanding of the works of systems which sustain urban areas and the environmental changes caused by these systems. The course serves the dual role of a communication bridge between CES, CCC, and CCS and as a basic course in environmental design processes.

356-330 Hydrology 3 cr.
An introduction to the principles of hydrology dealing with the waters of earth; the occurrence, circulation, and distribution; the chemical and physical properties of water and its reaction with the environment, including the relation to living things. P: 296-202 or cons inst.

356-332 Introduction to Geophysical Fluid Mechanics 3 cr.
Fundamental behavior of fluids and fluid flows; the statics, kinematics, and dynamics of fluids, with applications to atmospheric and hydrospheric flow phenomena and to engineering problems. P: 226-211 or concurrent registration.

356-355 Applied Mathematical Optimization 3 cr.
Introduction to analytical and numerical optimization techniques; and to linear, nonlinear, integer, and dynamic programming. The techniques are applied to problems of water, forest, air, and solid waste management.

356-363 Forest and Plant 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.

356-424 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 man-made 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, 296-202, 226-300 or 302.

356-434 Water Chemistry 4 cr.
Study of fresh and ground water, chemical composition, chemical reactions, and physical principles which control or affect solute content of natural waters. Analytical and sampling techniques used to study natural waters. P: 226-311.

356-437 Water Supply and Sewage Treatment 3 cr.
Introduction to environmental engineering concerned with development, processing and distribution of water supply systems and principles applicable to the disposal, assimilation, and fate of municipal and industrial wastes. Problems in water quality control and waste management systems.

356-460 Resource Management Strategy 3 cr.
Applications of the principles of systems analysis to the design of resource management systems and to the development of strategies for maintaining optimum environmental qualities. The ecosystem and ecological principles are emphasized. P: sr st and some background in economics or conservation.

470, 471 Styles of Expression: The Arts and Technology I, II, 4, 4 cr.
See 242-471, 472.

356-483X Selected Topics in Environmental Control 1-4 cr.
See page 96.

356-484 Senior Distinction Project 3 cr.
See page 97.

356-498 Directed Study 1-4 cr.
See page 96.

362 ENVIRONMENTAL SCIENCES (CES)

362-102 Introduction to Environmental Sciences 3 cr.
Principles that govern the structure, function, and interrelationships of the earth's ecosystems are examined. The impacts of human activities are viewed as they relate to these basic processes. Solutions to environmental problems are examined relative to both the limitations of the environment and the constraints by today's technological society.

362-104 Selected Concepts from Physical Science 3 cr.
Laboratory-discussion format that supplements lectures in 362-102 with an increased emphasis on the principles of physics which include: mechanics, heat, light, sound, and electricity. Other topics include: resources from the earth, science and pollution, and science and the future. Does not serve as a prerequisite for 226-111 or 211. P: concurrent registration in 362-102.

362-202 Environmental Information Sources 1 cr.
Research techniques and methods, with special reference to information on the environment, ecology, pollution, and related fields that is available in the library and elsewhere.

362-260 Energy, Electric Power, and Man 3 cr.
The technological, economic, and environmental aspects of electrical power generation and use. Primary emphasis on general concepts of power generation alternatives provides the student with an overview of the energy crisis as applied to electrical power.

362-284 Husbandry of the Land 3 cr.
Concepts and attitudes concerning land and husbandry; historical aspects of our relationship with land and food production use; agricultural development in the U. S.; land ethics vs. land economics; conflicting demands on the land; state and national land use policies: land and food for the future. Field trips.

362-286 Forest Vegetation of Wisconsin 2 cr.
Historical (Indian, settler, logger) and contemporary (fire, grazing, urbanization) modifi-

cation of Wisconsin forest vegetation. Biology of individual species and community dynamics. Interpretation of current vegetation research and management practices.

288 Man and Wildlife 2 cr.
See 356-288.

362-302 Principles of Ecology 3 cr.
The biological principles which govern the interactions of plants and animals in their physical and biotic environments. Mechanisms of evolution and the resultant physiological and behavioral adaptations of individuals to their environment. Succession, productivity, energy flow, and nutrient cycling in ecosystems. Consideration is given to people as a factor in the ecosystem and to concepts underlying strategies used in the management of natural resources. P: 204-203. (Credit will not be granted for both 362-302 and 301-322, 323.)

362-303 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, as well as the chemical, physical, and biological proceses occurring in nature which affect and influence our conservation and management practices. Consideration is given to the politics and economics of resource conservation. P: 362-102 or 204-203 or 296-202.

362-445 Planning in a Simulated Environment 4 cr.
Techniques and limitations of environmental planning are explored through readings, lectures, discussions, and the use of an adaptation of the River Basin Model which simulates the lower Fox Valley including the city of Green Bay. In this simulation, students assume various decision-makers' roles—such as government official, school director, industrialist, planner, etc.—and, in the light of many social, economic, and environmental indicators, plan for and observe the changes in the simulated region. P: jr st, cons inst.

362-450 Air Pollution Chemistry and Meteorology 3 cr.
Chemical reactions and transport phenomena in the unpolluted and polluted atmosphere with a special emphasis upon dispersal processes and control. P: 226-212.

416 GEOGRAPHY (CCS)

416-102 The Regions of Earth: A Geographical Appraisal of the Human Habitat 3 cr.
An introduction to 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. P: 255-102.

416-202 Introduction to Cultural Geography 3 cr.
A consideration of the impact of culture through time in creating the world's contrasting landscapes.

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.

235 Wisconsin Landscapes and Regions 3 cr.
See 834-235.

416-316 Geography of Transportation and Industrial Location 3 cr.
Geographic analysis of transportation and industrial location; the role of transportation in determining the location of business and industrial activities. P: jr st or cons inst.

416-320 Landform Geography: Topics and Regions 3 cr.
Introduction to geographic methods of landform description and analysis with application to selected regions of the world. P: jr st or cons inst.

416-325 Regional Climatology 3 cr.
The elements, controls, and classification of climates; the distribution of climatic types over the earth; world patterns. P: jr st or cons inst.

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 unit of subsystems—commercial, residential, and manufacturing—functioning in space. P: soph st.

416-350 Maps and Air Photos 3 cr.
Introduction to the appreciation, use and evaluation of maps and air photos as informational sources. P: soph 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 photographs are used in the analysis of human use of the earth and its resources. P: jr st.

416-355 Introduction to Quantitative Methods of Spatial Analysis 3 cr.
The scientific approach to the study of geographic problems, and introduction to basic techniques for the analysis of spatial distributions and spatial relationships. P: a course in statistics.

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.

416-371 Geography of the United States and Canada 3 cr.
A systematic analysis of 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.

372 Analysis of the Great Lakes Region of North America 3 cr.
See 834-372.

416-376 Geography of Developing Areas 3 cr.
An analysis of the geography of countries in various stages of development and the role of physical and human resources. P: soph st.

377 Analysis of Northern Lands 3 cr.
See 834-377.

416-378 Geography of Tension Areas 3 cr.
Investigation of the economic and political geography of areas actually or potentially dangerous to the peace of the world in an attempt to analyze underlying causes of existing tensions. P: jr st or cons inst.

426 GROWTH AND DEVELOPMENT (CHB)

426-201 Life and Growth Through Films 2 cr.
A camera's eye view of the process of growth and aging—birth to death. Provides a unique vision of the life span of our species, a view that books alone cannot give. Many types of films are used; everyone from psychologists to professional, commercial film makers have focused on human growth. Offered in January.

426-205 Challenges to Human Development 3 cr.
The critical problems connected with social, cultural, and psychological aspects of human environments. Examples of topics dealt with are the youth culture, including alienation, the psychological impact of violence and aggression in the mass media, the generation gap, effects of poverty, cultural disparity, and educational relevance. The objective is to give psychological insights into causes, effects, and solutions. Contributes to human relations skills.

426-210 Psychology of Human Development and Learning 3 cr.
An introductory foundation course focusing on a developmental approach to psychology and including a special emphasis on the learning process in humans and the guidance of human learning. The developmental span covered is birth through early adulthood. Programmed materials designed for self-instruction are used to give students greater command of their own progress.

426-283X Selected Topics in Growth and Development 1-4 cr.
See page 96.

426-298 Directed Study 1-4 cr.
See page 96.

426-331 Infancy and Early Childhood 3 cr.
Review of genetic and physical factors; social, emotional, cognitive development; family and other social interaction impacts. Includes motivation and learning; personality and intellect; sex role development; health; interrelationships with family, school and community; human relations implications of understanding development. P: 426-210 or equivalent.

426-332 Middle Childhood and Adolescence 3 cr.
Physical growth: social, emotional, and intellectual development; learning processes and interests; school and community impacts; physiological factors, social roles, identity-crises, human relations during adolescence. P: 426-331.

426-333 Observation and Interpretation of Child Behavior 3 cr.
Interpretation of behavior and development during the preschool and early school years through directed observation in selected situations. Developing objectivity contributes to human relations skills. P: 426-331.

426-334 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 examined. Observation and laboratory sessions with a variety of creative materials. P: 426-331.

426-336 Sex Role Development in Contemporary Society 3 cr.
Analysis of the impact of social change on sex roles from an interdisciplinary and developmental orientation. Effects of child rearing practices, current social demands and expectations, problems of identity resolution. P: soph st and some course work in psychology, sociology, or anthropology.

426-337 Developmental Tests and Measurements 3 cr.
Problems of measuring human characteristics, particularly intellectual and personality traits. Determining validity and reliability of such measures. Interpreting test data for individuals and groups. Applications in developmental and behavioral contexts, such as psychological and sociological studies, business and industry, education. P: course in statistics recommended.

426-410 Mental Health of the Child 3 cr.
Identification, treatment, prevention of emotional disorders among children. Environmental factors, community aspects and agencies, child advocacy. Individual projects, contact with work of community agencies. P: 426-331.

426-429 Theories of Personality Development 3 cr.
A review of the 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: Freud, Adler, Jung, Sullivan, Erikson, Lewis, Rogers, Skinner, and others. Emphasis is on individual-environmental interaction. P: 426-331 and jr st.

426-431 Cognitive Development and Facilitation in Childhood and Adolescence 3 cr.
An analysis of the course of development of cognitive functioning and the conditions of learning from infancy through adolescence, with particular attention to the findings of Piaget and other current investigators. Effects of the interrelationship of cognitive and affective factors are examined, as are the implications for learning. P: credit or concurrent registration in 426-332.

426-432 Cultural Impacts on Human Development 3 cr.
The cultural context of socialization, class, and ethnic differentials and their impact on cognitive style, value systems, human relations, and personality patterning. Subcultures considered are those of the inner city, American Indian, and others involving significant segments of the American population. P: 426-332.

426-433 Adulthood and Later Maturity 3 cr.
Emphasis on identity resolution, adjustment to work, marriage, parenthood; processes of old age, involving physical, intellectual, personality developments, adjustments to retirement and human relations. P: 426-332.

426-435 Developmental Problems and Deviations 3 cr.
Developmental deviations of constitutional and of social-emotional etiology in childhood and in adulthood are considered. Problems of exceptional children, children with handicaps, learning difficulties. Signs of coping difficulty. P: 426-332.

426-436 Developmental Guidance with Children and Adolescents 3 cr.
Theory and principles of remediation in developmental problems suitable for teachers and others dealing with children in groups, as well as individually. Problems most relevant to the students' respective interests are selected. Case study approach and practice via simulation techniques. P: 426-435.

426-437 Developmental Guidance with Adults and the Aged 3 cr.
Common problems of young adults, parents, and the aged requiring guidance. Principles and techniques of effective interpersonal communication and human relations. Analysis of individual and parental behavior as a function of personality and the cultural-social context. The use of communication as a change-agent technique. P: 426-332.

426-438 Lifetime Needs and Environmental Planning 3 cr.
Problems in providing optimal developmental opportunities for persons of all ages in a complex democratic society. Human needs requiring community collaboration; effective procedures for implementing need-oriented programs; developing humane institutions and supporting services; the organization of the physical and social environments for optimal human development. P: 426-433.

426-439 The Elderly: Social and Behavioral Implications for Health Care 3 cr.
An interdisciplinary overview of older Americans, with emphasis upon creating for them an optimum environment. Physiological change, problems of meeting health care, social status, and psychological change, with emphasis upon individual differences. Historical and anticipated future changes in the older population are discussed. Field trips to nursing homes and rehabilitation facilities in the Green Bay area. Offered in January.

426-441 Guidance and Methods for Preschool and Kindergarten Groups I 3 cr.
The philosophy of preschool education, basic objectives, role of the teacher, group management, program management and current alternatives in emphasis, with guided observations of preschool children. P: 426-334 or concurrent registration in 333 and 334.

426-442 Guidance and Methods for Preschool and Kindergarten Groups II 3 cr.
Planning the preschool program, utilization of indoor and outdoor space, experiences in mathematical concepts, science, environmental education, physical education, graphic media, music, movement, language and children's literature, sensory experiences, social studies, human relations, and operation of the preschool, with guided observations and selected experiences in a preschool. P: 426-333, 334, and 441.

426-444 Practicum in Working with Preschool and Kindergarten Groups 5 cr.
Directed work in selected preschool and kindergarten milieu, practice in applying the principles of guiding children in preschool and kindergarten groups and in implementing good human relations in such groups. Students arrange for 12 hours of participation in preschool and/or kindergarten settings per week. P: 426-442.

426-483X Selected Topics in Growth and Development 1-4 cr.
See page 96.

426-484 Senior Distinction Project 3 cr.
See page 97.

426-495 Language Acquisition and Utilization During Childhood 3 cr.
An interdisciplinary approach to language including structural linguistics, biological and physiological aspects, acquisition and psychological development, utilization as a cognitive tool, communication skills, and sociocultural factors. Field experience in the observation and interpretation of child speech behavior. Offered in January.

426-498 Directed Study 1-4 cr.
See page 96.

448 HISTORY (CCC)

448-202 Rise of the International Economy from 1400 to the Present 3 cr.
The development of technology and economic institutions in Europe and their interaction with the economies of other continents and geographical regions; growth of international trade and its importance to regional and national economies; economic significance of colonial systems and patterns of their economic development. Emphasis is on the pervasive influence of the international economy on peoples of the modern world.

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 non-European cultures; the Scientific Revolution, the Enlightenment, and 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.
The emergence of modern Europe. Revolutions against the Old Regime; 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; the reconstruction of Europe.

448-205 History of the United States from 1600 to 1865 3 cr.
The origins of European empires and their colonization of the American continents; the expansion of the North American English colonies within the British Empire; the splitting of the British Empire and the establishment of the United States. Stress is placed on the building of American nationalism, landed imperialism, ideological conflicts, and institutional development up to the end of the Civil War.

448-206 History of the United States from 1865 to the Present 3 cr.
The results of the Civil War; the impact of industry; the development of corporation capitalism; and the expansion of political, economic and military power abroad.

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 to shape and form the other. Emphasis on the blossoming of modern science in the seventeenth century, the influence of the sciences upon other intellectual disciplines, the relationship between science and technology in recent times, and the development of some of the major theoretical structures in science.

448-250 History of East Asia since the 17th Century 3 cr.
The evolution of East Asian civilizations as seen through their major cultural, political, and economic institutions. Primary emphasis on China and Japan.

448-261 Ancient History from the Neolithic Age to 323 B.C. 3 cr.
An orientation into the methods of evaluating the history of human accomplishment in the areas where agriculture and metallurgy emerge. Begins geographically in Anatolia, the Mesopotamian Valley, the Fertile Crescent, the Nile Valley, and the islands of the Eastern Mediterranean. The history of the Mycenean, Hellenic, and post-Hellenic periods to the death of Alexander the Great provides the means for studying the history of the ancient near east, classical Greece, and the archaeological, artistic, and documentary sources of knowledge. Special attention given to a critique of the writing and reconstruction of history.

448-262 Ancient History, Mediterranean History from 323 B.C. to 334 A.D. 3 cr.
The westward spread of Greco-Roman civilization, into which Christianity was born, and its press northward into the Celtic and Germanic areas. Of major interest is the great constitutional struggle that ended the Roman Republic and brought into being the Roman Empire. Study of the surviving monuments in art, architecture, and literature shows how the finished product developed and how the Semitic religion was influenced by Greek and Roman concepts.

448-302, 303 History of American Thought and Culture 3, 3 cr.
The 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.

448-305 History of Asian Thought and Culture 3 cr.
The evolution of Asian thought, religion, and art; the agencies of cultural life; impact of European culture; influence of Asian thought outside Asia. P: jr st or cons inst.

448-306, 307 History of European Thought and Culture, 1650 to the Present 3, 3 cr.
Major currents in European philosophy, religion, science, artistic modes, and cultural life; the worldwide influence of European culture and the impact of European ideas on other major regions. P: jr st or cons inst. Can be taken out of sequence.

448-309 History of Science in Modern Times 3 cr.
The development of science since the 16th century seen as a part of the cultural matrices in which it has existed; discussion of important scientific concepts of the last four centuries. P: jr st or cons inst.

448-312 History of the Great Lakes Region from 1600 to the Present 3 cr.
The development of the Great Lakes Region as a distinct physiographic, economic, political, and cultural region in North America. The historical development of such an international region within the context of traditional nationalism and international rivalry, as well as its impact and influence within the respective nations. A frame of reference is provided for comparison with other regions within the North American milieu. P: jr st or cons inst.

448-314 The Transformation and Collapse of Imperial Russia 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.
A 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.

448-322 Economic History of the U.S. 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 processes and the developing relationship between the domestic and the world economy. P: jr st or cons inst.

448-323, 324 History of American Foreign Relations 3, 3 cr.
American foreign relations as a medium for the study of American history; the different facets of American values, economic structures, and political decision-making as they affect the nation's relations with the rest of the world and as the rest of the world affects them. P: jr st or cons inst. Can be taken out of sequence.

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 a product of American culture; the internal history of the city as a social system. P: jr st or cons inst.

448-350 Social History of Europe Since the Industrial Revolution 3 cr.
The social manifestation and consequences of continuing and accelerating economic change. A study of the origins, development, diffusion, and impact of the Industrial Revolution on European society; an examination of the theoretical and institutional bases of liberalism, socialism, communism, and fascism within the framework of the evolving modern mass society. P: jr st or cons inst.

448-356, 357 History of Africa 3, 3 cr.
The social, political, and economic institutions of African kingdoms from prehistoric times to the present, with emphasis upon the development of the institutions; analysis of European colonialism, African cultures and the emergence of modern African nation-states. P: jr st or cons inst. Can be taken out of sequence.

448-363 Medieval History from 337 to 1100 A.D. 3 cr.
The development of human institutions in the West beginning with the death of the first Christian Roman emperor. The northward movement of the newly Christianized Mediterranean culture in the West and the Celtic and Germanic peoples in the East; Greek Christianity's movement into the areas of the Slavs. Changes provided by the Turkic peoples and the Scandinavian Vikings. Development of the Carolingian empire and the Papacy in the West as indication that the inherited forms were inadequate. The First Crusade as an index of a new dynamism in the West. P: jr st or cons inst.

448-364 Medieval History from 1100 to 1453 A.D. 3 cr.
The continuation of the development of European society from the point where Mediterranean culture is modified. Subdivisions of the Slavs: changes in the Byzantine empire; formation of new dynastic states, population increases. The rapid rise of the city, new classes based upon mercantile wealth, new forms in technology and their reflections in architecture, painting, sculpture, philosophy, theology, and the spread of the university. Similarities between the Hellenistic period and the lunar and space age are noted. Elements that are intensified in the Renaissance and Reformation are witnessed. P: jr st or cons inst.

448-402 Political and Social History of Modern Asia 3 cr.
A critical examination of political and social change in 20th century Asia; the clash between colonialism and emerging nationalist movements; continued European and American involvement in Asia. P: sr st or cons inst.

448-403 Political and Social History of Modern America 3 cr.
A critical examination of political and social change in 20th century America; the evolution of governmental roles in social change; the emergence of the United States as an industrial power. P: sr st or cons inst.

448-404 Political and Social History of Modern Europe 3 cr.
A critical examination of 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-World War II renaissance of the European community. P: sr st or cons inst.

448-405 History of Technological Change 3 cr.
An analysis of 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 Problems in Historical Causation 3 cr.
A seminar involving the careful consideration of major schools in historiography; problems in the interpretation of cultural, economic, political, scientific, and social history. P: sr st or cons inst.

NOTE: Directed study offered by concentrations may be taken for history option credit with the approval of the option chairperson.

478 HUMAN ADAPTABILITY (CHB)

478-104 Anatomy and Physiology 4 cr.

The structure of the human body and the physiology of the organ systems. Primarily for nursing students. Includes laboratory. P: 204-202 and 226-108 or 110.

478-201 Adaptation to the Environment 3 cr.
An examination of the morphological and functional adaptations of animals to the aquatic, aerial, and terrestrial environments and a consideration of human adaptability to the stresses brought about by technology and crowding. P: soph st.

478-283X Selected Topics in Human Adaptability 1-4 cr.
See page 96.

478-298 Directed Study 1-4 cr.
See page 96.

478-301 Adaptive Mechanisms 3 cr.
A study of the discrete biochemical, cellular, organismal, and morphological changes that are the bases for adaptation and acclimatization. P: 204-202 and 203 and 226-112 or 212.

478-302 Comparative Physiology 3 cr.
An analysis of the ways in which dissimilar organisms perform similar functions. Behavioral, physiological, and biochemical solutions of problems imposed on invertebrate and vertebrate animals by their environment. Lectures and discussions. Offered in alternate years. P: 204-203, 226-112 or 212, or cons inst.

478-303 Laboratory in Comparative Physiology 2 cr.
Laboratory experiments demonstrating phenomena discussed in 478-302 acquaint students with the techniques and rationale of laboratory science. Several alternative approaches to each laboratory exercise. P: 478-302 or concurrent registration.

478-325 Biological Instrumentation 2 cr.
Laboratory exercises with instruments useful in biological investigations. Consideration mainly of the mechanical principles of instrumentation, and reliability and accuracy of measurements. P: 226-112 or 212 and 204-202 and 203.

478-402 Human Physiology 3 cr.
The functions of the major organs and organ systems of man other than the central nervous system and the special senses. P: 204-202 and 203 and 226-112 or 212.

478-403 Human Physiology Laboratory 2 cr.
Laboratory exercises in conjunction with 478-402 with special emphasis on experimental techniques and fundamentals of research. P: 478-402 or concurrent registration.

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. Special emphasis on limitations imposed by various environments. P: 204-202 and 203 and 226-112 or 212 or cons inst.

478-414 Neurophysiology Laboratory 2 cr.
Experiments and techniques to demonstrate phenomena discussed in 478-413; anatomical, histological, electrophysiological, and behavioral approaches to experimentation. An individual research project is offered. P: 478-413 or concurrent registration.

478-420 Human Growth, Development, and Senescence 2 cr.
The physical and functional events of the stages in the life sequence of the human being. Examined mainly on the basis of changes in musculo-skeletal, cardiopulmonary, central nervous, and endocrine systems and how they may relate to sociopsychological concerns. Offered in alternate years. P: jr st and 204-202 and 203.

478-430 Environmental Physiology 2 cr.
The physiological responses to thermal stresses of the environment. Offered in January as a lecture-laboratory course in which the students perform both as technicians and subjects. P: 204-202 and 203 and 226-112 or 212.

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 in the concentration. P: sr st or cons inst.

478-483X Selected Topics in Human Adaptability 1-4 cr.
See page 96.

478-484 Senior Distinction Project 3 cr.
See page 97.

478-498 Directed Study 1-4 cr.
See page 96.

480 HUMAN BIOLOGY (CHB)

480-102 Introduction to Human Biology 3 cr.
Introduction to the development, nature, and processes of human adaptability.

485 HUMANISM AND CULTURAL CHANGE (CCC)

485-101, 102 Introduction to Humanistic Studies I, II 3, 3 cr.
An interdisciplinary study of the way human values are expressed in our scientific, philosophic, artistic, and technological endeavors. A general introduction to the methods and substance of the humanistic areas in the concentration. This basic tool course is a prerequisite for majors in this concentration.

485-207 Philosophy and Literature 3 cr.
An interdisciplinary course to develop the relationship between philosophy and literature. Topics include scientific thought in the novels of the 18th century; philosophy in literature; tragedy and its forms in plays by Sophocles, Shakespeare, Strindberg, Miller; pornography, literature, and the law.

485-274 Red Man in White America 3 cr.
A multi-disciplinary survey of the changing position of Native Americans in American culture and society. The historical relations of Indians and Whites will be examined to discover basic processes of sociocultural 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?

485-283X Selected Topics in Humanism and Cultural Change 1-4 cr.
See page 96.

485-298 Directed Study 1-4 cr.
See page 96.

485-300 Experimental Learning Community Program 12 cr.

Students are offered the opportunity to devote all of their intellectual effort to the study of one particular area of concern at a time, using a unified, coherent, interdisciplinary approach within a cooperative and interacting academic community. Avoiding the problems inherent in a program of study consisting of separate and essentially unrelated courses, the experimental learning community program focuses all study around a central theme: The Individual in Society.

Students in the program work in groups of five or more on topics of interest to them and of direct relevance to the central theme. At the end of each study period, students have the opportunity to reorganize themselves into new study groups, approaching new topics.

The program as a whole serves as a miniature model of individuals forming a "learning society." Part of the study focuses on the issues which inevitably are raised as students and faculty alike engage in the process of building an interacting and cohesive academic community. The acquisition of learning and communication skills is stressed. In an increasingly interdependent "white collar" world of large scale organization learning the skills and the responsibilities involved in truly cooperative study is important.

485-301 Humanism and Cultural Change Projects in the Community 1-5 cr.
Projects vary, but emphasize service, creative, developmental, and communications ac-

tivities in the community. May be repeated for credit. P: cons inst.

485-302 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: 485-101, 102, jr st, or cons inst.

485-303 Action Training (Intensive) 4 cr.
Techniques and backgrounds of successful anti-poverty projects in the University Year for Action program. P: membership in the University Year for Action Program.

485-307, 308 Other Cultures through Humanistic Studies I, II 3, 3 cr.
Introduction to and specific aspects of a given culture are studied in humanistic context by means of a contrastive and structural analysis in order to enrich the student's view of his or her own culture when parallel to a different heritage, ideology, and value system. Can be taken out of sequence.

485-310 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. It includes a 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 would be highly desirable. P: jr st or cons inst.

485-311, 312 Visions of Man 3, 3 cr.
This course seeks to provide the student with an experience of some of the most significant ways in which people, in the past and in the present, have sought to understand themselves, to look at themselves in relation to each other and to their world. These visions are presented by an interdisciplinary faculty team in a nonspecialized and broadly based way as are sets of ideas, feelings, and aspirations defining the human condition and held in common by a group of artists, writers, and thinkers, either at the same or differing times and places. P: 485-101, 102, jr st, or cons inst.

485-313 Man, Machines, and the Environment 3 cr.
The environmental effects of our attempts to exploit resources and to alter our surroundings throughout time. Ecological crises are put into historical perspective through the treatment of themes such as deforestation from prehistoric times until the present; the growth of air pollution with the adoption of fossil fuels; the effects of warfare upon the environment; the ecological effects of the industrial revolution; urbanization in response to agriculture and to industry, etc. P: 485-101, 102, jr st, or cons inst.

485-325 Western Christianity: Belief and Institutional Structure from the New Testament Era to the Reformation Era 3 cr.
The Christian Church is the human institution which has sought to guide a large portion of the world's population to ultimate felicity. Lectures and readings follow the development of belief, forms, and institutions as they changed in the fifteen hundred years to the close of the Council of Trent.

485-331 Geo-Historical Approaches to the Environment 3 cr.
The interaction between our conception of our environment, our attempts to classify it, and our actions to relate ourselves and our society to it. Important historical examples of the relationship between human behavior and scientific, social, and geographic thought are treated. P: 485-101, 102, jr st or cons inst.

485-369 Women: Crisis in Society 3 cr.
An introduction to the field of women's studies. Various aspects of women's relationships to American society are surveyed on an interdisciplinary basis, beginning with society's images of women and the mechanisms by which these images are imposed as roles. The biological and psychological bases of women's roles are examined and questioned. The dilemma of women who do not accept traditional roles is investigated, and possibilities for the future are explored. Private innovation, in the form of alternative life styles, is discussed, as well as planned social change at the national level. The students are encouraged to formulate proposals for the future.

485-375 Wealth, Culture, and Society 3 cr.
An interdisciplinary and cross-cultural study focusing on the economic influences and appearances reflected in culture and society. Comparative methods are used to explore the similarities and differences among related societies (e.g., England, Canada, and the U.S. from 1850-1950; the revolutionary periods of the U.S., Latin America, and Germany; the cultural milieus of empires such as the Renaissance Italian city-states, the 17th century Dutch, 18th century French, 19th century British, 20th century American, etc.). P: 485-101, 102, jr st, or cons inst.

485-376 Human Contrast 3 cr.
The cultural contrasts among the African cultural experience, the Native American cultural experience, and the cultural experience of the American ethnic groups of European and/or Asian descent are examined. P: 485-101, 102, jr st, or cons inst.

485-390 Man's Environment of Violent Change and Revolution 3 cr.
The origins, development, and consequences of violent conflicts on the local, national, and international levels, examined within the framework of social change. Focus on major forms of violence (revolts, revolutions, wars, etc.) and on significant revolutionary ideologies and movements.

485-395 The Individual and His Culture: The Film-Maker's View 3 cr.
The motion picture as a serious art form which examines and illuminates the relations between the individual and his/her society. Students view 12 significant and also entertaining movies which are analyzed for their aesthetic and cultural implications. Offered in January.

423 Literary Research and Criticism 3 cr.
See 552-423.

485-429 Utopia and Anti-Utopia 3 cr.
The role of utopia and anti-utopia as to their origins, history, philosophical conceptualization, political representation, and literary expression in Western thought since the fifteenth century. In addition to ideologies and nihilism, special attention is given to the American experience of utopian and anti-utopian values. P: 485-101, 102, jr st, or cons inst.

485-430 Art, Ideas, Society, and the Quality of Life 3 cr.
The interrelations of social value (whether elite or popular values) and the environment of art, ideas, and ideology. Specific topics may vary from semester to semester. For example: art, culture, and pornography; the literature and art of social reform and social reaction; literature, the visual arts, the church, the state, and cosmology of Renaissance Europe. P: 485-101, 102, jr st, or cons inst.

485-474 The Native Americans: Emergence of Pan-Indian Cultures 3 cr.
What have been the consequences of cultural contacts between Native Americans and Euro-Americans? Emphasis upon the several kinds of processes which have transformed, eroded, and revitalized Native American cultures, especially on the emergence of Pan-Indianism. Key issues in acculturation and cultural change theory are stressed.

485-483X Selected Topics in Humanism and Cultural Change 3 cr.
See page 96.

485-484 Senior Distinction Project 3 cr.
See page 97.

485-495 Symposium on Structure and Order: Ideas, Ideals, and Ideologies 3 cr.
Topically and thematically oriented, thus varies in its content and methodology each time offered. Designed for majors but open to anyone. Offered in January.

485-498 Directed Study 1-4 cr.
See page 96.

510 JANUARY PRACTICA

195, 295, 395, 495 January Practicum 1-3 cr.
Special programs designed by the faculty exclusively for presentation during January. Focus is on the extension of theories and concepts studied in classes to relevant and practical conditions. May consist of studies

related to a contemporary and relevant theme, on-campus activities for individuals and groups, guided study tours, field trips, as well as such other activities as may be appropriate to the January time period. Distribution, option, or concentration credit is subject to the approval of the chairperson of the appropriate program. Students ordinarily pursue one activity during January. Specific programs are published in the January *Timetable*.

532 LEISURE SCIENCES (SPS)

532-283X Selected Topics in Leisure Sciences 1-4 cr.
See page 96.

532-298 Directed Study 1-4 cr.
See page 96.

532-302 Philosophy and Sociology of Leisure 3 cr.
The impact of increasing leisure on society, its culture, and subcultures; fundamental attitudes and values which have influenced the development of leisure. P: jr st.

532-310 Formulating and Administering Recreation Programs 3 cr.
Practice in designing programs and establishing effective organizations for their administration: applying valid conclusions from the philosophical, sociological, and physiological characteristics of leisure usage; theories, principles, and practices of program development in public and private operations. P: 532-302.

532-320 Field Practicum 2 cr.
Directed work-study experiences in selected environmental settings in the United States, Canada, or other culture; available to qualified students between junior and senior years. Oral and written reports are required. P: six cr in leisure sciences.

532-403 Recreation Supply and Demand Analysis 3 cr.
Actual case problems in analyzing both supply and demand for recreation: theoretical concepts, determinants of supply and demand, including treatment of the substitution effect; pricing and allocation of recreation resources and services. P: 532-302.

532-404 Public Park and Recreation Systems 3 cr.
Policies, principles, and administrative practices involved in the planning, development, and operation of public park and recreation systems. P: jr st and 532-302.

532-410 Outdoor Recreation and the Natural Environment 3 cr.
Regional recreation resources planning utilizing ecological principles; resource inventory classification and allocation; forecasting demand; quantification of user-resource relationships: formulation and application of recreation planning guides; fiscal considerations. Problem orientation to the public lands in the Upper Great Lakes region. P: jr st.

532-483X Selected Topics in Leisure Sciences 1-4 cr.
See page 96.

532-498 Directed Study 1-4 cr.
See page 96.

538 LIBERAL EDUCATION SEMINARS

538-101, 102 Freshman Modules on the Theme: Crises of Belief and Ecology 3, 3 cr.
An introduction to the two central concerns of the University, values and ecology. A choice of topics on human values and their relations to contemporary ecological problems. Studied in modules of up to 35 students. Methodology includes critical reading, written and verbal communication, and discussion. The student selects two topics for study each term. Sample topics are the human condition in world perspective, technology and human values, resource utilization and the American character, crises in communication, and contemporary moral problems.

538-301, 302, 395 Intermediate Course Packages 3, 3, 3 cr.
The 9-credit packages integrated around particular themes include elements of off-campus projects, involvement with another culture, and cross-culture comparison. Significant attention is given to appropriate preparation for the off-campus and other-culture experiences. The packages are also related to LES travel experiences available usually in

January. Students are encouraged to select a theme package and stay with it through the 9-credit sequence. Sample themes are: experiment in community; strategies for the study of social change; settlements, communities and new towns; environmental aspects of human settlement; the interrelatedness of the arts; the war against hunger: coastal zone land use, and social management and values. P: 538-102.

538-401 Senior Seminar 3 cr.
An interdisciplinary seminar on selected problems in the natural, social, technological, and cultural environments. Seniors from different concentrations study a complex situation of particular concern to society. Sample seminars are: social consciousness and the scientist; culture, community, and environment in America; images of woman and man; the American mind in modern society; the minorities' view of America. P: 538-301, 302, and 395 or cons inst.

553 SPECIAL LEARNING PROGRAMS—ENGLISH

095 Basic English Composition 3 cr.
For students with specific needs or problems in the area of study skills, with emphasis upon writing, comprehension of lectures and reading assignments, and study habits. Work is on a tutorial basis, scheduled at the convenience of the student. Students may be referred through placement tests or on advice of a faculty member or may request services of the staff. Offered on an automatic pass-no credit basis: credits do not count toward graduation.

LITERATURE AND LANGUAGE* (CCC)

552 English-American
554 French
556 German
558 Spanish

102, 103 Introduction to the French, German, Spanish Language 4, 4 cr.

Study and practice of the language with emphasis upon listening, speaking, reading, and writing. Courses are sequential and according to the level of achievement. One year of high school foreign language usually equals one semester of university work.

104 Introduction to Literary Types 3 cr.
A survey of major literary types (epic, lyric, ode, sonnet, ballad, types of the novel, drama, essay) through intensive analysis of literary classics. Significant contemporary works are studied for aesthetic structure and convention.

*Courses in English and American literature carry no prerequisite except consent of the instructor. However, students should enroll in courses appropriate to their class standing. 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. Separate courses are offered in each language. If the student passes a foreign language course with a grade of 'C' or better at a level one semester higher than the level of proficiency attained in high school work, credit will be given for college language courses preceding the one in which the student is enrolled to a maximum of 11 credits.

106 Great Books 3 cr.
A study of the literary heritage and traditions of world culture, including non-Western expressions.

202, 203 Introduction to the French, German, Spanish Language 3, 3 cr.
Study and practice of the language with emphasis upon listening, speaking, reading, and writing. Courses are sequential and according to the level of achievement. One year of high school foreign language usually equals one semester of university work.

207 Philosophy and Literature 3 cr.
See 485-207.

212 Introduction to Creative Writing: Fiction 3 cr.
A first course in the writing, appreciation, understanding, and technique of fiction. May not be repeated.

213 Introduction to Creative Writing: Poetry 3 cr.
A first course in the writing, appreciation, understanding, and technique of poetry. May not be repeated.

214 Introduction to English Literature 3 cr.
An introductory, chronological survey of English literature from Anglo-Saxon times to the end of the 18th century, including such writers and works as Beowulf, Gawain and the Green Knight, Second Shepherd's Play, Wyatt, Sidney, Marlowe, Shakespeare, Spence, Donne, Milton, Dryden, Pope, and Congreve.

215 Introduction to English Literature 3 cr.
An introductory, chronological survey of English literature from the Romantic movement through the 20th century, including such writers as Wordsworth, Keats, Shelley, Byron, Browning, Tennyson, Arnold, Carlyle, Shaw, Conrad, Joyce, and Lawrence.

216 Introduction to American Literature 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 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.

218 Introduction to World Literature I 3 cr.
An introductory, chronological survey of world literature from Homer to Cervantes, including such writers as Homer, Lucretius, Dante, Erasmus, Machiavelli, Rabelais, Montaigne, and non-Western writers of the same historical period.

219 Introduction to World Literature II 3 cr.
An introductory, chronological survey of world literature from Pascal to the present, including such writers as Pascal, Racine, Voltaire, Balzac, Flaubert, Dostoevsky, Ibsen, Baudelaire, Brecht, and non-Western writers of the same historical period.

220 Poetry in Context 3 cr.
A chronological study of the development of the more important genres of poetry and their distinctive features with comparative studies of outstanding examples of practitioners of selected forms (e.g., Beowulf, Milton's Paradise Lost, Williams' Paterson).

221 Drama in Context 3 cr.
A study of the drama as a form with distinguished examples selected from the dramatic literature of Europe, England, and the United States.

222 The Novel in Context 3 cr.
A study of the various forms of the novel (historical, picaresque, manners, social protest, etc.) devoted to a thematic, genristic, or period approach.

223 Approaches to Criticism 3 cr.
The analysis of various historical, psychological, and formal approaches to the evaluation of literature. Several works chosen by the instructor are analyzed using different critical methods.

225, 226 French, German, Spanish Composition and Conversation 3, 3 cr.
Intensive practice in conversation and writing.

Preparation and delivery of oral presentations and dialogues based on current topics. Patterns and idioms practical in simulated, but "true" to everyday or special, situations. May be taken concurrently with French, German, Spanish 227, 228. P: 203 in the same language or equivalent.

227, 228 Introduction to French, German, Spanish Literature 3, 3 cr.
Introduction to historical periods in literature from the literary beginning to the present. Reading and discussion of representative works. The rudiments of literary criticism. May be taken concurrently with French, German, Spanish 225, 226. P: 203 in the same language or equivalent.

302 Fiction Writing Workshop 3 cr.
An advanced course in the practice of writing fiction. Group criticism of student work. P: cons inst. May be repeated for credit.

303 Poetry Writing Workshop 3 cr.
An advanced course in the practice of writing poetry. Group criticism of student work. P: cons inst. May be repeated for credit.

304 Advanced Expository Writing 3 cr.
Designed to cover some of the basics of composition as well as more sophisticated approaches such as developmental strategies and stylistic choices.

307, 308 Other Cultures Through Humanistic Studies I, II 3, 3 cr.
See 485-307, 308. Can be taken for credit as 552, 554, 556, or 558.

310 Major English Drama 3 cr.
A study of English drama exclusive of Shakespeare either by period or by theme.

313 Major English Prose Fiction 3 cr.
A study of the short story and/or the novel either by period or by theme.

314 Major English Poetry 3 cr.
A study of English poetry either by period or by theme.

330 Major American Drama 3 cr.
A study of American drama either by period or by theme.

331 Major American Prose Fiction 3 cr.
A study of American prose fiction either by period or by theme.

332 Major American Poetry 3 cr.
A study of American poetry either by period or by theme.

333 Literary Themes 3 cr.
Prose, drama, or poetry. The theme may be explored through the various forms or limited to a single form and may be international in scope. Available in American, English, French, German, Spanish, or other literatures.

334 Literary Isms 3 cr.
Prose, drama, or poetry of a significant literary movement such as Romanticism or Realism. Available in American, English, French, German, Spanish, or other literatures.

335 Literary Eras 3 cr.
Prose, drama, or poetry: the works of a number of writers studied in relation to their time. Available in American, English, French, German, Spanish, or other literatures.

350 Major Foreign Drama 3 cr.
A survey of development in drama in the language indicated, with emphasis on any particular aspect (chronological progress, various isms, notable periods) depending upon expressed interest of students and faculty. Conducted either in the foreign language or English.

351 Major Foreign Prose Fiction 3 cr.
A survey of development in prose fiction in the language indicated, with emphasis on any particular aspect (chronological progress, various isms, notable periods) depending upon expressed interest of students and faculty. Conducted either in the foreign language or in English.

352 Major Foreign Poetry 3 cr.
A survey of development in poetry in the language indicated with emphasis on any particular aspect (chronological progress, various isms, notable periods) depending upon expressed interest of students and faculty. Conducted either in the foreign language or in English.

423 Literary Research and Criticism 3 cr.
The principles of literary studies are stated and questioned by exploring the methodology and purposes of bibliography, scholarship, and criticism. The student's participation in literary study and the critical values he/she forms from such participation are emphasized. P: sr st or cons inst.

431, 432 Shakespeare 3, 3 cr.
Shakespeare's tragedies, comedies, tragicomedies, history plays, and poems; techniques and problems of play production as these affect interpretation.

434 A Major British Writer (or Writers) Exclusive of Shakespeare 3 cr.
A study of one or more outstanding figures in British literature. A careful analysis of the important themes, devices, and influences on the specific writer are emphasized.

435 A Major American Writer (or Writers) 3 cr.
A study of one or more outstanding figures in American literature. A careful analysis of the important themes, devices, and influences on the specific writer are emphasized.

436 Major French Writer 3 cr.
A study of an outstanding figure in French literature. Subject chosen according to student and faculty interest. Class conducted either in French or in English.

437 Major German Writer 3 cr.
A study of an outstanding figure in German literature. Subject chosen according to student and faculty interest. Class conducted in either German or English.

438 Major Spanish Writer 3 cr.
A study of an outstanding figure in Spanish literature. Subject chosen according to student and faculty interest. Class conducted either in Spanish or in English.

493 Seminar in English Literature 3 cr.
A study of a major writer, literary movement, or influence in English literature. Extensive research on the chosen topic is required.

494 Seminar in American Literature 3 cr.
A study of a major writer, literary movement, or influence in American literature. Extensive research on the chosen topic is required.

575 MANAGERIAL SYSTEMS (SPS)

GENERAL COURSES

575-101 Effective Business Communication 2 cr.
Basic concepts and principles for effective business communication; explains relationships between creative and logical thinking, and communicating facts and ideas. Covers letters, reports, memos, summaries, minutes, press releases. Although attention is paid to spelling, punctuation, and grammar, the main focus of the course is on the fundamental principles of unity, coherence, and emphasis upon which effective business communication depends. Course assignments are directly related to the particular interests of the students, and class discussions are devoted primarily to analyzing and evaluating each student's work.

575-202 Business and Its Environment 3 cr.
The interaction of environmental factors with American business, including social, political, and economic systems; the development of business practices and institutions. Required of all students in Managerial Systems and environmental administration.

575-204 Introductory Accounting 3 cr.
Fundamental principles of accounting; basic business terminology; techniques and practices; books and accounts; and statements for retailing and wholesaling concerns; treatment and presentation of sole proprietorship, partnership, and corporation accounts. Open to second semester fr; soph st recommended.

575-283X Selected Topics in Managerial Systems 1-4 cr.
See page 96.

575-298 Directed Study 1-4 cr.
See page 96.

575-305, 306 Business Law I, II 3, 3 cr.
Survey course of laws affecting business conducted on the case method with emphasis on the Uniform Commercial Code. Introduc-

tion to law and the legal process, contracts, agency, property including environmental problems, landlord-tenant and real estate law. 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. Must be taken in sequence.

575-483X Selected Topics in Managerial Systems 1-4 cr.
See page 96.

575-484 Senior Distinction Project 3 cr.
See page 97.

575-498 Directed Study 1-4 cr.
See page 96.

ACCOUNTING AND QUANTITATIVE METHODS

575-215 Intermediate Accounting 4 cr.
Accounting principles and procedures as they apply to balance sheet and income statement accounts; presentation and interpretation of financial reports, including problems of terminology; problems related to inventory, investments, plant, liabilities, equity, as well as funds flow analysis, tax allocation, and statement analysis. P: 575-204.

575-216 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: 575-204.

575-217 Quantitative Methods in Administration 3 cr.
Studies of the origin, processing, use, and interpretation of accounting, statistical and other computerized data in administrative organizations; application of techniques of accounting and financial analysis to reporting, planning, and controlling. P: soph st.

575-312 Cost Accounting 3 cr.
Problems of accounting for cost in administrative organizations; includes job order and process cost accounting, standard costs, incremental analysis and profit planning. P: 575-216.

575-313 Financial Accounting, Theory, and Practice I 3 cr.
The analysis of accounting problems, methods of problem solving, specialized and technical subject matter for majors in accounting; accounting for installment sales and consignments, reorganizations, bankruptcy and equity receiverships; estates, personal trusts, and partnerships. P: 575-215.

575-314 Financial Accounting, Theory, and Practice II 3 cr.
Specialized and technical subject matter for accounting majors; home office and branches, preparation and interpretation of consolidated statement and foreign exchange. P: 575-313.

575-316 Governmental and Institutional Accounting 2 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: 575-215.

575-410 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: 575-204.

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.

DISTRIBUTION

575-322 Principles of Distribution 3 cr.
An introduction to the marketing methods, variables, and activities related to the flow of goods from the producers to the consumers. 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.

575-326 Principles of Purchasing 3 cr.
Principles of procurement of materials and goods by business and government. Features purchasing function, organization for purchasing, personnel, E.D.P. in purchasing, standards of quality, inventory management, cost analysis, selection and evaluation of suppliers, purchasing policies, and ethics of purchasing. P: jr st.

575-331 Management of Transportation Systems and Their Interaction with the Environment 3 cr.
Provides a fundamental knowledge of problems and practices encountered in the management of transportation systems and their impact on the environment. Includes the analysis of the costs of transportation systems and their effects on both economic development and the environment; location and marketing; relationships with price policies; rate theory; regulatory problems and public policy; current transportation developments and problems with particular emphasis on environmental impact. P: soph st.

575-332 An International Program in Transportation Systems 3 cr.
Compares and contrasts the cultural aspects of our society and those of two European nations, and what impact they have upon the corporate process, transportation systems, and environmental deterioration. P: 575-331.

575-333 Analysis of Environmental Factors in Transportation Systems Planning 3 cr.
Analysis of the internal and environmental factors affecting transportation systems and the effect of such factors on the development and implementation of integrated transport systems. Application of model building, simulation, cost-benefit analysis, and other techniques in the resolution of such problems as congestion; air, water, noise, and visual pollution; economic, social, and institutional constraints on energy optimization in transport; and transportation problems of the rural and urban poor. P: jr st and 575-331.

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, buildings, 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. P: 575-322.

575-427 International Distribution and Marketing 3 cr.
The structure of foreign trade; facilities available to exporters and importers; cross-cultural and economic analysis for marketing in foreign environments; contemporary trends in international economics affairs. P: 575-322.

575-428 Applied Motivational Research 3 cr.
Studies and cases in the motivation of buyers and sellers, consumers and categories of publics. P: 575-322 and 820-335.

FINANCE

575-201 The Consumer Experience* 3 cr.
Critically examines a wide range of consumer problems by utilizing video tapes, readings, class discussions, and a problem solving case approach. Analyzes alternative economic mechanisms such as cooperatives and consumer financial problems of the young, the aged, and minorities as well as general consumer problems associated with life style and standard of living.

*Divisional Committee approval is pending.

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: 575-204.

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.

575-346 Public Finance and Fiscal Policy 3 cr.
The theory and practice of public finance: revenues, primarily taxes; budget, expenditures, public debt, fiscal policy. P: 298-202.

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.

575-445 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.

LABOR AND PERSONNEL MANAGEMENT

575-362 Principles of Personnel Management 3 cr.
A fundamental introduction course in personnel management, investigating the topics of manpower planning, selection, recruitment, training, motivation, fringe benefits, salary and wages, and labor relations. P: jr st.

575-363 Personnel Administration in Government 3 cr.
A counterpart course to 575-362 but emphasizing aspects of personnel management unique to government service: the problem of patronage, civil service rules and regulations, written examinations for recruitment. P: jr st. Not open to persons who have had 575-362.

575-364 Labor Unions in America 3 cr.
The history and development of labor unions in private business and in government service: present status of unionization. P: jr st.

575-366 Collective Bargaining 3 cr.
Cases of techniques and problems in dealings between organized employees and their employers; industry-wide collective bargaining; constraints in the public service; administration of collective bargaining agreements. P: cons inst.

575-367 Motivation and Leadership 3 cr.
An investigation of current theories of motivating and leading employees. Develops managerial skills of the student. P: jr st.

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.

575-464 Cases in Collective Bargaining 3 cr.
Cases involving union recognition, type of shop, aspects of wages and hours determinations, strikes, grievance machinery, and fringe benefits. P: 575-366 and sr st.

575-466 International Labor Relations 3 cr.
Comparative labor relations in industrialized foreign countries: government regulation, labor productivity, wage rates and labor costs; relationships between labor organizations in the U.S. and the International Labor Organization and International Trade Secretariats. P: 575-364.

ORGANIZATION AND OPERATIONS

575-382 Principles of Management 3 cr.
Presents basic ideas and concepts of managing. Introduces the student to 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 change 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.

575-386 Small Business Management in the Northern Great Lakes Region 3 cr.
Case studies leading to the development of principles concerning the operation of small businesses; cases drawn from the Northern Great Lakes region. Course draws upon all phases of business management at the level of simplification suitable to enterprises of limited size and staff. P: jr st.

575-388 Practice of Public Administration 3 cr.
The management of physical and human resources in the execution of public policy, relationship between policy determination and policy administration; leadership, control, and accountability. P: jr st.

575-482 Planning, Control, and Routinization 3 cr.
The ongoing process of an administrative organization in operation: job analyses, routinization of procedures; handling variations in work load; standing orders; translating control information into planning terms. P: jr st.

575-485 Managerial Economics* 3 cr.
Designed as an 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. Discussion of current economic issues of

*Divisional Committee approval is pending.

interest to the manager, such as current environmental policies and regulations, are also taken up. P: 298-202, 298-203 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: sr st or cons inst.

575-488 Rational Decision Making in Administration 4 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: sr st and cons inst.

575-489 Problems of Business Management 3 cr.
Focuses on 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.

595 MASS COMMUNICATIONS (SPS)

202 Media I: Introduction to Mass Communications 3 cr.
See 246-202.

595-203 Media II: Newswriting Laboratory 3 cr.
Assignments in gathering and writing news; copy editing; emphasis on developing an objective, clear, accurate, and forceful style. Required for the professional collateral in mass communications. P: soph st.

305 Elements of Electronic Media 3 cr.
See 246-305.

595-325 Specialized Writing 3 cr.
Development of skills in translating and interpreting material from particular fields of expertise; designed for the preparation of writers specialized in covering such fields as the physical sciences, social sciences, education, business, the arts. P: cons inst.

595-402 Television and Radio Internship 3 cr.
Supervised assistance and practice in the production of radio programs and television programs at commercial stations in the Green Bay area. Individually arranged. P: cons inst.

595-405 Professional Reporting Internship 3 cr.
A field course with supervised instruction and practice reporting for a newspaper, periodical, or public information office in the Green Bay area. Individually arranged. P: cons inst.

430 Mass Media and Society 3 cr.
See 246-430.

600 MATHEMATICS (CES)

600-101 Intermediate Algebra 3 cr.
Preparation for 600-104 for the student with a high school background of first-year algebra. Properties of the real numbers; solving linear and quadratic equations and inequalities; operations with polynomials; graphs; fractional expressions and equations; synthetic division; exponents, powers and roots; variation. P: one year of high school algebra and satisfactory score on placement examination.

600-104 Elementary Functions: Algebra and Trigonometry 4 cr.
The real number system, functions, exponential and logarithmic functions, trigonometric and inverse trigonometric functions, complex numbers, polynomial and rational functions, systems of equations, principles of counting, sequences. For students whose mathematical background is inadequate for 600-202. P: 600-101 or two years of high school algebra and satisfactory score on placement examination.

600-180 Fundamentals of Arithmetic 4 cr.
Basic notations and operations in elementary

arithmetic; place notation with various bases; development of the basic algorithms of arithmetic; prime, decimal, irrational, real, complex numbers; divisibility; rational arithmetic. P: 600-101 or two years of high school algebra and satisfactory score on placement examination.

600-181 Fundamentals of Elementary Geometry and Algebra 3 cr.
Provides the upper elementary teacher with a foundation in mathematical concepts encountered in the new curriculum. Topics include Euclidean geometry, real and complex numbers, equations, inequalities, formulas, relations and functions, measurement, mensuration, analytical geometry. P: 600-180.

600-202 Calculus and Analytic Geometry I 4 cr.
The fundamentals of calculus; functions and graphs, derivatives, theorems on limits, inverse functions, composite functions, differentials, continuity, curve plotting, Rolle's theorem, mean value theorem, indefinite integration, derivatives of sine and cosine, areas as limits, the definite integral, fundamental theorem of integral calculus, area between curves, volume, curve length, area of surface of revolution, centroid, pressure, work. P: satisfactory score on placement examinations or passing grade in 600-104.

600-203 Calculus and Analytic Geometry II 4 cr.
Further calculus of one variable: transcendental functions, hyperbolic functions, methods of integration, tangents and normals, Newton's method, equations of loci, conic sections, second-degree curves, polar coordinates, parametric equations in kinematics and in analytic geometry, vectors in space, scalar and vector products, loci in space. P: 600-202.

600-206 Calculus and Analytic Geometry III 5 cr.
Real valued functions of several variables, partial derivatives, Taylor's series, multiple integrals, integrals, improper integrals, applications. P: 600-203.

600-240, 241 Finite Mathematics I, II 3, 3 cr.
For students in the natural and social sciences. Discusses on a reasonable level many topics in mathematics which are being used today in applying mathematics to new areas, including logic, sets, Boolean algebra, relations, functions, vectors, matrices, linear algebra, probability, linear programming, game theory, optimization methods, strategy and decision making, simulation. Applications of many of these topics are discussed. P: 600-101 or two years of high school algebra and satisfactory score on placement examination.

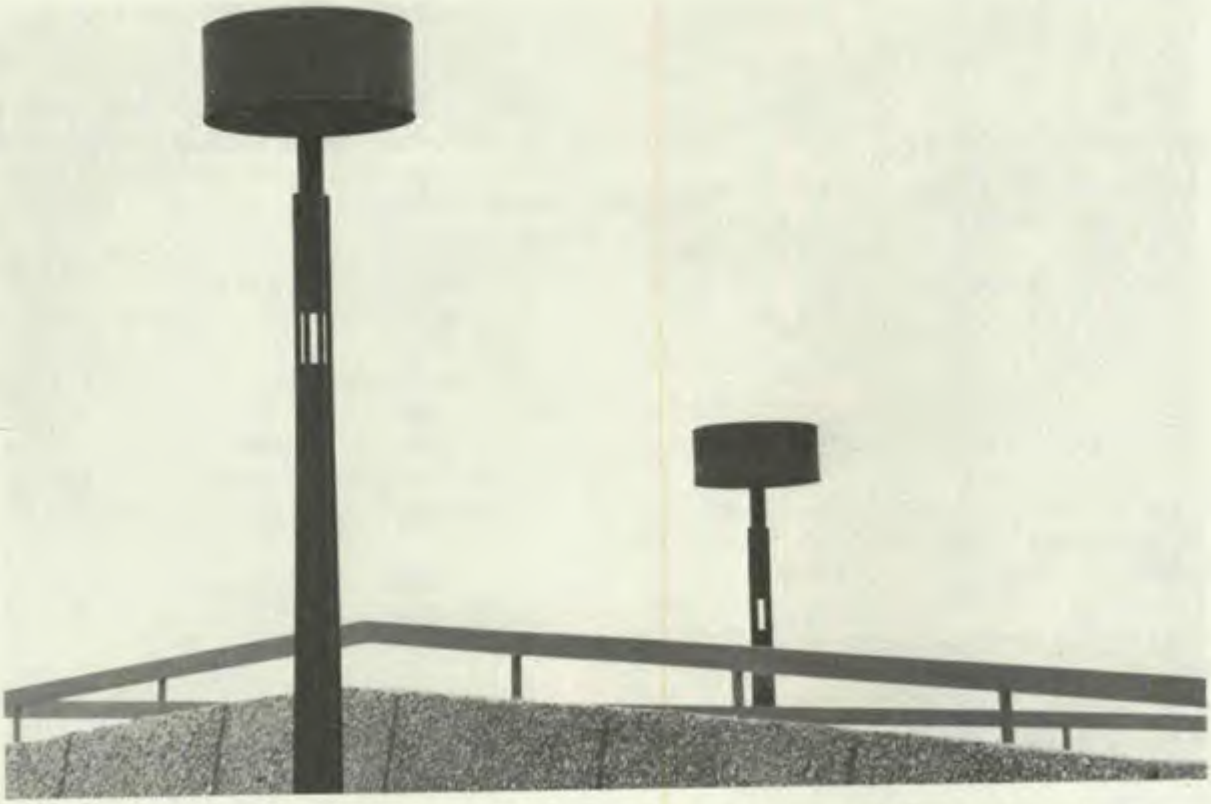
600-250, 251 Computer Science I, II 3, 3 cr.
A lecture and laboratory course about the structure, operations and programming of a computer; application of data processing to students' areas of interest; logic decision techniques as applied to systems and procedures. Examples are selected appropriate to student needs. P: 600-101 or two years of high school algebra and satisfactory score on placement examination.

600-252 Machine Organization 3 cr.
An introduction to concepts involved in the design of computers and computer systems. P: 600-250.

600-260 Elementary Statistics 3 cr.
Descriptive and inferential statistics; frequency distributions; graphing techniques; percentiles; measures of central tendencies and of dispersion; normal distribution, correlation, regression, prediction; probability, statistical inference; analysis of variance. Applications are processed using computer programs. P: 600-101 or two years of high school algebra and satisfactory score on placement examination.

600-308 Differential Equations and Matrix Algebra 5 cr.
Elementary methods of solution, integrating factor, linear differential equations with constant coefficients, solution of systems of first order linear differential equations using matrix methods, applications. P: 600-206.

600-311 Advanced Calculus 3 cr.
Jacobians; transformation of coordinates; functional dependence; constrained extrema and Lagrange multipliers; line, surface, and volume integrals; scalar and vector fields: gradient, divergence, and curl; divergence theorem, Stokes' theorem. P: 600-206.



600-312 Real Analysis I 3 cr.
The basic ideas of real analysis, sets, functions, real numbers, 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: 600-206.

318 Engineering Systems and Automatic Control 3 cr.
See 356-318.

600-321 Linear Algebra I 3 cr.
Vector spaces and vector space isomorphisms, linear transformations, matrices and matrix operations. P: 600-203.

600-328 Introduction to Algebraic Structures 3 cr.
Groups, rings, and fields as organizing ideas. Basic structure theorems. Applications. P: 600-203.

600-350 Numerical Analysis 3 cr.
Solutions of equations, polynomial approximations, initial value problems for ordinary differential equations; matrix inversion. Students are encouraged to run a computer program for a problem from their concentration areas. P: 600-250 and 308.

600-353 Advanced Programming 3 cr.
Structure of languages and of a particular programming language, theory of compilers, evolution of a translator. P: 600-251.

600-360 Theory of Probability 3 cr.
Probability as a mathematical system, with applications; basic probability theory; combinatorial analysis; independence and dependence; 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: 600-203.

600-361 Theoretical Statistics 3 cr.
Sample moments and their distributions, tests of hypotheses, point and interval estimation, regression and linear hypotheses, nonparametric methods, sequential methods. P: 600-360.

600-362 Methods of Statistical Analysis 3 cr.
Model specification, computational techniques, and hypothesis tests in general-regression analysis. Topics covered include linear and multiple regression, orthogonal

polynomials, block designs, factorial designs, nested classifications, and analysis of covariance. P: 600-260.

600-363 Experimental Designs 3 cr.
Methods of constructing designs for experimental investigations; concepts of randomization and replication; experimental unit techniques; completely randomized and block designs; confounding; fractional replication; response surface methodology; incomplete block designs. P: 600-362.

600-382 History of Mathematical Thought 3 cr.
Gives the secondary teacher an appreciation of the origins and historical growth of mathematics through an examination of the way in which each age received from its predecessors and transmitted to those who followed—occasionally losing in the process, but often adding its own great contributions. P: jr st and 600-206.

600-385 College Geometry 3 cr.
Intuitive and deductive introductions to euclidean, affine, hyperbolic, spherical, elliptic and synthetic projective geometries. P: 600-202.

600-395 Introduction to Applied Graph Theory and Combinatorics 2 cr.
Theory of structural models with applications to economic models, communication networks, social and linguistic structures, shortest path problems and automata and data structures. Offered in January. P: 600-203.

600-410 Complex Analysis 3 cr.
Algebra and geometry of complex numbers, analytic functions, integration, Taylor and Laurent series, contour integration, residues, analytic continuation, conformal mapping, boundary value problems, integral transforms. P: 600-311.

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 variables in various coordinate systems, Dirichlet problem, strings and membranes, heat flow, electricity flow. P: 600-308.

A maximum of 6 credits from the following list of courses from other areas is approved for use in fulfilling the 24 credits needed for the mathematics option. The number of credits allowed toward the option is listed with each course. Full credit is allowed for some; partial for others. Several courses offered in January may also qualify for mathematics credit. See the January *Timetable* for details. (Previous courses that have provided one option credit each have included 301-395, Mathematical Ideas in Biology, and 356-495, Mathematical Political Science.)

226-315, Mechanics III, 3 cr.
356-272, Introduction to Analog Computer Simulation, 1 cr.
356-355, Mathematical Optimization, 3 cr.

601 SPECIAL LEARNING PROGRAMS-MATHEMATICS

601-094 Elementary Algebra 2 cr.
An audio-tutorial course utilizing individualized instruction for students having no background in algebra. Topics include an introduction to sets, binary operations, variable expressions, factoring, equations of higher degree, fractional equations, absolute value, operations with rational expressions, the solution of inequalities, radicals and fractional exponents, systems of linear equations, and an introduction to functions and relations. Offered on an automatic pass-no credit basis, except by petition. Not offered for degree credit.

628 MEDICAL TECHNOLOGY

628-400, 401, 402 Internship in Medical Technology 32 cr.
Conducted during the senior year at a cooperating hospital. Prepares the student in the theory and practice of numerous specific medical diagnostic procedures required to become a registered medical technologist. Prior to the internship, the student must have completed other UWGB degree requirements. Qualification for a degree and completion of the internship meet the requirements of the American Society of Clinical Pathologists for admission to the Examination for Registry.

662 MODERNIZATION PROCESSES (CCS)

662-283X Selected Topics in Modernization Processes 1-4 cr.
See page 96.

662-298 Directed Study 1-4 cr.
See page 96.

662-244 Love, Responsibility, and Justice 3 cr.
Some religious-ideological approaches emphasize doing good, sacrificing or repressing ourselves for the benefit of a group or the realization of an idea. Others emphasize feeling good, recommending to us the goal of self-actualization. *Using feature* films, novels, and plays, this course offers each participant an opportunity to develop her/his way of living with himself/herself in society. Among the topics explored are individual needs for love and for justice; conflicting commitments to self, family, or friends and to social justice; the individual in collective action; and the use of unlawful or violent means in pursuit of a just and peaceful order. Offered in January.

662-301 Action Projects in the Community 3 cr.
Modernization credit for participation in the University Year for Action program.

662-311 Behavioral Stress* 3 cr.
Behavioral stress focuses upon the tensions and anxieties people arouse in others, and themselves, immersed in, and enroute to a constantly changing modern world. Some of the environments, environmental factors, processes, and their interactions that stress modern people and change their behavior. How mankind copes with stress.

662-320 American Constitutional Law and Constitutional Development* 3 cr.
The American Constitution and its development have molded our civilization. Conversely, the constitution and the law of the land have often reflected the perception and experience of the people in our changing nation. This course focuses on the constitution, interpretations of it, and the development of our legal system. Attention is paid to the law as a parameter and a molder of the processes in our society and to current trends in constitutional law, the implications for our development, and social options available if different interpretations occur. P: 6 cr. in MDP, Poli. Sci., or History courses.

662-333 Modernization in a Selected Area* 3 cr.
The processes and strategies of modernization in a selected nation or set of nations. Course may be repeated for credit each time it focuses upon a different area.

662-360 Concepts of Modernization 3 cr.
The value oriented problems of defining modernization. Use and construction of models as analytical tools in the study of modernization. Half of the Modernization Processes *core* courses sequence. P: concurrent registration in 662-361.

662-361 Process of Modernization 3 cr.
Application of the concepts and models of modernization discussed in 662-360 to the question of the processes of modernization through time. Emphasis on both the historical processes of modernization and on values implicit in them.

662-370 Strategies of Modernization 3 cr.
Economic, political, and socio-cultural factors in planned change as it occurs in societies at different levels of modernization and an examination of resulting forms and dilemmas exemplified by diverse case studies.

662-385 Dynamics of Revolutionary Change 3 cr.
A few political revolutions are examined, but emphasis is on the political, social, and psychological restructuring of societies brought about by social revolutions. The significance of this process as a method of change is contrasted to the slower-paced dynamics of evolutionary change.

662-400 Environmental Law 3 cr.
A synthesis of the fragmented collection of court decisions on the federal, state, and local levels, and examination of various legislative statutes and administrative codes which touch upon aspects of the physical environments. Attention to decisions of administrative units (AEC, Forest Service, Na-

*Divisional Committee approval is pending.

tional Park Service, etc.), problems of legal jurisdiction (including procedural questions), and substantive determinations by the courts.

662-410 Alternative Social Environments from Speculative Fiction 3 cr.
An inquiry into our alternative futures emphasizing the element of choice in the design of tomorrow. Through the medium of speculative fiction novels, different social environments are explored and traced back to antecedents in our present social fabric, leading to a better understanding of present social change and its implications for the future.

662-415 Development, Technology and Environmental Quality 3 cr.
Interrelationships between people, technology, and environment are examined in relation to social, political, and economic development and environmental quality. Specific attention is given to the cultural bases of and solutions to problems of environmental degradation in developing and modern societies.

662-425 The Legal Role in Social Maintenance and Change 3 cr.
The functions and effects of institutional rules and social norms are investigated in philosophical and behavioral context. Special attention is given to interchanges between cultural norms, laws, and judicial institutions. Historical and comparative implementation of the law are analyzed in terms of their effect on society.

662-460 Modernization of the Peasantry and Other Marginal Societies 3 cr.
A comparative study of the peasantry of underdeveloped nations and marginal societies within highly industrialized nations. Emphasis on political, economic, and cultural penetration by more advanced centers and forms of adaptation and resistance to that penetration.

662-470 Senior Seminar in Modernization Processes 3 cr.
A rigorous analysis and synthesis of a central issue in modernization processes chosen for a full-semester study. The emphasis is on intellectual depth; the student applies the previously obtained knowledge on a problem and attempts to synthesize realistic alternatives.

662-483X Selected Topics in Modernization Processes 1-4 cr.
See page 96.

662-484 Senior Distinction Project 3 cr.
See page 97. See the concentration adviser at beginning of senior year.

662-498 Directed Study 1-4 cr.
See page 96.

694 NUTRITIONAL SCIENCES (CHB)

694-142 You and Your Food 2-3 cr.
An introductory, consumer-related coverage of the nutritional requirements of sedentary populations, and the occurrence of diseases of dietary origin. Includes purposes of food and how they are accomplished in its production, processing, packaging, advertising, and distribution; 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. One or more food topics of current interest may be considered. Recommended as distribution course for students in community sciences and in the humanities: no chemical and biological knowledge beyond high school level needed initially; valuable also for students emphasizing the environmental and biological sciences. Special arrangements with instructor required to earn the third credit.

694-232 Nutritional Significance of Food 3 cr.
Fundamentals of human nutrition, including functions and requirements of essential nutrients; means of securing 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 one semester of college chemistry.

694-283X Selected Topics in Nutritional Sciences 1-4 cr.
See page 96.

694-298 Directed Study 1-4 cr.
See page 96.

694-302 Nutrition and Culture 3 cr.
Effects of environment and culture on food habits in historical perspective. Nutritional problems. Role of food in health and disease as related to man and the biosphere. P: 694-232 or cons inst.

694-303 Food Science 4 cr.
Standards of food quality, food preferences, food assay, food deterioration, adulteration, methods of preservation and distribution as related to world food needs. Laboratory includes quantitative analysis of and instrumental procedures for various food components; arranged student visits or/and interaction with specific area food laboratories. P: 226-303 or 694-328.

694-328 Principles of Nutritional Biochemistry 3 cr.
Comprehensive survey of metabolism and physiological chemical functions in living organisms. P: 226-300 and 301 or 303.

694-329 Nutritional Biochemistry Laboratory 1 cr.
An optional basic laboratory course to accompany 694-328. P: An organic chemistry laboratory course and previous credit or concurrent registration in 694-328.

694-421 Community Nutrition I 2 cr.
Nutritional problems of the individual and family within the context of the larger community—world, nation, region, and state. P: 694-302.

694-422 Community Nutrition II 2 cr.
Nutritional problems of the individual and family within a local ecological setting—county, city, special population segments. Includes field work. P: 694-421.

694-483X Selected Topics in Nutritional Sciences 1-4 cr.
See page 96.

694-484 Senior Distinction Project 3 cr.
See page 97.

694-485, 486 Advanced Human Nutrition 3, 3 cr.
Physiological and biochemical principles of nutrition; fundamental concepts of human nutrition and nutritional diseases. P: 204-202 and 203; 226-330 or 694-328.

694-488 Advanced Nutrition Laboratory* 1 cr.
Biochemical and clinical aspects of nutritional status, indicators of metabolic imbalances and diseases, nutritional adaptations and one or more significant nutrient and environmental interrelationships of the individual. P: 694-329, 226-331 or equivalent experience by cons inst.

694-498 Directed Study 1-4 cr.
See page 96.

705 PERFORMING ARTS: MUSIC (CCC)

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 of intervals, melodies, chords, and rhythms. To be taken concurrently with 242-151.

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 242-152.

151, 152 Materials and Values in Music I, II 3, 3 cr.
See 242-151, 152.

705-241 Jazz Improvisation* 3 cr.
Lecture and laboratory work in music improvisational skills. Lectures on notation and function of chords, chord symbols, scales and rhythms. Laboratory work in selected record listening and actual playing sessions. P: basic background in music reading and playing.

*Divisional Committee approval is pending.

251, 252 Literature and Styles in Music I, II 4, 4 cr.
See 242-251, 252.

705-302 Piano for Elementary Teachers 1 cr.
Piano techniques for elementary school teachers, with emphasis on school music literature and flexibility in its use.

705-315 Choral Arranging 2 cr.
Arranging, adapting, and creating scores for small and large vocal ensembles which includes an original composition for soprano-alto-tenor-bass (SATB) to be performed by the concert choir. P: 705-212.

705-316 Instrumental Arranging 2 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: 242-252.

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.

705-331 Choral Conducting 3 cr.
Detailed study of conducting techniques; emphasis on practical application to choral organizations. P: 705-315 or 318.

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 1 cr.
Lecture and laboratory experience in the performance of string instruments including violin, viola, violin-cello, and string bass. Requirements are performance proficiencies on all instruments and completion of a reference syllabus. P: jr st.

705-344 Choral Techniques 2 cr.
Theory and practice in the fundamentals of singing. P: jr st.

705-345 Percussion Techniques 1 cr.
Lecture and laboratory experience in the performance of percussion instruments including snare drum, bass drum, tympany, xylophone, marimba and all trap equipment. 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: 707-042.

351, 352 Literature and Styles of Music III, IV 4, 4 cr.
See 242-351, 352.

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 student. P: 242-352.

705-417 Arranging for Jazz Ensemble 2-3 cr.
Acquaints the student 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.

707 PERFORMING ARTS: MUSIC, APPLIED (CCC)

707-001-440 Class and Private Instruction in Instruments and Voice 1-2 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, violin-cello, double bass, and harp is dependent upon available resident music option staff and their teaching loads.

All students registered for class and private applied music instruction are assessed the full tuition fee regardless of the total number of credits carried. The prerequisite for courses beyond the "fundamentals" level is successful completion of the preceding course in a sequence and cons inst.

707-241, 441 Concert Band 1 cr.
707-242, 442 Marching Band 2 cr.
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.
707-151, 351 Orchestra 1 cr.
707-153, 353 String Ensemble 1 cr.
707-261, 461 Concert Choir 1 cr.
707-162, 362 Oratorio Choir 1 cr.
707-163, 363 Vocal Ensemble 1 cr.
707-164, 364 University Singers 1 cr.

709 PERFORMING ARTS, THEATER (CCC)

Acting (8-semester sequence)
This sequence of courses is based on the system of training the actor developed by Stanislavski. Though his work was first developed in the Moscow Art Theatre, the principles and application of the system are not uniquely Russian as its application has profoundly affected the theater of the world. The training inherent in this eight-semester sequence, plus the student's participation in the University's play production program, offers a

total concept of theater as a socially constructive art form. From this study a student can develop his or her own personal artistic attitude toward theater.

709-131, 132 Acting I, II 3, 3 cr.
Controlled improvisation, exercises, and simple scenes introduce a basic organic approach to acting technique with such concepts as "action," "objective," "justification." Leads to the development of a vocabulary and skills that allow the student to approach with confidence scene work from contemporary theater literature. The second semester applies principles learned to performing scenes from contemporary American theater literature.

709-231,232 Acting III, IV 3, 3 cr.
Work in scene study advances into more complex American theater literature. Techniques for script analysis introduce the basic problem of characterization and style. Study of plays from contemporary European theater literature and the American playwrights, O'Neill, Williams, Albee, and Miller. Admission to Acting IV and each subsequent acting level is by an advisory audition.

709-331, 332 Acting V, VI 3, 3 cr.
Problems of characterization and style; work on contemporary European theater, leading to the study of classical and nonrealistic theater, work that concentrates on each play's position in its social and historical milieu.

709-431, 432 Acting VII, VIII 3, 3 cr.
Work on full-length classical and contemporary plays in various styles, considering conception and interpretation of the role within the production outline of the director and fulfilling and developing the characterization structure within the precise period of the play and style of the production. A public theater performance is presented to help the students master craft problems and to serve as a summation of their studies. A special laboratory seminar deals with problems of acting in films, TV, and radio.

Voice and Speech

The objective of this sequence is to provide students with the vocal and speech resources—a well-placed, strong, musical voice and effective speech—to meet the demands of both contemporary and classical theater and oral interpretation. Students also gain mastery over their own individual voice and speech problems. Included are training in breath control, resonance, voice placement, diction, and articulation. Classes emphasize both solo and choric speech.

133, 134 Voice and Speech I, II 3, 3 cr.
See 246-133, 134.

709-233 Voice and Speech III 3 cr.
Intermediate work on vocal production for the performer with emphasis on oral interpretation of prose works to various types of audiences.

709-333, 334 Voice and Speech IV, V 3, 3 cr.
Intermediate work in delivery of spoken poetry and poetic drama, both contemporary and classical. Work is done solo and in chorus. Introduction to problems of standard American and standard English speech, in addition to beginning work on regional American and British dialects and foreign accents.

Dance and Movement

As is universally accepted by professional teachers, schools, and dance companies, classical ballet is the primary foundation for all dance technique (however, some modern dance techniques which are based on classical ballet can provide the student with the ability of a professional modern dancer). Therefore, classical ballet technique is the foundation for all dance and movement training at UWGB.

709-137, 138 Dance and Movement I, II 3, 3 cr.
Basic study of ballet terminology and beginning movements coordinating the mind and body.

709-237, 238 Dance and Movement III, IV 3, 3 cr.
More advanced ballet technique to build a solid foundation of technique and understanding to prepare the student for a greater variety of dance types and styles. Beginning modern dance.

709-337, 338, 437, 438 Dance and Movement V, VI, VII, VIII 3, 3, 3, 3, 3 cr.
Different influences of dance: character dance—ethnic and social dances from different periods in a form adapted for the stage. Supported adagio—working with partners in lifts and supports for use in theater, musical theater, or any form of dance.

709-139, 140 Theater Dueling I, II 1, 1 cr.
Basic techniques of modern fencing are combined with the choreography of all theatrical period duels and the use of accompanying hand weapons and shields. The usage and practices involved in historic hand-to-hand combat familiarize the student with the weapons, crafts, and varied styles of swordfighting and fencing of different historic eras. Male students learn the basic techniques of staging fights with broad-sword, sabre and sword, and dagger; all students learn the use of foil and the choreographing of duels and group swordfights for the stage. Group classes and individual coaching.

Technical Theater

Correlative to the training of the actor and director is the development of the theater technician and designer. Practical training in the visual and plastic arts and in the technology of light and sound are combined by the designer in the creation of the proper visual and aural environment for the finished performance by the actor.

709-221, 222 Introduction to Theater Production Techniques I, II 3, 3 cr.
Lectures and laboratories in the organization and operation of theater production and on the design and execution of scenery, lighting, sound, properties and costume. Participation in actual production problems is expected.

709-321 Scene Design 3 cr.
Concentration on the history, aesthetics, and practical techniques of scenic design. Develops ability to create the visual and mechanical environment to support the presentation of historic and contemporary theater pieces. Historic scenic forms and techniques are applied to contemporary production. Classic and contemporary plays are studied and designed in class and individual projects. P: 709-221, 222, or cons inst.

709-322 Costume Design* 3 cr.
Historical survey of clothing in the western world with development of ability to adapt historic dress to contemporary stage costume. Aesthetics and techniques of costuming as essential to the environment supporting the presentation of historic and contemporary theater works.

709-323 Stage Lighting and Sound Design* 3 cr.
The history, aesthetics, and practice of design of lighting and sound in theatrical production. A survey of contemporary equipment and control systems with supporting laboratory practice. Group and individual design and laboratory problems.

General Theater Courses

709-225, 226 Intercurricular Theater I, II 3, 3 cr.
For students who wish the experience of participating in a theater production without committing themselves to the full theater arts

*Divisional Committee approval is pending.

program. The opportunity to become involved in the area of greatest interest. All class members study the theory and practice of the play being prepared and performed, its place in dramatic literature and theater history and its social and historical context. This overall view of a play and its milieu together with the practical experience of producing the work in a contemporary setting, provides the student with a provocative insight into theater, past and present.

709-235, 335 Theater Performance in the Community 1-3 cr. ea.
Participation in a performance for community audiences. May include plays, dance, or readers' theater performances in high schools, for children, or community groups. May be repeated for credit.

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. May concentrate on any of several periods. Areas have included "The Theater of Ancient Greece," "19th Century *Developments in Theater Realism*," and "Avant Garde." Areas of study planned include "The Theater of the Renaissance," "The Theater of the Absurd," and "Black Theater in America."

709-341, 342 Shakespeare and Poetic Drama I, II 3, 3 cr.
The complex and unique problems presented by Shakespearean and other poetic drama. The speaking of dramatic poetry, simple scenes from minor Elizabethan to Shakespeare's plays, more complicated scenes and sets of scenes from Shakespeare and in dramatic verse plays and poetic dramas. Includes 16th and 17th century Renaissance drama, some of the Greek classics, the Wilbur verse translations of Moliere, Federico Garcia Lorca, Archibald MacLeish, Maxwell Anderson, Dylan Thomas, and contemporary poets such as LeRoi Jones.

Bridging the so-called separation between prose and poetic drama, the speaking of poetry (verse reading) leads the students by gradual stages from work on simple scenes from various poetic dramas, including Shakespeare's plays, to more advanced and intensive study.

709-351, 352 Introduction to Stage Directing I, II 3, 3 cr.
Theories and techniques of theatrical staging. Relationship of the director to the student 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 option chairperson.

709-361, 362 Introduction to Playwriting I, II 3, 3 cr.*

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 is the study of theater of various periods and cultures.

See also relevant courses in other areas including:

242-241, 242, Introduction to Theater History I, II, 3, 3 cr.
242-305, 306, American Documentary Theater I, II: A Community Voice, 3, 3 cr.

736 PHILOSOPHY (CCC)

736-100 Ethics 3 cr.
Ethical issues in the thought of selected traditional and contemporary thinkers. Some effort made to use case studies to delimit the chief characteristics of ethical concepts.

736-104 Freedom and Individuality 3 cr.
The notions of freedom and individuality and *their significance for an individual in a com*plex and highly structured society. Emphasis on the relation of historical considerations to contemporary issues.

736-106 Pacifism and Violence 3 cr.
The nature of violence and pacifism and their *various forms. Some historical treatment is* considered in conjunction with contemporary studies, including those of anthropology, to clarify the function of violence and pacifism in the contemporary world.

*To be offered when justified by program growth.

736-111 Elementary Logic 3 cr.
Deductive and inductive inference, kinds of definition and similar problems are considered.

736-201 Philosophy and Language 3 cr.
A philosophical and historical inquiry into the notion of language as a "natural world concept" and the medium of access to the objective world. Such thinkers as Herder, W. von Humboldt, Dilthey, Scheler, and Cassirer are examined.

736-206 Belief, Knowledge, and Truth 3 cr.
The grounds of rational belief and knowledge and the methods for obtaining them as seen by philosophers such as Plato, Descartes and others. The problems of evidence and truth. P: a course in philosophy.

207 Philosophy and Literature 3 cr.
See 485-207.

736-208 Philosophy and Scientism 3 cr.
The origins of scientism in the behavioral and natural sciences. Establishment of a philosophical critique of the social and political representations of scientism in the 20th century. P: a course in philosophy or in one of the social sciences.

736-210 Philosophy of Theories of Culture 3 cr.
The dynamics of cultural development, the influence of cultural trends on various activities within a given culture. A critical appraisal of major cultural theories. P: a course in philosophy.

736-211 Philosophy of the Arts 3 cr.
Various fine arts and what they might have in common as art, with attention to the creative activity of the artist. Critical investigation of the significance of the arts for human existence. P: a course in philosophy or in the performing or visual arts.

736-213 History of Ancient Philosophy 3 cr.
Philosophical thought from the pre-Socratics to the time of Augustine, with attention to Plato, Aristotle, the Stoics, and the Epicureans. Emphasis on the relation of that thought to the cultural institutions of the time.

736-215 Marxism and Existentialism 3 cr.
Survey of Marxism and existentialism centered around the problems of human's understanding of their environment. P: a course in philosophy.

736-301 The Criticism of Values 3 cr.
An interdisciplinary study of the thought of selected philosophers and nonphilosophers as it represents a critique of the cultural values and institutions of their day. Different thinkers are dealt with at different times. (For example, Marx, Nietzsche, Weber, Kierkegaard, Dostoevsky, Freud, Ibsen, Sartre.) P: jr st and a course in philosophy.

736-304 American Philosophy in Context 3 cr.
An historical and critical survey of the American philosophical tradition, focusing on those elements which are distinctively American (e.g., transcendentalism, pragmatism) and their relevance to present-day problems. P: jr st and a course in philosophy.

736-310 Philosophy of Mind 3 cr.
The nature of mind and its relation to body and matter; recent movements in psychology and philosophy. P: a course in philosophy.

736-313 History of Medieval and Renaissance Philosophy: Augustine to 1600 3 cr.
Philosophical thought from Augustine to the time of Descartes, with attention to the Christian, Jewish, and Arabic philosophical traditions and their relation to the cultural institutions of the time. P: 736-213.

736-314 History of Modern Philosophy: Descartes to 1850 3 cr.
Philosophical thought from Descartes to the time of J. S. Mill. Major figures of the French, German, and English traditions and their cultural impact on modern life. P: 736-313.

736-315 Philosophy of Work and Leisure 3 cr.
The roles played by work and leisure in human existence from the standpoint of the human process in general. The relative value of each for human existence. P: a course in philosophy.

736-317 Philosophical Foundations of the Natural Sciences 3 cr.
The meaning and structure of nature at large; the basic assumptions in the interpretation of nature by physics, biology, mathematics, mechanics, psychology. P: a course in philosophy.

736-319 Phenomenology I: German 3 cr.
An introduction to the theory of intentionality in an historical framework. The basic problems of phenomenology centering around the work of Edmund Husserl and its impact on American Philosophy. P: two courses in philosophy.

736-320 Phenomenology II: French 3 cr.
An introduction to French phenomenology with reference to its theories of reality, ethics, aesthetics, and psychology. P: 736-319.

736-322 Aesthetics 3 cr.
Contemporary philosophies of art and art criticism, with attention to the central problems of appreciation and evaluation. P: a course in philosophy.

736-324 Contemporary Philosophical Movements 3 cr.
A survey of late 19th century and 20th century philosophical movements in Europe and America (positivism, Marxism, pragmatism, intuitionism, existentialism, analytic philosophy, idealism). P: 736-314.

736-404 Major Philosophic 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). P: cons inst.

736-406 Philosophical Problems in Psychology 3 cr.
Philosophical examination of the major psychological theories concerning the fundamental structure of the human individual, the relation of conscious to unconscious mental functions, the possibility of freedom, the role of society in the development of the human individual. P: two courses in philosophy.

PHYSICAL EDUCATION PROGRAMS

740-Men
741-Women
742-Coed
Students need to develop physical as well as mental and social capabilities during their collegiate experience. The physical education basic instruction program offers a broad range of courses appealing to the diverse interests of the general student body. Each student should find one or more courses worthy of electing.

These courses help the student learn a new skill, improve ability in a familiar activity, and/or improve one's personal fitness. They also tend to satisfy the physical education requirement of other institutions. Associated lectures provide knowledge and insight into the nature of human movement and the physiological effects it elicits. Skill and knowledge tests are utilized to measure initial capabilities, progress, and understandings. The development of a relatively high degree of performance in one or more activities provides the confidence and motivation one needs to enjoy active participation throughout life.

All courses except First Aid meet the equivalent of two class periods per week and earn 1 credit. The classes may meet for two single periods or one double period per week during the semester or two double periods per week for one half of the academic period. The First Aid class meets three times per week, earns 2 credits and provides Red Cross and Medical Self-Help certification.

Courses are offered on a coed basis whenever feasible. Students must show evidence of personal fitness for the activity selected via the required University physical examination. Questions regarding this program should be directed to the chairperson of the physical education programs.

Beginning level courses (100) anticipate novice performers and follow a basic outline:

Introduction—history, kinesthetic and physical aspects, social and recreational values, facilities and equipment, tournament standards.

Conditioning and Safety—healthful and physiological effects, personal lifetime fitness considerations and safety procedures.

Performance—body mechanics, basic skills and drills, competitive strategy and play.

Knowledge—terms and definitions; courtesies and rules of play; officiating, scoring, and timing.

Intermediate level course (200) participants should have some previous training or experience in the skill areas selected. Prerequisites or the consent of the instructor are generally required. Physiological aspects, performance strategy, and compliance with the rules are reinforced and enhanced. Emphasis is placed upon the efficient application of body mechanics as the individual seeks to perfect technique. Increased opportunity for competitive experience seeks to impart the feeling of competence in a skill area.

Advanced level courses (300) are intended for those who desire to pursue interests and develop abilities beyond the average. Prerequisites and/or cons inst are usually required. Individual skills are perfected qualifying the person for a relatively high performance level.

The student should consult the *Timetable* for each academic session for specific offerings. Selections are made from the following list of courses:

Aquatics: 100 series—swimming; 200 series—swimming, life saving, skin and SCUBA diving, and sailing; 300 series—water safety instruction (utilizes Red Cross program and standards leading to certification).

Dance: 100 series—folk, modern, social and square.

Exercise and Fitness: 100 series—personal conditioning, weight training, running conditioning, fitness and diet, exercise and aging, orienteering and backpacking; 200 series—weight training and slimnastics.

Individual Sports: 100 series—archery, bowling, foil fencing, golf, horsemanship, judo and karate.

Personal Health: 100 series—first aid; 200 series—first aid; 300 series—emergency medical care.

Racket Skills: 100 series—badminton, tennis, handball, paddleball, and racketball; 200 series—tennis.

Sports Officiating: 100 series—basketball, football, soccer, softball/baseball, volleyball, and wrestling.

Team Sports: 100 series—basketball, European handball, field hockey, lacrosse, soccer, softball/baseball, speedball and volleyball.

Tumbling and Gymnastics: 100 series—free exercise, gymnastics and tumbling.

Winter Sports: 100 series—cross country skiing, curling, snowshoeing, and downhill skiing: 200 series—downhill skiing.

The Coaching Certification Program offers the student an opportunity to gain minimal preparation for assuming the responsibility of a coach of athletic activities. Many states, including Wisconsin, require or recommend that all public school coaches be so certified in addition to their general teacher certification. The CCP sequence consists of 16 credits and is consistent with the recommendations of the National Council of State High School Coaches, the National Association for Sport and Physical Education and the National Association for Girls and Women in Sport. The courses for this program include:

Required:

480-102, Introduction to Human Biology, 3 cr.
742-401, Theory and Philosophy of Athletic Coaching, 2 cr.
742-403, Organization and Administration of Athletics, 2 cr.
742-405, Scientific Conditioning of the Athlete, 2 cr.
742-406, Prevention and Treatment of Athletic Injuries, 2 cr.
742-XXX, Principles of Coaching (Sport),* 2 cr.
742-XXX, Field Experiences in Coaching (Sport),* 2 cr.

Elective:

742-402, Psychology and Sociology of Sport, 2 cr.
742-407, Rehabilitation of Athletic Injuries, 2 cr.
742-XXX, Athletic Officiating of (Sport),* I cr.
742-116, First Aid Procedures, 2 cr.
742-216, Emergency Medical Care, 2 cr.

PHYSICS (CES)

Physics courses are listed under Chemistry-Physics (226). Students who wish to pursue an option in Chemistry-Physics with an emphasis in physics will find the following courses relevant.

*Course number determined by sport selected.

226-110, 111, 112 Fundamentals of Chemistry-Physics I, II, III 5 cr. ea.
226-160 Supplementary Physics 3 cr.
226-210, 211, 212 Principles of Chemistry-Physics I, II, III 5 cr. ea.
226-315 Mechanics III 3 cr.
226-320, 322 Thermodynamics and Kinetics (with laboratory) 3-4 cr.
226-321, 323 Structure of Matter (with laboratory) 3-4 cr.
226-324 Advanced Physical Laboratory 2 cr.
226-325 Advanced Physical Laboratory 1 cr.
226-404 Electricity and Magnetism 3 cr.
226-405 Electronics for Scientists 4 cr.
226-417, 418 Nuclear Physics and Radiochemistry (with laboratory) 3-4 cr.
301-141 Astronomy 3 cr.
301-306 Biophysics 3 cr.
301-317 Electromagnetic Radiation 3 cr.
301-350 Meteorology 3 cr.
356-313, 314 Mechanics I, II 3 cr. ea.
356-332 Fluid Mechanics 3 cr.

778 POLITICAL SCIENCE (CCS)

778-103 Introduction to Political Analysis 3 cr.
The nature and function of political science; politics as a cultural phenomenon. P: 255-102.

778-207 Macropolitics 3 cr.
Approaches to political analysis which proceed from the perspective of the political system as a whole.

778-208 Micropolitics 3 cr.
The political behavior and characteristics of individuals and other sub-community units: groups, parties, councils, and bureaucracies. Social and psychological traits associated with political behavior are explored and explanations of who participates in politics, how, and with what consequences are examined.

778-210 Normative Politics 3 cr.
The relationship between normative principles as guides to political conduct or as standards of political action and the consequences of such principles in empirical political situations. Topics include: existing and emerging normative orientations toward public policy; the search for universal political norms; political ideologies as competing approaches to achieving the good society, etc.

778-302 Community Political Behavior 3 cr.
Major trends in American local politics; behavior of major structures and local associations. Some field experience is provided. P: jr st.

778-303 Elections and Voting Behavior 3 cr.
Psychological and social elements in voting behavior; current electoral trends; roles of voters in the governmental process. P: jr st.

778-304 Comparative Political Systems 3 cr.
An introduction to comparative political analysis stressing both essential structures and functions. Modes of analysis in reference to the British, French, Russian, and other political systems. P: jr st.

778-307 Concepts in Political Theory 3 cr.
The nature of conceptual thought about politics; various problematic concepts of traditional and scientific theory: power, authority, community, justice, and others.

320 American Constitutional Law and Constitutional Development* 3 cr.
See 662-320.

778-350 Political Conflict and Urban Policy 3 cr.
The management of conflict in urban areas. Emphasis on the relationship between patterns of conflict, management of urban governments, and the public service provided by these governments, such as criminal justice, education, welfare, and poverty programs. P: 255-102.

778-402 Political Values and Ideologies 3 cr.
Assumptions and characteristics of modern ideologies; application of analysis to such systems of belief; the role of values in determining individual and group political behavior. P: jr st and one course in political science or philosophy at the 300 level.

*Divisional Committee approval is pending.

778-403 Foundations and Problems of International Politics 3 cr.
Contemporary international politics, stressing the wide variety of approaches. P: jr st and one political science course at the 300 level.

778-404 American Foreign Economic and Military Policies 3 cr.
The role of economic and military policies in efforts by the United States to assure security, international stability, and economic development. P: jr st and one political science course at the 300 level.

778-405 American Executive Behavior 3 cr.
The patterns of executive behavior at the local, state, and national levels in the United States; interplay of administration and partisan politics; influence of variations in structural arrangements. P: jr st and one political science course at the 300 level.

778-426 American Legislative Process 3 cr.
Procedures through which American national and state legislatures arrive at legislation: group behavior of representative bodies in the contemporary United States. P: jr st and one political science course at the 300 level.

778-450 Political Change 3 cr.
Theories of political change, the relation of political change to changes in economic and social systems with emphasis on patterns of change, resistance to change, and change producing agencies and processes. P: sr st.

778-472 Parties and Pressure Groups 3 cr.
The role of parties and pressure groups in the American political system; techniques employed in advancing their interests. P: jr st and one political science course at the 300 level.

779 POPULATION DYNAMICS (CHB)

779-204 Fertility, Reproduction, and Family Planning 2 cr.
Reproductive physiology. Historical, philosophical, cultural, religious, social, and emotional aspects of the family unit, human sexuality, and fertility control. Organizational and technical factors in birth control and family planning programs.

779-283X Selected Topics in Population Dynamics 1-4 cr.
See page 96.

779-298 Directed Study 1-4 cr.
See page 96.

779-310 Introduction to Human Genetics 3 cr.
Principles of human and population genetics and the genetic implications of technology. P: 204-202.

779-312 Evolutionary Processes 3 cr.
The cytological, morphological, behavioral, and geographic factors involved in the origin of species and higher taxa. P: 204-203.

779-315 Man's Impact on the Face of the Earth* 3 cr.
Surveys far-reaching, often pernicious environmental changes effected by non-Western as well as Western populations prior to the Industrial Revolution. Gives consideration to the implications of human population growth for the environment, and provides a basis for objective definition of the population problem. P: cons inst.

779-318 Vertebrate Reproduction 3 cr.
An introduction to basic reproductive processes, with emphasis on the factors, both hormonal and environmental, that affect reproductive functions in vertebrates, particularly mammals; an examination of how these processes can be modified to control reproduction. P: 204-203 or cons inst.

779-320 Introduction to Population Dynamics 3 cr.
Factors that affect size, density, distribution and composition of population, emphasizing human population. Included are elements of demography, socioeconomics, migration, urbanization, genetics, and control of population numbers.

779-330 Biological History of Wisconsin 2 cr.
Modifications in Wisconsin vegetation and animal life from the late pleistocene due to the effects of population growth and cultural

*Divisional Committee approval is pending.

changes. Includes fur trade, logging, advent of farms, fisheries, market hunting.

779-342 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: 779-312.

779-350 Human Sexual Behavior and Its Function 3 cr.
Human sexual and reproductive behavior, emphasizing their family-binding functions in representative cultures. Presented in broad biological and social scientific perspective. P: 204-203.

779-401 Agricultural Genetics and World Food Production 3 cr.
Inheritance as related to livestock and agronomic plants. Goals and techniques of selection, hybridization, and breeding for yield, pest, and disease resistance; feed efficiency; and product quality. Emphasis on major food crops exploring the relationships among agricultural technology, population growth, and human nutritional requirements. P: 204-303.

779-402 Population Biology 4 cr.
An indepth analysis of nonhuman populations. Emphasis on the growth, structure, and regulation of populations. Theoretical and applied aspects are considered. P: 362-302 and 600-260.

779-412 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.

779-421 Problems in Population Regulation 3 cr.
Consideration of biological, cultural, and political problems in regulating human populations. P: 779-320.

779-450 Current Topics in Population Dynamics 2 cr.
Review and analysis of current literature in population dynamics. Students present seminars and prepare written reports on topics selected from current issues. P: sr st.

779-460 Principles of Demography 3 cr.
Provides knowledge of basic demographic methods that involve the measurement of change in size, composition, and distribution of human populations and emphasizes the related functions of fertility, mortality, and migration. Meets the needs of those interested in economics, sociology, preventive medicine and social administration, and related problem areas. Demographic and other socioeconomic factors interact upon each other and technical knowledge of demography enables the disentanglement of one from the other. P: jr st or cons inst.

779-480 Biogeography 3 cr.
The adaptation of biological populations to geographic regions. Considers their origins, migrations, and differentiation, and the complex of climatic and physiographic factors influencing their distribution, as well as the application of biogeographic principles for the appropriate utilization of biotic resources. P: 204-203 or cons inst.

779-483X Selected Topics in Population Dynamics 1-4 cr.
See page 96.

779-484 Senior Distinction Project 3 cr.
See page 97.

779-498 Directed Study 1-4 cr.
See page 96.

820 PSYCHOLOGY (CCS)

820-102 The Behavior and Experiences of Man 3 cr.
Introduction to general psychology and the psychology of individual differences; examination of basic and complex processes; problems in systematic study of objective and subjective data. P: 255-102.

820-202 Introduction to Social Psychology 3 cr.
Introduction to social psychology, including attitude formation and attitude 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, frustration, and conflict; adjustive techniques; analysis and rehabilitation. P: soph st.

820-300 Experimental Psychology 4 cr.
Experimental designs applied to psychological problems; designing, conducting, analyzing, and reporting of research; individual and group laboratory projects; statistics recommended. P: jr st.

820-306 Psychology of Perception 3 cr.
Nature of perceptual processes and their functional relationships to environmental, behavioral, and central factors such as motivation, learning, and personality. P: jr st.

820-309 Psychology of Motivation 3 cr.
Study of 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.

820-320 Personnel Psychology 3 cr.
Selection, classification, and placement procedures; techniques of employment interviewing, rating methods, industrial tests (mechanical, clerical, trade), job analysis, and occupational description; lecture and laboratory work. P: jr st.

820-335 Psychology of Attitudes 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.

820-338 Psychology of Learning 3 cr.
Basic principles of conditioning and learning; functional relationships between salient variables related to rate of acquisition and degree of retention, transfer effects and related phenomena. P: jr st and 820-102 or cons inst.

820-415 Organization Psychology 3 cr.
Relation between social structure and psychological behavior, problems of bureaucracy, leadership styles, communication networks, decision-making processes, 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 industrial organizations, cross-generation adjustments, race relations, and international relations. P: sr st.

820-417 Thinking and Problem Solving 3 cr.
Methodological problems and experimental results in concept formation, language, thinking, and problem solving. P: sr st and 820-300.

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.

834 REGIONAL ANALYSIS (CCS)

834-222 Man and the Ocean of Air 3 cr.
Fundamentals of the 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.

834-223 Man and the Ocean of Air Laboratory 1 cr.
Recommended but not required to accompany 834-222.

834-235 Wisconsin Landscapes* 3 cr.
Wisconsin's natural and cultural landscapes-specifically the characteristics and origins of land form and earth material regions and their associated cultural features. Field trips included.

834-283X Selected Topics in Regional Analysis 1-4 cr.
See page 96.

834-298 Directed Study 1-4 cr.
See page 96.

834-320 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. The methods of defining regions, as based upon human activities and the nature of the total environment, are developed. P: soph st.

834-325 Human Living Space 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 environmental-behavior relationships. P: jr st.

834-326 Human Living Space 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 a detailed study of a selected environment-behavior problem. P: jr st.

*Divisional Committee approval is pending.

331 Geo-Historical Approaches to the Environment 3 cr.
See 485-331.

834-335 Intercity Transportation* 3 cr.
Intercity transportation systems in the United States, their development, impact, present character, problems, and trends. P: jr st.

834-355 Introduction to Quantitative Methods of Spatial Analysis 3 cr.
Application of selected statistical measures and computer techniques to the analysis of regional problems. P: a course in statistics.

834-357 Field Methods in Regional Analysis 3 cr.
A summer field camp under faculty supervision in which the student is trained to inventory the uses humans make of the resources of a region. Techniques for evaluating the human resource of the region are developed. Each team of students is assigned a specified research area. P: jr st.

834-362 Analysis of the Great Lakes Region of Africa 3 cr.
A systematic analysis of the areas surrounding the Great Lakes of Eastern Africa, with emphasis on the ecological and historical bases of cultural, economic, and political diversity; the resource base with respect to economic activities and regional development. P: soph st.

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.

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 Greenland. P: jr st.

834-382 Regional Analysis of Northwestern Europe 3 cr.
An analysis of the physical, economic, and cultural regions within the British Isles, France and the Germanies, Switzerland, Austria and the Benelux, and Scandinavian coun-

tries. Comparison of the region as a whole in its relationships with the rest of the world. Map work is emphasized. P: jr st.

834-385 Land Resources and Man 3 cr.
The resources of the terrestrial environment and the identification and evaluation of their impacts on humans and their activities. Discussions of programs of more effective uses of resources, rehabilitation of land areas, and conservation of the total natural resource. P: jr st.

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: jr st.

401 Regional Economic Analysis 3 cr.
See 298-202.

403 Recreation Supply and Demand Analysis 3 cr.
See 532-403.

410 Outdoor Recreation and the Natural Environment 3 cr.
See 532-410.

834-420 Regional Planning 3 cr.
An introduction to 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.

834-427, 428 Man in Thinly Populated Regions I, II 3, 3 cr.
Human communities in the thinly populated regions of the world, their physical and human settings, the form and character of the communities and their effects on human behavior, health, and well-being. Second semester includes field experience and research on problems.

834-472 Planning in the Great Lakes Region of North America 3 cr.
Seminar on selected contemporary issues and problems apparent from analysis of the Great Lakes region; the application of skills gained in prior concentration courses to the study, analysis, and solution of specific problems; coordination with studies going on in private research organizations and governmental agencies; emphasis on the integrative approach to problem resolution. P: jr st.

834-483X Selected Topics in Regional Analysis 1-4 cr.
See page 96.

834-484 Senior Distinction Project 3 cr.
See page 97.

834-498 Directed Study 1-4 cr.
See page 96.

892 SOCIAL SERVICES (SPS)

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.

892-283X Selected Topics in Social Services 1-4 cr.
See page 96.

892-298 Directed Study 1-4 cr.
See page 96.

892-302 Investigation of Issues in Contemporary Social Service Work 4 cr.
Emphasis may be on public welfare, probation and parole, child welfare, drug abuse treatment and education, or social problems of the aged and infirm. May be repeated for credit each time a different issue is studied. P: 892-202.

892-303 Social Service Programs of the National, State, and Local Government 3 cr.
Nature, development, and administration of social insurance, public assistance, categorical aids, poverty programs, and urban redevelopment. P: jr st.

892-320 Introduction to Principles of Social Service Methods 3 cr.
An analysis of generic social service practices with individuals, groups, and organizations as subjects of change; understanding the techniques of interviewing, group management, and organizational change with an emphasis on the mental health and social service sector. P: 892-302.

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.
The 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 serve. Offered in January.

892-402, 403 Field Experience in a Social Service Agency 3, 3 cr.
Actual social service work through placement in a social service agency; weekly seminar meetings and written reports. P: 892-302.

892-407 Clinical Approaches to Institutional Change I 3 cr.
An introduction to institutional responses to changing social needs from the perspective of the consumer as well as the deliverers of service. Emphasis on developing skills for system entry and participant observation. P: 892-302 and concurrent registration in 892-402.

892-408 Clinical Approaches to Institutional Change II 3 cr.
The student as a participant within an institution, plans for institutional change, initiates intervention within the agency system, evaluates the effectiveness of his/her change model, and institutionalizes his/her change effort where appropriate. P: 892-407 and concurrent registration in 892-403.

892-483X Selected Topics in Social Services 1-4 cr.
See page 96.

892-498 Directed Study 1-4 cr.
See page 96.

900 SOCIOLOGY (CCS)

900-202 Introduction to Sociological Analysis 3 cr.
Introduction to major sociological theories and their application to contemporary problems of society. P: soph st.

900-203 Minority Groups 3 cr.
Character of racial, religious, and ethnic minority groups; adjustments to society and societal accommodation. P: soph st.

900-208 Marriage and Family 3 cr.
Nature of the family; processes of courtship and marriage interaction; correlation of physiological, psychological, economic, and sociological contributions to marriage and family life. P: soph st.

900-302 Social Stratification 3 cr.
Occupation, class, and status as determinants of group interests, ideologies, and struggles; selected international comparisons. P: 900-202 or cons inst.

900-303 Theories of Societal Development and Change 3 cr.
Analysis of theories of social change with reference to contemporary patterns in developing areas of the world. P: 900-202 or cons inst.

900-304, 305 Processes of Deviant Behavior 3, 3 cr.
Factors and conditions which underlie disagreement about fundamental values; relation of values to personal and social maladjustment; evaluation of various theories of deviant behavior; deviant behavior in different societies; group approaches to social reintegration. P: 900-202 or cons inst. May be taken in sequence, in reverse order, or independently.

900-311 Collective Behavior 3 cr.
Analysis of the dynamics of social movements, mobs, crowds, masses; voluntary and compulsory associations; power structure; group responses to varieties of leadership. P: 900-202 or cons inst.

900-312 Social Change 3 cr.
Social change in community and society with emphasis upon the rate, direction, mechanisms, and planning of change in modern and emerging nations. P: 900-202 or cons inst.

900-402 World Population 3 cr.
Population size, distribution, composition, and processes; social and economic determinants and consequences of demographic variations. P: jr st and one course in sociology at the 300 level.

900-404 Criminology 3 cr.
Crime as a form of deviant behavior; its relation to societal values and social structure; behavior systems and types of criminal behavior; theories of treatment and control. P: jr st and one sociology course at the 300 level.

900-405 Rural-Urban Interaction 3 cr.
Relationships between rural and urban social patterns; problems of adjustment to city life. P: jr st and one course in sociology at the 300 level.

900-406 Comparative Social Systems 3 cr.
Contemporary social systems; distinctions and broad cross-cultural comparisons between Western and non-Western systems. P: jr st and one sociology course at the 300 level.

900-407 Complex Organization 3 cr.
Major theories relating to structures and processes of large-scale formal organizations; consideration of industrial-commercial, governmental, religious, military, political, and educational organizations. P: jr st and one sociology course at the 300 level.

UNIVERSITY WITHOUT WALLS

930-200, 400 Contract Learning 1-18 cr. ea.
Contract Learning is an agreement made between a student and faculty sponsor on a course of study in which the student works on his/her own in a situation of challenged guidance from the sponsor. Procedures for setting up contracts are quite specific, requiring a syllabus of study to be developed by the student and his/her sponsor which includes the contract title, previous experience in the area, goals to be achieved, methods and resources to be used, and evaluation procedures.

938 URBAN ANALYSIS (CCS)

938-283X Selected Topics in Urban Analysis 1-4 cr.
See page 96.

938-298 Directed Study 1-4 cr.
See page 96.

938-313 City Through Time and Space 3 cr.
The development and comparison of urban patterns in different cultural contexts. Major issues such as community, expansionism, imperialism, autonomy and participation stratification systems, mobility, poverty, cityscape, and aesthetic qualities of public space are examined in historical and cross-cultural settings.

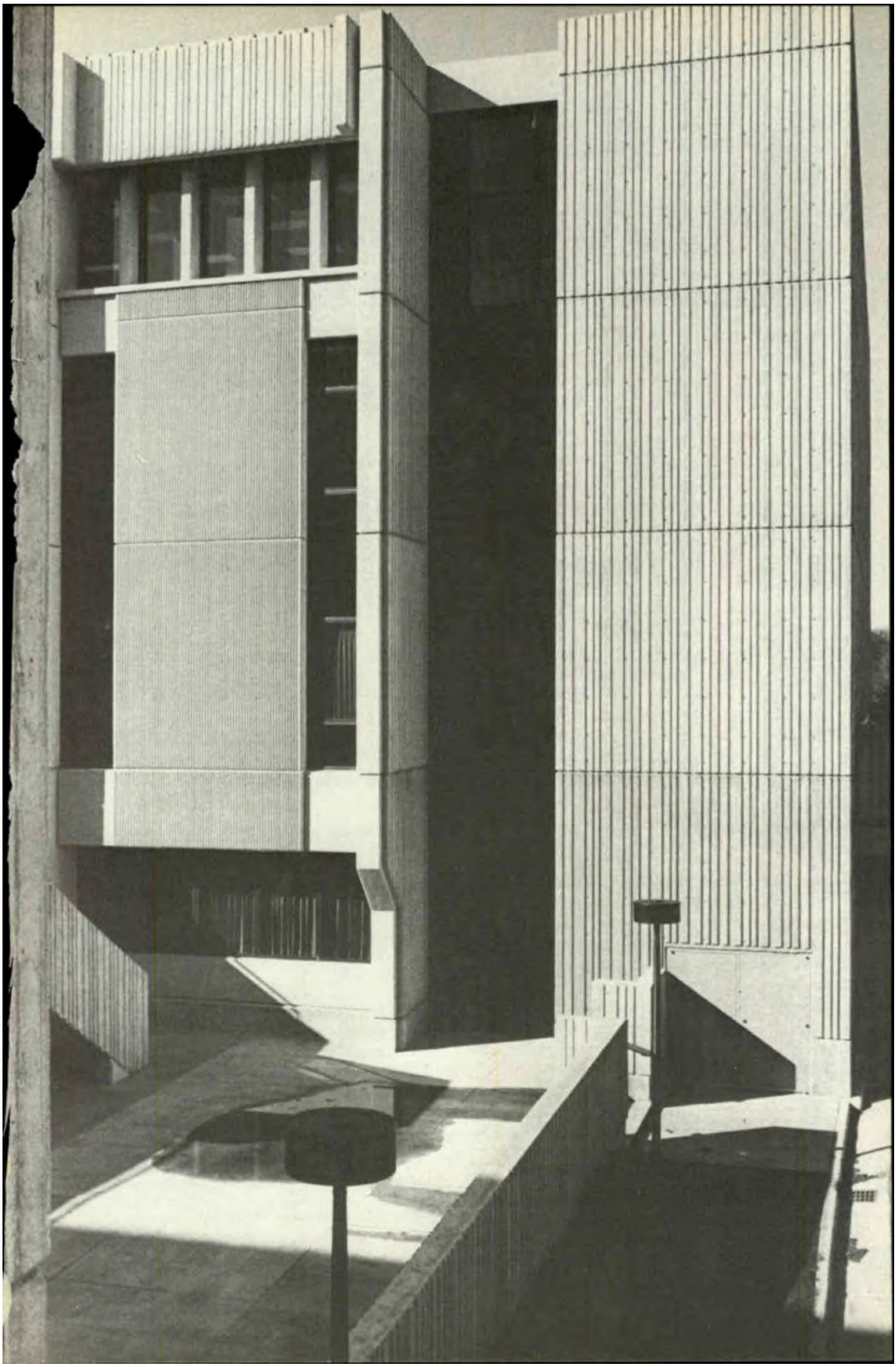
938-317 Poverty and Social Welfare in Urban America 3 cr.
An examination of change and continuity in American attitudes and responses to poverty. Readings deal with both historical and contemporary approaches to poverty. Topics include institutionalization of deviant and dependent persons, anti-institutional approaches, professionalism and bureaucracy, community organization, and advocacy and racism. Offered in January.

325 Human Living Space I 3 cr.
See 834-325.

326 Human Living Space II 3 cr.
See 834-326.

938-335 Aggressive Behavior: Biological and Psychological Roots 3 cr.
Examination of current views on sources of aggressive behavior. Data and theories from both ethological studies of animal behavior and psychological studies of the behavior of humans and other animals are considered. An attempt is made to synthesize these two major points of view, with a special emphasis on the implications for human behavior.

938-336 Research on Aggression 3 cr.
Examines some aspect of aggressive behavior in animals or humans in the context of guided research based upon a design submitted prior to the course. Includes discussion of problems faced in research design and data



analysis. Primarily intended for students who have completed 938-335.

938-337 Urban Violence: Causation and Control 3 cr.
An analysis of collective violence in urban communities, bringing together several strains of scholarship—political science, psychology, sociology, collective urban violence. Special emphasis on the links between theories of causation and theories of control.

938-350 The City as Habitat 3 cr.
The physical aspects of the city, focusing on the demographic, spatial, and resource subsystems. The contemporary American city is viewed in historical and cross-cultural context.

938-351 Transportation and the City 3 cr.
The impact of the transportation sub-system of the city upon the other urban sub-systems (residential, commercial) and upon urban dwellers.

938-360 New Communities* 3 cr.
The history and development of an important alternative to metropolitan areas. European and American new towns are examined and compared.

938-370 Police in Modern Society 3 cr.
The relationship of the police with the environment and what police actually do. Emphasis on organizational structure of police departments, personality and attitudinal characteristics of officers, psychology of becoming an officer, public attitudes toward police, police-minority relations, response to social unrest, and future roles for police.

938-395 Advocacy Planning 3 cr.
An analysis of citizen participation in the

*Divisional Committee approval is pending.

urban planning process. A critical investigation of the urban planner in the role of community advocate. Topics include a services perspective on urban systems, the development of community organizations, the analysis of community problems and goals, and the design of intervention strategies. A journal, an annotated bibliography, and a research paper are required. Offered in January.

938-400 The City as Idea 3 cr.
Attempts to define what a city is have been many and varied, reflecting political boundaries, population density, bricks and mortar, and the like; but it is equally important to understand how the city is perceived, which may well be different from what it is in concrete terms. The ways in which Americans have viewed the city over time—its life as a construct, an image, symbol, and myth—are examined and the implications of population perceptions on public policy are explored.

938-414 The Self in the Urban Setting 3 cr.
The aspects of urban existence which aid and impede Americans' personal quests for identity. Relationships between urban commercial institutions, recreational facilities, aesthetic conditions and community structures and the individual's search for significance, control, pleasure and companionship. The effects of an urban setting on the problems of acculturation, loneliness, helplessness, boredom, apathy and mental stress.

938-421 Urban Planning I 3 cr.
Planning as a generic process—an examination of planning activities in the various delivery systems of the city, introduction to the basic methods and techniques of urban land use planning, the contemporary issues in planning, the implementation of plans, an overview of major federal programs for the delivery and improvement of the urban environment.

938-422 Urban Planning II: Community Project 6 cr.
A field research seminar focusing on the planning/decision-making processes involved in an ongoing program for the revitalization of 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. Topical areas 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 of the community and description of its residents; analysis of community needs; systems of service in the community; design and implementation of strategies of intervention; basic systems for the generation and organization of information for planning and intervention activities.

938-432 Evolutionary Roots of Urban Behavior* 3 cr.
Is the behavior of urban man influenced by his evolutionary history? This question is explored through a study of the relationship between the social behavior within animal societies, both nonhuman and human, and the environment to which they evolved. The course draws from work in the fields of human evolution, evolutionary animal behavior, environmental and comparative psychology. The purpose is to attempt to identify those behaviors that warrant study in terms of their evolutionary roots.

938-440 Social Dynamics of Urban Life 3 cr.
Aspects of culture and environment which impede or facilitate social interaction, solidarity and participation in urban America. The impact of values, images, physical qualities, size, homogeneity, mobility, social class and ethnic group affiliation upon cooperation, neighborliness, friendliness, companionship, commitment, security and power. Special attention is paid to any changes in these patterns as America became increasingly industrialized and urbanized as well as to any changes produced by counterculture movements.

938-444 National Issues and Community Reform 3 cr.
A focus on (1) the effect of national socioeconomic problems on urban concerns; and (2) the effect of community reformist action on urban and national issues. Explores the urban effects of corporate and national gov-

*Divisional Committee approval is pending

ernmental policies towards the distribution of wealth and power in urban America. Strategies employed by Americans who have attempted to use community action to cope with urban and national problems are examined.

938-445 Simulated Environmental Planning 4 cr.
Techniques and limitations of environmental planning are explored through readings, lectures, discussions, and the use of an adaptation of the River Basin Model which simulates the lower Fox Valley including the city of Green Bay. Students assume various decision-makers' roles such as government official, school director, industrialist, planner, etc., and in the light of many social, economic, and environmental indicators plan for and observe the effects in the simulated region.

938-450 Senior Seminar 3 cr.
Students synthesize insights from prior academic experiences in seeking to answer the enduring question: how can people improve upon their urban existence? Students form several small groups (communities) and work together in clarifying their individual goals, deriving means of measuring progress, and proposing specific policy recommendations. Group papers are defended before faculty and peers.

938-483X Selected Topics in Urban Analysis 1-4 cr.
See page 96.

938-484 Senior Distinction Project 3 cr.
See page 97.

938-495 Southern Appalachian Migrants in Northern Urban Centers: A White Anglo-Saxon Minority* 3 cr.
The migrant experience in new environments is typically characterized by pronounced social and psychological strains. These stresses are particularly evident under circumstances of impelled migration. Patterns of adjustment and channels for integration of one such migrant population are examined—Southern Appalachian peoples whose movement to northern metropolitan centers has been the result of economic stagnation in their native region. Offered in January.

938-295, 495 The Urban Experience: A Simulation* 4 cr.
By participating in simulations, students become community influentials for a time and make all the decisions required of such influentials in real life. Simulations such as SIMSOC, TRACTS, CLUG, IMPACT, and GHETTO introduce students to different types of situations, each of which help them experience important parts of urban existence. Offered in January.

938-498 Directed Study 1-4 cr.
See page 96.

957 VISUAL ARTS (CCC)

957-102 Design and Drawing Studio I 3 cr.
A basic introduction to studio art work and to fundamental concepts of art structure and design. Emphasis upon two-dimensional art work employing various drawing techniques in black and white media.

957-103 Design and Drawing Studio II 3 cr.
A basic introduction to studio art work and to fundamental concepts of art structure and design. Emphasis upon two-dimensional art work in color and design utilizing the elements and principles of design.

957-104 Design and Drawing Studio III 3 cr.
Introduction of advanced problems of design and art with an emphasis upon three-dimensional design. P: 957-102, 103.

143 Introduction to Creative Photography 3 cr.
See 246-143.

957-201 Painting I 3 cr.
Investigation of painting media; oil, watercolor, and acrylics and their inherent expressive qualities and characteristics. P: 957-102, 103.

957-202 Ceramics I 3 cr.
Investigation of ceramics media and their inherent expressive qualities. P: 957-104.

957-203 Sculpture I 3 cr.
Investigation of sculpture media and their inherent expressive qualities. P: 957-104.

*Divisional Committee approval is pending.

957-303, 304 Watercolor Painting 3, 3 cr.
Creative approach to watercolor techniques; cultivation of personal expression and development of imaginative concepts. P: 957-201.

957-305, 306 Graphic Arts: Relief Printing 3, 3 cr.
Aspects of relief printing: woodcut and linoleum printing in black and white and color. The media is explored and developed as a medium of expression in which the artist communicates his or her personal statements reflecting the human condition of the environment. P: 967-201.

957-307, 308 Graphic Arts: Intaglio Printing 3, 3 cr.
Studio work in intaglio techniques, including dry point, engraving, and various etching procedures. Various color printing techniques are taught and the development of a personal concept encouraged. P: 957-201.

957-311, 312 Oil Painting II, III 3, 3 cr.
Cultivation of techniques for personal expression; composition and development of imaginative concepts in oil paint and allied media. P: 957-201.

957-321, 322 Sculpture II, III 3, 3 cr.
Emphasis on the use of clay, plaster, and other media. Traditional and innovative methods are investigated for a fundamental understanding of sculptural form. P: 957-203.

957-331, 332 Ceramics II, III 3, 3 cr.
Basic methods of forming clay, including pitch, coil, and slab methods and throwing on the wheel. Ceramic chemicals and glaze calculations; glaze application; stacking and firing kilns. P: 957-202.

957-341 Textiles: Fiber Construction 3 cr.
Investigation of the varied techniques of creating both two and three dimensional forms with fibers, yarns, and related materials. Areas include weaving (both on and off the loom), knotting and macrame, creative knitting and crochet. Techniques are introduced as a vehicle for creative expression. P: 957-104.

343 Creative Photography II* 3 cr.
See 246-343.

*Divisional Committee approval is pending.

957-351, 352 Art Metal and Jewelry Design I, II 3, 3 cr.
Studio work in the creation and design of art metal-jewelry projects utilizing varied metal techniques, processes, and media. Emphasis on forming, shaping, and designing of jewelry as quality handcrafted art forms for personal adornment and expression. P: 957-104.

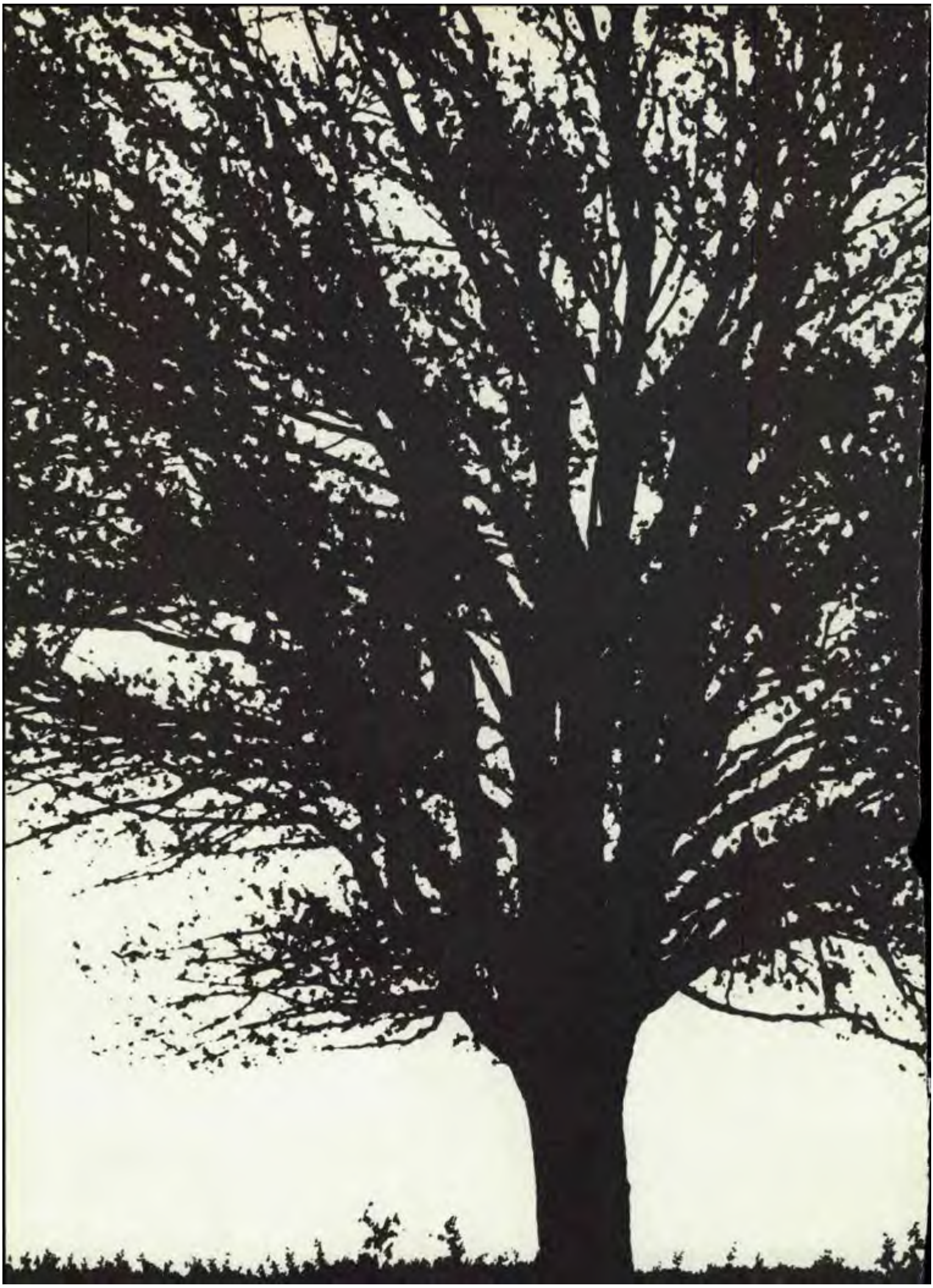
957-360, 361 Life Drawing and Anatomy 3, 3 cr.
The skeletal structure and muscular articulation of human and animal forms as a basis for artistic interpretation. P: 957-102, 103.

957-409 Materials Workshop for the Designer 3 cr.
Investigation of various materials of the designer and techniques of fabrication with these materials. P: two courses in design.

957-410 Materials Workshop for the Painter 3 cr.
Investigation and demonstration of painting media; the chemistry of paint; framemaking; preparation of painting grounds; underpainting, glazing. P: 957-102, 103 and a course in painting.

957-411 Materials Workshop for the Sculptor 3 cr.
Techniques and equipment; construction of tools; investigation of materials, traditional and innovative, as related to needs and aesthetic consideration of the sculptor. P: two courses in sculpture.

957-412 Materials Workshop for the Ceramist 3 cr.
Investigation and formulation of clay bodies and glazes. Construction of kilns and various firing techniques including high-fire, low-fire, raku, and salt-glazing. P: two courses in ceramics.



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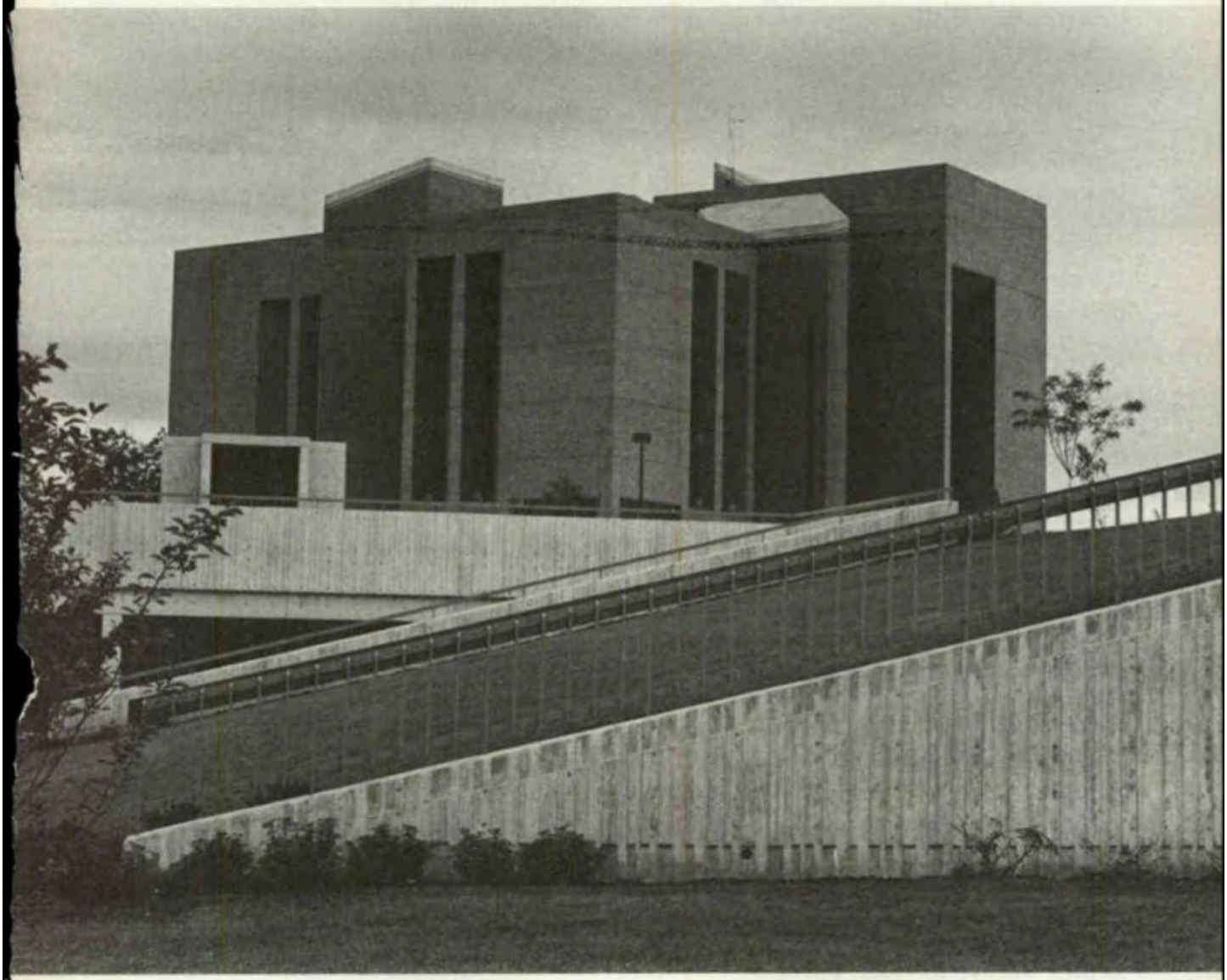
Cohrs, Arthur L., Associate Professor of Communication-Action; B.M., UW-Madison; M.M., Rochester.

Coleman, Boyd E., Lecturer in Managerial Systems; B.S., Clarion State; M.A., Pittsburgh.

Cook, Robert S., Associate Professor of Environmental Control; B.S., UW-Stevens Point; M.S., Ph.D., UW-Madison.

Cooley, Peter J., Associate Professor of Humanism and Cultural Change; B.A., Shimer; M.A., Chicago; Ph.D., Iowa.



Crandall, Coryl, Associate Professor of Humanism and Cultural Change; A.B., A.M., Ph.D., Illinois.

Damkoehler, David L., Assistant Professor of Communication-Action; B.S., UW-Oshkosh; M.F.A., Kent State.

Daniels, Thomas E., Associate Professor of Humanism and Cultural Change; B.A., M.A., Utah State; Ph.D. Washington State.

Davis, A. Muriel, Lecturer in Communication-Action; B.M., Lawrence; M.S., UW-Madison.

Day, Harold J., Professor and Chairperson of Environmental Control; B.S., M.S., Ph.D., UW-Madison.

Deese, Dawson C., Associate Professor and Chairperson of Nutritional Sciences; B.S., North Carolina Agr. & Tech.; M.S., Tuskegee Inst.; Ph.D., UW-Madison.

Dilweg, Vivi, Assistant Professor of Managerial Systems; J.D., Texas.

Doberenz, Alexander R., Professor of Nutritional Sciences; B.S., Tusculum; M.S., Ph.D., Arizona

Durham, Norris M., Assistant Professor of Population Dynamics; B.S., Westchester State; M.A., NYU; Ph.D., Pennsylvania State.

Erwin, Robert J., Assistant Professor of Communication-Action; B.A., South Florida; M.F.A., Alberta.

Evans, Francis B., Assistant Professor of Education; B.F.A., New Mexico; M.A., Northern Arizona; M.A., Ed.D., New Mexico State.

Faik, Jacqueline M., Assistant Professor of Growth and Development; B.A., Carleton; A.M., Radcliffe; M.A., Ph.D., Chicago.

Fischbach, Fritz A., Associate Professor of Ecosystems Analysis; B.S., M.S., Ph.D., UW-Madison.

Flatley, Robert R., Community Lecturer in Humanism and Cultural Change; B.S., J.D., UW-Madison.

Fleurant, Kenneth J., Assistant Professor of Humanism and Cultural Change and Academic Affairs Intern in Office of Dean of Colleges; B.A., Holy Cross; M.A., Ph.D., Princeton.

Ford, J. L., Clinical Lecturer in Medical Technology; B.S., West Virginia; M.D., Maryland.

Frisch, Jack E., Associate Professor of Communication-Action; B.A., M.A., Ph.D., UW-Madison.

Galaty, David H., Assistant Professor of Humanism and Cultural Change; B.A., Trinity; Ph.D., Johns Hopkins.

Galt, Anthony H., Assistant Professor of Modernization Processes; A.B., UC-Berkeley; Ph.D. UC-Riverside.

Gandre, Donald A., Professor of Regional Analysis; B.S., Arizona State; M.S., Illinois; Ph.D., UW-Madison.

Gaworek, Norbert H. Assistant Professor of Humanism and Cultural Change; B.A., M.A., Ph.D., UW-Madison.

Geppert, Heinz, Instructor in Humanism and Cultural Change; B.A., Colorado College; M.A., Washington.

Gerritsen, William D., Instructor in Modernization Processes; M.A., New Mexico.

Gillis, Eugene R., Community Lecturer in Population Dynamics; M.S.W., St. Louis.

Girard, Dennis M., Associate Professor of Ecosystems Analysis; B.S., M.A., Detroit; Ph.D., Ohio State.

Goemans, Robert C., Assistant Professor in Physical Education Programs; B.S., M.S., UW-Madison.

Gohdes, Paul N., Clinical Lecturer in Human Adaptability; M.D., UW-Madison.

Goldsby, Alice I., Associate Professor of Ecosystems Analysis; B.A., Lynchburg; M.S., Utah State; Ph.D., UW-Madison.

Gorder, Lyle D., Assistant Professor of Regional Analysis; B.S., M.S., UW-Madison.

Gould, John L., Instructor in Urban Analysis; B.A., Kansas.

Green, James W., Assistant Professor of Modernization Processes; B.A., Puget Sound; M.A., Ohio State; Ph.D., Washington.

Green, Jeremy R., Community Lecturer in Population Dynamics; MB.B.Ch., Witwatersrand, Johannesburg, South Africa.

Greif, Gary F., Assistant Professor of Humanism and Cultural Change; B.A., M.A., Gonzaga; Ph.D., Toronto.

Grimes, Bruce A., Professor of Communication-Action and Director of Intercollegiate Athletics, Intramurals and Recreation; B.F.A., Millikin; M.F.A., Ohio.

Guilford, Harry G., Professor of Population Dynamics and Secretary of the Faculty; Ph.B., Ph.M., Ph.D., UW-Madison.

Halverson, Carolyn J., Lecturer in Managerial Systems; M.S., Minnesota.

Haney, Emil B., Jr., Associate Professor of Modernization Processes; B.S., Ohio State; M.S., Ph.D., UW-Madison.

Haney, Wava G., Assistant Professor of Urban Analysis; B.S., Ohio State; M.S., Ph.D., UW-Madison.

Harden, Donald F., Assistant Chancellor for University and Student Relations and Associate Professor of Community Sciences; B.A., M.A., Ph.D., Michigan State.

Harris, Hallett, Jr., Associate Professor of Ecosystems . Analysis; B.A., Coe; M.S., Ph.D., Iowa State.

Hartley, Eugene L., Dean for Educational Development and Professor of Community Sciences; A.B., A.M., Ph.D., Columbia.

Hartley, Ruth E., Professor of Growth and Development; A.B., Cornell University; A.M., Ph.D., Columbia.

Havens, Elmer A., Professor and Chairperson of Humanism and Cultural Change; B.A., Cornell College; B.D., Drew; M.A., Ph.D., UW-Madison.

Herrscher, Walter J., Associate Professor of Humanism and Cultural Change; B.A., Elmhurst; M.A., Northwestern; Ph.D., UW-Madison.

Hogan, Thomas P., Director of Educational Testing Center and Lecturer; B.A., John Carroll, Cleveland; M.A., Ph.D., Fordham.

Huber, Neil M., Associate Professor of Population Dynamics; A.B., Columbia; D.Sc., Tuebingen (Germany).

Huddleston, J. Herbert, Associate Professor of Ecosystems Analysis; B.S., M.S., Cornell University; Ph.D., Iowa State.

Hughes, Fergus P., Assistant Professor of Growth and Development; B.A., St. John's University; M.A., Ph.D., Syracuse.

Ihrke, Charles A., Assistant Professor of Population Dynamics; B.S., UW-Oshkosh; M.S., Nebraska; Ph.D., Oregon State.

Ives, Lovell G., Associate Professor of Communication-Action; B.M., UW-Stevens Point; M.M., Vandercook College of Music.

Jadwani, Hassa Nand T., Associate Professor and Chairperson of Managerial Systems; B.B.A., Miami; M.B.A., Columbia; D.B.A., Harvard.

Jaeckel, Wayne L., Assistant Professor of Communication-Action; B.S.M., UW-Stevens Point; M.M., Michigan State.

Jansen, Richard G., Lecturer in Social Services and acting director and counselor, Student Development Center; B.A., UW-Madison; M.S.W., UC-Berkeley.

Johnsen, Per Kristian, Assistant Professor of Urban Analysis; B.S., Ph.D., Washington.

Joscelyn, Lela Ames, Lecturer in Growth and Development; B.A., Hawaii; M.A., Windsor.

Jowett, David, Professor of Ecosystems Analysis and Acting Director of Graduate Studies; B.S., University College of Northern Wales; Ph.D., University of Wales, Bangor.

Kangayappan, Kumaraswamy, Associate Professor of Modernization Processes; B.A., University of Madras (India) M.A., Annamalai University (India); M.A., Ph.D., UW-Madison.

Kaufman, William C., Professor and Chairperson of Human Adaptability; B.A., Minnesota; M.S., Illinois; Ph.D., Washington.

Kazar, Michael R., Professor of Education and Communication-Action and Associate Director of Arts, University Extension; B.S., Milwaukee State Teachers; M.S., UW-Madison.

Kellogg, Peter J., Assistant Professor of Urban Analysis; B.S., Davidson; M.A., Ph.D., Northwestern.

Kersten, Frederick I., Professor of Humanism and Cultural Change; B.A., Lawrence; M.A., Ph.D., New School for Social Research.

Kersten, Raquel, Associate Professor of Humanism and Cultural Change; B.S., Havana; M.A., Ph.D., New York.

Knowles, Eric S., Associate Professor of Urban Analysis; B.A., Antioch; Ph.D., Boston.

Kolka, James W., Associate Professor of Modernization Processes; B.S., UW-Eau Claire; J.D., UW-Madison; Ph.D., Kansas.

Kolshus, Halvor J., Associate Professor of Modernization Processes and Associate Dean of the Colleges (Academic Programs); B.S., Vinterlandbruksskolen-Oslo; M.S., Agricultural College of Norway; Ph.D., Kentucky.

Korner, Ija N., Professor of Humanism and Cultural Change and Chairperson of Social Services; B.A., Geneva; Ph.D., Columbia.

Kuepper, William G., Associate Professor of Regional Analysis; B.S., M.S., Ph.D., UW-Madison.

Laatsch, William G., Assistant Professor of Regional Analysis; B.S., Carroll; M.A., Oklahoma; Ph.D., Alberta.

Lackey, G. Lynne, Assistant Professor of Urban Analysis; B.A., Bowling Green; M.A., Ph.D., Kentucky.

Ladowski, Janet, Laboratory Teaching Specialist in Environmental Control; B.S., UW-GB.

Langlois, Elaine J., Lecturer in Human Adaptability; B.S., Jackson College; M.A., Smith; M.A.T., Radcliffe.

Lanz, Robert W., Associate Professor of Environmental Control; B.S., M.S., Ph.D., UW-Madison.

Larmouth, Donald W., Associate Professor and Chairperson of Communication-Action; B.A., Minnesota; M.A., Ph.D., Chicago.

Lauter, Estella, Assistant Professor of Communication-Action; B.A., Ph.D., Rochester.

Lee, Kwang K., Associate Professor of Environmental Control; B.S.C.E., National Taiwan; M.S., Duke; Ph.D., Cornell.

Lewis, Lloyd R., Community Lecturer in Population Dynamics; S.T.B., Divinity School at Harvard.

Lind, Joan D., Assistant Professor of Modernization Processes; B.A., Minnesota; M.F.A., Cranbrook; M.A., Ph.D., Michigan.

Lindem, J. Curtis, Assistant Professor of Environmental Control and Director of Physical Plant; B.S., M.S., UW-Stout.

Linthicum, David H., Assistant Professor of Communication-Action; B.M., Peabody Conservatory of Music; M.M., Catholic; D.M.A., Illinois.

Littig, David M., Assistant Professor of Urban Analysis; M.S., Ph.D., UW-Madison.

Little, Ruth V., Community Lecturer in Humanism and Cultural Change; B.A., North Carolina (Women's College).

Logan, Richard D., Assistant Professor of Growth and Development; A.B., Harvard; Ph.D., Chicago.

Loomer, Allison P., Associate Professor of Ecosystems Analysis; B.A., M.A., Acadia.

Macdonald, William B., Laboratory Teaching Specialist in Population Dynamics; B.A., Beloit; M.S., Illinois State.

Maier, Robert H., Vice Chancellor and Professor of Environmental Sciences; B.S., Miami; M.S., Ph.D., Illinois.

Makaroff, Nikolai S., Assistant Professor of Communication-Action; B.S., Kiev Military Academy (USSR).

Maki, Jon R., Assistant Professor of Population Dynamics; B.A., Minnesota; M.S., Ph.D., Michigan State.

Mann, Paul, Professor of Communication-Action.

Matter, Charles F., Assistant Professor of Urban Analysis; A.B., Lycoming; Ph.D., Washington.

Matulis, Anatole C., Associate Professor of Communication-Action; B.A., Detroit Institute of Technology; M.A., Wayne State; Ph.D., Michigan State.

McAuley, William J., Assistant Professor of Population Dynamics; B.A., North Carolina.

McHale, James M., Assistant Professor of Humanism and Cultural Change and Acting Director of Academic Assistance Programs; B.A., M.S., Ph.D., UW-Madison.

McIntosh, Elaine N., Associate Professor of Nutritional Sciences; A.B., Augustana; M.A., South Dakota; Ph.D., Iowa State.

McIntosh, Thomas H., Associate Dean of the Colleges and Professor of Environmental Control; B.S., M.S., Ph.D., Iowa State.

Mehra, Anjani K., Assistant Professor of Ecosystems Analysis; B.S., M.S., Allahabad (India); Ph.D., I.I.T., Kapur (India).

Mendelsohn, Robert A., Associate Professor of Urban Analysis; B.S., Cornell; M.A., Ph.D., Michigan.

Moore, Douglas H., Professor of Environmental Control; A.B., UC-Berkeley; M.A., Ph.D., UCLA.

Moore, Nan F., Program Specialist in Growth and Development; B.Ed., National College of Education; M.Ed., Laverne.

Moran, Joseph M., Associate Professor of Environmental Control; B.S., M.S., Boston College; Ph.D., UW-Madison.

Morgan, Michael D., Associate Professor of Ecosystems Analysis; B.A., Butler; M.S., Ph.D., Illinois.

Mowbray, Thomas B., Associate Professor and Chairperson of Population Dynamics; B.A., Minnesota; M.A., Ph.D., Duke.

Mugane, Bridget R., Assistant Professor of Humanism and Cultural Change; B.A., M.A., Ph.D., UC-Berkeley.

Mulvihill, Philip M., Assistant Professor of Managerial Systems; B.B.A., Michigan; J.D., Wayne State.

Murphy, Michael W., Associate Professor of Humanism and Cultural Change; B.A., Marquette; M.A., Ph.D., UW-Madison.

Murray, James M., Professor and Chairperson of Regional Analysis; B.A., B.S., M.A., North Dakota; Ph.D., Oregon.

Nair, V.M.G., Associate Professor of Environmental Control and International Program Officer; B.S., Madras-Christian College; M.S., University of Aligarh; Ph.D., UW-Madison.

Nelson, Conny E., Professor of Communication-Action and Assistant to the Vice Chancellor; A.B., Ph.D., Washington.

Nelson-Cole, Clary, Assistant Professor of Communication-Action; M.F.A., Illinois

Nesberg, Lloyd S., Assistant Professor of Modernization Processes; Ph.B., M.S., Ph.D., UW-Madison.

Nichols, Terry W., Instructor in Urban Analysis; M.A., Chicago.

Norman, Jack C., Associate Professor of Ecosystems Analysis; B.S., New Hampshire; Ph.D., UW-Madison.

Null, Gilbert T., Assistant Professor of Humanism and Cultural Change; B.A., UC-Santa Cruz; M.A., Ph.D., New School for Social Research.

Obenberger, Robert W., Assistant Professor of Managerial Systems; B.S., Whitewater; M.S., Northern Illinois.

O'Brien, Dean W., Associate Professor of Mass Communications and Communication-Action; B.S., M.S., Ph.D., UW-Madison.

O'Hearn, George T., Professor of Education and Director of Grants Administration; B.S., M.S., Ph.D., UW-Madison.

Petrakopoulos, Nikitas L., Assistant Professor of Environmental Control; B.A., Columbia; M.S., Ph.D., NYU.

Petrie, George W., Professor of Managerial Systems; B.S., M.S., Carnegie Tech.; Ph.D., Lehigh.

Pezzetta, John M., Assistant Professor of Environmental Control; B.A., Toronto; M.S., Dalhousie; Ph.D., Michigan.

Pharmakis, Thomas L., Clinical Lecturer in Human Adaptability; M.S., Boston Graduate School.

Pollis, Carol A., Associate Professor of Modernization Processes and Director of University Without Walls; B.A., M.A., Oklahoma; Ph.D., Oklahoma State.

Pollis, Nicholas P., Associate Professor of Urban Analysis; B.A., Johns Hopkins; Ph.D., Oklahoma.

Powers, John E., Associate Professor of Managerial Systems; B.S., M.S., Ph.D., UW-Madison.

Prange, W. Werner, Dean for Instructional Services and Associate Professor of Creative Communication; Abitur, Paedagogium Bad Godesberg (Germany); Ph.D., Bonn.

Presnell, Richard W., Assistant Professor of Education; B.A., M.A., Iowa; Ph.D., Cornell.

Prevetti, William F., Professor of Communication-Action; B.S., M.S., M.F.A., UW-Madison.

Pum, Robert J., Associate Professor of Communication-Action; B.S., M.S., UW-Madison; Ed.D., Ball State.

Randall, Donna Z., Instructor in Nutritional Sciences; B.S., St. Teresa; M.S., UW-Madison.

Randall, Sterling P., Assistant Professor of Environmental Control; B.S., St. Norbert; M.S., Ph.D., UW-Madison.

Reed, John F., Professor of Ecosystems Analysis; A.B., Dartmouth; M.A., Ph.D., Duke.

Rhyner, Charles R., Associate Professor of Environmental Control; B.S., M.S., Ph.D., UW-Madison.

Richen, Marilyn C., Instructor in Humanism and Cultural Change; B.A., M.A., Oregon.

Richter, Caryl M., Program Specialist in Growth and Development; B.A., Carroll.

Rodesch, Jerrold C., Assistant Professor of Humanism and Cultural Change; B.S., UW-Madison; M.A., Ph.D., Rutgers.

Russell, Donald L., Community Lecturer in Liberal Education Seminars; B.A., L.L.B., Missouri.

Ryall, Rajagopal, Assistant Professor of Modernization Processes; M.A., Madras (India); M.A., Ph.D., Duke.

Sager, Dorothea B., Assistant Professor in Population Dynamics; B.A., Lawrence; M.S., Iowa; Ph.D., UW-Madison.

Sager, Paul E., Associate Professor and Chairperson of Ecosystems Analysis; B.S., Michigan; M.S., Ph.D., UW-Madison.

Saller, Francis A., Assistant Professor of Managerial Systems; B.S., U.S. Military Academy; M.S., Kansas; Ph.D., Pennsylvania State.

Sanders, Norris M., Associate Professor of Education; B.S., M.S., Ph.D., UW-Madison.

Sandmire, Herbert F., Community Lecturer in Population Dynamics; M.D., UW-Madison.

Schwartz, Leander, J., Associate Professor of Ecosystems Analysis; B.S., UW-Platteville; M.S., Ph.D., UW-Madison.

Schwintzer, Christa R., Assistant Professor of Ecosystems Analysis; B.A., Berea; M.A., Ph.D., Michigan.

Sell, Nancy J., Assistant Professor of Environmental Control; B.A., Lawrence; M.S., Ph.D., Northwestern.

Shade, Robert A., Community Lecturer in Liberal Education Seminars; B.S., Colorado.

Shariff, Ismail, Associate Professor of Regional Analysis; B.A., M.A., Mysore (India); Ph.D., UW-Madison.

Sherrell, Richard E., Associate Professor of Communication-Action and Chairperson of Liberal Education Seminars; B.A., Pomona; B.D., Chicago; Ph.D., Claremont.

Simons, Roger A., Assistant Professor of Ecosystems Analysis; A.B., UCLA; M.A., Ph.D., UC-Berkeley.

Smith, Larry J., Assistant Professor of Modernization Processes; B.A., Oklahoma State; M.A., Ph.D., Chicago.

Smith, William M., Professor of Regional Analysis; B.A., UCLA; M.S., Ph.D., George Washington.

Sonenfield, Irwin C., Professor of Humanism and Cultural Change; B.M., Stetson; M.M., Florida State; Ph.D., UW-Madison.

Sorce, James F., Assistant Professor of Growth and Development; B.A., Canisius; M.A., Denver; Ph.D., SUNY-Buffalo.

Spille, Henry A., Assistant Dean of the Colleges and Director of Academic Assistance Programs; B.S., Lawrence; M.S., UW-Madison.

Starkey, Ronald H., Assistant Professor of Ecosystems Analysis; B.A., Augsburg; M.S., Ph.D., Michigan State.

Steffenson, David, Community Lecturer in Humanism and Cultural Change; S.T.M., Yale.

Stevens, Richard J., Assistant Professor of Human Adaptability; B.S., Rochester; M.S., Ph.D., Illinois.

Stumpf, Roy J., Lecturer in Skills Learning Programs; B.S., St. Norbert; M.A., Bowdoin.

Swinerton, Elwin N., Jr., Associate Professor of Urban Analysis; B.A., M.A., Massachusetts; Ph.D., Kentucky.

Tasch, Thomas J., Associate Professor of Humanism and Cultural Change; B.F.A., Illinois; M.A., Kansas State.

Taylor, Donald P., Lecturer in Communication-Action; B.A., St. Norbert; M.F.A., Puget Sound.

Taylor, N.B.G., Professor of Population Dynamics; M.D., Toronto; Ph.D., Western Ontario.

Thompson, Philip E., Assistant Professor of Education; B.A., Beloit; M.S., UW-Madison; Ph.D., Illinois.

Thron, E. Michael, Associate Professor of Humanism and Cultural Change; B.A., M.A., Ph.D., Nebraska.

Thron, Joan E., Lecturer in Skills Learning Program; B.A., Emory.

Troyer, Michael D., Instructor in Managerial Systems; B.A., Grinnell; M.A., Duke.

Van Koevering, Thomas E., Associate Professor of Environmental Control; B.S., Western Michigan; M.A., Michigan; Ph.D., Western Michigan.

Veilleux, Jere, Associate Professor of Communication-Action; B.S., Northwestern; M.A., Ph.D., Minnesota.

Wallach, H.G. Peter, Assistant Professor and Chairperson of Modernization Processes; A.B., Kenyon; M.A., Ph.D., Connecticut.

Wallach, Martha Kaarsberg, Assistant Professor of Humanism and Cultural Change and Assistant to the Chancellor; B.A., M.A., Ph.D., Washington.

Ward, David J., Associate Professor of Managerial Systems; B.B.A., M.B.A., Ph.D., UW-Madison.

Weaver, John C., President of the University of Wisconsin System and Professor of Regional Analysis; A.B., M.A., Ph.D., UW-Madison.

Weidner, Edward W., Chancellor and Professor of Community Sciences; B.A., M.A., Ph.D., Minnesota.

Weidner, Jean B., Community Lecturer in Population Dynamics; B.S., Graduate Certificate in Social Work, Minnesota.

Wenger, Robert B., Associate Professor of Environmental Control; B.S., Eastern Mennonite; M.A., Pennsylvania State; Ph.D., Pittsburgh.

West, Patrick C., Assistant Professor of Regional Analysis; B.S., M.S., Minnesota.

Westphal, Joanne, Specialist and Lecturer in Population Dynamics; B.S., UW-Stevens Point; M.S., UW-Madison.

Whaley, Russell G., Professor of Communication-Action; A.B., Emerson College; Full Membership in United Scenic Artists, Yale.

White, Keith L., Professor of Ecosystems Analysis; B.S., UW-Madison; M.S., Montana; Ph.D., UW-Madison.

White, Rolfe E., Lecturer in Social Services; B.A., M.S.W., Case Western Reserve.

Wiersma, James H., Associate Professor of Ecosystems Analysis; B.S., UW-Oshkosh; M.S., Ph.D., Missouri-Kansas City.

Williams, Ralph M., Senior Lecturer in Managerial Systems; A.B., Ohio State; M.B.A., Indiana.

Williams, Schafer, Professor of Humanism and Cultural Change; A.B., A.M., Harvard; S.T.B., Harv. Div. School; Ph.D., California.

Witherell, Louise R., Professor of Humanism and Cultural Change; B.A., Toledo; M.A., Ph.D., UW-Madison.

Yarbrough, C. Jarrell, Jr., Associate Professor of Urban Analysis; B.A., Western Washington; M.A., Ph.D., Washington.

Zehms, Karl M., Assistant Professor of Managerial Systems; B.B.A., M.B.A., Ph.D., UW-Madison.

UNIVERSITY OF WISCONSIN GREEN BAY PROFESSIONAL STAFF

Allen, Orvis, Supervisor of Risk Management and Inventory; B.A., UW-Madison.

Aslakson, Charles T., Assistant Basketball Coach and Specialist in Intramurals and Recreation; B.S., M.A., UW-Madison.

Bach, Joseph W., Supervisor of Grounds.

Bachtell, Ivan C., Supervisor of Evening Services; B.A., Northwestern College.

Backes, Cyril, Director of Business Affairs and University Services; Oshkosh Business College.

Barry, Thomas E., Manager of Personnel and Payroll; B.S., UW-Eau Claire.

Bartlett, Dorma Z., Supervisor (Processing); B.A., Michigan; M. A., UW-Oshkosh.

Bauer, George R., Associate Director of Public Services; B.S., St. Norbert; M.A., M.L.S., UW-Madison.

Bellinghausen, Carol R., Supervisor (Acquisitions); B.A., Lawrence; M.A., UW-Madison.

Birmingham, Thomas J., Director of Lectures and Performances; B.A., Milton; M.S., UW-Madison.

Blecha, Laverne, Assistant (Nurse); R.N., St. Mary's School of Nursing.

Boehning, Karen S., Specialist (Assistant Catalog Librarian); M.A., UW-Milwaukee.

Brisson, Michael L., Specialist (Still Photography).

Brown, Betty D., Director of News Services; B.A., Milwaukee-Downer.

Bruss, Lyle R., Director of Facilities Planning; B.S., UW-Oshkosh; M.E., Illinois; Ph.D., UW-Madison.

Buss, David R., Head Basketball Coach and Specialist (Intramurals and Recreation); B.S., UW-Eau Claire; M.S., Winona State.

Cargile, Samuel D., Co-Coordinator of Ethnic Heritage Center and Counselor in Student Development Center; M.S., UW-Oshkosh.

Cator, Lavern W., Director of Security and Safety.

Cherry, John, Bursar; B.S., UW-Stevens Point.

Christie, Richard L., Director of Student Life Programs; M.A., UW-Madison.

Crandall, Eleanor J., Director of Publications; B.A., Iowa.

Davids, Roland A., Coordinator of Upward Bound; Diploma, Herald Engineering College.

Davis, Paul D., Director of Development; B.A., Middlebury; M.S., Columbia.

Dell, Virginia C., Assistant to the Director of Publications; B.J., Missouri.

Dhuey, Ronald A., Registrar; B.S., M.S., UW-Stout.

Ehr, Bruce M., Director of Placement and Career Counseling; B.S., Milton; M.S., UW-Madison.

Eichen, Henry, Head Soccer Coach; B.S., Springfield College; M.S., Columbia.

Eichten, Paul J., Media Specialist; B.A., St. Norbert.

Engelman, Marge A., Director of Adult Education; B.A., Illinois Wesleyan; M.A., Northwestern; M.S., UW-Madison.

Erickson, Marjorie, Assistant to the Supervisor of Day Care Center; B.A., UWGB.

Erwin, Linda Ann, Specialist (Lectures and Performances.)

Gajewski, Laurine, Specialist (Lectures and Performances); B.A., UWGB.

Garofalo, V. James, Chairperson and Specialist (Skills Learning Program); B.A., Albright; M.A.T., Colgate; Ph.D., Syracuse.

Gaunt, Joseph H., Coordinator of Media Library and Distribution Services; B.A., American University.

Glaaser, Eduard, Director of Computer Services; B.A., UW-Madison.

Goltz, Robert C., Supervisor of Graphic Arts; Diploma, Layton.

Gries, Philip R., Film Photo Specialist, B.A., City College of New York; M.F.A., UCLA.

Hammerle, Carol A., Specialist (Intercollegiate Athletics, Intramurals and Recreation, and Physical Education); M.S., Northern Michigan.

Hanson, Thomas L., Technical Theater Specialist and Lecturer, Communication-Action; B.S., UW-Oshkosh; M.A., Indiana.

Hartley, Allan C., Specialist (Educational Development); B.S., Tufts; M.S., Syracuse; Ph.D., Iowa.

Hensen, Paul J., Counselor (Admissions and Orientation); M.S., UW-Oshkosh.

Higgs, Larry Y., Specialist (TV Producer); M.F.A., UCLA.

Hill, Norbert S., Jr., Coordinator of Special Services Project; B.S., M.S., UW-Oshkosh.

Hillman, Richard M., Counselor (Admissions and Orientation); M.A., Michigan State.

Hitchcock, Anabelle L., Specialist (FM Radio Supervisor) B.A., Wheaton; M.A., UW-Madison.

Kane, Constance, Reading Specialist, Skills Learning Program; B.S., Western Michigan.

Kaufman, Susan, Sports Information Director; B.A., Marquette.

Kemler, John L., Specialist (Visual Design); B.S., Western Michigan.

Kiefer, F. Irene, Assistant to the Director of News Services.

Krueger, Mary M., Assistant to the Supervisor of Day Care Center; B.A., UW-Whitewater.

Kuebler, James H., Specialist (Facilities Management and Analyst); B.S., Illinois.

Kundinger, Elizabeth R., Counselor (Admissions and Orientation); M.S., UW-Oshkosh.

Ladowski, James E., Specialist, (Assistant Coordinator for Systems Programming); B.A., UWGB.

Lautenbach, Kenlyn, Personnel Technician; B.A., Western Michigan.

Layton, Emmet J., Specialist (Landscape Architect); B. Arch., M.A., Washington (St. Louis).

Lebergen, Susan J., Specialist (News Services); B.A., UWGB.

Lemke, Rolland E., Associate Registrar; B.S., M.S., UW-Oshkosh.

Maclean, Thomas R., Specialist (Conferences, Seminars and Workshops); B.A., UWGB.

Mach, Gary W., Chief Engineer and Coordinator of Electronics Design.

MacKay, Coral Lee, Specialist (Academic Advising); B.A., Carroll.

Maes, Richard H., Purchasing Agent; B.S., St. Norbert.

Maki, Jacqueline, Writing Specialist, Skills Learning Program; B.A., Michigan State.

Mancoske, Marcella M., Assistant to the Registrar (Data Processing and Registration); B.A., St. Norbert.

McIntyre, William J., Assistant to the Director of Summer Sessions; B.S., UW-Madison.

Metz, T. John, Director of Library; B.A., Heidelberg College; M.A., Miami; A.M.L.S., Michigan.

Mommaerts, Barbara H., Assistant Director of Placement and Career Counseling; B.S., UW-Oshkosh.

Moore, John D., Specialist (Production Design).

Morales, Lupe, Counselor, Special Services; B.A., Indiana; M.S.W., Washington (St. Louis).

Neukum, Laurence J., Specialist (Production Assistant); B.S., SUNY College at Oneonta.

Niquette, Paul, Manager of University Purchasing; B.B.A., UW-Milwaukee.

Novak, Robert M., Coordinator of Community Relations Programs; B.S., UW-Oshkosh; M.A., Northern Michigan.

O'Brien, Lee D., Director of Educational Communications; B.A., Michigan State.

Olson, Gerald H., Director of Student Services, Admissions and Orientation; B.S., UW-LaCrosse; M.S., UW-Madison.

Olson, Marcia J., Counselor (Student Development Center) M.A., Minnesota.

Otto, Paul A., Specialist (Architecture); B.A., Kansas State.

Pankratz, Michael J., Specialist (Electronics Design); B.A., UWGB.

Parsons, Dorothy S., Supervisor, Day Care Center; B.A., UCLA.

Peloquin, Albert A., Specialist (Engineer/Draftsman) A.A., International Coorespondence School; B.S., UWGB.

Peterson, Harry L., Assistant Director of Student Life Program; B.A., San Diego State; M.S.W., UC-Berkeley.

Phelps, Edward J., Supervisor of Building Maintenance.

Prechter, Keith J., Assistant (Academic Budget); B.B.A., UW-Madison.

Pritchard, Robert M., Supervisor of Student Employment; B.S., UW-Milwaukee.

Quigley, Timothy R., Program Consultant-Specialist.

Radtke, Kenneth E., Chief Accountant; B.B.A., UW-Milwaukee; C.P.A.

Raduenz, Les R., Assistant Director of Physical Plant; B.S., UW-Madison.

Remick, Mary L., Assistant to the Registrar (Senior Summary); B.A., UW-Madison.

Rheinschmidt, Alan, Manager of University Services; B.A., UW-Milwaukee.

Ripp, Michael J., Specialist (Electronics Design); B.S., UW-Madison.

Ruthmansdorfer, Kurt D., Coordinator of Academic Computing; B.S., UW-Madison.

Schelter, John W., Coordinator of Systems and Programming.

Schlesinger, Phyllis, Specialist (Program Adviser for University Without Walls); B.A., Brown, M.S.T., UW-Oshkosh.

Schott, Robert J., Supervisor of Operations.

Scriven, Bill, Supervisor, Ethnic Heritage Center; B.S., UWGB.

Sink, Robert H., Specialist (TV Producer).

Smith, Bonni L., Specialist (Program Adviser for University Without Walls); B.A., Oklahoma State; M.A., Roosevelt.

Smith, Lynn C., Specialist (Academic Advising); B.S., Purdue; M.S., Indiana.

Spille, Henry A., Assistant Dean of the Colleges and Director of Academic Assistance Programs; B.S., Lawrence; M.S., UW-Madison.

Sprague, Oliver J., Superviser of Heating-Chilling Plant.

Spurlock, Arthur E., Assistant Chancellor for Administrative Services; B.S., Union College; M.S., Tennessee.

Starks, Bernard G., Specialist and Lecturer in Physical Education and Chairperson of Physical Education Program; B.S., UW-Eau Claire; M.S., UW-Madison.

Stein, Gordon, Chairperson and Specialist (Academic Advising), B.S., Kansas; M.A., UW-Oshkosh.

Stiller, Ann, Assistant to the Registrar (Credit Evaluation); B.S., UW-Madison.

Stoner, Barry, Specialist (TV Producer); Master of Divinity, Lutheran School of Theology.

Tadyshak, Greg S., Specialist (Electronics Design).

Taylor, Robert L., Associate Director of Technical Services; B.A., UW-Madison; M.A.L.S., UW-Milwaukee

Thomas, Dean, Specialist (Audio Production).

Thompson, Rodney L., Associate Director of Admissions and Orientation; B.A., UW-Whitewater.

Torrey, Jan, Chief Telephone Operator.

Thulin, Dennis S., Assistant to Director of Publications.

Unmus, Donna M., Assistant to the Supervisor of Day Care Center; B.S., UWGB.

Vanderperren, Roger J., Coordinator of Audio Production; B.S., UW-Madison.

Van De Ven, Myron J., Acting Director of Financial Aids and Student Employment; B.A., St. John's University; M.Ed., Wyoming.

Van Pee, James L., Account Specialist, Auxiliary Services; B.S., UWGB.

Van Price, Philip, Program Adviser, University Without Walls; B.S., UWGB.

Von Hoff, Timothy K., Specialist (Media).

Warford, Jean C., Assistant Director of Admissions and Orientation; B.A., Sacramento; M.A., Michigan State.

Weidner, Beatrice R., Supervisor of Health Service; R.N., St. Mary's School of Nursing.

Wessel, Frederick P., Supervisor of Cinematography; M.A., Columbia College, Chicago.

Williams, Arthur J., Specialist, (Electronics Design).

Winkler, Howard, Specialist (Audio Production); A.B.J., Georgia.

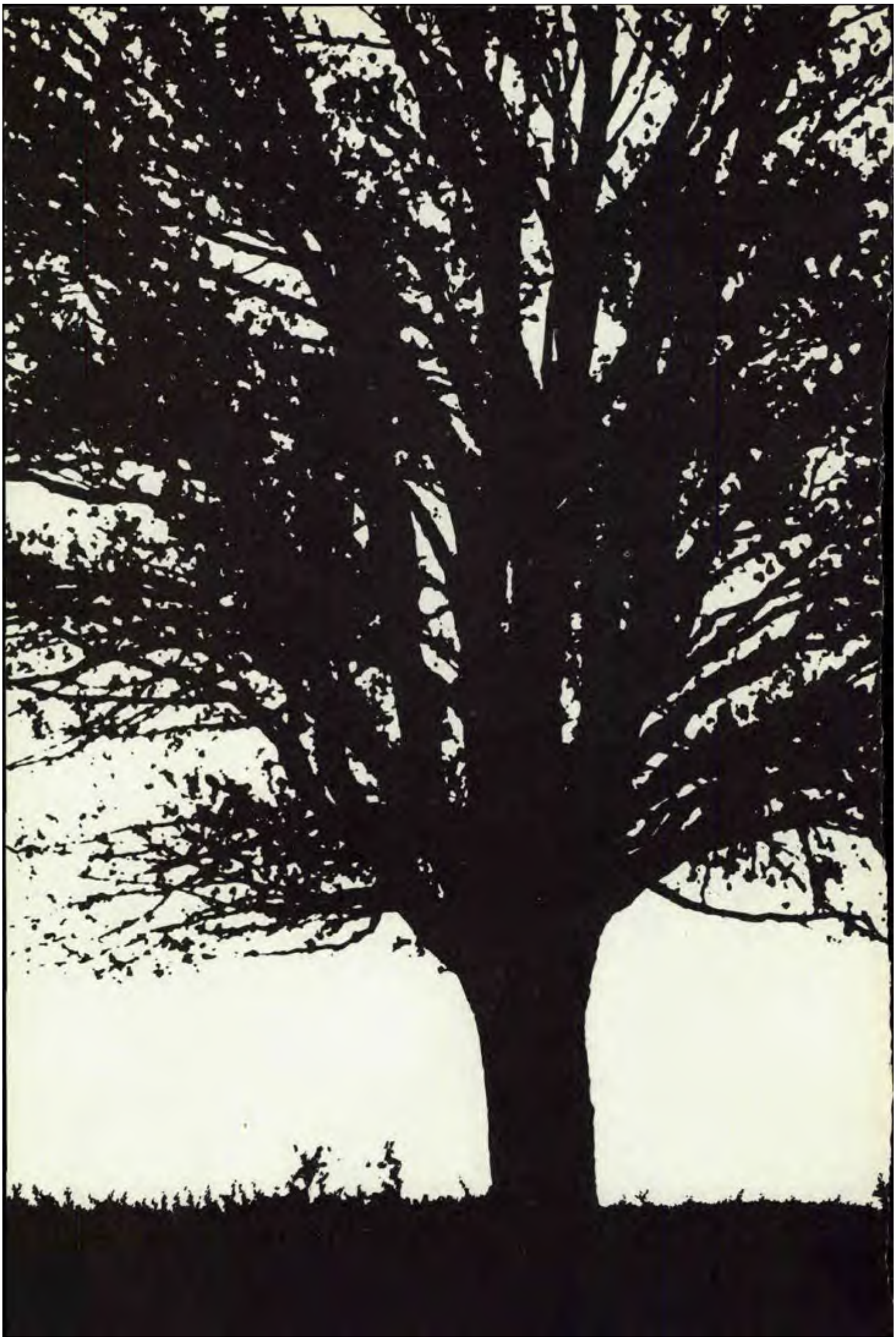
Winzenz, Karon E., Specialist (Interior Design); M.S., UW-Madison.

Wiseman, Charles L., Accountant; B.S., Southeast Missouri State.

Zeitler, Gerhardt J., Supervisor of Grounds.

Zinkl, Andrew R., Specialist (Assistant Reference Librarian); M.A., Creighton; M.A.L.S., UW-Milwaukee.

Zipperer, James E., Special Assistant to the Chancellor; B.A., UWGB.



Appendices

UWGB GRADUATION REQUIREMENT CHART

Incoming Freshmen

Liberal Education Seminar
Freshman year—all-university program, 6 credits.

Intermediate years—includes preparation for and execution of off-campus problem study, 9 credits.

Senior year—all-university program, 3 credits.

Preparation for Concentration
Freshman-Sophomore requirements or recommendations. (3 to 23 credits, depending on concentration)

Major
Concentration—30 credits OR
Concentration-Option—36 credits.
(Must be Junior and Senior level courses)

Tool Courses
Each concentration determines the lower level (freshman or sophomore) communication and/or background, preparatory courses appropriate to it and the individual student (usually 1 to 4 courses, 3 to 12 credits).

Distribution Courses
Minimum of 5 credits (usually 2 courses) from each of the four theme colleges (20 to 24 credits).

Electives
General—free choice (30 to 50 credits).

January Special Studies programs, 0-12 credits, maximum of 4 credits per year.

Additional Possibilities
Collateral—professional course work (social services, teacher certification, etc.) 18-29 credits.

Cognate—a requirement only for the Managerial Systems concentration.

124 Credits Needed for Graduation

Bachelor of Science or Bachelor of Arts in Environmental Sciences or Human Biology or Creative Communication or Community Sciences or Administration

MAJORS AND MINORS AT THE UNIVERSITY OF WISCONSIN-GREEN BAY

CONCENTRATIONS (MAJORS)

Communication-Action
Ecosystems Analysis
Environmental Control
Growth and Development
Human Adaptability
Humanism and Cultural Change
Managerial Systems (Accounting, Administration, Finance, Marketing, and Personnel Management)
Modernization Processes
Nutritional Sciences
Population Dynamics
Regional Analysis
Urban Analysis
Personal Concentration

INTERCONCENTRATION PROGRAMS

Design Processes and Environmental Problems
Environmental Health Sciences

OPTIONS (CO-MAJORS)

Anthropology
Biology
Chemistry
Communication Processes (Speech, Photography, Media)
Earth Science (Geology)
Economics
Geography
History
Literature and Language (English-American, French, German, Spanish, and Creative Writing)
Mathematics
Medical Technology
Performing Arts (Dance, Music, Theater)
Philosophy
Physics
Political Science
Psychology
Sociology
Visual Arts

COLLATERALS (PROFESSIONAL MINORS)

Education
(preschool, elementary and secondary teacher certification—see teaching majors and minors)
Environmental Administration
(business and public administration)
Social Services

TEACHING MAJORS AND MINORS

Early Childhood Education
(certification to teach nursery and/or kindergarten)
Elementary Education
General certification: K-6*, 1-6*, 4-8*
Special Subject Area Certification: Art*, Music
Secondary Education
Art*
Athletic Coaching (special certification program)
Biology
Chemistry
Broad Field Communication Arts
(certification to teach English plus area of emphasis, i.e., drama, foreign language, media [journalism], speech)
Conservation (minor only)
Earth Science
English
Foreign languages (French, German, Spanish)
Geography
History
Mathematics
Mathematics, computer emphasis
Music (instrumental or choral) *
Physics
Broad Field Environmental Science*
(certification to teach general science plus area of emphasis, i.e., anthropology, economics, geography, history, political science, psychologyy, sociology)
General Science*
Broad Field Social Studies*
(certification to teach general social studies plus area of emphasis, i.e., anthropology, economics, geography, history, political science, psychology, sociology)
K-12 Specialist Programs
Art*
Music*
Reading (special certification program)

*Offered as teaching major only. Others are offered both as majors and minors, except where noted.

DUAL DEGREE PROGRAMS

Engineering
Nursing
Pharmacy

PREPROFESSIONAL PROGRAMS

Agricultural Science
Architecture
Dentistry
Engineering
Home Economics
Law
Medicine
Nursing
Pharmacy
Social Work
Theology
Veterinary Medicine

Calendar*

Fall Semester	**1974-75**	**1975-76**	**1976-77**
Registration and new student period (or register by mail earlier)	*Aug. 26-29*	*Aug. 25-28*	Aug. 30-Sept. 2
Classes begin	Sept. 3	Sept. 2	Sept. 7
Thanksgiving recess	Nov. 28-Dec. 1	Nov. 27-30	Nov. 25-28
Classes end	Dec. 11	Dec. 10	Dec. 15
Final examinations	Dec. 12-18	Dec. 11-17	Dec. 16-22
Commencement	Dec. 15	Dec. 14	Dec. 19
Holiday recess	Dec. 19-Jan. 5	Dec. 18-Jan. 4	Dec. 23-Jan. 2
January Interim Period			
Begins	Jan. 6	Jan. 5	Jan. 3
Ends	Jan. 31	Jan. 30	Jan. 28
Spring Semester			
Registration and new student period (or register by mail earlier)	*Jan. 27-30*	*Jan. 26-29*	Jan. 24-27
Winter recess	Feb. 1-9	Jan. 31-Feb. 8	Jan. 29-Feb. 6
Classes begin	Feb. 10	Feb. 9	Feb. 7
Spring recess	Mar. 29-April 6	April 17-25	April 9-17
Classes end	May 23	May 21	May 20
Final examinations	May 27-31	May 24-29	May 23-28
Commencement	May 24	May 22	May 21
Summer Session	**1975**	**1976**	**1977**
Registration and new student period (or register by mail earlier)	June 5-6	June 3-4	June 2-3
Classes begin	June 9	June 7	June 6
Independence Day (holiday)	July 4		July 4
Classes end (finals)	Aug. 1	July 30	July 29

*These dates may be subject to change. Consult the most recent *Timetable* to double check dates.

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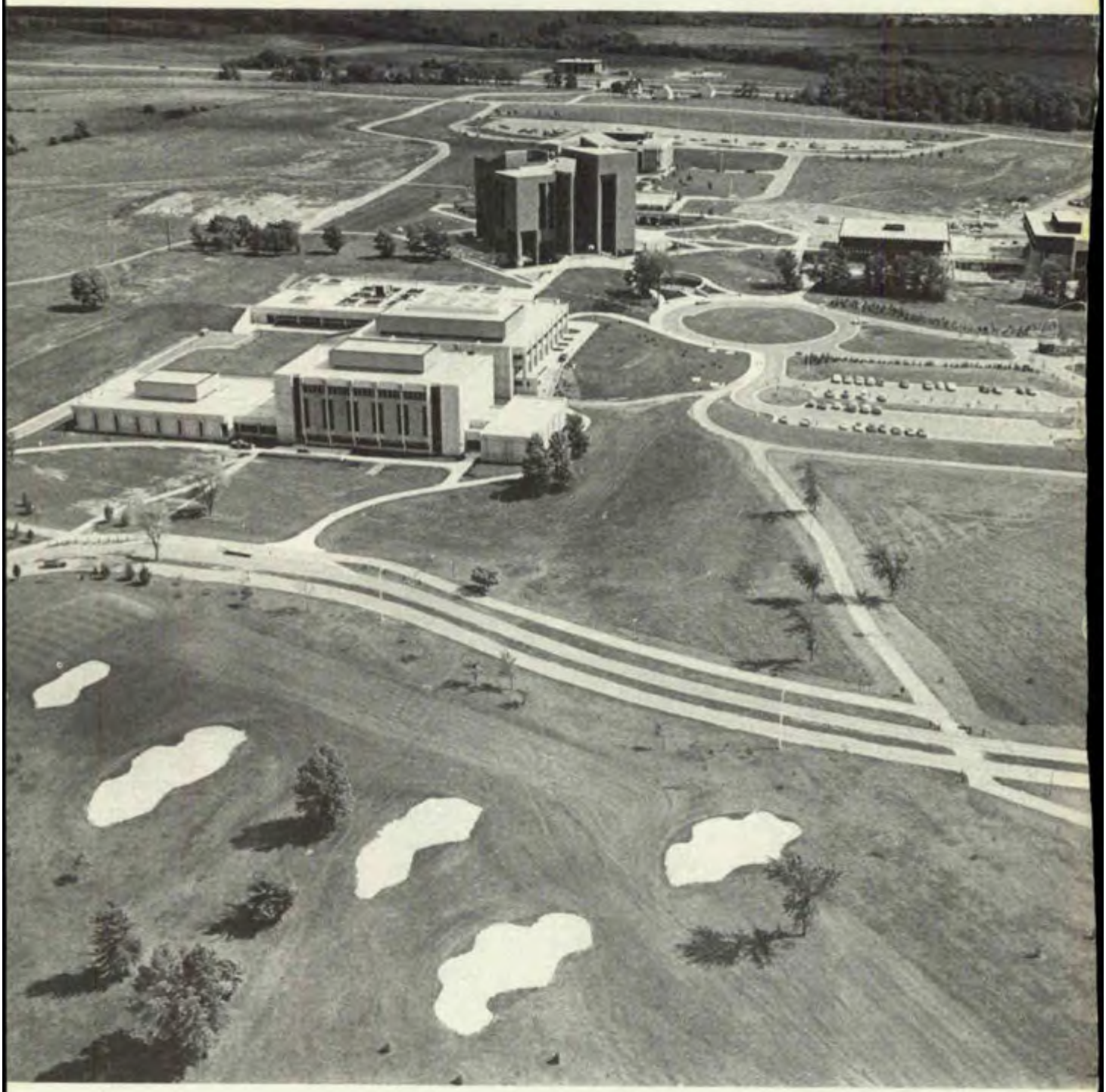

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