

University of Wisconsin-Green Bay

## UWGB GRADUATION REQUIREMENT CHART

Flow chart of general requirements for the bachelor's degree from the  
University of Wisconsin-Green Bay

### Incoming Freshmen

#### **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  
January Special Studies programs, 0-12 credits, maximum of 4 credits per year

#### **Additional Possibilities**

*Collateral* — professional course work (social services, teacher certification, etc.) 18-27 credits  
*Cognate* — a requirement only for the Managerial Systems concentration

#### **Liberal Education Seminars**

Freshman year — all-University program, 6 credits

Sophomore year — theme college seminar which includes local off-campus individual problem study, 6 credits

Junior year — theme college seminar which includes other culture individual problem study, 6 credits

Senior year — all-University program, 6 credits

#### **Theme College and Concentration**

Freshman-Sophomore requirements or recommendations

#### **Theme College Major**

Concentration — 30 credits *OR*  
Concentration-Option — 36 credits  
(Must be Junior and Senior level courses)

124 credits needed for graduation

Bachelor of Science or Bachelor of Arts

in

Environmental Science or Human Biology or Creative Communication  
or Community Sciences or Administration

**MAJORS AND MINORS  
AT THE UNIVERSITY OF WISCONSIN-GREEN BAY**

**CONCENTRATIONS (MAJORS)**

Analysis-Synthesis  
(humanistic studies and social change)  
Communication-Action  
Ecosystems Analysis  
Environmental Control  
(air, water, and soil quality; water resources)  
Growth and Development  
Human Adaptability  
Managerial Systems  
(accounting, finance, business and public administration, marketing, management)  
Modernization Processes  
Nutritional Sciences  
Population Dynamics  
Regional Analysis  
(regional planning and development)  
Urban Analysis  
(urban planning and development)

**OPTIONS (CO-MAJORS)**

Anthropology  
Biology  
Chemistry  
Communication Sciences  
(speech, photography, media)  
Earth Science  
(geology)  
Economics  
Geography  
History  
Literature and Language  
(English-American, French, German, Russian, Spanish, creative writing)  
Mathematics  
(computer science)  
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)

Leisure Sciences  
Mass Communications  
Social Services

**TEACHING MAJORS AND MINORS**

Early Childhood Education  
(certification to teach nursery and/or kindergarten)  
Elementary Education  
General certification: K-4\*, 1-4\*, 4-8\*  
Art: elementary teaching major\*, K-12\*  
Music  
Secondary Education  
Art\*  
Biology  
Chemistry  
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., biology, chemistry, earth science, physics)  
Broad Field Social Studies\* (certification to teach general social studies plus area of emphasis, i.e., anthropology, economics, geography, history, political science, psychology, sociology)

**DUAL DEGREE PROGRAMS**

Engineering  
Nursing

**PREPROFESSIONAL PROGRAMS**

Agricultural Science  
Architecture  
Dentistry  
Engineering  
Home Economics  
Law  
Medicine  
Nursing  
Pharmacy  
Social Work  
Theology  
Veterinary Medicine

\*Offered as teaching major only. All others are offered both as majors and minors.

## FOR MORE INFORMATION

Inquiries about the University of Wisconsin-Green Bay are welcomed and should be directed to the appropriate office. The address is the University of Wisconsin-Green Bay, Green Bay, Wisconsin 54302.

### **Admission Information, Residency, Credit Evaluation**

Office of Admissions  
414-465-2111

### **Brochures, Applications, Catalogs, Campus Visits, General Information**

Office of Admissions Advising  
414-465-2141

### **Housing**

Office of Housing  
414-465-2400

### **Scholarships and Other Financial Aids**

Office of Student Financial Aids  
414-465-2075

### **Student Records, Transcripts**

Office of the Registrar  
414-465-2055

### **Academic Advising**

Office of Academic Advising  
414-465-2362

### **Counseling and Testing**

Student Development Center  
414-465-2343

## EFFECTIVE DATES FOR THIS CATALOG

Students registered during the summer of 1972 or during the 1972-1973 academic year at one of the UWGB campuses may elect to graduate either under the requirements outlined in the 1972-1973 catalog or those in the present document. New or transfer students who first register at a UWGB campus during the summer of 1973 or later must meet the requirements as set forth in this catalog.

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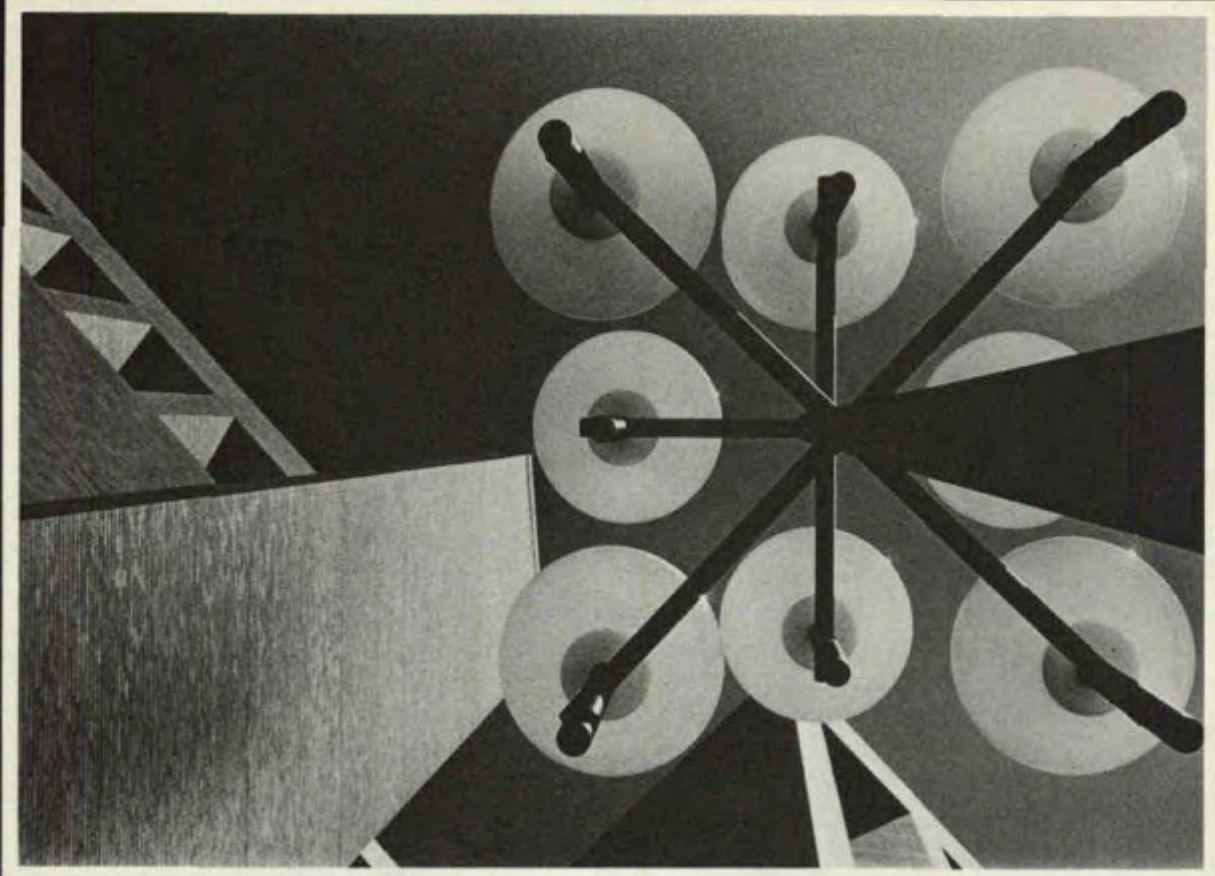
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Introduction to the Campus and Community

## INTRODUCTION

The University of Wisconsin-Green Bay (UWGB) is one of the few universities in the world with a focus for all of its activities. That focus is man in his environment. Whether in teaching, research, or community outreach, the aim is to help student, instructor, and community member relate more effectively to, and do something constructive about, the environment.

All of the courses necessary for basic preparation for a wide variety of professional, business, administrative, and technical careers are available at UWGB. What makes UWGB different and distinctive is the fact that its courses are presented in the context of a unique academic plan. This plan relates study in all fields to problems of man's various environments. Thus the UWGB graduate, whatever his chosen vocation, is unusually well prepared to deal with the greatest challenge facing his world.

Even a casual visit to the UWGB campus discloses that this is a new and growing institution. The first three academic buildings were opened in the fall of 1969. Construction activity has been continual since that time, with major buildings or building complexes being scheduled for completion at approximate two-year intervals. Opening early in 1972 was the eight-story Library-Learning Center, the physical and academic center of the new campus. Scheduled for occupancy before the end of 1974 are five more buildings of the academic core.

Meanwhile, other facilities have been developed in line with the physical master plan: a student union and food service building, permanent heating plant, soccer field, nine-hole golf course (adapted from a former eighteen-hole private course), tennis courts and playing fields for other sports, and privately-owned student apartments. Awaiting final legislative authorization is a physical education building featuring a large gymnasium and a swimming pool.

More important than the newness of the buildings, however, is the fresh concept of higher education that is being developed in and around them. The idea of an entire curriculum focused on problems of the environment has gained attention from journalists and educators around the world and is attracting students and faculty members from all sections of the country.

The UWGB story began in 1965 with authorization by the Wisconsin legislature of a new degree-granting campus of the University of Wisconsin to serve particularly the north-eastern area of the state. Subsequently it was determined that this new institution should be comprised of the existing two-year campuses of the UW Center System in Green Bay, Manitowoc, Marinette, and Menasha. A four-year curriculum and a new site would be provided for the Green Bay campus. The three other campuses would remain at their established locations and continue at the two-year level.

This concept became the basis for three years of intensive planning under the leadership of Chancellor Edward W. Weidner. The result was a coordinated academic-physical master plan, the physical plan being adapted to a superb 600-acre site sloping up from the waters of Green Bay to the limestone ridge of the Niagara Escarpment.

In the fall of 1971, the legislature enacted a university merger bill bringing together in a single University of Wisconsin System all of the state's 13 degree-granting campuses. One result of that bill was to detach from UWGB the two-year campuses at Marinette, Manitowoc, and Menasha and return them to the UW Center System. These three campuses, however, continue to maintain cooperative relationships with UWGB.

Enrollment at Green Bay has been growing at the average rate of approximately 400 students a year and is projected to exceed 6,000 by 1980. There has been a steady increase in the proportion of students enrolling from out of the region and out of state, reflecting widespread interest in the university and its academic plan by state and national media. UWGB, in fact, has become known throughout the world and each year welcomes dozens of visitors from universities and government agencies in the U.S. and abroad.

It is the UWGB academic plan, primarily, that attracts these visitors. Under this plan, each student at UWGB builds his program around a broad problem of the physical or social environment, rather than a standard disciplinary area. He may take courses in a variety of fields—as in a traditional university—but he must relate the knowledge he acquires in those courses to the environmental problem he has chosen for the focus of his study.

The problem may be related to man's use of the natural environment, such as environmental control, or to the impact of the environment on man, such as human growth and development. It may be a problem that man faces in the social environment, such as urban development, or the processes of modernization. The UWGB faculty have identified 12 broad problems such as these as areas of concentration. The student chooses one of these concentration areas as his major. Within his concentration major, he may select a single subject field, such as chemistry, or political science, 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.

Three basic principles undergird the UWGB academic plan:



problem orientation, social responsibility, and integration of knowledge. Several distinctive program elements have evolved from these principles: an orientation emphasizing the present and future instead of the past; flexibility and student initiative in curriculum development; off-campus learning in the "real world" of Northeastern Wisconsin through community action and practical experience; the study of environmental problems in another culture; education for responsible employment and citizenship; and a close relationship between students and instructors.

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 mature role in society, these may seem to be "impractical" objectives. But the opposite is true.

With rare exceptions, it is a mistake for a young person just starting college to feel that he must make a definite and permanent decision on his vocational plans. There are still too many exciting career possibilities he has never considered, or of which he is only dimly aware. Furthermore, during his lifetime career fields will open up that are not now apparent to anyone. Finally, experience shows that many educated persons today engage in several different careers in the course of their lives.

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 physical and social sciences can be found in the course lists. There is much that is familiar at UWGB, but there is also much that is new.

Chancellor Weidner has commented on the blending of the traditional and innovative at UWGB in these words:

"There are basic intellectual skills that must be mastered by every person who is going to be a responsible citizen of any modern society. Beyond these basic skills, there are specialized skills that must be mastered by many of our citizens. The question of critical social importance, and the one to which the UWGB academic plan particularly addresses itself, is how each individual chooses to use the skills he acquires.

"More than ever before our country and the world need citizens who are committed and dedicated to improving the lot of mankind on the planet Earth. At UWGB we are seeking to inspire in all of our students a lifelong attitude of concern for the environment, its preservation, and its improvement. For we are dealing not merely with the threat of occasional inconvenience and discomfort, but with the threat



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Introduction

of catastrophic alterations in the entire life system of our planet. To keep this threat from becoming a reality poses the greatest challenge that has ever been faced by human intelligence."

## **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 1973-74 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 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 a curriculum of three freshman courses taught in rented classrooms, the center grew to a campus of more than 1,000 students by the time it became integrated in 1968 with the new four-year university. The building occupied by the former center, constructed in 1960, continues in use as the UWGB Deckner Avenue Building.

Ground was broken in November, 1967, for the new four-year campus. The first three buildings, opened in 1969, were designed as a permanent home for the College of Environmental Sciences and for temporary use by all of the colleges. The eight-story Library-Learning Center was occupied early in 1972, with six floors devoted to library functions and two to offices for faculty and administrative staff. This building will remain the architectural as well as the academic hub of the campus, with the buildings of the four colleges grouped around it.

Development of the campus continues with the construction of buildings for the College of Creative Communication, scheduled for completion in the fall of 1973, and for the College of Community Sciences, to be occupied in 1974. The

former complex will house a 450-seat theater, studios for the visual and performing arts, and classrooms and offices providing new quarters for many of the activities now carried on at the Deckner Avenue Building. A fourth complex will be built later for the College of Human Biology to complete the "academic core" of the University's master plan.

Other facilities have been constructed to complement the academic buildings. On the former site of the Shorewood Country Club, near the north boundary of the campus, are three student activities buildings: the Shorewood Club, with lounge and game room; the Shorewood Club Annex, containing a cafeteria and dining room that converts into an informal facility for meetings and social events, and the Student Organizations Building. Adjacent is the nine-hole UWGB Shorewood Golf Course, rebuilt from an 18-hole layout previously located in the area.

On-campus athletic facilities include, besides the golf course, a soccer field, with team rooms and spectator areas for one of the University's major intercollegiate sports; six tournament-size, color-surfaced tennis courts, and baseball and softball diamonds. A physical education building, now being planned, will provide a swimming pool and a gymnasium and related spaces for the intramurals programs, which is presently centered in a gymnasium at the Deckner Avenue Building. Varsity basketball games, against major collegiate opponents, will continue to be played at the Brown County Veterans Memorial Arena on the southwest side of Green Bay.

Three additional buildings lie near the periphery of the campus. A former farmhouse on the east side of Highway 54-57 provides office and shop space for operation of the physical plant; on the west side of the highway, a Utility Control Center dispenses electric power, heat, and air conditioning to the entire campus through an underground distribution system. Near the southwest entrance, on the bay shore, is the Human Development Center. Housed in a renovated summer cottage, the center operates a preschool that serves as a training and observation facility for students in growth and development and early childhood education. Other University-owned parcels along the shore have been cleared of deteriorating buildings and left to return to a natural state, with the exception of a few sites developed as public picnic areas.

A drive that circles the campus is accessible from four entrances on the west, north and east. Connecting auto roads lead to parking lots in various areas and to adjacent private facilities that are integral to campus life; the Bay Apartments, where more than 500 resident single students live in one-and two-bedroom units, and the Ecumenical Center, headquarters for an interfaith campus ministry supported by Northeastern Wisconsin churches.

Pedestrian and bicycle paths link central buildings and outlying areas, and connect at the southwest entrance of the campus with a three-mile bicycle path constructed by the city. Running south along the shore road, the bicycle trail terminates at the Bay Beach wildlife sanctuary and recreation area.

Construction planned for the next few years includes a new University union and dining area near the academic buildings,

on-campus housing for single and married students, a new building for physical plant, central receiving and central stores, and a trail and arboretum system around the campus periphery.

## THE COMMUNITY

The UWGB campus is just a few miles from the spot where Jean Nicolet stepped from his birch bark canoe in 1634 to become the first white man in recorded history to set foot in what was later to be Wisconsin.

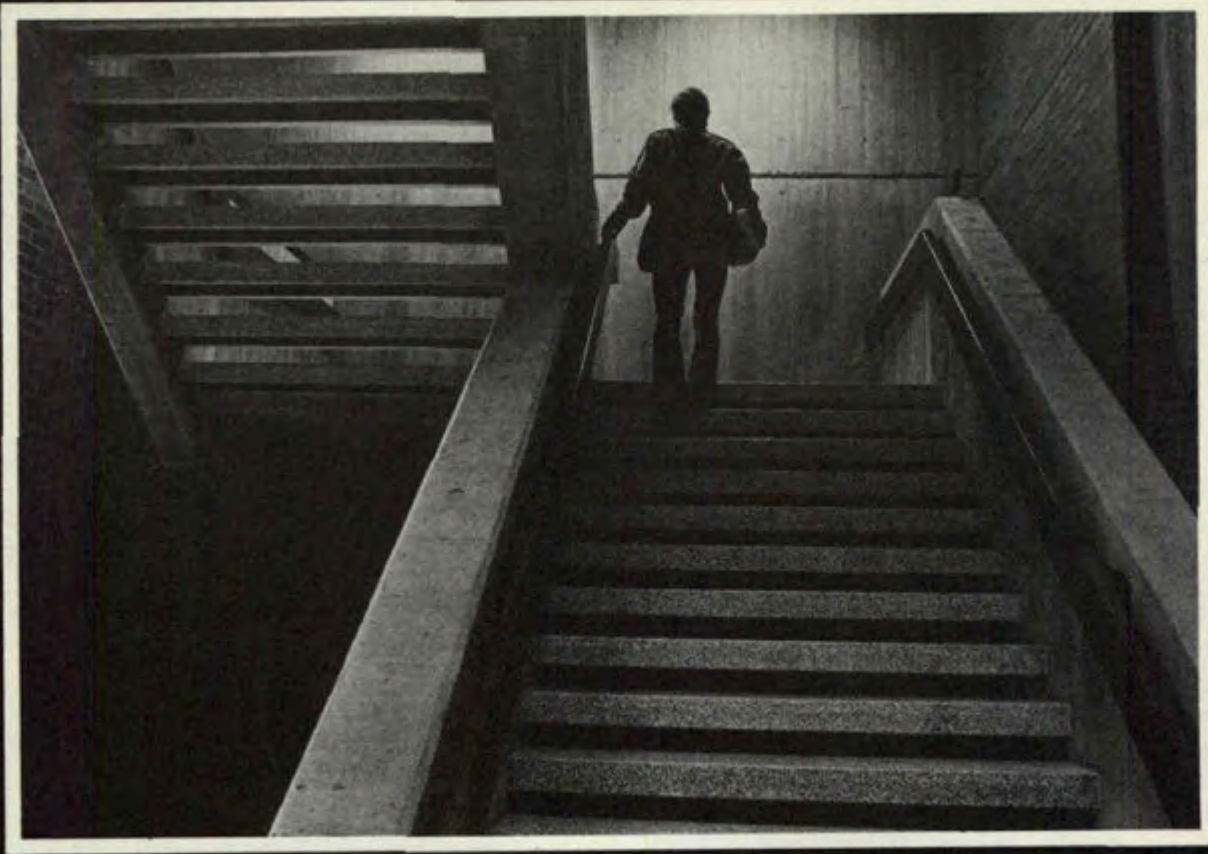
Nicolet's mission for the French government in Quebec was to pacify the Indians, expand the fur trade, and investigate a possible route to the Orient. He was soon followed by fur trappers and missionaries who settled at the mouth of the Fox River, giving Green Bay claim to being the oldest community in Wisconsin.

As fur trading gave way to lumbering, the French settlers made room for new immigrants. Germans, Belgians, Dutch, and Scandinavians came to farm and to work in the developing paper industry. Green Bay's strategic location dictated its early and continuing development as a trading center connecting the Fox-Wisconsin waterway with the Great Lakes and the world beyond. Railways, highways, and airlines have increased the importance of trade, and Great Lakes shipping now brings vessels from around the world to the port of Green Bay.

The manufacture of paper products continues to be Green Bay's largest industry. Other important economic activities include cheese processing; the storage and processing of food; and the manufacture of such diverse items as clothing and sheet metal, mittens and auto parts, concrete products and mattresses, and office furniture and power shovels.

Enhancing the social, recreational, and cultural life of the community are such organizations as the Green Bay Symphony Orchestra, Green Bay Community Theater, Civic Music Association, and, for sports fans, the Green Bay Packers football team and the Green Bay Bobcats hockey team. Community resources include three hospitals, a growing public library system, churches representing every major denomination, one daily and four weekly newspapers, four television stations, three radio stations, and excellent YMCA and YWCA facilities. The area supports several business colleges and the publicly-supported Northeast Wisconsin Technical Institute. St. Norbert College, a coeducational Catholic-sponsored, liberal arts college, is in nearby DePere.

Green Bay is at the center of a popular outdoor recreation area. Lake Michigan and the Door Peninsula to the east and northeast, the Fox River valley to the south, and quiet wilderness streams and woods of North Central Wisconsin to the west and the waters of Green Bay at its doorstep attract visitors from many states. The city's 35 parks and playgrounds offer more than 630 acres of recreational space to residents as well as tourists.



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 for the student, but he also participates in a variety of activities outside the classroom, both on the campus and in the community, that are designed to enrich his educational experience.

The four colleges of UWGB are organized around environmental themes rather than according to traditional disciplines. They are the College of Environmental Sciences, the College of Human Biology, the College of Community Sciences, and the College of Creative Communication. 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 selects an option, or co-major, along with a concentration. He 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 his 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 expects to major at the beginning of his sophomore year. By the time he is a junior he should have selected his concentration or concentration-option and his professional collateral, if he plans to pursue one.

## **THE COLLEGES AND SCHOOL**

### **The College of Community Sciences**

The College of Community Sciences (CCS) offers programs focusing upon the role of man in the social environment and

the processes by which he modifies 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 man is a being of many environments, his education should not confine him to a limited view of himself. Man is not only a social creature and an ecological organism, but he is also a seeker after aesthetic, intellectual, and spiritual fulfillment. Although it behooves man to accept the limitations and challenges of his animal ancestry, he 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. For the sake of religious and political man we have exterminated each other. For the sake of economic and technological man 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 Analysis-Synthesis and Communication-Action.

### **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. The student choosing one of these concentrations takes courses that provide the basic knowledge in science which is essential for comprehension of today's world.





### **The College of Human Biology**

The programs of the College of Human Biology (CHB) are concerned with the theme of man in relation to his environment. Alone, and in populations, man is subjected to many stresses — both biological and behavioral — that can lead to extensive and serious problems. Often under conditions of overcrowding and malnutrition, he must strive for healthy and meaningful growth and development. Of utmost concern is the ability of man 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 five 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, mass communications, 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

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.

### **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 needs — he may design a major of his own 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 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. The student who selects this type of major is required to complete 30 credits of junior-senior level courses (which, at the discretion of the individual concentration, may include the junior liberal education seminar) that reflect an interdisciplinary focus on an environmental problem. The student should seek the aid of a concentration adviser in planning his program.

### **Choice 2 — The Concentration-Option**

The student who wishes to combine his 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. His program must be approved by both the concentration adviser and the option chairman.

He normally is required to take 36 credits related to his concentration-option at the junior-senior level. At least 12 of these credits must be in the concentration and may include junior LES, at the discretion of the concentration advisers. 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 option to complement his Environmental Control concentration. Similarly, a student might supplement his 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 his 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 interests direct him toward a problem which is not represented adequately in any single concentration. Such a student may elect to design an individual program in the spirit of the UWGB academic plan. Such a program must consist of a minimum of 30 credits at the junior-senior level organized around a clearly defined environmental problem.

Normally a personal major includes at least 12 credits drawn from the advanced course offerings of two or more concentrations and a three-credit directed study course during the senior year aimed at integrating the student's work. The remaining credits are selected to carry out the theme with which the student is concerned. Such programs are administered through the Office of the Dean of the Colleges.

A student who wishes to develop a personal major should consult an associate dean of the colleges, who will aid him in devising a preliminary proposal and identifying an appropriate personal adviser. The student then works with the adviser to develop his program in detail, after which it is submitted by special petition to the dean of the colleges for final approval.

Personal majors usually combine course work and independent study taken under the sponsorship of any of the theme colleges or the School of Professional Studies, so long as they express the major academic concerns of the University: interdisciplinary education focused on the application of skill and knowledge to the problems of the physical, social, and cultural environments.

### **Professional Application**

The student may, if he wishes, choose to emphasize professional application of his 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 his major and provides him 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, mass communications, 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.

### **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 the prospective student of the equivalency and help him 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 four years of the liberal education seminar and those courses that are part of his concentration (major), option (co-major), and/or collateral (professional minor). He 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 his proficiency and obtaining the consent of the instructor in advance.

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

### Liberal Education Seminar

The academic core at UWGB is the liberal education seminar (LES), a four-year program through which every student learns to relate the classic concepts of values to a present day ecological problem.

As a freshman he is introduced to the concepts of values, ecology, and environment. As a sophomore he studies environmental problems of the Great Lakes region, both in the classroom and by means of an off-campus project. As a junior he expands this study to include some other region in the United States or abroad. As a senior he integrates what he has learned and explores the possible consequences of present day situations to future generations.

The **Freshman Seminar** involves the student in the two central concerns of the University: values and ecology. He is offered a choice of topics to be studied in lecture format and in student-directed discussion. The topics emphasize man's values and their relations to contemporary ecological problems. Through lectures, discussions, and assigned readings the student develops competence in critical evaluation and written communication and gains experience in group discussion.

Each theme college offers its own program in the **Sophomore Seminar**. The topics focus on environmental problems but vary with the theme of the college and student interest. The theory and methods learned in the first term prepare the student for practical application in an off-campus project. He may undertake this project individually or with a group. A report of results is required and may be presented orally, in writing, or in other forms which may be suitable to specific situations.

As a junior the student studies an environmental problem in a region other than Northeastern Wisconsin or a culture

other than his own. The **Junior Seminar** is often related to the college concentrations and varies widely according to the orientation of the concentration and the interests of the student. The first term is devoted to a formal study of a specific region in preparation for a supervised student project in other areas of the United States or abroad during the second term.

Other possibilities for relating the junior seminar to the student's program exist and should be explored with the LES staff.

For students who have participated in VISTA, the Peace Corps, or similar programs, credit or waivers may be granted for all or part of the sophomore or junior seminar. Students should consult the LES office about these and other work experiences such as practice teaching, military service, or residence abroad, which may be considered equivalent to the second term of the sophomore and junior programs.

Culminating LES, the **Senior Seminar** is intended to be the capstone of the student's education at UWGB. It is designed to enlarge perspectives, analytical abilities, and interest in the enduring problems of the self and society as they relate to political, social, environmental, aesthetic, and ethical issues. Seminars made up of students from various concentrations emphasize reflection, conceptualization, broad perspectives, and the implementation of knowledge.

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 a variety of personal, cultural, societal, and environmental issues; and, finally, go beyond prior assumptions by examining the nature and quality of the human condition from new perspectives. This intellectual approach stimulates each student to identify and assess his own values, formulate a philosophical position, and develop an understanding of problems in their broadest dimensions.

The student is encouraged to select a seminar topic not usually dealt with in his concentration, so as to extend the breadth of his education. Qualified seniors may fulfill the requirement by participating as instructors of the freshman seminar.

All four years of the liberal education seminar must be taken for a letter grade. Students are referred to the *Liberal Education Seminar Handbook* for further information on various aspects of the program, including a full list of freshman and senior topics, foreign programs available in any given year, and bases for petition to waive or substitute requirements on evidence of suitable extracurricular experience.

### **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 seminar brings together students and professors from all theme colleges in their consideration of man's 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 listing on page 98 in this catalog). 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 concentration or concentration-option. Academic advisers can help him identify and take advantage of such relationships.

### **Tool Subjects**

Every student must develop skills that enable him 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 years is required, including at least half the advanced work in the student's concentration or concentration-option. Also required are at least two years (four semesters) of the liberal education seminar.

The residence requirement does not imply that a student must live in Green Bay or must carry a full-time schedule of courses. He may commute and he may 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 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 senior liberal education seminar and either the sophomore or junior liberal education seminar. A student transferring as a sophomore or a junior will normally be given credit for meeting the distribution and tool subject requirements if he has taken courses elsewhere that, although not equivalent, meet the spirit of the requirements.

### **INDIVIDUALIZED LEARNING**

The student at UWGB has broad choice in the selection of his program. Firmly required courses are minimal in number and many 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 chairman and the concentration chairman 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 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 he can select those relevant to his 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 has the necessary level of proficiency without taking the suggested prerequisite should consult the instructor before entering the course.

### SEEKING PERSONAL 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 planning his program 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 advisers 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 the *Timetable* published each semester and in the booklet, *Here's How to Take Advantage of the Flexibility of the UWGB Academic Plan*.

The *Timetable* also 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 his 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 he wishes. He can do this 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 second semester sophomore or junior liberal education seminar 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 he preregisters 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 fundamental 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 simultaneously. 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.

Honor students will find special programs which allow them to participate as assistants in significant scholarly and scientific research on environmental problems or as creative arts apprentices.

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.

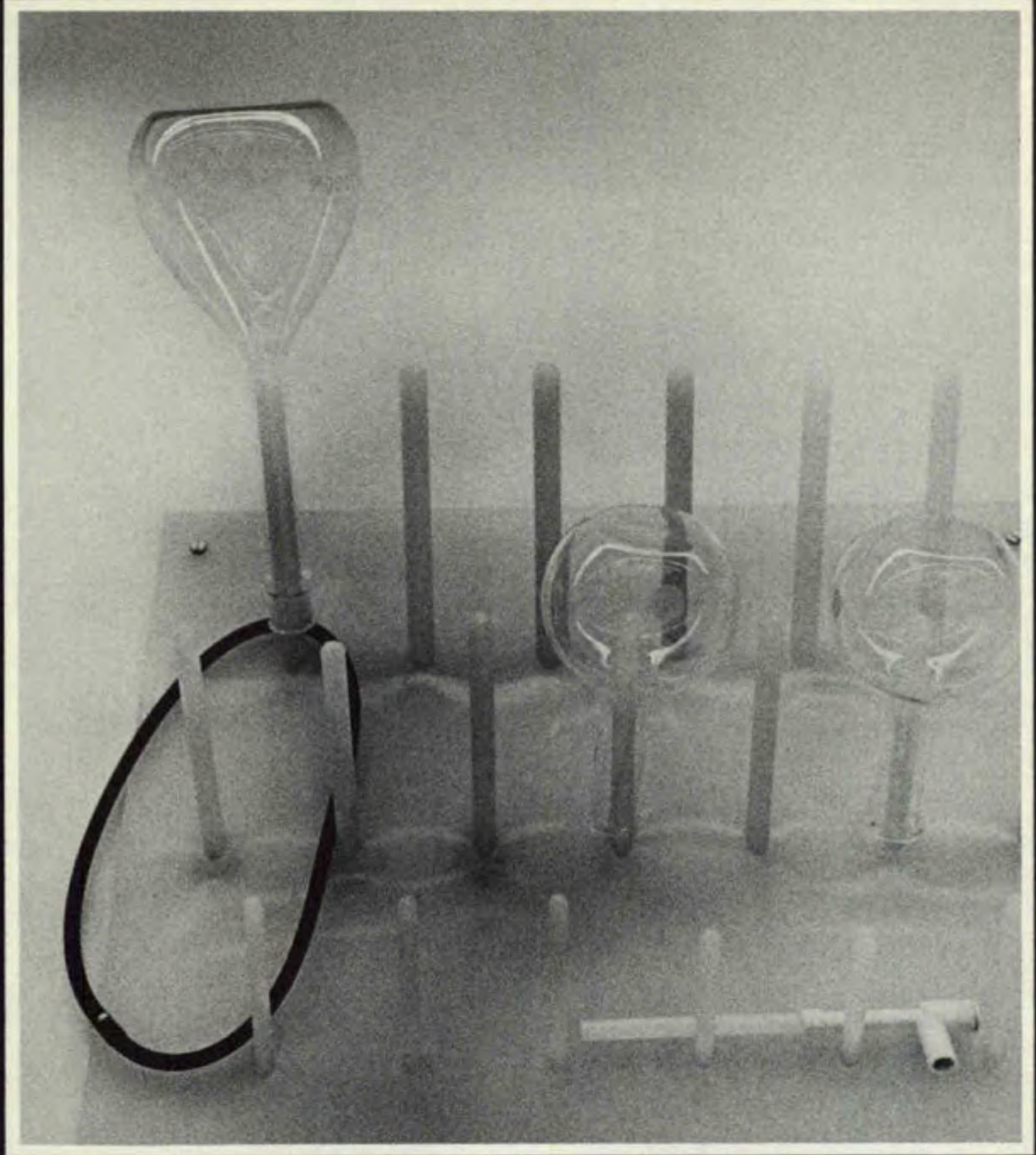
Summer housing is available in either the private Bay Apartments adjacent to the campus, or in nearby off-campus locations.

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 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 his 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 program.

Some of the concentrations recommend certain core courses to fulfill part of the 30-credit requirement; others have no specific requirements. Students taking the concentration-related sections of the junior liberal education seminar (an all-University requirement) may count such work as part of the concentration requirements if their concentration adviser approves; students who wish to count other versions of junior LES must request permission on a special petition. Some concentrations also require mastery of certain tool subjects.

The student should note that he can also develop his own concentration, focusing upon an environmental problem that is of particular interest to him, 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 plan of study, the student is encouraged to seek detailed help from the concentration chairman and advisers who will help him design a program to meet his 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 seminar and distribution credits). Once the student has narrowed his choice of concentrations to one or two, he should consult with the appropriate advisers in making his 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 Analysis-Synthesis (CCC)**

*Professors* J. Clifton, E. Havens (chairman), F. Kersten, I. Korner, I. Sonenfield, S. Williams.

*Associate Professors:* P. Abrahams, T. Churchill, P. Cooley, C. Crandall, T. Daniels, M. Martins, W. Simpson, T. Tasch, M. Thron, L. Witherell.

*Assistant Professors:* J. Barger, J. Davis, O. Clark, F. Clements, D. Galaty, N. Gaworek, G. Greif, W. Herrscher, J. McHale, D. Moews, B. Mugane, M. Murphy, E. Pence, C. Richey, J. Rodesch, L. Rudolph, D. Webb, S. Yake.

*Instructors:* K. Fleurant, M. Wallach.

*Lecturers:* E. Menendez-Ayuso, B. von Hoffmann.

*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. Analysis-Synthesis attempts to do this by concentrating on modern man's obligation to be engaged with, and responsible for, his *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 nonhumanistic 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 humanistic studies is excellent preparation for most graduate study and law school, as well as for careers in 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 a major in humanistic studies are urged to see the chairman or the concentration adviser.

#### **Concentration in Communication-Action (CCC)**

*Professors:* M. Kazar, P. Mann, C. Nelson, W. Prevetti.

*Associate Professors:* J. Abraham, R. Bauer, N. Blaisdell, A. Cohrs, J. Frisch, B. Grimes (acting chairman), R. Kersten, R. Kostka, A. Matulis, R. Scherrell, J. Veilleux.

*Assistant Professors:* T. Chavez, D. Damkoehler, R. Erwin, W. Jaeckel, D. Larmouth, E. Lauter, N. Makaroff, R. Pum.

*Instructors:* R. Briscoe, J. McClurg.

*Lecturers:* D. Byrne, L. Ives.

The concentration major in Communication-Action is concerned with the effect in the human environment of all kinds of communications: *language, music, mass media, theater, literature, public speaking, photography, the visual arts, and advertising, for example.* The goal of the concentration is to educate its students for useful social action through communications as well as for environmental understanding.

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

The student concentrates part of his study on such general problems as the modern communications revolution, the arts and social change, and Communication-Action projects in the community. But communications and the arts are not just things to study. They are things to do. Therefore, the concentration also places considerable emphasis on creative skills and on the *act* of communication. To this end, the concentration encourages its students to develop and use one or more communications or artistic skills in the classroom, the studio, and in activities in the community.

Career possibilities are numerous. Students work with their advisers to develop programs of study leading to careers in such fields as teaching, music, commercial or fine arts, theater, journalism, politics, law, government, publishing, film, television, radio, creative writing, public relations, advertising, religion, designing, and communications. The student may also prepare himself for advanced work in graduate school, especially in communications and art fields.

The career choice has an important relationship to how the student organizes his plan of study. This may be done in three different ways:

1. The student may major in Communication-Action alone by completing a program of courses that lead to a broad understanding of the uses, abuses, and meaning of the arts and communication processes in the human environment.

2. The student may couple his concentration with a co-major in any of UWGB's disciplinary programs (called options). Especially popular are combinations with theater, art, music, speech, literature, philosophy, or history. Equally valid combinations can be made, however, with such options



as sociology, economics, psychology, political science, biology, or geography.

3. The student may add to his concentration a professional minor — called a collateral at UWGB — in such fields as environmental administration, education, mass communications, leisure sciences, and social services. This kind of program allows a student to acquire professional credentials in such teaching fields as art, literature, language, communications, history, and music; or in such business and governmental fields as journalism, advertising, and public relations.

The requirements for these different kinds of programs are spelled out elsewhere in this catalog. The student should consult with his adviser before selecting his program. Whatever type of major he selects, the student is expected to complete six hours of conceptual and background tool subjects. These should normally be selected from the concentration's program of freshman and sophomore foundation courses.

#### **Concentration in Ecosystems Analysis (CES)**

*Professors:* J. Reed, D. Jowett, K. White (acting chairman).

*Associate Professors:* F. Fischbach, A. Goldsby, H. Harris, A. Loomer, M. Morgan, J. Norman, P. Sager, L. Schwartz, J. Wiersma.

*Assistant Professors:* D. Girard, H. Huddleston, A. Mehra, E. Robkin, C. Schwintzer, R. Simons, R. Starkey.

Man's efforts to increase productivity and provide a better way of life have caused him to interfere with the equilibrium of the ecosystems that surround him. With increasing frequency and intensity, he attempts to intervene in the continuous movement of energy and materials and to meet his 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 man is 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 major prepares students for careers in teaching.

The Ecosystems Analysis major normally emphasizes a particular aspect of his study of ecosystems. To do so, he must develop both a sound and broad base for his interdisciplinary program and a particular set of intellectual tools with which to pursue his 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; Environmental Science 302; 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).

**Communication skills.** These include verbal and written communication and efficient use of library resources. Skills in scientific communication are developed in the sophomore liberal education seminar and applied in advanced concentration courses.

**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.

The following courses also are recommended: Environmental Sciences 310, Ecosystems Analysis 412, and advanced mathematics courses appropriate to the student's interests.

Courses are to be selected on the basis of the student's interests and career goals. For example, he might choose to develop a program in systems ecology, population ecology, community ecology, or physiological ecology. In any event, he should work out an appropriate program in consultation with his 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.

#### **Concentration in Environmental Control (CES)**

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

*Associate Professors:* R. Cook, V. Nair, C. Rhyner.

*Assistant Professors:* T. Abeles, H. Iyengar, R. Lanz, K. Lee, C. Lindem, J. Moran, N. Petrakopoulos, J. Pezzetta, S. Randall, N. Sell, W. Shufeldt (on leave), T. Van Koevering, C. Weber, R. Wenger.

*Lecturers:* E. Layton, R. Leuba, R. Sogard.

Among the most pressing problems that face man are those stemming from his 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 man depends upon the productivity of the biosphere for his subsistence and upon these resources to sustain his civilization, he 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 Environment 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 his adviser, work out the program that best fits his 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.

### **Concentration in Growth and Development (CHB)**

*Professor:* R. Hartley (chairman).

*Assistant Professors:* T. Auger, J. Falk, F. Hughes.

*Instructors:* S. Cannizzo, L. Joscelyn.

*Lecturers:* N. Moore, C. Richter, T. Hogan.

To optimize the development of individuals, we must understand the effect of the transactions between man and his 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 well-springs of human functioning for any occupation dealing with people, e.g., teaching, nursing, work with preschool children, social service, recreation, guidance, etc. 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 or 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 counseling 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 is 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, Human Biology 102, 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 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 in their program the following courses: 333, 334, 431, 432, 435, 436, 437, 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 major, 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 postgraduate professional programs, or to qualify for specific vocational placement.

#### **Concentration in Human Adaptability (CHB)**

*Professor:* W. Kaufman (chairman).

*Associate Professor:* R. McRitchie.

*Assistant Professor:* R. Stevens.

*Lecturer:* E. Langlois.

*Clinical Lecturers:* P. Gohdes, T. Pharmakis.

The concentration major in Human Adaptability is concerned with man's response to a stress or pressure. When a given response has become stable, man is said to have *adapted to a specific stress*.

Knowledge of man's 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 man's responses to his 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 instru-



**35**  
Concentrations



ments or books. The concentration also is appropriate for students following premedical, pre dental, 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 should prepare himself 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.

### **Professional Concentration in Managerial Systems (SPS)**

*Professors:* G. Petrie (chairman), R. Posey.

*Associate Professor:* H. Jadwani.

*Assistant Professors:* R. Bullard, J. Powers, D. Ward, K. Zehms.

*Senior Lecturer Emeritus:* A. Zander.

*Lecturer:* C. Halverson.

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.

The student should take the following two required courses during the sophomore year: Organization and Operations 202 and Quantitative Methods 204.

Next the student chooses six credits each in four of five fields: distribution, finance, labor relations, organization and operations, and quantitative methods.

An additional six credits must be taken in the field of the student's principal interest. Also required is Quantitative Methods 315.

Economics 202 and 203 are recommended for meeting the all-University distribution requirement.

The tool subjects requirement in Managerial Systems is met with Mathematics 250 and 260 and two optional courses, one in quantitative communication, selected from Quantitative Methods 230 or 251 or Mathematics 202, 204, or 251 and one in verbal communication, selected from Organization and Operations 110, Communication Sciences 133 or 266, or Literature and Language 212. If more than two tool subjects are elected from CES, the third may count toward distribution.

Managerial Systems majors must also fulfill a cognate which consists of 24 credits in one of the theme college concentrations or in public accounting, a cognate designed to help prepare the student for the Certified Public Accountant examination and which conforms as nearly as possible to the statutes and regulations of the State Board of Accountancy.

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 junior liberal education seminar may be counted toward the cognate requirements.

The student selecting the public accounting cognate includes Economics 230 and Quantitative Methods 315 and 316.

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 206.

### **Concentration in Modernization Processes (CCS)**

*Associate Professors:* B. Baker, J. Kolka, C. Pollis.

*Assistant Professors:* E. Card, E. Haney (acting chairman), A. Galt, J. Green, K. Kangayappan (on leave), H. Kolshus, L. Nesberg, R. Ryali.

*Instructors:* J. Edelstein, L. Epstein, L. Smith, P. Wallach.

The world is changing rapidly and many changes receive a good deal of public attention. The purpose of the Modernization Processes concentration major is 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 questions:

1. What has happened in history to produce the accelerated kinds of 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 have been the economic, socio-cultural, political, and psychological antecedents and consequences of change processes?

4. How may concerned people combat the enormous problems such as inequality, population explosion, and ecological destruction that are part of rapid change in the modern world?

Solutions for 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 social science disciplines. The concentration is oriented toward consequences and problems of modernization as well as their prospective solutions and seeks to give instructional emphasis in the following problem areas.

**Modernization and Environment** focuses on the assumptions that: (1) environmental problems spring, at least in part, from society's structure and values; (2) society evolves definitions and rules for regulating social relations and cultural perspectives with respect to the environment; and (3) a fundamental attempt at studying and solving environmental problems includes an evaluation of current normative and value frameworks and how they can be changed to implement a positive relationship between modernization and environment.

**Social Conflict** focuses on social and political conflicts attending modernization processes. The nature of these conflicts ranges from protest, revival, and reform movements to political and social revolution.

**International Development and Planning** comprises the traditional focus of what is called developmental studies. National planning and community development (economic, technological, political, and socio-cultural) are the central emphases.

Selected aspects of **Social Inequality** such as economic, social, and ethnic stratification are explored as they relate to modernization in different countries. Courses focus on such



topics as poverty and the effects of social and economic deprivation in relation to development and change.

**Alternative Futures of Man** examines alternative paths, problems, and prospects for man and his continued survival. Among topics which are given attention is the quality of life in the future.

The concentration major is required to take Modernization Processes 360 and 361, which emphasize conceptual models of social change and problems associated with defining modernization as one type of change.

In addition the student is required to take the modernization sections of the junior liberal education seminar and is advised on problem area and other courses that will provide him with an *integrated plan of study*. He will also be advised on appropriate concentration-oriented option (co-major) offerings relevant to his plan of study and various ways in which a six-credit tool subject requirement can be fulfilled. Faculty advisers are available to help the student select a problem area and to design an individualized program.

The concentration provides useful preparation for professional schools such as law, business and public administration, 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 about 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.

#### **Concentration in Nutritional Sciences (CHB)**

*Professors:* A. Doberenz, H. Benham.

*Associate Professors:* D. Deese (acting chairman), E. McIntosh

*Instructor:* D. Randall.

For man 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 con-

sumed in the right amounts to assure adequate nutrition for each individual.

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.

The Nutritional Sciences major must take appropriate courses to develop skills in (1) deriving and interpreting data, and (2) effective communication. The requirement includes a course in statistics, possibly computer science, and one or more courses in communication sciences. 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, and 303; Microbiology 302; Chemistry 228-229 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 graduate school candidates); Ecosystems Analysis 312; and Nutritional Sciences 303, 414, and 485-486.

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

### **Concentration in Population Dynamics (CHB)**

*Professors:* H. Guilford, B. Taylor (chairman).

*Associate Professor:* N. Huber.

*Assistant Professors:* C. Ihrke, T. Mowbray, J. Maki.

*Lecturers:* D. Sager, J. Shier, J. Westphal.

*Community Lecturers:* E. Gillis, J. Green, L. Lewis, H. Sandmire, J. Weidner.

One of the greatest problems facing mankind today is the rapidly increasing population, popularly referred to as the "population explosion." Although the problems of population in Asian countries and elsewhere in the world are obvious, there is less awareness of these problems in areas of the *United States*.

Continued population growth contributes to, or causes, many problems, including pollution, crowding, mental and physical stress, malnutrition, and general deterioration of the environment. There is a need to understand the bases of the population growth and their interrelationships and to develop generally effective solutions. Teamwork by individuals trained in *biology and in the social and behavioral sciences* is essential. The purpose of this major is to prepare individuals who can work toward the understanding and solution of these problems.

Population Dynamics prepares students for careers in international, federal, state, and community agencies and foundations concerned with population growth, its regulation, and its problems; 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 problems.

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.

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 program.

### **Concentration in Regional Analysis (CCS)**

*Professors:* F. Byrne (chairman), J. Murray, G. Petrie.

*Associate Professors:* D. Gandre, W. Smith.

*Assistant Professors:* R. Ditton, L. Gorder, W. Keupper, W. Laatsch, I. Shariff.

*Senior Lecturer Emeritus:* A. Zander.

Regional Analysis is concerned with the spatial relationships between man and his 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 man and his activities are the basic concerns of this major. Man has, in many cases, abused the useful resources of the regions he inhabits. These abuses have developed into some of mankind'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 organization. Interested students can continue their formal education in a graduate school.

The concentration offers a core curriculum of a progressive series of selected courses to which the student adds courses that meet his special interests and needs from a wide selection. As supplements to his 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 to him. Two tool subjects are required: computer science and a course in statistics.

#### **Concentration in Urban Analysis (CCS)**

*Associate Professors:* F. Armstrong (chairman), R. Mendelsohn, N. Pollis, E. Swinerton.

*Assistant Professors:* R. Baba, T. Bender, S. Bremer, L. Chenoweth, W. Haney, P. Johnsen, R. Klimek, E. Knowles, J. Yarbrough.

*Instructors:* J. Gould, L. Lackey, C. Matter, W. Wagner.

*Lecturers:* T. Nichols, H. Spille.

The continuing and accelerating process of urbanization that characterizes modern life profoundly affects the psychological, social, cultural, and physical aspects of life. This alteration of man's experience requires that knowledge from the traditional disciplines be organized in a way that makes it more accessible and functional for urban man. The concentration in Urban Analysis seeks to achieve this new synthesis by making the city the focus for studying the enduring problems of man in society.

Urban Analysis majors study the nature of urban life and the processes — physical, social, and cultural — by which cities emerge, persist, and change over time. Cities are approached as linked systems of people, resources, and styles of life. These diverse aspects are intertwined, making the city a complex but interrelated whole. Because urban life itself is so diverse, the concentration uses a variety of perspectives and techniques in order to arrive at an integrated understanding of urban man and his environment.

Urban Analysis is not only an area of study; it is an association of faculty and students who seek to understand man and his communities. Such cooperative study enhances the prospects for maximizing the advantages of urban life while minimizing its disadvantages.

Students entering Urban Analysis should share a concern for the quality of life and the relationships among people.

They are encouraged to integrate experience with the insights of academic study to improve their understanding of themselves, their cities, and their urban culture. With this understanding and a variety of analytical tools, they will be able to participate more effectively as members of their communities.

The concentration provides pre-professional preparation for *public service* careers in city planning, administration, social service, law, and others. It also provides a useful background for a variety of careers in the private sector and a solid foundation for several fields of graduate study.

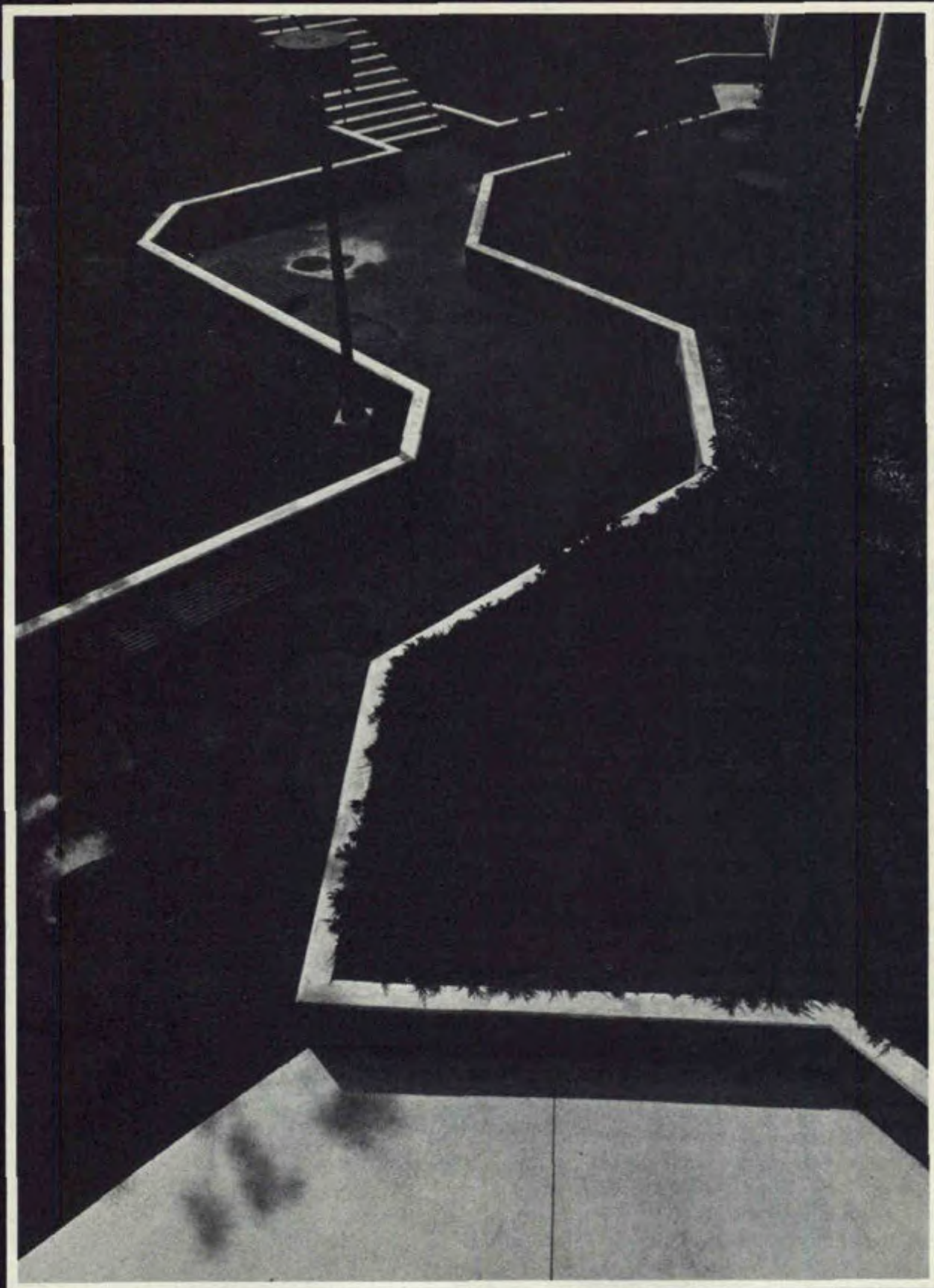
Since any assessment of the nature, problems, and possibilities of urban culture requires the study of the self, society, and the environment, the curriculum is divided so that the student may study these enduring problems in four contexts. Every student is expected to take at least one concentration course in each of the following areas:

1. The Cultural Context of Urban Life: 400, 410, 414.
2. Space and Resources in Urban Life: 350, 351, 352, 421.
3. Social Organization of Urban Life: 325-326, 335, 337, 440.
4. Alternatives in an Urban World: 450.

A specific academic program is determined through consultation with the student's concentration adviser. Students have wide latitude to pursue diverse interests in relation to the overall theme of the concentration. Accordingly, the criterion for selecting courses for concentration credit is the applicability of a course to the student's educational objectives within the concentration.

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 tool subjects. The precise nature of these tool subjects depends upon the student's academic objectives and is determined in consultation with a concentration adviser. This requirement may be fulfilled, for example, through training in a foreign language or by course work leading to the acquisition of specific analytical skills such as *computer sciences*, statistics, or philosophical and literary criticism of values.

Students considering Urban Analysis should take Community Sciences 102. They are also advised to seek a broad general education during their first two years, including distribution courses that build a coherent and integrated foundation for later work. A concentration adviser should be consulted as early as possible.



Options and Collaterals



## THE OPTIONS (CO-MAJORS)

The student who wishes to relate the environmental problem he is studying in his 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 and may include the junior liberal education seminar, at the discretion of the concentration chairman.

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 student consult with faculty advisers in both the option and concentration for help in selecting courses that meet his needs. Because all UWGB programs are designed to be interdisciplinary, the student will find that certain courses outside his 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 he begins his concentration-option work, the student needs to *obtain approval of his program* from the option chairman 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.

The student may select any option that relates to the environmental problem he plans to study in his 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 the student can follow when he works out his individual program with his faculty advisers.

### **Option in Anthropology**

*Acting Chairman:* Ronald L. Klimek.

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.

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

The student who studies anthropology will find that the skills and capacities gained can be applied to a variety of vocational and professional interests, including government work at all levels, social service and related professions, education and graduate work. The student should consult with a faculty adviser to work out an appropriate program.

Students desiring a co-major in anthropology are required to include in their option work one 200-level and one 400-level course.

**Option in Biology:**

*Chairman:* Leander J. Schwartz.

Biology offers students the opportunity to study microorganisms, plant and animal structure, function, systematics,



evolution, and biological resources. Courses emphasize man 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 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 his 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.

#### **Option in Chemistry**

*Chairman:* Jack Norman.

Chemistry is fundamental to the study of the bio-physical 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.

The student electing a co-major in chemistry must take Chemistry 302, 303, 304, 305, 313, and 321; and Chemistry-Physics 110, 211, 212, and 320.

With the assistance of his faculty adviser, the student selects the remainder of his option credits from among courses in such areas as chemistry, chemistry-physics, ecosystems analysis, and environmental control.

The student desiring to relate an option in chemistry to concentrations in the College of Human Biology would find courses from related areas such as microbiology and nutritional sciences appropriate.

#### **Option in Communication Sciences**

*Chairman:* Jack E. Frisch.

Communication sciences 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 the col-

lateral in 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, Analysis-Synthesis, 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**

*Chairman:* 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 the student integrate his knowledge of the earth's physical environment with his knowledge of the biosphere to gain a more complete understanding of ecosystems and their complexities and interactions and of the environments in which man 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. The student who is 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. The student who wishes to focus on a single area should select an adviser within that area who will help him develop a program that includes earth science and supporting courses from chemistry, physics, mathematics, and geography. And, the student who is just plain curious about the physical environment in which he lives and works can satisfy that curiosity through appropriate earth science courses.

#### **Option in Economics**

*Acting Chairman:* Ismail Shariff.

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.

The student should work closely with his faculty adviser in selecting economics courses that most closely relate the option to his chosen concentration.

### **Option in Geography**

*Chairman:* Lyle D. Gorder.

Geography is concerned with the systematic study of the location, variations, and inter-relations 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 man's 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.

A faculty adviser will help the student develop his 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 Chairman:* Norbert H. Gaworek.

History is humanity's broadest attempt to understand change in the relationship of man to man, to society, and to nature. As historian, man examines all aspects of his experience, especially his aspirations and achievements, his failures, frustrations, and accidents. By scrutinizing the records — written, oral, artistic, archeological, and technological — man as historian hopes to explain to himself what he is experiencing in the world.

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.

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



### **Option in Literature and Language**

*Chairman:* Thomas E. Daniels.

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 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. A student desiring teaching certification in English or a foreign language should combine literature in that language, linguistics, and expressive use of the language. He is 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**

*Chairman:* Allison P. Loomer.

The mathematics option is most readily useful for the student who has elected to specialize in ecological modeling within the Ecosystems Analysis concentration. He may already have programmed 18 credits in mathematics. Thus only six additional 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, as well as more specialized offerings such as Heaviside calculus.

Mathematics enables the student to gain additional mastery of concepts and techniques in probability, statistics, analysis, and computer science. Finally, because mathematics is an important form of communication, it can be meaningfully combined with the concentrations in the College of Creative Communication.

*The student who co-majors in mathematics must take Mathematics 202, 203, and 206, and also should include 250, 308, 311, 321, 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**

*Chairman:* 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 the fall of his junior year the student applies to an accredited one-year clinical program at an affiliated hospital. To be considered for the clinical program, he 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; Chemistry 228-229, and 313; Biology 202 and 203; Microbiology 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 Chairman:* Arthur Cohrs.

*Theater Chairman:* Paul Mann.

The performing arts involve an effort at meaningful aesthetic communication between performers and their audiences and dedication to the improvement of man's 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 dance courses 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 courses for students interested in pursuing career goals in teacher certification at the primary and secondary levels, performance, or entrance into graduate study programs. Faculty advisers will develop with the student the individual program which will be most useful to him.

The student who wishes to specialize in music is given 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, Basic Musicianship, before enrolling in the music theory sequence of courses.

It is recommended that the student give special attention to courses at the 100 and 200 level (such as music theory, history, and applied music areas) which serve as prerequisites for entrance into the many 300- and 400-level courses.

Completion of 300-level study in the student's major area of applied music is required.

**Theater.** The essence of theater exists before an audience in the person of the actor. In the truest sense, dramatic works are meaningless until performed. Consequently, the education of the actor is of paramount importance to the life of the theater, for without him there is no living theater art.

The program in theater arts begins, then, with the training of the actor, with the objective of developing his latent talents *to the fullest*. This enables him to fulfill his unique individuality and to develop a view of and relationship to theater as a humanistic, socially contributive art. The student is encouraged to make the most of his talents and individuality while he relates to the group and takes pride in the accomplishments of his colleagues. This cooperation is essential to theater work.

It is important for the theater artist or teacher to be firmly rooted in the reality of his time. In the deepest sense he must know his own culture, not for any chauvinistic reason, but because this is the root of his creative strength, serving to provide him with a more profound insight into other cultures and peoples. His national heritage is made up not only of the conditions of his personal life — his family and friends — but also of the larger environment that includes his street, his community, his country, and the contributions of his forefathers.

The student learns to see his talent as possessing a socially contributive purpose beyond the currently acceptable individualistic, almost anarchistic, status quo goals. Philosophical alternatives are posed which lead and encourage the student to utilize his talents in the theater arts and in the teaching of these arts to extend and deepen what is, by today's commercial standards, considered acceptable. One of the major objectives of the teaching is to help the student learn to gain satisfaction and fulfillment by utilizing his creativity as a contribution to his country and to his fellow man.

The purpose of the theater arts program is to provide instruction in theater on various levels. Training will qualify students as teachers in high school or college, as actors or directors of a municipal theater, for graduate school, or for work in professional theater or film.

For the student who simply wishes to experience some aspects of theater, training in acting will provide a deepened knowledge and appreciation of the craft and art of theater.

Instructors hold at least two individual conferences with each student each semester. These conferences contribute to a vital student-teacher relationship and assist in evaluating and guiding the student's overall development.

**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**

*Chairman:* Frederick I. Kersten.

The study of philosophy makes the student aware of the intellectual structure from which he perceives his world and in terms of which he may seek to live in or change his world. Philosophy begins with an appreciation of the Socratic dictum, "The unexamined life is not worth living," and moves through the critical analysis of the ideas of man to a reflective consideration in depth of contemporary challenges to man's 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, philosophy of religion, and social and political philosophy.

The student choosing to co-major in philosophy will find it useful in the pursuit of many different occupations and a productive dimension of his 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.

The student selecting a philosophy option should take the history of philosophy sequence, 213, 313, 314, and must take senior level philosophy courses. He should work with his faculty adviser in developing the program best suited to his needs.

**Option in Physics**

*Chairman:* Charles R. Rhyner.

Physics, a science of measurement, experimentation, and systematization of the results of experiments, has played a



fundamental role in much basic and applied scientific development. It is central to the related disciplines in engineering, chemistry, astronomy, and applied mathematics and forms an essential complement to the earth sciences and biology.

The student who co-majors in physics must take Chemistry-Physics 210, 211, and 212, and Mathematics 202 and 203.

The remaining option credits may be chosen, with the help of a faculty adviser, from courses in physics and related areas such as chemistry-physics, ecosystems analysis, and environmental control.

#### **Option in Political Science**

*Acting Chairman:* 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**

*Acting Chairman:* Eric Knowles.

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.

Most growth and development courses can be used to fulfill option requirements. The student should select appropriate courses with the help of his faculty adviser.

#### **Option in Sociology**

*Acting Chairman:* 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 his faculty adviser in selecting courses in sociology and related fields that best meet his individual needs. Anthropology 310 or an upper division social psychology course approved by the option chairman is required.

#### **Option in Visual Arts**

*Chairman:* Bruce A. Grimes.

Man is an image and form maker. From the images on the cave walls of paleolithic man, 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 student who co-majors in the visual arts will find that the skills and capacities he gains will prove to be useful in the pursuit of many different occupations. This option will also add a meaningful dimension to his participation in community endeavors. A faculty adviser is available to help the student make course selections that meet the option requirements.

#### **THE COLLATERALS (PROFESSIONAL MINORS)**

While each of the concentrations and options helps prepare the student for various career fields, either directly or through graduate school, there are several professional applications that require specific courses and training. The student interested in any of these areas can select a collateral (professional minor) which supplements his major concentration or concentration-option and provides him 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, 27 credits are required. The student interested in a collateral should consult his 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 (chairman), 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. Elementary school certification, kindergarten through grade 4; grades 1-4; and grades 4-8.
3. Specialist certificates in art K-12 or music K-12.
4. Secondary school certification in areas including art, biology, chemistry, broad field communications, earth sciences, English, French, geography, German, history, mathematics, computer emphasis mathematics, music, physics, broad field environmental science, broad field social studies, and Spanish.

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 his regular degree work. The additional course work becomes an integral part of the degree program, but requires careful planning to meet all requirements.

Teacher certification is carried on cooperatively by the concentrations and the School of Professional Studies. The student pursues work on his chosen concentration while also completing the collateral (professional minor) work in educa-

tion. The student entering the teacher certification program should list the appropriate collateral code on his registration form at the beginning of the semester. He 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 will be available from the faculty.

**Secondary School License.** For a secondary school license, the student must complete an approved program for a teaching major, or a major and a minor, or two majors, or a broad field major. The teaching major in a discipline includes freshman and sophomore work. The student also pursues advanced work with an environmental focus in a concentration. Specific requirements of 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 professional education requirements, totaling 18 credits, must be completed for secondary school certification:

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 in education courses, as approved by the student's adviser. Elective courses in education include 201, 203, 318, 404, 405, 406, 407, 483X, and 498.

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.)



5. 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."

Cooperative marketing and consumers' cooperatives are included in Economics 102.

The conservation of natural resources is included in Environmental Sciences 302 or 303, Economics 305, or Leisure Sciences 410. The statutory requirement is in addition to the 18 credits of professional education.

A recent addition to the state code requires that preparation in human relations, including intergroup relations, be included in the certification programs. The plan for implementing this requirement at UWGB was being developed and submitted to the Wisconsin Department of Public Instruction during 1972-73. Students should confer with their advisers in education on this requirement.

The Wisconsin Department of Public Instruction is currently considering a requirement in the teaching of reading for certification in all subjects at the secondary school level. Such preparation is currently required as a condition of employment in several Wisconsin school districts. It is anticipated that Education 318 will fulfill this, but an adviser should be consulted.

**Elementary School License.** The collateral in education offers a certification program for teachers at the primary grade levels, which may include kindergarten certification, and another for the intermediate-upper elementary grade levels. (An early childhood and kindergarten certification program is offered by the Growth and Development concentration. See page 33.

To be eligible for 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. Because of its interdisciplinary nature, a concentration is appropriate for students seeking elementary school licensing.

The following program of courses, providing a minimum of 27 credits, is designed to meet the professional education requirements of the Wisconsin state code for elementary certification:

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, and 307.
3. A minimum of eight credits of student teaching (Education 402) or internship at the elementary school level.

**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 credit basis. Student teaching is offered on a pass-no credit basis only.

### **The Collateral in Environmental Administration**

*Professors:* G. Petrie, R. Posey.

*Associate Professor:* H. Jadwani.

*Assistant Professors:* R. Bullard, J. Powers, D. Ward (acting chairman), K. Zehms.

*Senior Lecturer Emeritus:* A. Zander.

*Lecturer:* C. Halverson.

The purpose of this collateral (professional minor) is to assist the student who is fulfilling a theme college concentration or concentration-option to study the rudiments of administration applicable to his field of major interest. It is not open to the managerial systems major; it is open only to the student majoring in a theme college concentration or concentration-option.

The 18 credits required to fulfill the collateral should include either Organization and Operations 202 or 203.

The remaining credits should be selected by the student in consultation with his adviser and should be chosen according to the relevance of the courses to his theme college concentration or concentration-option.

If it develops that a course in the professional collateral also is listed in the student's concentration or concentration-option, one such course can be doubly counted, thus reducing the collateral requirement to 15 credits.

### **The Collateral in Leisure Sciences**

*Assistant Professor:* R. Ditton.

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 302 and 320 are required. In consultation with his faculty adviser, the student chooses the remaining credits from among the other leisure sciences course offerings.



**The Collateral in Mass Communications**

*Assistant Professor:* D. O'Brien (chairman).

*Lecturers:* J. Marshall, D. Otto, R. Woessner.

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 his 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 sciences, political science, and social psychology.

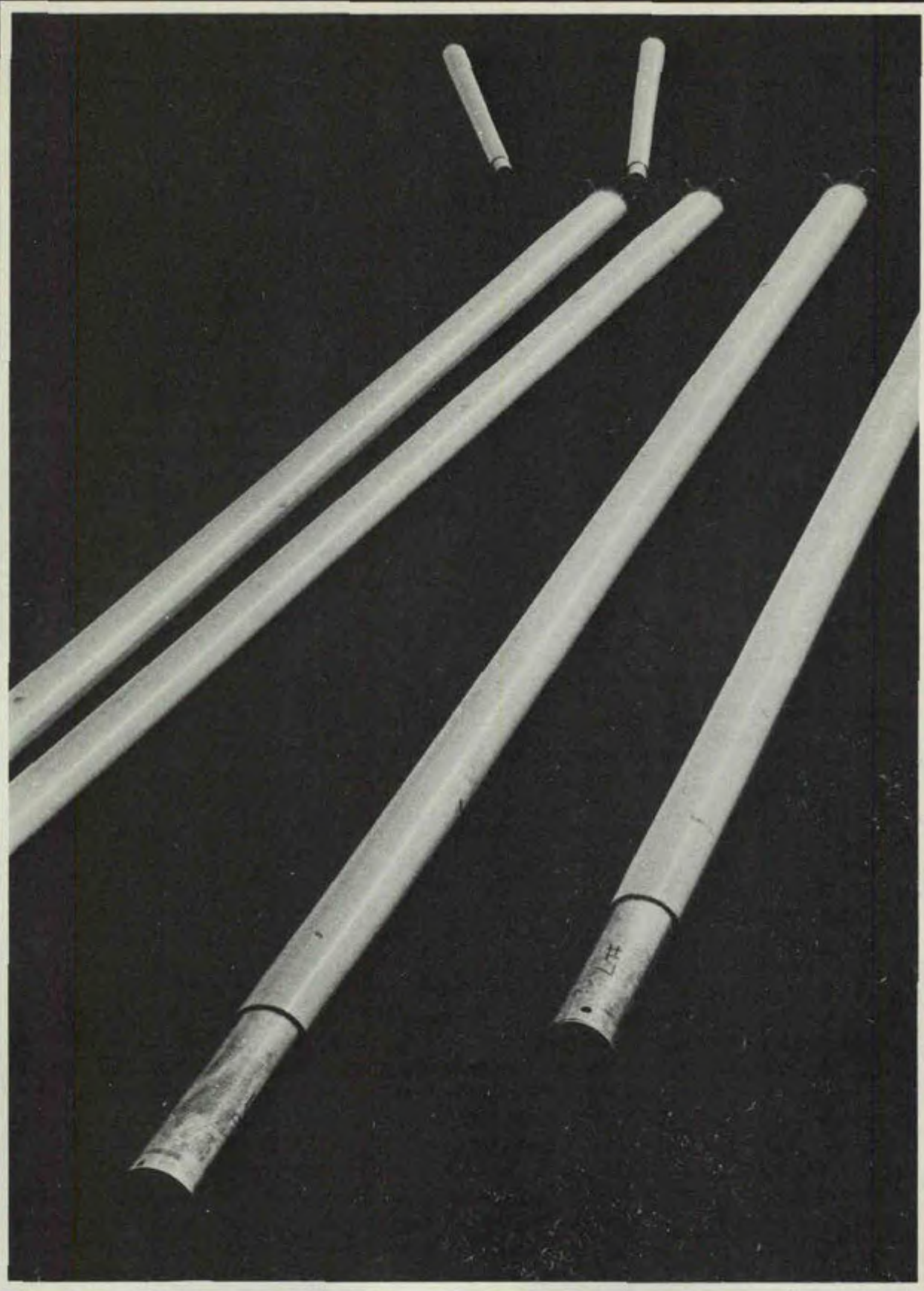
**The Collateral in Social Services**

*Professor:* I. Korner (chairman).

*Instructor:* D. Galaty.

*Lecturers:* R. Jansen, R. White.

Fulfilling this collateral prepares the student for a variety of social service activities in public and private settings where the master of social work degree is not appropriate or required. The student, in consultation with his faculty adviser, chooses from among the following 18-credit programs: social work, change agency, and social consultation.



Preprofessional Programs

## **PREPROFESSIONAL PROGRAMS**

Three kinds of preprofessional opportunities exist at UWGB. First, regular concentration majors, option co-majors, and collateral 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 intends to enter, and be guided by its recommendations for his 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 choice, and be guided primarily by its requirements and recommendations.

The degree requirements of UWGB are flexible enough that the student, in consultation with his 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 his 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 plans to attend. Then, in consultation with his adviser, he should adjust his program to meet the transfer requirements for the engineering field of his 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, Engineering 102 and 113, and Environmental Control 313 and 314 depends upon the choice of engineering school and field of engineering.

Students studying under the 3-2 plan must take Liberal Education Seminar 215, 216, 315, 316 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 familiarize himself with the requirements of that college and make certain that the courses for which he 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, he should examine the catalog of the dental school to which he plans to seek admission and, with his adviser, formulate his 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, conducted in collaboration with the Schools of Nursing at the Madison and Milwaukee 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: 18 credits in biology, 5 credits in general chemistry, 6 credits in written and oral communication, and 3 credits each in psychology and sociology.

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 at UWMSn and UWM.** The Schools of Nursing of the University of Wisconsin-Madison and the University of Wisconsin-Milwaukee both 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. Each program is four years and two summer sessions in length. One year may be taken at UWGB; the remainder is offered at the schools of nursing on the Madison and Milwaukee 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 wishes to attend for admission to the last three years of the nursing program. Admission is based on qualifications for nursing, 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 302, 303, 304 and 305; Chemistry-Physics 110, 111, and 112; 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 might apply. The University of Wisconsin does not grant a degree in veterinary medicine.

The student interested in veterinary medicine should consult his adviser as early as possible to work out a course program that will satisfy the admission requirements of the school of his 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 302, 303, 304, and 305; Chemistry-Physics 110, 111, and 112; 6 credits in written and oral communication; 4-5 credits of 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 fac-



ulty or admissions committee is usually required. High school records, scholastic attainment in preprofessional course studies, aptitude, character, and personality are given special consideration in the selection of candidates. Other qualifications being equal, residents of the state in which the veterinary school is located 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. His program must have the approval of the dean of the colleges and preliminary approval of the veterinary medical school of his 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 attend UWGB during his freshman and sophomore years, transferring to a school of home economics at the beginning of his junior year. The preprofessional student in home economics should obtain a copy of the catalog of the school of his choice and plan his first two years with his faculty adviser. The following freshman and sophomore courses are typically required: Chemistry 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 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 his program with his 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 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 his adviser, can build a program which will focus on his 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.

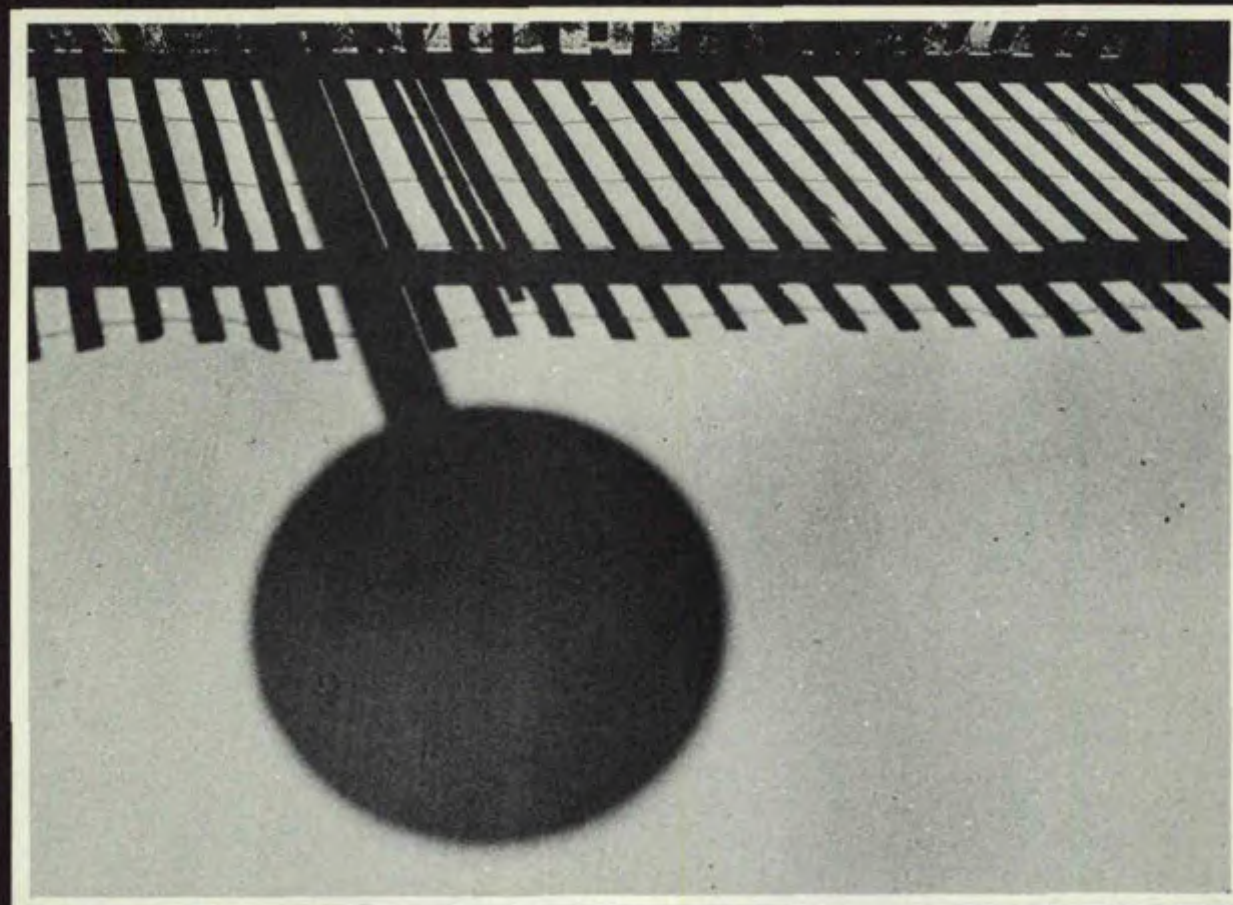
There are no professional courses in teaching methods or in practice teaching. Instead, it is expected that the student will obtain a bachelor's degree in the field in which he wishes to teach. Subsequently he enters a graduate school and pursues a program of graduate study leading to the master's or 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 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 he 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 does not have adequate preparation in the discipline, in which case he will probably be required to take some undergraduate courses in preparation for his 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 examinations are 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 sense his wholeness. Curricular and co-curricular programs act together to enrich and extend the academic plan of UWGB so that his 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 particular intellectual, social and physical needs.

## SPECIAL PROGRAMS

UWGB has developed special academic programs to meet the needs of particular students. These 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 per cent of his entering class, and the sophomore, junior or senior with at least a 3.5 cumulative grade point average is invited to apply for membership in the program. The student with a cumulative grade point average below 3.5 may also apply if he 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, Student University 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.

### **New Opportunities Program**

This program is designed for those who do not meet the normal entrance requirements of the University. It is based on a special advisory relationship between the student and a member or members of the UWGB faculty or staff, to assure that the student is aware of all of the resources of the University, that his academic efforts are as fruitful as possible, and that he is informed on the academic alternatives available to him.

The new opportunities program incorporates the spirit of the following resolution adopted by the University of Wisconsin Board of Regents on May 17, 1968:

"Whereas the problem of providing equal educational opportunities is one of the urgent and major crises facing this state and the nation; and

"Whereas, by long tradition, this University has devoted its instructional, research and extension efforts to the problems of disadvantaged people whether disadvantaged by economics, geography, cultural deprivation or motivation; and

"Whereas the University Faculty Council, the University Faculty Assembly and the University Administration have recommended immediate attention to the problems of equal opportunity for all the citizens of the state,

"Be it resolved that the Regents of the University of Wisconsin direct the administration of the University to expand, within the limits of its resources, the University efforts to provide equal opportunity for disadvantaged citizens, with primary emphasis on Wisconsin residents. . . ."

A student can seek admission to UWGB under the new opportunities program if he shows good potential for academic success. Such potential may be verified by consultation with his high school advisers and teachers, religious leaders, and members of his community.

Freshman enrollees in the new opportunities program should be aware that a leading objective of the program is to assure that they will be able to complete the junior and senior years without further special academic assistance.

### **Special Learning Programs**

Special learning programs are designed for students who need improvement in study skills, English, or mathematics. Students may be referred to the program through placement tests or by faculty members, or they may refer themselves. Most work in the program is on a tutorial 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, man's 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 sophomore and junior sec-



tions of the liberal education seminar. During the sophomore seminar, a special project is done in the Northern Great Lakes region. The off-campus experience in the junior seminar is in another culture, sometimes through simulation and study, and sometimes through travel to other parts of the United States or abroad.

Students who participate in VISTA, the Peace Corps, or similar programs can receive credit equivalent to that given for all or part of the sophomore and junior seminars. 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.

### **COMMUNITY INVOLVEMENT**

From its beginning, UWGB has involved community members in its development. Community consultants helped formulate the academic plan. Currently there are about a dozen community advisory committees. A number of citizens participate as community lecturers in the liberal education seminar.

The typical advisory committee meets two to four times a year with appropriate members of the faculty, staff, and student body. Matters of current concern are discussed and reports are published as needed. Committees focus on such

topics as the university budget, legislative liaison, planning and zoning in the campus area, various aspects of the academic and professional training programs, the lecture and performing arts program, varsity athletics, specific building needs, student health, and community-university relations.

The university springs from the community. As a community organization, it has a responsibility to report back to the community and be a part of it. Opening up many avenues of community participation permits a level and a dependability of communication not otherwise possible and reflects the belief that the university's goals can most effectively be achieved through active community participation.

### **Community Programs**

Because UWGB focuses on man in his environment, an effort is made to relate the community and the university in cooperative environmental improvement projects. The following are examples:

Students tutor Oneida and Menominee Indians.

Staff and students work with the Green Bay public schools in identifying culturally disadvantaged elementary students, who then attend reading clinics at which UWGB students serve as teacher aides.

Community and university each April, during "Environmental Action Month," focus on such problems as household consumption effects on resources, waste disposal, and elementary and high school student awareness.

Students under faculty supervision conduct air sampling analyses in the Green Bay area to determine lead content.

Students cooperate with the Green Bay-Brown County Regional Planning Commission to survey noise pollution.

Projects are organized to study automobile exhaust pollution, and to analyze alternatives to current governmental structures in the Green Bay area and Brown County.

A cooperative study by a faculty member, community physician, and several students of the effect of oral contraceptives on the Vitamin B<sub>6</sub> status of women users results in a scientific publication.

Some faculty members participate in a federally-funded program that involves campus and community in an investigation of "Dimensions of Social Alienation in Northeastern Wisconsin."

Faculty, students, and community leaders in a 20-county area engage in a successful analysis-demonstration project on actual and potential linkages among cities and counties of northeastern Wisconsin.

### **Community Outreach**

UWGB maintains an office to provide leadership, coordination, and policy direction for its community outreach and research efforts. Through this office, students and faculty are encouraged and assisted to volunteer for community service activities and to work with service organizations, business, industry, government, and citizen groups in designing mutually beneficial off-campus projects.

Close working relationships have been established with business firms and government agencies, some of which have



assisted UWGB through financial support, donation or loan of equipment and facilities, time of staff members, and technical and administrative support.

UWGB, for its part, has assisted cooperating firms and agencies with technical information, analyses, and educational efforts.

UWGB invites community participation in a variety of seminars, workshops, and conferences, develops opportunities for adults to continue their education through credit and non-credit programs, and schedules late afternoon and evening courses for the convenience of employed persons.

### **Seminars and Conferences**

UWGB regularly conducts seminars and conferences related to its focus on ecology. During 1971-72 it held an air quality workshop for high school seniors, a conference on the status of women, a third annual population symposium, a conference on political thought, and a conference on drug abuse.

### **Partnership with University Extension**

To bring to bear most effectively its combined programs of teaching, research, and community outreach on problems of the environment, UWGB cooperates with University of Wisconsin-Extension. UWGB and Extension faculties work together to identify problems, analyze opportunities, and design and conduct educational and community service programs. These joint activities are concerned with the economic, social, and cultural development of the communities of the region and with the career advancement, general educational improvement, and cultural enrichment of individuals throughout the region.

Non-credit offerings cover such topics as the improvement of environmental quality; community and regional planning and development; economic and social development of northeastern Wisconsin; business, industry, and labor management; recreation development, including planning and management of facilities and services; conditions of individual, family, and community disadvantage; and community cultural development.

Other offerings cover professional improvement in the fields of education, business management and public administration, recreation and leisure use, communications, and social services. Non-credit offerings in literature, history, philosophy, music, theater, dance, and the visual arts are available.

### **Undergraduate and Graduate Credit Courses Through University Extension**

UWGB, in cooperation with University Extension, offers selected courses for undergraduate and graduate credit that otherwise would not be available in northeastern Wisconsin. In addition, summer courses which can be taken by adults are offered cooperatively by University Extension and UWGB, including courses at a Door County art school.

### **Continuing Education Opportunities**

UWGB schedules late afternoon and evening courses during the fall, spring, and summer terms for adults who wish to enroll on a part-time or full-time basis. UWGB, through the Office of Communiversy Programs, also provides continuing education opportunities in professional and general classes, seminars, and workshops for all age groups in the Green Bay area.

### **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 the Student University Committee, which contributes to campus governance, 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 participation in band and choral groups, 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, is on a bluff overlooking 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 new building that is used primarily as a dining and assembly hall. It also accommodates 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 in these housing units.

The private developer cooperated with UWGB 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" or "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 intercollegiate athletic teams presently compete in basketball, golf, soccer, and tennis. All home basketball games are played in the Brown County Veterans Memorial Arena; home contests in golf, soccer, and tennis are played at the main campus.

UWGB competes in all athletic contests as an independent.

Its opponents include a number of high-ranking universities. UWGB follows the rules of the National Association of Intercollegiate Athletics 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 should increase. Meanwhile, in addition to the four varsity sports, the University offers a wide variety of intramural activities and club sports, enabling many students to enjoy athletic participation.

During the first three years of the intercollegiate program, the athletic teams, particularly in soccer and basketball, compiled outstanding winning records.

### **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 the following:

**FALL:** Archery, flag football, golf, soccer, speedball, tennis, and softball.

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

**SPRING:** Golf, tennis, and softball.

The intramural program is organized and administered by the Office of Intramural Activities and the Intramural Activities Council. The council is composed of team captains, activity representatives, and staff advisers.

### **STUDENT DEVELOPMENT CENTER**

The Student Development Center offers counseling help to students who need assistance with personal and emotional problems, vocational choice, and skill development. Trained counselors are available at all times. Various 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 most students generally make sound decisions in these areas, the Student Development Center staff stands ready to assist those who want help. All 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.

### **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 wish to have this kind of experience.

## **PLACEMENT AND CAREER INFORMATION**

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

The placement office brings to the campus employers from business, industry, government, and education, providing students with a wide range of job opportunities. In addition, a library of up-to-date literature on job opportunities is maintained and career guidance is available to students who request it. Students are assisted in making contacts and preparing resumes for job interviews.

In conjunction with the Student Development Center, a student can take advantage of individual or group counseling sessions to assist him in reaching a career decision based on a full appreciation of his potential.

The placement office also provides information and assistance to seniors wishing to continue their education at the graduate level. The placement library includes graduate school catalogs and information on financial assistance.

## **RESOURCES**

### **Office of Instructional Services**

The Office of Instructional Services supports the educational and administrative functions of the university through media and audio-visual services, computing and data systems, libraries, and the work of the curator of art.

### **Computing Services**

The staff of Computing Services supports the academic program of UWGB, sponsored and unsponsored research for faculty members, and administrative requirements of university offices. Consulting services also 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, with appropriate computer programs to facilitate the scoring and analysis of examinations, is available.



Capability of the UWGB computer system is multiplied by its link to the statewide University of Wisconsin computing utility network. A system of remote terminals is planned for the Green Bay campus to further assist administrative and instructional activity.

#### **Curator of Art**

The curator of art serves as custodian of UWGB's art collection, which includes the contemporary work of artists enjoying national and international reputations, as well as exemplary efforts by artists residing in the Upper Great Lakes region. Paintings, sculpture, watercolors, prints, drawings, ceramics, and photography comprise the various art forms owned by the University. The curator of art arranges exhibits, conducts a television program entitled "Gallery" which critiques the exhibitions, and acts as liaison to principal museums.

#### **Educational Communications**

UWGB distribution of instructional materials over an internal network of audio and video facilities has won national

attention. The network is the result of cooperative efforts between faculty and Educational Communications staff.

Microwave transmission, videotape distribution, cassette duplication, and closed circuit distribution combine with television, audio, photofilm, and graphics to create an instructional program answering the demand for practical study tools in the emerging field of ecology. *Semester-long courses* are transmitted from Green Bay to the UW-Marquette County Center by way of a microwave link and are augmented by an exchange of questions and answers through studio and classroom intercampus audio facilities.

Instructional television programs and audio lessons are routed to classrooms and carrels on the main campus through a multi-channel switching system. Learning carrel installations are strategically located throughout the campus and occupy the plaza level floor of the Library-Learning Center. They are focal points for audio-tutorial instruction in such subjects as algebra and physics.

Photographers and audio production specialists work with faculty and staff members to develop slide/tape presentations explaining the university mission and the ecology of northeastern Wisconsin to classroom and community groups. Students assist the professional staff of Educational Communications and gain proficiency in skills demanded beyond the campus.

UWGB provides the studios for public television channel 38 serving northeastern Wisconsin under license to the Educational Communications Board. Some of the time on this channel is available for UWGB programming.

### **Library**

The air-conditioned, eight-story Library-Learning Center is thoroughly contemporary. Employing the latest developments in library automation and planning; embodying attractive and practical design; centrally located on the campus; providing for the comfort and convenience of its readers and staff; endowed with a warm, pleasant atmosphere that invites students and stimulates learning in its many modes; and stocked with books, periodicals, and a full range of resource materials in all forms, the Library-Learning Center is the intellectual heart of the campus.

The collection is growing rapidly. In the fall of 1972 it included approximately 120,000 books, 15,000 reels of microfilm, more than 500,000 microprint cards, and various other types of library material essential for study and research. The periodical subscription list has about 2,700 titles, with backfiles of most of them available 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 and selected documents of foreign countries are maintained on microprint.

In addition, the library is a depository for Wisconsin and Michigan maps of the U. S. Geological Survey. The library has also been named an Area Research Center of the Wis-

consin State Historical Society, and, as such, houses historical manuscripts and archives of northeastern Wisconsin counties and municipalities.

A well-qualified staff is on hand to assist students and faculty in their work. 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 for convenient and uninterrupted study.

Resources of the University Libraries in Madison are made available through weekly truck service, aided by a microfilm copy of the Madison campus Memorial Library public catalog. The library is also an active member of NEWIL, an organization of northeastern Wisconsin area libraries sharing resources for better service to patrons. Faculty and students with advanced standing can obtain materials from other libraries throughout the country and the world through the Interlibrary Loan Service.





Working closely with the UWGB library are the libraries, each containing from 10,000 to 20,000 volumes, located at the Fox Valley, Manitowoc, and Marinette campuses of the UW Center System. Shared ordering, processing and cataloging facilities, and daily truck service tie all these libraries together.

#### **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 UWGB educational programs and to contribute to their improvement.

The primary activity of OED is a monitoring program designed to measure the progress of students toward instructional and personal goals. This program includes the placement testing of incoming freshmen as well as the progress tests at the end of the sophomore and senior years. 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.

Other OED programs are designed to take soundings on the "social climate" of the campus; help teachers increase their pedagogical skills; 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 Fine Arts**

A student-faculty committee and staff coordinator comprise the Office of Lectures and Fine Arts. It is the responsibility of this office to "book in" 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 also works closely with the instructional program in lending production support for on-campus shows and arranging tours of University-based performing groups.



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.

### 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 Regent UW Systems 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
Math (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	<hr/> 16 units

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

### **Admission Procedures**

An application should be submitted no later than August 1 for the fall term, December 15 for the spring term, or May 1 for the summer session.

Many students are admitted to the University on the basis of grades earned through the junior year in high school, plus a listing of subjects carried in the senior year, and therefore may receive a permit to register before high school graduation. Others may be asked to provide grades through the senior year to assist the admissions 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 his permit to register.

### **Office of Orientation**

The Office of Orientation provides the first contact that many high schools and the community have with UWGB. This office provides information to the high school community and to other publics about UWGB, the UW System, higher education, and related matters, and appropriate resources and services of the University to these same publics.

### **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 additional information.
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 has attended since high school to forward an official transcript directly to the Office of Admissions and certify as to his 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 desire to request UWGB credit for the courses.

UWGB is flexible regarding the transferability of credits from other institutions. While such credits are evaluated, UWGB is concerned primarily with levels of proficiency as disclosed by the College Level Examination Program (CLEP) and other tests. In some cases UWGB credits are awarded for high placement on these tests.

A student transferring to UWGB with senior standing may meet the all-University liberal education seminar requirement by taking the senior seminar plus either the sophomore or junior seminar. A student transferring as a sophomore or junior normally will be given credit for meeting distribution



and tool subject requirements if he has taken courses that, although not equivalent, meet the spirit of the requirements.

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

Courses completed or credits earned elsewhere are evaluated by the Office of the Registrar and an official credit evaluation is issued to the transfer student indicating the courses and credits accepted to *fulfill requirements* at UWGB. In general, the accreditation status of the previous institution and the quality of the student's achievement are the determining factors in course and credit transferability.

#### **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 the recommendation of the student's high school principal or his designated representative. A student seeking early admission should have completed the 11th grade. A student wishing to take a part-time course of study while still enrolled in high school must meet the requirements mentioned above, with the exception of the test scores.

#### **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 superior high school students who have completed the 10th or 11th 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. The superior high school student submits with his application a transcript of high school grades, a letter of recommendation from his principal, and a list of desired courses. 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 Session Only* to "try out" college work and 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 should file a Re-entry Application. 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 Application Form. (See the index for additional information on summer session.)

#### **New Opportunity Program**

The New Opportunity Program is designed for students clearly in need of special resources as verified at the time of admission. The program includes participation in the Special Learning Programs and close work with advisers and resource students to assure that immediate and long-range needs are met. (See the chapter on Enrichment and Resources for additional information.)

## 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 each semester during 1971-72 totalled approximately \$275 for a student classified as a Wisconsin resident by the Office of the Registrar and enrolled for 12 or more credits. A nonresident student paid approximately \$950 per semester tuition and fees. A part-time student may register for 11 credits or less on a per credit basis. Wisconsin residents pay an approximate fee of \$25 per credit; nonresident students, approximately \$81 per credit.

Resident status classification is governed by Section 36:16, Wisconsin Statutes of 1963. Since the regulations which determine resident status for tuition purposes differ in many respects from resident determination for other purposes, the student whose resident status may be in question is advised to consult the statute specified above or write to the Office of the Registrar. Informal opinions or statements concerning resident status determination by other University employees are not to be considered official.

Fees and tuition, as well as the application fee, preregistration fee, late payment fee, late registration penalty fee, and the refund schedule are subject to change without notice. Revised schedules are published in each *Timetable*.

### Preregistration Fee

When a student submits his preregistration study list, he is required to deposit a nonrefundable preregistration fee of \$50. This deposit is applicable to the regular semester fees when final registration is completed and the balance of the semester fees is paid. It is not an additional fee but is a part of the semester fee used as a deposit to reserve a student's place on class rosters up to the first day of classes.

### Late Registration and Late Payment Fees

An added fee of \$10 is charged all full-time students, and certain part-time students, who complete final registration after the official registration period.

If fees are paid after the first week of classes, the student is assessed a late payment penalty according to the following schedule: during the second week of classes, \$25; during the third and fourth weeks of classes, \$50.

### Refunds

A student who notifies the Office of the Registrar, by filing an official withdrawal form before the end of the fourth week, that he is withdrawing from all classes is entitled to a partial refund of fees and tuition as follows: during the first or second week, 80 per cent; during the third or fourth week, 60 per cent; after the fourth week, no refund. The date on which

the official Notice of Withdrawal form is submitted is the date used for authorizing a partial refund.

Students who make substantial credit load reduction adjustments during the first four weeks may also be eligible for a partial refund of fees and tuition.

All penalties and refunds are subject to change without notice.

### Summer Session Fees

Fees for the 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 will be denied an education at UWGB because of 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 may qualify. The financial aid office can provide detailed information.

### A Typical Budget

A 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:

	Commuter student living at home	Resident student living on campus
Fees	\$ 558	\$ 558
Books and Supplies	125	125
Room and board	450 (board only)	1150
Travel and miscellaneous	525	475
Totals	\$1658	\$2308

**Nonresident students should add \$1348 for out-of-state tuition to these figures. Changes of fees and tuition, which may be made without notice, would also change the budget totals.**

The "living at home" budget shows the actual costs of supporting a student in college, including the cost of food, miscellaneous expenses, and travel. Commuters and their parents should keep in mind that they are already paying for these items; the only additional costs are for fees and books, a total of \$683. Transportation costs depend on whether the student lives in Green Bay or commutes from a more distant residence.

### Financial Aid Application Procedures

**Forms.** Only one form is required. It is included in an application packet which can be obtained from guidance counselors and principals in Wisconsin high schools or from the UWGB Office of Student Financial Aids. A student who sub-





mits an application is considered for all the types of financial aid for which he is eligible. An application for aid may be filed before the University issues a permit to register, but a student must have his permit before UWGB can make him an offer of aid. A Parents' Confidential Statement, completed by the parents of the applicant, must be sent to the agency listed in the instructions.

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

For National Defense student loans, work-study jobs, and State of Wisconsin loans, applications are accepted throughout the year as long as funds are available. However, all applications filed before April 15 are given first priority. The University cannot guarantee loan or job assistance to those applying after the priority date. Students applying after the scholarship deadline dates but before priority dates will be notified of their awards by August 15.

**Parents' Confidential Statement.** To help judge student need and award aid fairly, the University asks parents 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 his education will cost.

Students are expected to commit a substantial amount of their resources toward education expenses before they request assistance. For students living on or near the campus, a car is unnecessary and can be a hindrance. Hence, a car often is regarded as an asset which can be sold to help a student meet his educational expenses.

**Aid Awards.** Rarely can a student meet all his 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. He 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. 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 he 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.

**Wisconsin Higher Education Grant.** This grant has replaced the former Wisconsin State Scholarship program. Awards are based primarily on financial need and are concentrated at the freshman and sophomore years.

**Educational Opportunity Grant.** The Higher Education Act of 1965 created a new federal student assistance program to help students "of exceptional financial need." In general, this means those students whose parents are able to provide only a small portion of the financing.

Further, the act specified that the institution awarding the federal grant must also offer the student an equal amount of assistance from its own resources. The matching award may be in the form of a job, loan, or a scholarship. The student must accept the matching award in order to accept the grant. The amount of the grant may equal half of the student's need up to a maximum of \$1,000 and it is renewable each year up to four years as long as the student continues to make satisfactory progress toward his degree and the financial situation does not change. Grants are considered gift assistance and do not have to be repaid.

**Loans.** In some cases it is advisable to borrow to finance an education. Caution is advised in borrowing, however, and generally a student should not rely primarily on loans to finance his education. A student is usually advised not to borrow more than half of what he needs to meet his expenses.

**National Defense Student Loan Program.** Under Title II of the National Defense Education Act of 1958, students in good standing and with financial need may be awarded a National Defense Student loan. An undergraduate may borrow a total of \$2,500 during the first two years of school. And, if the student has not previously borrowed during the first two years, he 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 his undergraduate program.

A borrower may have up to 10 years and 9 months after he ceases to be at least a half-time student to repay a loan. Repayments with interest of 3 per cent 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.** Residents of Wisconsin may borrow from the State of Wisconsin student loan program. These loans are from funds established by the state, and are administered jointly by the institution the student is attending and the State Higher Educational Aids Board. An undergraduate student may borrow up to \$1,500 per year and has up to 10 years and 9 months after he leaves school to repay the loan at 7 per cent interest. The minimum yearly repayment is \$360 plus accrued interest. Deferments of up to three years may be obtained for active duty with the armed forces, Peace Corps, or VISTA.

**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.

Depending upon the total amount borrowed, the student has up to 10 years to repay the loan at 7 per cent interest, after he has permanently left school. The undergraduate may borrow up to \$1,500 per fiscal year. Maximum accumulation of loans is \$5,000.

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 \$250 per academic year. Repayment usually is expected within the same semester that the loan is taken out. Interest rates vary, but the average is 2 to 3 per cent per year. Loans are usually made only for emergency situations.



**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 now claims residence. He 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.

**War Orphans Educational Assistance.** The War Orphans Educational Assistance Act provides educational benefits for children of permanently 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. A student who thinks he may be eligible for such financial assistance should write or call his 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.

**Student Employment.** All enrolled students and their spouses are eligible to use the employment services of the Office of Student Financial Aids. The student may apply any time during the year but he cannot be referred to a job opening until he arrives on campus.

Many students work on the UWGB 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. Students generally are able to earn from \$500 to \$700 during the academic year.

Most academically able students can, without undue strain, carry a full load of coursework while holding a part-time job of 12 to 15 hours a week. Many 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 student who has skills such as typing, shorthand, keypunching, bookkeeping, drafting, carpentry, painting, mechanics, photography, laboratory work, sales or janitorial work will have a much easier time finding a part-time position. The rate of pay for student jobs on and off campus generally ranges from \$1.80 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	\$1.80/hour	\$1.90/hour
10	\$612	\$646
12	\$734	\$775
15	\$918	\$965

#### **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 Seminar, January Practica, and physical education. The following abbreviations are commonly used throughout:

### Abbreviations

cr	credits
P	prerequisite(s)
fr	freshman
soph	sophomore
jr	junior
sr	senior
st	standing
cons inst	consent of instructor
CCC	College of Creative Communication
CCS	College of Community Sciences
CES	College of Environmental Sciences
CHB	College of Human Biology
SPS	School of Professional Studies

(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 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 203-303. 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:

- 102 Administration: Distribution (SPS)
- 104 Administration: Finance (SPS)
- 106 Administration: Labor  
Relations (SPS)
- 108 Administration: Organization and  
Operations (SPS)
- 109 Administration: Quantitative  
Methods (SPS)
- 143 Analysis-Synthesis (CCC)
- 156 Anthropology (CCS)
- 203 Biology (CHB)
- 205 Biology: Botany (CHB)

209 Biology: Entomology (CHB)  
 211 Biology: Microbiology (CHB)  
 215 Biology: Zoology (CHB)  
 224 Chemistry (CES)  
 226 Chemistry-Physics (CES)  
 242 Communication-Action (CCC)  
 246 Communication Sciences (CCC)  
 255 Community Sciences (CCS)  
 296 Earth Science (CES)  
 298 Economics (CCS)  
 301 Ecosystems Analysis (CES)  
 302 Education (SPS)  
 325 Engineering (CES)  
 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)  
 510 January Practica  
 532 Leisure Sciences (SPS)  
 538 Liberal Education Seminar  
 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)  
 559 Literature and Language:  
 Russian (CCC)  
 595 Mass Communications (SPS)  
 600 Mathematics (CES)  
 601 Special Learning Programs—  
 Mathematics  
 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)  
 754 Physics (CES)  
 778 Political Science (CCS)  
 779 Population Dynamics (CHB)  
 820 Psychology (CCS)  
 834 Regional Analysis (CCS)  
 892 Social Services (SPS)

900 Sociology (CCS)  
 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 the booklet, *"Here's How to Take Advantage of the Flexibility in the UWGB Academic Plan."*

#### 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. His adviser can direct him 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 chairmen. The student is encouraged to register in the first semester of the senior year.

**102 ADMINISTRATION: DISTRIBUTION (SPS)**

**298 Directed Study 1-4 cr.**

For description, see page 99.

**302 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.

**305 Theory and Practice in 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.

**310 Transportation and Purchasing 3 cr.**

Economic analysis of the costs of transportation and their effects on economic development, location, and marketing; relationships with price policies; principles of procurement of materials and goods by industry and government; sources, specifications, quality and price, internal control.

**402 Retailing and Wholesaling 3 cr.**

Management practices in the operation of retail and wholesale enterprises; merchandising, promotion, role of the buyer, inventory control. P: 102-302, sr st.

**403 Principles of Advertising 3 cr.**

Types of advertising and their characteristics; planning, execution, and evaluation of advertising campaigns. P: 102-302.

**404 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: 102-302.

**407 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: 102-302.

**410 Applied Motivational Research 3 cr.**

Studies and cases in the motivation of buyers and sellers, consumers and categories of publics. P: 102-302 and 820-335.

**498 Directed Study 1-4 cr.**

For description, see page 99.

**104 ADMINISTRATION: FINANCE (SPS)**

**298 Directed Study 1-4 cr.**

For description, see page 99.

**303 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: 109-204.

**305 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.

**306 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.

**402 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: 104-303.

**403 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: 104-303.

**405 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.

**498 Directed Study 1-4 cr.**

For description, see page 99.

**106 ADMINISTRATION: LABOR RELATIONS (SPS)**

**298 Directed Study 1-4 cr.**

For description, see page 99.

**302 Personnel Administration in Business 3 cr.**

The functions of personnel management: recruitment, staffing, training, safety, wage policy, and fringe benefits. P: jr st. Not open to persons who have had 106-303.

**303 Personnel Administration in Government 3 cr.**

A counterpart course to Labor Relations 302, but emphasizing aspects of personnel management unique to government ser-

vice: the problem of patronage, civil service rules and regulations, written examinations for recruitment. P: jr st. Not open to persons who have had 106-302.

**310 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.

**312 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.

**402 Problems in Labor Relations 3 cr.**

Treats basic problems such as industrial vs. craft unionism, strikes in government employment, the role of mediation and arbitration; the efficacy of statutes governing organized relations. Does not include cases in collective bargaining. P: jr st or cons inst.

**403 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 respecting women and children. P: jr st or cons inst.

**412 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: 106-312 and sr st.

**420 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: 106-310.

**498 Directed Study 1-4 cr.**

For description, see page 99.

**108 ADMINISTRATION: ORGANIZATION AND OPERATIONS (SPS)**

**110 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.

**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.

**203 Government and Business 3 cr.**

Relations of businessmen and business firms with the levels of government: local, state, and national; corporations and bureaucracies as institutions, their similarities and differences; brief treatment of government regulation of business and business determinants of government policy. P: soph st.

**283X Selected Topics in Administration 1-4 cr.**

For description, see page 99.

**298 Directed Study 1-4 cr.**

For description, see page 99.

**302 Principles of Organization and Operation 3 cr.**

Principles underlying the subdivision and specialization of productive work; problems arising from line and staff functions, and geographical decentralization; changing work demands; flow of information;

means of control; adapting to new requirements. P: 108-203, or concurrent registration.

**304 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.

**310 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.

**320 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.

**402 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.

**483X Selected Topics in Administration 1-4 cr.**

For description, see page 99.

**484 Senior Distinction Project 3 cr.**

For description, see page 99.

**491 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.

**498 Directed Study 1-4 cr.**

For description, see page 99.

**109 ADMINISTRATION: QUANTITATIVE METHODS (SPS)**

**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.

**205 Intermediate Accounting 3 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: 109-204.

**206 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: 109-204.

**230 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.

**251 Computer Science II for Business Students 3 cr.**

Business data processing; data vs. information; management information; scientific vs. commercial data processing. Online vs. batch systems; types of equipment; hardware evaluation; system designs and controls, computer center operation; programming techniques. P: 600-250.

**298 Directed Study 1-4 cr.**

*For description, see page 99.*

**302 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: 109-206.

**303 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 receivership; estates, personal trusts, and partnerships. P: 109-205.

**304 Financial Accounting, Theory, and Practice II 3 cr.**

Specialized and technical subject matter for majors in accounting; home office and branches, preparation and interpretation of consolidated statement and foreign exchange. P: 109-303.

**310 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: 109-205.

**315, 316 Business Law I, II 3, 3 cr.**

Contracts, agency, negotiable instruments, sales, property, partnerships, corporations, bankruptcy laws. P: jr st. May be taken in sequence, in reverse order, or independently.

**403 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: 109-304 or cons inst.

**404 Financial Information Systems 3 cr.**

Principles of systems design with an em-

phasis 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: 109-403 or cons inst.

**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: 109-204.

**498 Directed Study 1-4 cr.**  
For description, see page 99.

### 143 ANALYSIS-SYNTHESIS (CCC)

**101, 102 Introduction to Humanistic Studies I, II 3, 3 cr.**

An interdisciplinary study of the way human values are expressed in man's 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.

**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.



**211 Analytical and Synthetical Approach to Painting 3 cr.**

A lecture/studio introduction to the analytical and synthesizing (applied) phases of painting. The analytical is approached through various sources: Hegel, Burckhardt, Wolfflin, and others. The synthesizing or applied phase is explored through a systematic introduction to the mechanics of oil painting. One hour lecture/discussion and five hours of studio work each week. P: one year of drawing.

**213 Analytical and Synthetical Approach to Sculpture 3 cr.**

A lecture/studio course emphasizing the analytical as well as the practical approach to the historical development of sculpture with one hour per week devoted to discussion with slides and five hours per week of work in the studio experimenting with materials and techniques. P: lab fee of \$5 and one year of drawing.

**283X Selected Topics in Analysis-Synthesis 1-4 cr.**

For description, see page 99.

**298 Directed Study 1-4 cr.**  
For description, see page 99.

**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: 143-101, 102, jr st, or cons inst.

**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 his 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.

**311, 312 Visions of Man 3, 3 cr.**  
Without dogmatically teaching a vision of man, this course seeks to provide the student with an experience of some of the

**483X Selected Topics in Analysis-Synthesis 3 cr.**

For description, see page 99.

**484 Senior Distinction Project 3 cr.**

For description, see page 99.

**495 Symposium on Structure and Order: Ideas, Ideals, and Ideologies 3 cr.**

Offered only in January. It is topically and thematically oriented, thus varies in its content and methodology each time offered. Designed for majors but open to anyone.

**498 Directed Study 1-4 cr.**

For description, see page 99.

**156 ANTHROPOLOGY (CCS)**

**203 Understanding Changing Cultures 3 cr.**

Fundamental concepts and methods and their substantive applications to changing nonliterate, peasant, and complex societies; study of cultural processes of innovation, transculturation, drift, modernization, secularization, and integration. P: soph st or 255-102.

**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: 255-102 recommended.

**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.

**220 Myth, Ritual, and Religion 3 cr.**

Critical survey and analysis of mythologies, rituals, and religion and magic among divergent cultures of the world. Emphasis is placed on how religious and magical systems interrelate with family, political, and economic institutions. P: soph st or 255-102.

**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.

**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.

**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.

**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 culture. P: jr st or cons inst.

**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.

**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.

most significant ways in which man, in the past and in the present, has sought to understand himself, to look at himself in relation to his fellow man and to his 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: 143-101, 102, jr st, or cons inst.

**313 Man, Machines, and the Environment 3 cr.**

The environmental effects of man's attempts to exploit resources and to alter his 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: 143-101, 102, jr st, or cons inst.

**331 Geo-Historical Approaches to the Environment 3 cr.**

The interaction between man's conception of his environment, his attempts to classify it, and his actions to relate himself and his society to it. Important historical examples of the relationship between human behavior and scientific, social, and geographic thought are treated. P: 143-101, 102, jr st or cons inst.

**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: 143-101, 102, jr st, or cons inst.

**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: 143-101, 102, jr st, or cons inst.

**390 Man's Environment of Violent Change and Revolution 3 cr.**

A critical presentation of the major factors which give rise to violent mass movements as well as an examination of the movements themselves. Examined are violence on the individual, group, and nation-state level, employing psychologists, sociologists, political scientists, historians, and others. P: 143-101, 102, jr st, or cons inst.

**395 The Individual and His Culture: The Film-Maker's View 3 cr.**

Offered only in January. A study of the motion picture as a serious art form which examines and illuminates the relations between the individual and his society. Students view 12 significant and also entertaining movies which are analyzed for their aesthetic and cultural implications.

**423 Literary Research and Criticism 3 cr.**  
For description, see 552-423.

**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: 143-101, 102, jr st, or cons inst.

**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: 143-101, 102, jr st or cons inst.

143 - 369 - WOMEN CRISIS IN SOCIETY

✓ **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.

**203 BIOLOGY (CHB)**

**202 Biology of Cells 4 cr.**

An introduction to biological principles; cells as the fundamental units of living organisms. Includes laboratories.

**203 Biology of Organisms 4 cr.**

An introduction to biological principles; structure and function of organisms and their relationship to the environment. Includes laboratories.

**303 Genetics 3 cr.**

Mechanisms of heredity and variation, their cytological basis and their implications in biology. P: 203-202.

✓ **205 BIOLOGY: BOTANY (CHB)**

- **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.

- **320 Field Botany 3 cr.**

Identification and natural history of plants indigenous to Northeastern Wisconsin. P: 203-203.

**209 BIOLOGY: ENTOMOLOGY (CHB)**

✓ **302 Principles of Entomology 3 cr.**

The biology and habits of insects and their interrelationships with man. This course includes general anatomy, physiology, embryology, and classification of insects. Field collection is required. P: 203-203.

**211 BIOLOGY: MICROBIOLOGY (CHB)**

✓ **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: 203-202 and 224-108 or 226-110.

**303 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: 211-302.

✓ **215 BIOLOGY: ZOOLOGY (CHB)**

**302 Vertebrate Zoology 3 cr.**

The taxonomy, general biology, ecology, behavior, and special adaptations of chordate animals. P: 203-203.

• **303 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: 203-203.

• **305 Animal Behavior 3 cr.**

The biology of animal behavior patterns; the behavioral interactions of animals with their environment. P: 203-203.

• **310 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: 203-203.

✓ **320 Field Zoology 3 cr.**

Field collection and laboratory identifica-





tion of aquatic and terrestrial invertebrates and vertebrates of the region with analysis of their structure, behavior, and habitats. A collection is required. P: 203-203.

See also relevant courses in other areas including:

- 301-310, Plant Ecology, 3 cr.
- 301-311, Plant Physiology, 4 cr.
- 301-312, Productivity of the Ecosystem, 3 cr.
- 301-314, Plant Taxonomy, 3 cr.
- 301-315, Mycology, 3 cr.
- 301-316, Principles of Plant Distribution, 3 cr.
- 301-318, Systematics and Taxonomy, 3 cr.
- 301-403, General Limnology, 3 cr.
- 301-452, Elements of Biometeorology, 3 cr.
- 356-363, Forest and Plant Pathology, 3 cr.
- 362-302, Principles of Ecology, 3 cr.
- 478-302, Comparative Physiology, 4 cr.
- 478-402, Human Physiology, 4 cr.
- 478-413, Neurophysiology, 4 cr.
- 779-342, Human Evolution, 3 cr.
- 779-402, Population Biology, 3 cr.
- 779-412, Principles of Parasitology, 3 cr.

## 224 CHEMISTRY (CES)

### 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.

### 228 Bio-Organic Chemistry 3 cr.

Introductory course in organic chemistry with emphasis on those aspects of the field which are more 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 224-108 and cons inst).

### 229 Bio-Organic Chemistry Laboratory 1 cr.

Optional laboratory course to accompany 224-228. P: credit or concurrent registration in 224-228.

### 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 alcohols. P: credit or concurrent registration in 226-112 or 212.

### 303 Organic Chemistry II 3 cr.

Continuation of Chemistry 302. 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: 224-302.

### 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 224-302.

### 305 Organic Chemistry Laboratory 1-2 cr.

One or two three-hour laboratory periods per week. Intermediate level instrumental techniques and syntheses in organic chemistry. P: credit or concurrent registration in 224-303 and 304.

### 313 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.

### 321 Physical Chemistry 3 cr.

Properties of gases, liquids, and solids; solutions, chemical kinetics, electrochemistry, quantum theory, symmetry, atomic and molecular structure, spectroscopy. P: 226-320.

### 323 Physical Chemistry Laboratory 1 cr.

One three-hour laboratory per week. P: credit or concurrent registration in 224-321 and 226-322.

**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, 224-303 and 305 or cons inst.

**331 Biochemistry Laboratory 1 cr.**

One three-hour laboratory per week. P: credit or concurrent registration in 224-330.

**410 Inorganic Chemistry 3 cr.**

A survey of the elements including coordination and organometallic compounds. Modern bonding theories, group theory, and periodic properties are extended and applied to actual chemical systems and reactions. General acid-base theory and nonaqueous solvent systems are discussed. Special topics of current interest are included. P: 224-321.

**411 Inorganic Chemistry Laboratory 1 cr.**

Stresses inorganic reactions. A qualitative analysis scheme is designed and used to analyze for inorganic compounds in natural substances. Preparation of complex inorganic compounds. Instrumentation is used when available. P: credit or concurrent registration in 224-410.

**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: 224-313 and 321.

See also relevant courses in other areas, including:

226-110, 111, 112, 210, 211, 212, Chemistry-Physics, 5 cr. each

226-317, 318, Nuclear Physics and Radiochemistry (with laboratory), 3-4 cr.

226-320, 322, Thermodynamics and Kinetic Theory (with laboratory), 3-4 cr.

356-424, Environmental Biochemistry, 3 cr.

356-434, Water Chemistry, 4 cr.

356-453, Air Chemistry, 4 cr.

694-328, 329, Nutritional Biochemistry (with laboratory), 3-5 cr.

694-414, Nutrient Analysis, 4 cr.

694-485, 486, Advanced Human Nutrition, 3, 3 cr.

**226 CHEMISTRY-PHYSICS (CES)****✓ 110 Chemistry-Physics 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: 601-095 or equivalent.

**✓ 111 Chemistry-Physics 5 cr.**

Thermodynamics, chemical kinetics and chemical equilibria, motion, systems of forces, gravitation, mechanics of fluids, oscillations, wave motion, sound, and geometrical and physical optics. Students intending to pursue options in engineering, chemistry, or physics must take 226-211 and 212. P: 226-110.

**✓ 112 Chemistry-Physics 5 cr.**

Electricity and magnetism, chemical and physical properties of selected elements and compounds, nuclear physics and radiochemistry, modern physics topics, and selected integrated topics. Students intending to pursue options in engineering, chemistry, or physics must take 226-211 and 212. P: 226-111.

**✓ 210 Chemistry-Physics 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.

**✓ 211 Chemistry-Physics 5 cr.**

Thermodynamics, chemical kinetics and chemical equilibria, motion, systems of forces, oscillations, gravitation, and mechanics of fluids. Recommended for students pursuing CES concentrations or options in earth science, engineering, chemistry, mathematics, or physics and those preparing for graduate studies in the natural sciences. P: 226-210, and concurrent registration in 600-203.

**✓ 212 Chemistry-Physics 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 inte-

grated topics. Recommended for students pursuing CES concentrations or options in earth science, engineering, chemistry, mathematics, or physics or those preparing for graduate studies in the natural sciences. P: 226-211.

**317 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.

**318 Nuclear Physics and Radiochemistry Laboratory\* 1 cr.**

One three-hour laboratory per week. P: credit or concurrent registration in 226-317.

**320 Thermodynamics and Kinetic Theory 3 cr.**

Temperature, heat, and work. Thermodynamic properties of gases, solids, and solutions. Homogeneous and heterogeneous equilibria. Thermodynamics of electrochemical cells. Kinetic theory. Statistical thermodynamics. The calculation of thermodynamic properties of substances. P: 226-212 or 226-112 and 600-203.

**322 Thermodynamics and Kinetic Theory Laboratory 1 cr.**

One three-hour laboratory per week. P: credit or concurrent registration in 226-320.

**242 COMMUNICATION-ACTION (CCC)**

**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. The artist may be of various minds at various times concerning his social environment, but he inevitably responds to social conditions, and these responses, conscious or subconscious, find their way into his creative work. Normally includes one or more field trips to regional art centers.

\*Not offered in 1973-1974.

**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 times. Basic aesthetic and technological concepts are stressed. Normally includes one or more field trips to regional art centers.

**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.

**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 will be combined with outside listening to give the student basic repertoire of musical compositions of various forms and styles.

**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.

**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.

**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.

**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.

① **218 Introduction to World Literature I 3 cr.**  
For description, see 552-218.

② **219 Introduction to World Literature II 3 cr.**  
For description, see 552-219.

③ **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 repertoires, and influence upon Western music in the 20th century.

④ **241, 242 Introduction to Theater History I, II 3, 3 cr.**  
An introduction to 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.

⑤ **283X Selected Topics in Communication-Action 1-4 cr.**  
For description, see page 99.

⑥ **298 Directed Study 1-4 cr.**  
For description, see page 99.

⑦ **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.

⑧ **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.

⑨ **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.

⑩ **306 American Documentary Theater II: A Community Voice 3 cr.**  
Continuation of American Documentary Theater I. Normally, students complete the documentary script and, together with members of the theater staff, place the work into production.

⑪ **310 Criticism of the Performing Arts 3 cr.**  
For description, see 143-310.

⑫ **320 Communications: Extensions of Consciousness 3 cr.**  
Communicative systems as extensions of man's 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 man's image of himself, others, and the world, as that image affects his communicative attitudes, behaviors, and uses of language.

⑬ **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.

⑭ **324 Psycholinguistics 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).

⑮ **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.

⑯ **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.

**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.

**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.

**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.**  
For description, see 143-395.

**401, 402 Designing the Environment I, II 3, 3 cr.**  
The natural and man-made world as an integrated design phenomenon. Emphasis on man's attempt to make his environment reflect his aesthetic and personal values.

**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 affects of the arts and humanities on the scientific vision will also be explored. A project-oriented laboratory will provide an opportunity to examine and put to artistic use a broad range of technological tools such as lasers, electronics, chemicals, computers, etc.

**483X Selected Topics in Communication-Action 1-4 cr.**  
For description, see page 99.

**484 Senior Distinction Project 3 cr.**  
For description, see page 99.

**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.

**498 Directed Study 1-4 cr.**  
For description, see page 99.



**246 COMMUNICATION SCIENCES (CCC)**

**133 Voice and Speech I 3 cr.**

Introduction to the problems of voice production, voice quality, enunciation, and articulation.

**134 Voice and Speech II 3 cr.**

Voice production, voice quality, speaker presence, and the basics of public speaking.

**143 Introduction to Creative Photography 3 cr.**

An introduction to the creative process in photography, designed to develop visual perception through active participation in discussions and photographic exercises.

**166 Fundamentals of Interpersonal Communications 3 cr.**

An introduction to the 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.

**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.

**233 Voice and Speech III (Introduction to Public Speaking) 3 cr.**

Intermediate work on voice production and quality with emphasis upon public speaking, speech composition, and audience analysis.

**234 Voice and Speech IV (Introduction to Oral Interpretation) 3 cr.**

Intermediate work on voice production and quality with emphasis upon the oral interpretation of the written word for various audiences.

<sup>242</sup>  
**262 Argumentation and Debate 3 cr.**

The theory of argument, with practice in the preparation and delivery of various types of argumentative speeches and debates.

**266 Theory and Practice of Group Discussion 3 cr.**

The structure and dynamics of small-group decision-making; critical and creative problems in group interaction processes. P: 246-166 recommended.

**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.

**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.

**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.

**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.

<sup>was 311</sup>  
**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.

**333 Advanced 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: 246-233.

**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 non-dramatic forms of literature most suited to oral performance.

**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:

- 102-305, Theory and Practice in Public Relations, 3 cr.
- 102-403, Principles of Advertising, 3 cr.
- 102-410, Applied Motivational Research, 3 cr.
- 143-207, Philosophy and Language, 3 cr.
- 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.

552-212, 213, Introduction to Creative Writing: Fiction and Poetry, 3, 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.

736-360, Linguistic Analysis, 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.

**255 COMMUNITY SCIENCES (CCS)**

**102, 103 Man and His Social Environment 3, 3 cr.**

Introduction to concepts and concerns of the community sciences through an interdisciplinary focus on problems and opportunities of man and his social environment. A two-semester course. Students should take 102 before entering 103.

**205 Social Science Statistics 3 cr.**

Course in 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.

**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.

**310 Ethnographic Field Research Methods 3 cr.**

An intensive presentation of ethnographic field research methods via lectures, demonstrations, and supervised exercises. Techniques for obtaining, analyzing, and describing the composition and internal structures of sociocultural systems are presented with reference to other cultures as well as to Euro-American complex cultures. Some field observation and interviewing in a Nacirema subculture.

**296 EARTH SCIENCE (CES)**

**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.

**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. P: 296-202 or cons inst.

**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. P: 296-302 or cons inst.

**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. P: 296-202 or cons inst.

**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. P: 296-202.

**360 Deformation of the Earth's Crust 3 cr.**

An application of stress and strain analysis to a study of the genesis of primary and secondary structures of rock materials of the earth's crust. Two local field trips are scheduled to provide an opportunity to apply principles of the physics of deformation. P: 296-302.

**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. P: 226-112 and 296-202.

**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. P: 296-441.

\*Not offered in 1973-1974.





**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. 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.

356-330, Hydrology, 3 cr.

834-222, 223, Man and the Ocean of Air (with laboratory), 3-4 cr.

**298 ECONOMICS (CCS)**

**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.

**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.

**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.

**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.

**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.

**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.

**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.

**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.

**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.

**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.

**309 Introduction to Quantitative Economics 3 cr.**

Introduction to the estimation of economic relationships, including simulation and operations research. P: 255-205 or 600-260.

**401 Regional Economic Analysis 3 cr.**

Introduction to basic concepts and problems in the economic study of subregions of an economy, in both an intraregional and interregional context; problems in regional analysis; economic concepts regarding location, spatial organization, and planning for regional development. P: 298-202.

**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.

**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.

**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.

**405 International Finance 3 cr.**

Theory and recent experience in currency standards, international banking, exchange fluctuation, and exchange controls; international monetary cooperation and special topics. P: 298-403.

**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)**

**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.

**283X Selected Topics in Ecosystems Analysis 1-4 cr.**

For description, see page 99.

**298 Directed Study 1-4 cr.**

For description, see page 99.

**303 Electromagnetic Radiation 4 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.

**306 Biophysics 3 cr.**

The application of physical principles to the understanding of biological phenomena; the physical basis of life; inter- and intracellular 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 203-203 and 226-212 or equivalent or cons inst.

**310 Plant Ecology 3 cr.**

Interrelations of plant populations with the physical and biological factors of the environment; detection and description of pattern in the vegetation of North America and of Wisconsin. P: 362-302.

**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: 203-202, 203 and 226-112 or 212.

**312 Productivity of the Ecosystem 3 cr.**

World food sources and production processes, components of yield, fertilizer efficiency, genetic potential, climatic control, and land capability restrictions on food production; potential of aquatic and microbial food sources. P: 203-203.

**313 Dendrology\* 3 cr.**

Identification of native and cultivated trees and shrubs, their economic uses, distribution, growth, reproduction, and autecology. P: 203-203.

**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: 203-203.

**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: 203-202.

**316 Principles of Plant Distribution\* 3 cr.**

A study of present and past distributions of plants throughout the world and the structure of modern vegetation with emphasis on the floristic and ecological plant geography of North America. P: 205-320 or 301-313 or 314.

**318 Systematics and Taxonomy\* 3 cr.**

A consideration of the historical background of systematics, modern systems of analysis, the experimental approach to systematic problems, and interrelations with other fields. P: 203-203.

**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 to be arranged. P: 203-203, 224-108 or 226-110, and 296-202.

**350 Meteorology 3 cr.**

Introduction to atmospheric processes, their nature, and their measurement. P: 226-212.

**351 Meteorology Laboratory 1 cr.**

P: concurrent registration in 301-350.

**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: 203-203 and 226-110.

**410 Principles of Human Ecology 3 cr.**

(See 779-410.)

**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: 203-202, 203, and 226-112 or 212.

**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.

**452 Elements of Biometeorology\* 3 cr.**

The influence of the atmospheric environment on plants and animals; adjustments and adaptations made by organisms to changes in atmospheric environment. P: 362-301 and 301-350.

**472 Systems Simulation\* 3 cr.**

The comparison of proposed methods of operating a system through experimentation by means of the symbol manipulation capabilities of the computer, programming languages used in simulation, technical problems of simulation, statistical problems peculiar to simulation, applications. P: 600-250 and 361.

**483X Selected Topics in Ecosystems Analysis 1-4 cr.**

For description, see page 99.

\* Not offered in 1973-1974.

6 **484 Senior Distinction Project 3 cr.**  
For description, see page 99.

7 **498 Directed Study 1-4 cr.**  
For description, see page 99.

## \* 302 EDUCATION (SPS)

1 **201 Analysis of Learning Environments 2 cr.**  
An investigation of major variables affecting teaching and learning in the schools: the teacher and his 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, registration in education collateral.

2 **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: registration in education collateral.

3 **283X Selected Topics in Education 1-4 cr.**  
For description, see page 99.

4 **298 Directed Study 1-4 cr.**  
For description, see page 99.

5 **302 Elementary School Teaching Methods in Social Studies 3 cr.\***  
Teaching methods in the social studies in the elementary school. P: jr st.

6 **303 Elementary School Teaching Methods in Art 2 cr.\***  
Teaching methods in art. P: jr st.

7 **304 Elementary School Teaching Methods in Music 2 cr.\***  
Teaching methods in music. P: jr st.

8 **305 Elementary School Teaching Methods in Mathematics and Science 4 cr.\***  
Teaching methods in mathematics and science. P: jr st.

9 **306 Elementary School Teaching Methods in Physical Education 2 cr.\***

Teaching methods in physical education. P: jr st.

10 **307 Elementary School Teaching Methods in Reading 3 cr.\***  
Teaching methods in reading P: jr st.

11 **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 atti-

\* These courses are required for an elementary school teacher's license in Wisconsin.



tudes 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.

**1 310 Secondary School Teaching Methods in English 3 cr.**

For students who wish to be licensed in Wisconsin for the teaching of English in secondary schools. P: jr st.

**2 311 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.

**3 312 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.

**4 313 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.

**5 314 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.

**6 316 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 technique; curriculum development in art; and the role of the art teacher in the secondary school. P: jr st.

**7 317 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.

**8 318 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.

**9 319 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.

**1 355 Theory and Practice of Human Relations Skills 3 cr.**

For description, see 892-355.

**1 402 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. Offered on a pass-no credit basis only.

**2 403 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.

**3 404 Creative Learning in the Schools 2 cr.**  
Systems of instruction which foster creativity within the school. Simulation of learning experiences, systems of discovery-centered questions, and individual approaches to learning in the several subject matter areas. P: jr st.

**4 405 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.

**5 406 Evaluation Systems 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.

**6 407 Developing Environmental Education Materials for the Schools 2 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.

**1 461 Introduction to Programs in Drug Abuse Treatment and Education 3 cr.**  
For description, see 892-461.

**2 483X Selected Topics in Education 1-4 cr.**  
For description, see page 99.

**3 498 Directed Study 1-4 cr.**  
For description, see page 99.

### **325 ENGINEERING (CES)**

**1 102 Elements of Descriptive Geometry 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: 601-095.

**2 113 General Engineering Graphics 3 cr.**

Advanced principles of projection and perspective, sectional views, dimensioning, freehand sketching, isometric, and oblique pictorials, graphs and nomographs, drawings and electric circuits. Individual problems are designed to serve the interests of the student's concentration. P: 325-102.

See also relevant courses in other areas, including:

356-311, Mechanics of Materials, 3 cr.

356-313, Mechanics I, 3 cr.

356-314, Mechanics II, 3 cr.

356-318, Engineering Systems and Automatic control, 3 cr.

356-330, Hydrology, 3 cr.

356-332, Introduction to Geophysical Fluid Mechanics, 3 cr.

754-315, Mechanics III, 3 cr.

### **356 ENVIRONMENTAL CONTROL (CES)**

**1 249 Fortran Programming for Scientists 1 cr.**

An intensive course in Fortran programming with mathematical application relevant to the science-oriented student. Specifically designed for the student who is enrolled in the calculus sequence and desires an ability to utilize Fortran programming for the solution of mathematical and scientific problems he may encounter in future work.

**2 272 Introduction to Analog Computer Simulation 2 cr.**

Programming and operating an election analog computer. Solutions of differential equations. Simulation of linear and non-

linear systems. Automatic control of analog modes with logic signals. Parameter incrementation.

**3 283X Selected Topics in Environmental Control 1-4 cr.**

For description, see page 99.

**4 288 Man and Wildlife 2 cr.**

An introduction to the wildlife resource stressing the interrelationship with modern society and the importance to man. Cultural, recreational, and biological aspects of the resource are emphasized.

**5 298 Directed Study 1-4 cr.**

For description, see page 99.

**1 311 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.

**2 313 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.

**3 314 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 angu-

lar impulse and momentum, central force motion. P: 356-313.

**4 315 Mechanics III 3 cr.**

See 754-315.

**5 318 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; 356-311 or 600-308 recommended.

**6 320 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: 224-108 or 226-110; 296-202 recommended.

**7 321 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.

**8 327 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. Jointly listed with CES and CCC, it serves the dual role of a communication bridge between the two colleges and as a basic course in environmental design for both colleges.

**9 328 Games and Decisions 3 cr.**

A survey of the central ideas and results of game theory and related decision making models without making use of excessive mathematical detail. Problems include value (or utility), subjective probability, conflict of interest (game theory), decision making under uncertainty, and social resolutions of value conflicts. Aimed primarily toward those working in the social and environmental sciences, it emphasizes and criticizes aspects of the theories that appear to be their main concerns.



**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.

**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. P: 226-211 or concurrent registration.

**355 Techniques of Mathematical Optimization\* 3 cr.**

An introduction to the techniques of analytical and numerical optimization with applications to problems of water, forest, air, and solid waste management. Topics to be considered are classical optimization, search techniques, linear programming, non-linear programming, integer programming, and networks. P: 600-206.

**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: 203-203.

**402 Introduction to Stratigraphy and Sedimentology 3 cr.**

Introduction to the 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 sub-crops of stratified rocks. Lecturers and one field trip. P: 296-202 and either 296-302 or 301-331.

**424 Environmental Biochemistry 3 cr.**

Microbial and chemical transformations of carbon, nitrogen, phosphorus, sulfur, and certain trace compounds in soil-water atmosphere systems; fate of selected pesti-

cides, 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: 203-202, 296-202, 224-228 or 302.

**425 Environmental Biochemistry Laboratory 1 cr.**

Methods of microbial and chemical analysis. P: credit or concurrent registration in 356-424.

**427 Introduction to Geophysics 3 cr.**

Introduction to the interior structure and surface features of the earth. Fundamental principles of seismology and surface wave, earth gravimetry and geomagnetism, thermal state and heat flow of the earth.

**431 Introduction to Physical Oceanography 3 cr.**

An understanding of the physical nature of the oceans and Great Lakes. Characteristics of sea water and lake water; ocean currents and circulation; air-sea interaction; waves, tides, and tsunami; measurements of currents, waves, and tides.

**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: 224-313.

**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.

**453 Air Pollution Chemistry and Meteorology\* 3 cr.**

Chemical reactions and transport phenomena in the unpolluted and polluted atmos-

\* Not offered in 1973-1974.



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phere with a special emphasis upon dispersal processes and control.

**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.**  
For description, see 242-471, 472.

~~483X~~ **Selected Topics in Environmental Control 1-4 cr.**  
For description, see page 99.

~~484~~ **Senior Distinction Project 3 cr.**  
For description, see page 99.

~~498~~ **Directed Study 1-4 cr.**  
For description, see page 99.

### 362 ENVIRONMENTAL SCIENCES (CES)

**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 man's 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.

2  
**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 man as a factor in the ecosystem and to concepts underlying strategies used in the management of natural resources. P: 203-203.

3  
**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 processes 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 203-203 or 296-202.

4  
**310 Environmental Measurement 3 cr.**  
Actual measurements and determinations of important environmental variables associated with air, water, and soil as they are related to living plants and animals affected by open field, urban, and other special types of environments. Principles of sampling, data recording, and data analysis are discussed. Opportunities to install and operate specific instruments are offered, and some of the practical difficulties and limitations of each measurement are discussed and demonstrated. P: 226-112; 600-260 or 264 recommended.

### 416 GEOGRAPHY (CCS)

1  
**102 Approaches to Geography 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.

2  
**202 Introduction to Cultural Geography 3 cr.**  
A consideration of the impact of culture through time in creating the world's contrasting landscapes.

215  
1  
**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.

2  
**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.

**325 Regional Climatology 3 cr.** (3)

The elements, controls, and classification of climates; the distribution of climatic types over the earth; world patterns. P: jr st or cons inst. (4) 331

**341 Urban Geography 3 cr.** (5)

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. (6) 342

**350 Maps and Air Photos 3 cr.** (7) 345

Introduction to the appreciation, use and evaluation of maps and air photos as informational sources. P: soph st. (8)

**355 Introduction to Quantitative Methods of Spatial Analysis 3 cr.** (1)

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.

**361 Geography of Africa 3 cr.** (2)

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. 362 (2)

**371 Geography of the United States and Canada 3 cr.** (3)

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.

**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.

**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.

See also relevant courses in other areas, including:

834-222, 223, Man and the Ocean of Air, (with laboratory) 3-4 cr.

834-244, 225, The Land Surface: Form and Effects on Man, (with laboratory) 3-4 cr.

834-362, Analysis of the Great Lakes Region of Africa, 3 cr.

834-372, Analysis of the Great Lakes Region of North America, 3 cr.

834-377, Geography of Northern Lands, 3 cr.

834-382, Regional Analysis of Northwestern Europe, 3 cr.

**426 GROWTH AND DEVELOPMENT (CHB)**

**205 Challenges to Human Development 3 cr.** (1)

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.

**210 Psychology of Human Development and Learning 3 cr.** (2)

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 the student greater command of his own progress.

**283X Selected Topics in Growth and Development 1-4 cr.**

For description, see page 99.

**298 Directed Study 1-4 cr.**

For description, see page 99.

**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.

**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.

**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.

**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.

**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.

**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.

**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.

**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.

**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.

**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.

**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.

**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.

**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.

**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.

**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.

**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 pre-school and/or kindergarten settings per week. P: 426-442.

**483X Selected Topics in Growth and Development 1-4 cr.**

For description, see page 99.

**484 Senior Distinction Project 3 cr.**

For description, see page 99.

**498 Directed Study 1-4 cr.**

For description, see page 99.

**448 HISTORY (CCC)**

**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.

2 **203 History of Europe from 1300 to 1815 3 cr.**

Origins and development of the 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 secular and rational man.

3 **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.

4 **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.

5 **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.

6 **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.

7 **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 enter into man's new world. Begins geographically in Anatolia, the Mesopotamian Valley, the Fertile Crescent, the Nile Valley, and the islands of the Eastern Mediterranean. The history of the Mycenaean, 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.

1 **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.

2 **302, 303 History of American Thought and Culture 3, 3 cr.**

3 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, man, 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.

**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.

**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.

**308, 309 History of Science in Modern Times 3, 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. Can be taken out of sequence.

**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.

**314 The Transformation of Imperial Russia from 1850 to 1917 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.

**315 History of 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.

**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.

**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.

**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.

**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.

**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.



**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.

**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.

**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.

**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.

**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.

**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.

**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 chairman.

**478 HUMAN ADAPTABILITY (CHB)**

**104 Anatomy and Physiology 4 cr.** 1

The structure of the human body and the physiology of the organ systems. Primarily for nursing students. Includes laboratory. P: 203-202 and 224-108 or 226-110.

**201 Adaptation to the Environment 3 cr.** 2 2

An examination of the morphological and functional adaptations of animals to the aquatic, aerial, and terrestrial environments and a consideration of man's adaptability to the stresses brought about by technology and crowding. P: soph st.

**283X Selected Topics in Human Adaptability 1-4 cr.** 3

For description, see page 99.

**298 Directed Study 1-4 cr.** 4

For description, see page 99.

**301 Adaptive Mechanisms 3 cr.** 5

A study of the discrete biochemical, cellular, organismal, and morphological changes that are the bases for adaptation and acclimatization. P: 203-202 and 203 and 226-112 or 212.

**302 Comparative Physiology 3 cr.** 6

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: 203-203, 226-112 or 212, or cons inst.

**303 Laboratory in Comparative Physiology 1 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.

**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 203-202 and 203.

**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: 203-202 and 203 and 226-112 or 212.

**403 Human Physiology Laboratory 1 cr.**

Laboratory exercises in conjunction with 478-402 with special emphasis on experimental techniques and fundamentals of research based on exercise as the stimulus initiating the response to be demonstrated and measured. P: 478-402 or concurrent registration.

**413 Neurophysiology 3 cr.** 3

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: 203-202 and 203 and 226-112 or 212 or cons inst.

**414 Neurophysiology Laboratory 1 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.

**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 socio-psychological concerns. Offered in alternate years. P: jr st and 203-202 and 203.

**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: 203-202 and 203 and 226-112 or 212.



3 **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 those in the concentration. P: sr st or cons inst.

4 **483X Selected Topics in Human Adaptability** 1-4 cr.

For description, see page 99.

4 **484 Senior Distinction Project** 3 cr.

For description, see page 99.

5 **498 Directed Study** 1-4 cr.

For description, see page 99.

**480 HUMAN BIOLOGY (CHB)**

**102 Introduction to Human Biology** 3 cr.

Introduction to the development, nature, and processes of human adaptability.

**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 chairman of the appropriate program. Students ordinarily pursue one activity during January. Specific programs are published in the January *Timetable*.

**532 LEISURE SCIENCES (SPS)**

1 **283X Selected Topics in Leisure Sciences**  
1-4 cr.

For description, see page 99.

2 **298 Directed Study** 1-4 cr.

For description, see page 99.

3 **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.

203 **310 Formulating and Administering Recreation Programs** 3 cr.

Practice in designing programs and establishing effective organizations for their administrations; 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.

1 **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 hours in leisure sciences.

2 **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.

3 **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.

1 **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. Problems orientation to the public lands in the Upper Great Lakes region. P: jr st.

✓ **483X Selected Topics in Leisure Sciences**  
1-4 cr.

For description, see page 99.

G **498 Directed Study** 1-4 cr.

For description, see page 99.

7 **538 LIBERAL EDUCATION SEMINAR**

**101, 102 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 man's values and their relations to contemporary ecological problems. Studied in lectures limited to 60 students and student directed discussions limited to 15 students. Methodology includes critical reading, written and verbal communication, and discussion. The student selects two topics for study each term. Sample topics are technology and human values, resource utilization and the American character, contemporary moral problems, freedom and social control, and aesthetics of the environment.

**211 Seminar in Creative Communication**  
3 cr.

Topics studied vary from year to year, but in every case they are developed in perspectives of aesthetic, intellectual, and spiritual fulfillment to provide a foundation for the project to be completed in 538-212. P: 538-102.

**212 Seminar in Creative Communication**  
3 cr.

The completion and presentation of a project related to the topic or topics examined in 538-211 pursued in a supervised field experience. P: 538-211.

**213 Seminar in Community Sciences** 3 cr.

Introduction to the identification, preparation, and presentation of projects related to the opportunities and problems of man and his social environment. Emphasis is on Northeastern Wisconsin. P: 538-102 and 255-102.

**214 Seminar in Community Sciences** 3 cr.

In-depth study of a specific field project in Northeastern Wisconsin selected in 538-213. Data is collected and organized for presentation to the seminar group. P: 538-213.

**215 Seminar in Environmental Sciences**  
3 cr.

Introduction to the techniques of identification, definition, and solution of problems relating man to his environment. The scope of the major facets of that environment are analyzed; techniques of data collection are evaluated; and the organization of the data and the reporting of conclusions are undertaken. P: 538-102.

**216 Seminar in Environmental Sciences**  
3 cr.

Each student selects a facet of the environment, beyond the limits of the campus but readily accessible and of particular interest to him. The student defines the item, analyzes it, and reports upon it to his seminar group. P: 538-215.

**217 Seminar in Human Biology** 3 cr.

Introduction to the method of inquiry into problems of human adaptability. Techniques necessary to the identification, experimental design, collection and analysis of data and the dispersion of information relevant to these problems are explored. P: 538-102.

**218 Seminar in Human Biology** 3 cr.

Application of the tools acquired in 538-217 to a problem appropriate to the concentrations of the college and involving more than library resources. The student identifies the problem, collects the data as part of a field experience, and analyzes and reports the findings to the seminar group. P: 538-217.

538-220  
**311 Junior Seminar in Creative Communication** 3 cr.

Examines the relationships of cultural groups within the world community, and cultivates awareness of cultural contrasts and understanding of diverse and universal reflections of human identity. Selected Western and non-Western cultures and identities are studied, relevant to the student's proposed cross-cultural experience and project. P: 538-212.

**313 Junior Seminar in Community Sciences**  
3 cr.

A focus on the national and world community cultivates awareness of cultural contrast and understanding of other value

systems. Selected Western and non-Western cultures are studied and compared, utilizing various resources on the campus in a seminar format, in preparation for the second semester cross-cultural experience. P: 538-214.

**315 Junior Seminar in Environmental Sciences 3 cr.**

An opportunity to gain insight into the detailed nature of the physical, chemical, and geological aspects of the *environment*, the regulatory processes of natural and artificial biological systems, and to apply adaptive strategy in solving problems associated with man's impact upon the aquatic, terrestrial, or atmospheric components of the environment. P: 538-216.

**317 Junior Seminar in Human Biology 3 cr.**

Environment and man's ability to adapt to it dictate in large part the culture that he develops. Effects of stress on physical and mental growth and development are considered in the light of a number of cultures, using examples of extremes of climate. P: 538-218.

**312, 314, 316, 318 Junior Seminar Cross-Cultural Experience and Project 3 cr. ea.**

Study of the involvement in other communities of the United States and abroad. Each participant develops a means of comparing cultural perspectives in his own emerging field of competence. Two written reports are required: a cultural inventory of comparative experiences and an analytical review of a specific problem in the context of his own concentration. Alternatives are available. P: 538-311, 313, 315, or 317.

**401, 402 Senior Seminar 3, 3 cr.**

An interdisciplinary seminar on selected problems in the natural, social, technological, and cultural environment. Seniors from different colleges study a complex situation of particular concern to society. P: 538-312, 314, 316, or 318.

**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 em-

phasis 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**

**557 Italian**

**558 Spanish**

**559 Russian**

**102, 103 Introduction to the French, German, Russian\*\*, 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.

\* 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. 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.

\*\* Italian and Russian are currently offered on a limited basis only.

**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.

**105 Introduction to the French, German, Italian\*\*, Russian\*\*, Spanish Language 8 cr.**

An intensive course open to students having little or no knowledge of the language. One semester of liberal education seminar credit is given to those taking the course in preparation for an other-cultural experience. Students other than those in junior LES programs will be admitted if space is available. Class meets ten times per week, four hours in class, four hours for drill and two hours for language lab or other exercises. Preparation outside of class is kept to a strict minimum.

**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, Russian\*\*, 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.**

For description, see 143-207.

**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.

**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 the historical periods in the 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.

**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, Italian, Russian, 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, Italian, Russian, 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, Italian, Russian, 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 in 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 interests 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 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 English Seminar 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.

**595 MASS COMMUNICATIONS (SPS)**

**202 Media I: Introduction to Mass Communications 3 cr.**

For description, see 246-202.

**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.

3  
**283X Selected Topics in Mass Communications 1-4 cr.**

For description, see page 99.

4  
**298 Directed Study 1-4 cr.**

For description, see page 99.

5  
**305 Elements of Electronic Media 3 cr.**

For description, see 246-305.

6  
310  
**320 Advanced Reporting 3 cr.**

7  
Development of skills in journalistic research and in-depth reporting; analysis of source and audience contexts. P: 595-203.

8  
**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.

9  
**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.

10  
**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.

11  
**430 Mass Media and Society 3 cr.**

For description, see 246-430.

12  
**483X Selected Topics in Mass Communications 1-4 cr.**

For description, see page 99.

13  
**498 Directed Study 1-4 cr.**

For description, see page 99.

14  
**600 MATHEMATICS (CES)**

**104 Elementary Functions: Algebra and Trigonometry 4 cr.**

The real number system, functions, exponential and logarithmic functions, trigo-

nometric 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: 601-095 or satisfactory score on placement examination.

**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: 601-095 or satisfactory score on placement examination.

**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.

**202 Calculus and Analytic Geometry I 4 cr.**

An introduction to 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.

**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.

**206 Calculus and Analytic Geometry III**  
5 cr.

Real valued functions of several variables, partial derivatives, Taylor's series, multiple integrals, improper integrals, applications. P: 600-203.

**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: 601-095 or satisfactory score on placement examination.

**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: satisfactory score on placement examination or passing grade in 601-095.

**252 Machine Organization 3 cr.**

An introduction to concepts involved in the design of computers and computer systems. P: 600-250.

**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: 601-095 or satisfactory score on placement examination.

**264 Elementary Probability 4 cr.**

An introduction to probability and statistical inference, making use of the calculus developed in 600-202. P: 600-202.

**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.

**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.

**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.

**315 Intermediate Ordinary Differential Equations 3 cr.**

Systems of linear ordinary differential equations, Laplace transforms, linear ordinary differential equations with variable coefficients, boundary value problems involving nonhomogeneous linear equations, asymptotic expansions, nonlinear ordinary differential equations, numerical methods. P: 600-250 and 308.

**317 Heaviside Operational Calculus 3 cr.**

Heaviside calculus for recursion relations and digital systems; Heaviside calculus for integral-differential equations and analog systems; operand convergence, operator convergence; approximation of an analog system by a digital system. P: 600-308.

**318 Engineering Systems and Automatic Control 3 cr.**

(See 356-318.)

**321 Linear Algebra I 3 cr.**

Vector spaces and vector space isomorphisms, linear transformations, matrices and matrix operations. P: 600-203.



**322 Linear Algebra II 3 cr.**

Equivalence relations on matrices, canonical forms for similar matrices, eigenvalues and eigenvectors, matrix orthogonalization. P: 600-308 and 321.

**328 Introduction to Algebraic Structures 3 cr.**

Groups, rings, and fields as organizing ideas. Basic structure theorems. Applications. P: 600-203.

**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.

**353 Advanced Programming 3 cr.**

Structure of languages and of a particular programming language, theory of compilers, evolution of a translator. P: 600-250.

**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.

**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.

**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.

**363 Experimental Designs 3 cr.**

Methods of constructing designs for experimental investigations; concepts of ran-



domization and replication; experimental unit techniques; completely randomized and block designs; confounding; fractional replication; response surface methodology; incomplete block designs. P: 600-362.

**375 Optimization 3 cr.**

Linear programming, dynamic programming, combinatorics, and calculus of variations. P: 600-308 and 311.

**376 Theory of Games 3 cr.**

Introduction to von Neumann's theory of games with emphasis on the two-person, zero-sum game, applications to problems of strategy, decision functions, and to linear programming. P: 600-202 and 250.

**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.

**385 College Geometry 3 cr.**

Intuitive and deductive introductions to euclidean, affine, hyperbolic, spherical, elliptic and synthetic projective geometries. P: 600-202.

**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.

**412 Real Analysis II 3 cr.**

The metric space setting. Metric spaces, functions and sequences, open and closed sets, connectedness, compactness, completeness, contraction mappings, Lebesgue integral, Fourier series. P: 600-312.

**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.

**472 Systems Simulation 3 cr.**

(See 301-472.)

**601 SPECIAL LEARNING PROGRAMS—  
MATHEMATICS**

The courses below are offered on an automatic pass-no credit basis, except by petition. Not offered for degree credit.

**085 Topics in Plane Geometry 1 cr.**

For conditional matriculants and other students who have not had high school geometry. Geometry topics basic to an understanding of college level mathematics are covered.

**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.

**095 Intermediate Algebra 3 cr.**

A second course in algebra utilizing a three-fold approach of lecture, small group

tutoring sessions, and a self-teaching programmed text. Topics include a review of fundamental concepts, set algebra, factoring, operations with rational expressions and complex fractions, linear and higher degree equations, equations including radicals, introduction to functions, rational exponents, and complex numbers. Primarily for those who have had a course in elementary algebra. P: one year of high school algebra, satisfactory score on placement examination, or 601-094.

**662 MODERNIZATION PROCESSES (CCS)**

**283X Selected Topics in Modernization Processes 1-4 cr.**

For description, see page 99.

**298 Directed Study 1-4 cr.**

For description, see page 99.

**290 Power and Change in America 3 cr.**

An exploration of alternative perspectives on the location of power in the United States and the implications of these analyses for efforts to bring about effective solution to problems such as poverty, war, alienation, and destruction of our physical environment.

**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.

**361 Processes 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. P: 662-360.

**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.

**380 Black Man in White America 3 cr.**

The case of formerly African people in North America is examined in terms of

\*Not offered in 1973-1974.

cultural, technological, and environmental adaptations together with significant economic factors, questions of value, and social structure. Key issues such as social inequality, conflict, and efforts of planned change are discussed.

**385 Dynamics of Revolutionary Change**  
**3 cr.**

A few political revolutions are examined, but emphasis is on the political, social, and psychological re-structuring 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.

**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 on decisions of administrative units (AEC, Forest Service, National Park Service, etc.), problems of legal jurisdiction (including procedural questions), and substantive determinations by the courts.

**410 Alternative Social Environments from Speculative Fiction 3 cr.**

An inquiry into man's 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.

**415 Development, Technology and Environmental Quality 3 cr.**

Interrelationships between man, 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.

**450 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.

**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.

**483X Selected Topics in Modernization Processes 1-4 cr.**

For description, see page 99.

**484 Senior Distinction Project 3 cr.**

For description, see page 99.

**498 Directed Study 1-4 cr.**

For description, see page 99.

**694 NUTRITIONAL SCIENCES (CHB)**

**142 Hunger in the Americas—A Problem of Ecology 2 cr.**

Aspects of nutrition as ecological problems. Deals with nutrition profiles and problems of target groups of the population in selected areas of Northeastern Wisconsin, the state, the nation, and the rest of the western hemisphere. Effects of such factors as population size, food availability, and life styles of groups offer insights regarding nutritional status of the regions and of special groups including migrant workers, communes, and college students.

**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.

**283X Selected Topics in Nutritional Sciences 1-4 cr.**

For description, see page 99.

**298 Directed Study 1-4 cr.**

For description, see page 99.

**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.

**303 Food Science 4 cr.**

Standards of food quality, food preferences, food assay; food deterioration, adulteration, methods of preservation and packaging, problems of food preservation and distribution as related to world food needs. P: 224-303 or 694-328.

**328 Principles of Nutritional Biochemistry 3 cr.**

Comprehensive survey of metabolism and physiological chemical functions in living organisms. P: 224-228 or 303.

**329 Nutritional Biochemistry Laboratory 2 cr.**

An optional laboratory course to accompany 694-328. P: 224-229 and previous credit or concurrent registration in 694-328.

**342 Hunger in the Americas—A Problem of Ecology 2-3 cr.**

An in-depth coverage of specific sections or groups as treated in 694-142. Reports exploring an unusual, specialized phase or equivalent action-oriented project are required. P: 694-232. Cons inst necessary for 3 credits.

**414 Nutrient Analysis 4 cr.**

Composition of foods and the chemical and microbiological analysis of nutrients. P: 224-229 or 305 and 226-112 or 212 or cons inst.

**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.

**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.

**483X Selected Topics in Nutritional Sciences 1-4 cr.**

For description, see page 99.

**484 Senior Distinction Project 3 cr.**

For description, see page 99.

**485, 486 Advanced Human Nutrition 3, 3 cr.**

Physiological and biochemical principles of nutrition; fundamental concepts of human nutrition and nutritional diseases. P: 203-202 and 203; 224-330 or 694-328.

**498 Directed Study 1-4 cr.**

For description, see page 99.

**705 PERFORMING ARTS: MUSIC (CCC)**

**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.

**111, 112 Beginning Harmony and Counterpoint 3, 3 cr.**

Elementary study of harmony; species counterpoint in two parts; simple four-part harmonizations of choral melodies; analysis of pertinent works; attainment of the musical skills of sight singing, dictation, keyboard harmony, and ear training. P: placement test.

**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 705-111.

**116 Ear Training and Sight Singing 1 cr.**

Continued drill in all areas of musicianship. Emphasis on sight singing in more than one part, on aural perception of more complex melodies and rhythms, and on identification of chords in harmonic context. To be taken concurrently with 705-112.

**211, 212 Intermediate Harmony and Counterpoint 3, 3 cr.**

Four-part chorale harmonizations; counterpoint in three or four parts; canons and inventions; introduction to harmony based on 19th century practice; analysis of pertinent works; attainment of the musical skills of sight singing, dictation, keyboard harmony, and ear training. P: 705-112.

**221, 222 Landmarks in Western Music 2, 2 cr.**

A survey of the important basic musical styles from antiquity to the present. P: 705-112.

**302 Piano for Elementary Teachers 1 cr.**

Piano techniques for elementary school teachers, with emphasis on school music literature and flexibility in its use.

**311 Advanced Harmony and Counterpoint 3 cr.**

*The fugue*; continuation of 19th century harmony; introduction to 20th century harmonic and contrapuntal practices; practice



in composing in larger forms; analysis of pertinent works. P: 705-212.

**313 Analysis of Music 3 cr.**

A study of musical forms and structural principles from the Middle Ages to the present. Emphasis on selected periods at the discretion of the instructor. P: 705-212.

**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.

**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: 705-212.

**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.

**321 Bach and His Contemporaries 3 cr.**

Music developments of the Baroque and Rococo eras, based on analysis of selected works of various composers. P: 705-222.

**322 Haydn, Mozart, and Beethoven 3 cr.**

Musical developments of these major composers in the Classical period based on analysis of selected works. P: 705-222.

**331 Choral Conducting 3 cr.**

Detailed study of conducting techniques; emphasis on practical application to choral organizations. P: 705-315 or 318.

**332 Instrumental Conducting 3 cr.**

Detailed study of conducting techniques; emphasis on practical application to the full score and instrumental organizations. P: 705-316.

**341 Woodwind Techniques 2 cr.**

Lecture and laboratory experience in the performance of woodwind instruments in-

cluding flute, oboe, bassoon, clarinet, and saxophone. Requirements are performance proficiencies on all instruments and completion of a reference syllabus. P: jr st.

**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.

**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.

**344 Choral Techniques 2 cr.**

Theory and practice in the fundamentals of singing. P: jr st.

**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.

**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.

**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: 705-311.

**421 Music of the Nineteenth Century 3 cr.**

Musical developments of the Romantic era based on analysis of selected works. P: 705-222.

**422 Music of the Twentieth Century 3 cr.**

Music developments of the 20th century,

based on analysis of selected works. P: 705-222.

**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. P: 705-222.

**707 PERFORMING ARTS: MUSIC, APPLIED (CCC)**

**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 consent of the instructor.

**241, 441 Concert Band 1 cr.**

**142, 342 Marching Band 2 cr.**

**143, 343 Jazz Ensemble 1 cr.**

**144, 344 Woodwind Ensemble 1 cr.**

**145, 345 Brass Ensemble 1 cr.**

**146, 346 Percussion Ensemble 1 cr.**

**151, 351 Orchestra 1 cr.**

**153, 353 String Ensemble 1 cr.**

**261, 461 Concert Choir 1 cr.**

**162, 362 Oratorio Choir 1 cr.**

163, 363 Vocal Ensemble 1 cr.

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 Constantin Stanislavski. The training also is influenced by the work of Erwin Piscator, his student, Bertolt Brecht, and Martha Graham. The experimentation and work of Mayerhold, Vachtangov, and Michael Chekhov, which were based on Stanislavski fundamentals, have contributed new values to some of the physical and psychological training techniques used. Though Stanislavski's work was first developed in the Moscow Art Theatre, the principles and application of the system are no more uniquely Russian than *Pasteurization* is French. The Stanislavski system, most particularly in its application to acting, but also in its approach to directing, has profoundly affected the theater of the world, notably in Eastern Europe, as well as in England and the United States. For example, New York's Group Theatre of the 1930's and 40's and the Neighborhood Playhouse School of the Theatre both based their training on this system.

### 131, 132 Acting I, II 3, 3 cr.

Fundamental acting training is begun with the methodical study of professional acting technique. Elementary exercises to develop ability to achieve creative relaxation, keener sensory perception, and heightened creative imagination. Work is done individually and in groups. The student learns to create simple, direct, improvisational scenes which stress the principles of "action" and "objective," works on to more complex scenes and improvisations, and finally he learns to apply these basic principles to simple scenes taken from contemporary plays.

### 231, 232 Acting III, IV 3, 3 cr.

Concentrating on scene-study, the student acquires specific knowledge of the basic scenic and text analysis and does more advanced acting technique exercises, including more advanced improvisation. Spe-

cific study of some basic problems of characterization and detailed study of the relationship of the character in the play as a whole to the scenic situation. At first partly, and then fully, prepared scenes are presented to solve acting problems on these levels.

### 331, 332 Acting V, VI 3, 3 cr.

Dramatic texts are analyzed, focusing on work in modern and period one-act plays or in one-act sections of full length plays. Attention is focused on specific elements involved in the creation of the role, including precise period study and requisite historical research, embracing the entire spectrum of the socio-anthropological-political context.

### 431, 432 Acting VII, VIII 3, 3 cr.

Students 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. Finally, the students present a public theater performance. The purpose of these productions is 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 overall objective of this training sequence is to provide the student with the vocal and speech resources—a well-placed, strong, musical voice and excellent speech—he needs to meet the challenges of any role in contemporary or classical theater. Pleasant, effective, and expressive speech in daily life also is an outcome.

Together with the study of acting technique, the objective of the prose and poetry speech training is to make available to the student a more meaningful development and utilization of oral interpretation and to equip the student with mastery of his individual voice and speech problems, so that the vocal instrument functions with facility and freedom in contemporary, as well as classical, performance.

**133, 134, 233, 234 Voice and Speech I, II, III, IV 3, 3, 3, 3 cr.**

(See Communication Sciences 133, 134, 233, 234.)

**333, 334, 433, 434 Voice and Speech V, VI, VII, VIII 3, 3, 3, 3 cr.\***

#### **Dance and Movement**

The purpose of this sequence is the training and development of the student's body so that he has a strong, well coordinated, properly-aligned, and rhythmically responsive physical instrument that technically equips him to function fully on a pre-professional level in dance and in theater.

**137, 138 Dance and Movement I, II 3, 3 cr.**  
Simple exercises in rhythmic movement to create in the student fundamental feeling of physical freedom and relaxation. Floor work, walking, and movement exercises, primarily corrective in nature, to develop a sense of a well balanced, properly-aligned body. Training in basic ballet and modern dance techniques, folk dance, and social dancing of various periods.

**237, 238 Dance and Movement III, IV 3, 3 cr.**

More advanced ballet and modern dance techniques, vaudeville theater dance, tap and acrobatic, jazz, ethnic.



**337, 338, 437, 438 Dance and Movement V, VI, VII, VIII 3, 3, 3, 3 cr.\***

**139, 140 Theater Duelling 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 the actual practices involved in historic hand-to-hand combat familiarize the student with the weapons, crafts, and varied styles of sword-fighting and fencing of different historic eras.

Male students learn the basic techniques of staging fights with broadsword, 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.

**221, 222 Introduction to Theater Production Techniques I, II 3, 3 cr.**

An introduction to the knowledge and appreciation of the various arts and crafts involved in technical theater and in stage production: scene design and construction, costume design and construction, and prop making; the use of materials and construction methods involved in these crafts, including sewing, woodworking, metal work, and plastics.

Study of various elements of two- and three-dimensional form in the visual arts as applied to creating and embodying the stage space for specific performance. Elementary problems of scene, costume, and lighting design. An approach to stage and theater presentation as a part of learning historical techniques and practices in the performing arts.

**225, 226 Intercurricular Theater I, II 3, 3 cr.**

For students who wish the experience of participating in a theater production but do not yet feel prepared to commit themselves to the full theater arts program. The student has the opportunity to involve himself particularly in the area of his greatest interest. All class members study the theory and practice of the play being pre-

\*To be offered when justified by program growth.



pared and performed. The students learn about the place in dramatic literature and theater history of the particular play being produced, as well as researching its overall socio-anthropological and politico-historical context. In brief, they learn to define the milieu that produces the playwright and his view in writing his play. This, combined with the director's view in presenting the play and the student's coping with all aspects of the production, from acting to stage managing, provides the student with a provocative insight into theater.

**235 Theater Performance in the Community 1-3 cr.**

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.

**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. American theater history places critical emphasis on Black American theater and theater literature. History of world theater includes such topics as ancient, medieval, and renaissance periods.

**335 Theater Performance in the Community 1-3 cr.**

Advanced work in 709-235 for upper division students. May be repeated for credit.

**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 leads to dealing with simple scenes in poetic drama from minor Elizabethan to Shakespeare's plays. Study of more complicated scenes and sets of scenes from Shakespeare and in dramatic verse plays and poetic dramas of various kinds follow. In addition to Shakespeare and the Elizabethans, 16th and 17th century Renaissance drama, study includes 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 separation between the so-called 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.

**351, 352 Introduction to Stage Directing I, II 3, 3 cr.**

The study of various theories and techniques of theatrical staging. Primary emphasis is on the relationship of the student director to the work of 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 leads to staging exercises. It is recommended that the student with a special interest in directing develop his program in consultation with the theater arts director.

**361, 362 Introduction to Playwriting I, II 3, 3 cr.\***

**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. Especially pertinent is the study of theater literature of various periods and cultures, both of the United States and other countries. Selected topics might include American dramatic literature of the 1920's, 30's, 40's, 50's, or 60's; American theater literature of the 19th century; theater literature of the contemporary world stage; Black theater literature in the United States; Greek drama; Jacobean drama; Restoration drama; special studies of the work of individual playwrights such as Chekhov, Gorki, Strindberg, Ibsen,

\*To be offered when justified by program growth.



O'Casey, Shaw, O'Neill. The student might also concentrate on a special study in theater criticism.

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)**

#### **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.

#### **104 Freedom and Individuality 3 cr.**

The notions of freedom and individuality and their significance for an individual in a complex and highly structured society. Emphasis on the relation of historical considerations to contemporary issues.

#### **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.

#### **111 Elementary Logic 3 cr.**

Deductive and inductive inference, kinds of definition and similar problems are considered.

#### **112 Scientific Methods 3 cr.**

An elementary analysis of scientific methodology as it is found in selected physical and social sciences, with special attention to the similarities of their ideals and practice.

#### **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, Scheier, and Cassirer are examined.

#### **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.**

For description, see 143-207.

#### **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.

**209 Philosophy of Religious Consciousness 3 cr.**

The manifestation and significance of religious activity in human consciousness, with consideration of possible extraconscious sources for formation of religious consciousness. P: a course in philosophy.

**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.

**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.

**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.

**215 Marxism and Existentialism 3 cr.**

Survey of Marxism and existentialism centered around the problems of man's understanding of his environment. P: a course in philosophy.

**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.

**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.

**306 Linguistic Analysis 3 cr.**

The functions of language and relationships between language and philosophical problems; role of language analysis in the solution of philosophical problems; the works of Wittgenstein. P: jr st and a course in philosophy.

**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.

**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.

**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.

**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.

**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.

**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 their impact on American Philosophy. P: two courses in philosophy.

**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.

**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.

**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.

**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.

**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**

The physical education program encourages voluntary participation in a broad range of activities. Courses help the student learn a new skill, improve his ability in a particular activity, and/or improve his personal fitness. In addition, these courses tend to satisfy the physical education requirements of other institutions. Students interested should consult the chairman of the physical education program.

Instruction develops personal skills and provides knowledge and insight into the nature of human movement and the physiological effects it elicits. Skill and knowledge tests are utilized to measure capaci-

ties, progress, and understandings. The student can develop a relatively high degree of ability in one or more activities which he finds particularly satisfying and in which he will enjoy participating throughout life.

Meeting times vary to take advantage of the weather. One credit is earned in each class except for First Aid which meets three times per week, earns two credits, and provides Red Cross and Civil Defense certification. Coeducational classes are offered in appropriate activities. The student must show evidence of personal fitness via the required University physical examination for the activity selected.

*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 his technique. Increased opportunity for competitive experience seeks to impart the feeling of competence in a skill area.

*Advanced level courses (300)* require a rather high degree of personal ability and enrollment is with the consent of the instructor. 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 con-



ditioning, fitness and diet, and exercise and aging; 200 series — weight training.

**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, and downhill skiing; 200 series — downhill skiing.

#### 754 PHYSICS (CES)

**141 Elementary Astronomy 3 cr.**  
See 301-141.

**303 Electromagnetic Radiation 4 cr.**  
See 301-303.

**304 Electricity and Magnetism 4 cr.**  
Direct current circuits; alternating current circuits; theory of electric and magnetic fields; electromagnetic induction; magnetic properties of material; dielectric properties of matter; Maxwell's equations and electromagnetic waves. P: 226-212 and 600-206.

**305 Electronic Aids to Measurement 4 cr.**  
Fundamentals of electronics, electronic elements, basic circuits; combinations of these into measurement and control instruments. P: 226-212.

**306 Biophysics 3 cr.**  
See 301-306.



**310 Modern Physics 3 cr.**

A study of atomic structure of matter, atomic and molecular spectra, black-body radiation, introduction to quantum theory, X-ray spectra. P: 226-212.

**311 Advanced Laboratory Physics 2 cr.**

Experience with important research techniques and apparatus with emphasis on independent work; high vacuum, particle counters, ionization chambers, photoelectricity, X-rays, magnetic resonance, temperature measurement, photographic and emulsion techniques. P: cons inst.

**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.

**320 Thermodynamics and Kinetic Theory 3 cr.**

See 226-320.

See also relevant courses in other areas, including:

226-110, 111, 112, 210, 211, and 212, Chemistry-Physics, 5 cr. each.

226-317, 318, Nuclear Physics and Radiochemistry (with laboratory), 3-4 cr.

226-320, 322, Thermodynamics and Kinetic Theory (with laboratory), 3-4 cr.

301-141, Elementary Astronomy, 3 cr.

301-303, Electromagnetic Radiation, 4 cr.

301-306, Biophysics, 3 cr.

301-350, 351, Meteorology (with laboratory), 3-4 cr.

356-332, Introduction to Geophysical Fluid Mechanics, 3 cr.

**778 POLITICAL SCIENCE (CCS)**

**103 Introduction to Political Analysis 3 cr.**

The nature and function of political science; politics as a cultural phenomenon. P: 255-102.

**207 Macropolitics 3 cr.**

Approaches to political analysis which proceed from the perspective of the political system as a whole.

**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.

**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.

**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.

**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.

**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.

**305 Political Systems of the Commonwealth 3 cr.**

Problems of institutional transfer in reference to the experience in systems once a part of the British Empire. Case materials drawn from the Canadian, Indian, Nigerian, and other systems. P: jr st.

**306 International Political Systems and Processes 3 cr.**

Analysis of international political systems; balance of power, collective security, deterrence; the major political processes sustaining such systems. P: jr st.

**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.

**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.

**363 Politics of Developing Systems 3 cr.**

Political processes in contemporary developing systems; problems of nation building; the formulation of cross-national comparisons and emerging patterns of regional cooperation. P: jr st.

**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.

**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.

**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.

**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.

**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.

**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.

**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)**

**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.

**283X Selected Topics in Population Dynamics 1-4 cr.**

For description, see page 99.

**298 Directed Study 1-4 cr.**

For description, see page 99.

**310 Introduction to Human Genetics 3 cr.**

Principles of human and population genetics and the genetic implications of technology.

**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, socioeconomic, migration, urbanization, genetics, and control of population numbers.

**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 changes. Includes fur trade, logging, advent of farms, fisheries, market hunting.

**342 Human Evolution 3 cr.**

Evolution and dispersion of species *Homo sapiens*. The effects of technology on future human evolution.

**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.

**402 Population Biology 3 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.

**410 Principles of Human Ecology 3 cr.**

Application of principles of animal ecology to human biology; elements of habitat, development and individuality of man; morphological adaptations and physiological, behavioral, and social adjustments to environment; regulation of populations and control of environmental factors. P: 296-202 and 362-302.

**412 Principles of Parasitology 3 cr.**

Interactions of human populations with parasitic worms, protozoans, and arthropods. Laboratory includes identification and life cycles of parasites.

**421 Problems in Population Regulation 3 cr.**

Consideration of biological, cultural, and political problems in regulating human populations. P: 779-320.

**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 in the concentration.

**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 emphasize 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.

**483X Selected Topics in Population Dynamics 1-4 cr.**

For description, see page 99.

**484 Senior Distinction Project 3 cr.**

For description, see page 99.

**498 Directed Study 1-4 cr.**

For description, see page 99.

**820 PSYCHOLOGY (CCS)**

**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.

**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.

**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.

**206 Experimental Psychology 3 cr.**

Experimental designs applied to psychological problems; individual and group projects. P: soph st.

**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.

**309 Psychology of Motivation 3 cr.**

Development of motives in childhood; group attractions and pressures; *special prob-*



lems of motivation in industry and advertising; general problems of the physiological basis of motives; changing of motives and conflict. P: jr st.

**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.

**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.

**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.

**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.

**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.

**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.

**417 Thinking and Problem Solving 3 cr.**

Methodological problems and experimental results in concept formation, language, thinking, and problem solving. P: sr st and 820-206.

**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.

See also courses in Growth and Development.

**834 REGIONAL ANALYSIS (CCS)**

**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 man.

**223 Man and the Ocean of Air Laboratory 1 cr.**

Recommended but not required to accompany 834-222.

**224 The Land Surface: Form and Effects on Man 3 cr.**

The terrestrial environment, including descriptions of the various classes of land forms with particular emphasis on the effects that they have had on man's activities and the effects that man's activities have had on them. Techniques for quanti-

fying geomorphic units and land-surface data are developed. Single-day field trip.

**225 The Land Surface: Form and Effects on Man Laboratory 1 cr.**

Recommended but not required to accompany 834-224.

**283X Selected Topics in Regional Analysis 1-4 cr.**

For description, see page 99.

**298 Directed Study 1-4 cr.**

For description, see page 99.

**310 Regional Adaptations to a Changing Environment 3 cr.**

The problems of adaptation of human societies to the New World and its changing postglacial environment. Emphasis on the broad North American picture and regional changes in the Great Lakes area. P: 156-215 and soph st.

**315 Regional Demographic Analysis 3 cr.**

Provides the basic outline for analyzing the demographic data of a region. Inter-regional as well as intraregional variations in population distribution, composition, and change are emphasized with reference to the regional differentials in social, economic, and natural factors. Responds to the needs of analysts and planners in regional or urban contexts. P: soph st.

**320 Introduction to Regional Analysis 3 cr.**

The choices that man can and must make in the use of the limited space and resources available to him to satisfy his needs. The methods of defining regions, as based upon man's activities and the nature of his total environment, are developed. P: soph st.

**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.

**326 Human Living Space II 3 cr.**

The application of techniques and knowledge of the environment-behavior relation-

ship 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.

**331 Geo-Historical Approaches to the Environment 3 cr.**

For description, see 143-331.

**353 Air Photo Interpretation 3 cr.**

Techniques for the interpretation of the uses man makes of the earth. Vertical, oblique, and infrared aerial photographs are used in the analysis of man's use of the earth and its resources. P: jr st.

**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.

**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 man makes 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.

**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.

**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.

**377 Geography 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.

**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 counties. Comparison of the region as a whole in its relationships with the rest of the world. Map work is emphasized. P: jr st.

**401 Regional Economic Analysis 3 cr.**

For description, see 298-202.

**403 Recreation Supply and Demand Analysis 3 cr.**

For description see 532-403.

**410 Outdoor Recreation and the Natural Environment 3 cr.**

For description see 532-410.

**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.

**462 Planning in the Great Lakes Region of Africa 3 cr.**

Techniques of planning the development of selected areas in the Great Lakes Region of Africa; problem identification and resolution. Structured seminar. P: jr st.

**472 Planning in the Great Lakes Region of North America 3 cr.**

Techniques of planning the development of selected areas in the Great Lakes Region of North America; problem identification and resolution. Structured seminar. P: jr st.

**477 Planning in the Northern Lands 3 cr.**

Techniques of planning the development of selected areas in the Northern Lands; problem identification and resolution. Structured seminar. P: jr st.

**483X Selected Topics in Regional Analysis 1-4 cr.**

For description, see page 99.

**484 Senior Distinction Project 3 cr.**

For description, see page 99.

**498 Directed Study 1-4 cr.**

For description, see page 99.

**892 SOCIAL SERVICES (SPS)**

**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.

**238X Selected Topics in Social Services**

**1-4 cr.**

For description, see page 99.

**298 Directed Study 1-4 cr.**

For description, see page 99.

**302 Methods of Public Welfare Investigation 3 cr.**

The role of the social agent in understanding and helping clients; techniques of interviewing; analyses of cases (individuals and groups); agency policy and the choice of suitable social services. P: 892-202 and jr st.

**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.

**310 Child Welfare 3 cr.**

Problems of dependent, neglected, and delinquent children; methods of study and treatment policies by private agencies, and by federal, state, and local governments. P: 892-202 and jr st.

**320 Introduction to the Principles of Casework 3 cr.**

An analysis of social work practice with individuals as subjects. Emphasis on development of interviewing skills in one-to-one and small group situations. Videotaping, case studies, role playing, and field assignments facilitate the student's acquisition and refinement of his particular style of intervention. P: jr st.

**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.

**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 and sr st.

**405 Probation and Parole 3 cr.**

The history and theory of probation and parole; methods for treating offenders; investigation for probation; eligibility, selection, supervision, and termination of parole. P: 892-302 and sr st.

**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.

**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 change model, and institutionalizes his change effort where appropriate. P: 892-407 and concurrent registration in 892-403.

**410 Social Programs of the Aged and Infirm 3 cr.**

An historical consideration of the role of old and infirm people in society; the changing position of the underprivileged in American society; problems of the aged and infirm and methods of administration and change. P: 892-302 and sr st.

**461 Introduction to Programs in Drug Abuse Treatment in Education 3 cr.**

General knowledge of drug use and abuse is presented as it exists in our society today. The mental and physical health aspects of chemical alteration of behavior. Education and treatment programs.

**483X Selected Topics in Social Services  
1-4 cr.**

For description, see page 99.

**498 Directed Study 1-4 cr.**

For description, see page 99.

**900 SOCIOLOGY (CCS)**

**202 Introduction to Sociological Analysis  
3 cr.**

Introduction to major sociological theories and their application to contemporary problems of society. P: soph st.

**203 Minority Groups 3 cr.**

Character of racial, religious, and ethnic minority groups; social and economic adjustments in American society; the roles of private and public agencies. P: soph st.

**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.

**302 Social Stratification 3 cr.**

Occupation, class, and status as determinants of group interests, ideologies, and struggles; selected international comparisons. P: Sociology 202 or cons inst.

**303 Theories of Societal Development and Change 3 cr.**

Analysis of theories of social change with reference to contemporary patterns in de-



veloping areas of the world. P: 900-202 or cons inst.

**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.

**307 Concepts of Social Analysis 3 cr.**

Survey and analysis of theories concerning society; forms of sociological analysis; 20th century thinkers and ideas. P: 900-202 or cons inst.

**309 The City 3 cr.**

Introduction to social systems through a focus on problems of urbanization. P: Sociology 202 or cons inst.

**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.

**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.

**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.

**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.

**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.

**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.

**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.

**446 Juvenile Delinquency 3 cr.**

Characteristics of delinquency; explanatory theories; programs for prevention and control; role of police, courts, correctional schools, community agencies. P: jr st and one sociology course at the 300 level.

**938 URBAN ANALYSIS (CCS)**

**283X Selected Topics in Urban Analysis 1-4 cr.**

For description, see page 99.

**298 Directed Study 1-4 cr.**

For description, see page 99.

**325 Human Living Space I 3 cr.**

For description, see 834-325.

**326 Human Living Space II 3 cr.**

For description, see 834-326.

**335 On Aggression 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 man and other animals. These two major points of view are synthesized, with emphasis on the implications for human behavior.

**337 Urban Violence: Causation and Control 3 cr.**

An analysis of collective violence in urban

communities. Several strains of scholarship—political science, psychology, sociology, and history—are brought together to probe the nature, causes, and consequences of collective urban violence. Emphasis on the links between theories of causation and theories of control.

**340 Introduction to Urban Analysis 3 cr.**

The physical, economic, political, social, and cultural interaction within urban and urbanizing areas; concepts for evaluation of selected problems and opportunities of urban and urbanizing areas.

**350 The City as Habitat 3 cr.**

The physical aspects of the city, focusing on the demographic, spatial, and resource systems. The contemporary American city is viewed in historical and cross-cultural context.

**351 Transportation and the City 3 cr.**

The impact of the transportation subsystem of the city upon the residential, commercial, and other urban subsystems and the urban dwellers. Transportation is viewed as a city service; discussion of urban transportation problems and their solutions. P: 938-350 or cons inst.

**352 Seminar in Urban Transportation 3 cr.**

Continued investigation of the topics introduced in 938-351. Supervised research in urban transportation problems. Emphasis on the use of field work in data collection. Occasional guest speakers on topics of interest.

**400 The City as Idea 3 cr.**

Attempts to define what a city is have reflected 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.

**410 Education in America: Patterns of Development and Innovation 3 cr.**

The relationships between modernization, urbanization, and educational innovation in American history and culture. Contempo-

rary critics of the urban school system are read in the context of the ideological, social, economic, and political forces influencing educational development and innovation. The student's awareness of the interpenetration of educational issues in larger cultural matters is heightened. How have cultural values influenced American educational development? What has been the role of education in the formation of a modern urban culture in America?

**414 The Self in the Urban Setting 3 cr.**

Aspects of urban existence which aid and impede Americans' personal quests for identity. Explores the 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.

**421 Urban Planning 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.

**440 Social Dynamics of Urban Life 3 cr.**

An examination of the urban community as a set of ideas, norms, and structures created by and in turn affecting the urban dwelling.

**450 Senior Seminar 3 cr.**

Emphasis on synthesizing insights from prior academic work, student scholarship, and urban problems of particular concern. A paper is prepared and defended. P: sr st.

**483X Selected Topics in Urban Analysis 1-4 cr.**

For description, see page 99.

**484 Senior Distinction Project 3 cr.**

For description, see page 99.

**498 Directed Study 1-4 cr.**

For description, see page 99.

**957 VISUAL ARTS (CCC)**

**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.

**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.

**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.**

For description, see 246-143.

**201 Introduction to Painting 3 cr.**

Investigation of painting media; oil, watercolor, and acrylics and their inherent expressive qualities and characteristics. P: 957-102, 103.

**202 Introduction to Ceramics 3 cr.**

Investigation of ceramics media and their inherent expressive qualities. P: 957-104.

**203 Introduction to Sculpture 3 cr.**

Investigation of sculpture media and their inherent expressive qualities. P: 957-104.

**211 Analytical and Synthetical Approach to Painting I 3 cr.**

For description, see 143-211.

**213 Analytical and Synthetical Approach to Sculpture I 3 cr.**

For description, see 143-213.

**303, 304 Watercolor Painting 3, 3 cr.**

Creative approach to watercolor techniques; cultivation of personal expression and development of imaginative concepts. P: 957-201.

**305, 306 Graphic Arts: Relief Printing  
3, 3 cr.**

Aspects of relief printing: woodcut, collage print, and linoleum cut; relief printing in full color. P: 957-201.

**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.

**311, 312 Oil Painting 3, 3 cr.**

Cultivation of techniques for personal expression; composition and development of imaginative concepts in oil paint and allied media. P: 957-201.

**321, 322 Sculpture 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.

**331, 332 Ceramics 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.

**351, 352 Art Metal and Jewelry Design  
3, 3 cr.**

Art metal design and jewelry processes, techniques, and media. Emphasis on designing and creating quality handcrafted, aesthetic forms in metal. P: 957-104.

**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.

**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.

**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.

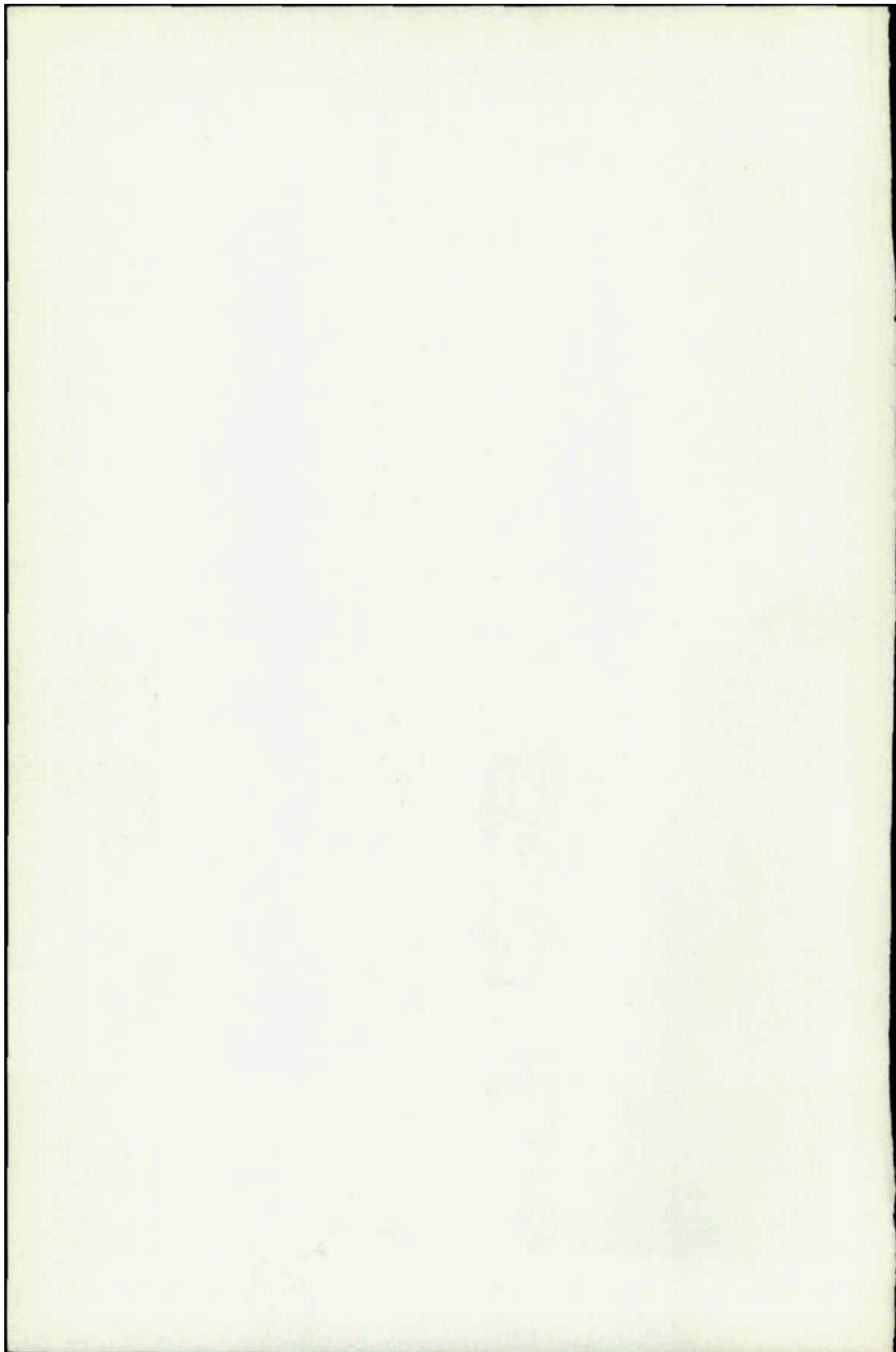
**411 Materials Workshop for the Sculptor  
3 cr.**

Techniques and equipment; construction of tools; investigation of materials, traditional and innovative, as related to needs and aesthetic considerations of the sculptor. P: two courses in sculpture.

**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.





# 5

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