

# **CALVIN COLLEGE**

**The college of the Christian Reformed Church  
Grand Rapids, Michigan**

**Catalog for 1977-78**

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# Calendar

## The Fall Semester 1977

SEPTEMBER	6	Tuesday	Faculty-Board conference
	7	Wednesday	Residence halls open
	8-10	Thursday-Saturday	Orientation and registration
	12	Monday	First semester classes begin 8 a.m.
			Convocation 9:40-10:45 a.m.
			Reading recess
OCTOBER	24-25	Monday-Tuesday	
NOVEMBER	11-23	Friday-Wednesday	Registration for Interim and spring semester
	23	Wednesday	Thanksgiving recess 10 p.m.
	28	Monday	Classes resume 8 a.m.
DECEMBER	15	Thursday	Classes end 10 p.m.
	16	Friday	Examinations begin 10:30 a.m.
	20	Tuesday	Fall semester ends 10 p.m.
			Christmas vacation begins

## The Interim 1977

JANUARY	4	Wednesday	Interim term begins 8 a.m.
	26	Thursday	Interim term ends 5 p.m.

## The Spring Semester 1978

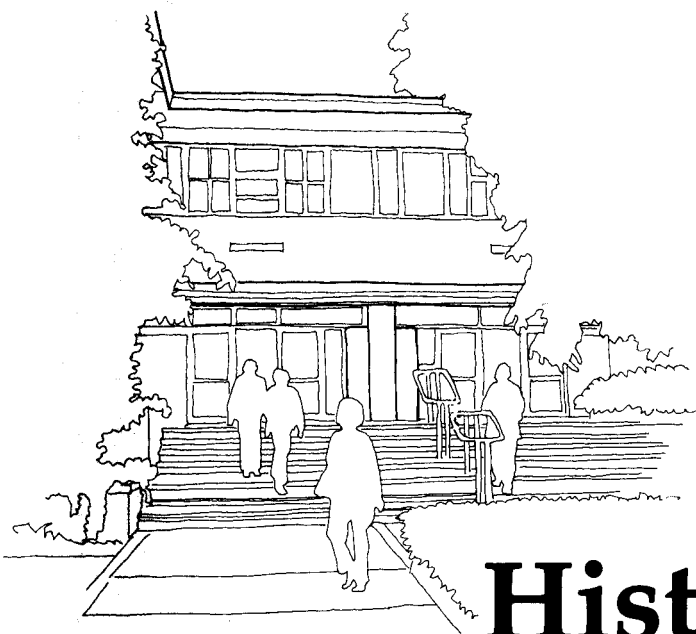
	30	Monday	Second semester classes begin 8 a.m.
MARCH	17	Friday	Spring vacation begins 10 p.m.
	28	Tuesday	Spring vacation ends 8 a.m.
MAY	4	Thursday	Honor Convocation 8:15 p.m.
	11	Thursday	Classes end 10 p.m.
	12	Friday	Examinations begin 2 p.m.
	17	Wednesday	Last examination period 4:30 p.m.
	20	Saturday	Commencement 3 p.m.

## The Summer Semester 1978

	22	Monday	First session begins 8:30 a.m.
JUNE	14	Wednesday	First session ends
	15	Thursday	Second session begins 8:30 a.m.
JULY	7	Friday	Second session ends
	10	Monday	Third session begins 8:30 a.m.
AUGUST	1	Tuesday	Third session ends
	2	Wednesday	Fourth session begins 8:30 a.m.
	24	Thursday	Fourth session ends

## The Fall Semester 1978

SEPTEMBER	5	Tuesday	Faculty-Board conference
	6	Wednesday	Residence halls open
	7	Thursday	Orientation and registration begins
	11	Monday	Fall semester classes begin 8 a.m.



# History

*The history of the college and its objectives*

**CALVIN COLLEGE** is a college of the Christian Reformed Church. The Christian Reformed Church is a century-old church with a five century-old heritage. It bases its whole faith and life on the sacred Scriptures, God's holy, inspired, infallible Word, and thus takes its stand with the churches which have their roots in the Protestant Reformation.

In America the Christian Reformed Church traces its origin to a band of immigrants who sought freedom in the nineteenth century from the established church of the Netherlands. They settled in western Michigan and, after an early period of religious unrest among the thousands of Dutch settlers who soon joined the earlier immigrants, organized the Christian Reformed Church in 1857.

The Christian Reformed Church subscribes to three statements of faith (in addition to the early Christian Apostolic Creed) which stem from the Reformation period: the Heidelberg Catechism, which is the most famous and widely translated of all Reformation creeds; the Confession of Faith written by the Belgian theologian Guido de Brès in 1561; and the Canons of Dort.

The Christian Reformed Church stresses the sovereignty of God in every part of life—in the family, the church, the state; in world affairs; in economic, social, and political life; in business; and in learning and the arts.

The founding date of Calvin College and Seminary is 1876. In that year the Christian Reformed Church adopted a six-year curriculum for ministerial training. The first four of these years were spent in the Literary Department and the last two in the Theological Department. In 1894 students who were not pre-theological students were admitted to an expanded curriculum, and thus the

school became a type of preparatory school or academy. In 1900 the curriculum was further broadened and made more attractive to students interested in teaching or in preparing for preprofessional courses in the universities. By 1906 the Literary Department, which provided the four years of preparatory and two years of college work, became known officially as the John Calvin Junior College. The two-year college in time became a four-year college, and the preparatory department was discontinued. In 1921 Calvin College awarded its first Bachelor of Arts degree.

The school, which had started with seven students, grew slowly during the early years, but by 1930 it had reached its pre-World War II size of 350-450 students. By 1950 the enrollment had climbed to 1270 and last year was 3900.

In 1956, when it became obvious that the college could expand no further on its Franklin Street campus, the trustees purchased the 165-acre Knollcrest Estate on the edge of the city. The new campus was planned as a unit before the first buildings, the seminary complex, were completed in 1960. Two years later the college constructed four residence halls and a dining hall, thus beginning what was to be the decade of the divided campus. In the same year the first section of the library combined with Heritage Hall, and a classroom wing, Hiemenga Hall, were opened. Other buildings followed: the Physical Education Building in 1965, the Fine Arts Center and four more residence halls in 1966, a new student Commons in 1967, and a Science Building and two more residence halls in 1968. In 1970 the Library was expanded and two additional residence halls were opened, to bring the total to twelve with a capacity of 1500 students. The College Center, the most recent building, and the Bergsma Natatorium complete the campus development, thereby providing for the potential of 4000 students and a reunited campus.

## *LIBRARY*

The Calvin Library, at the center of the campus, serves students of both the college and the seminary. Its 280,000-volume collection of books and bound periodicals is distributed over three floors of open stacks, which are arranged according to the Library of Congress classification. More than 1800 current periodicals are available for use in the library. Two major microfiche collections, The Library of American Civilization and The Library of English Literature, are part of the 17,000-item collection of microfilm, microfiche, and microcards. The library, which is air conditioned, can seat 1100 persons, mainly in individual study carrels and at tables. There are also seminar rooms and a spacious lounge.

Several special collections are housed in the library. The Curriculum Center contains a wide variety of demonstration teaching material useful to teachers and prospective teachers. The H. H. Meeter Calvinism Research Collection, located on the balcony of Heritage Hall, is one of the most extensive collections of books and articles on John Calvin and Calvinism available anywhere. The lower level of Heritage Hall houses the Colonial Origins Collection, which consists of manuscripts, archives, and other records of the Christian Reformed Church, its leaders, its Dutch origins, and closely related institutions. The Calvin Library is a partial depository of government documents, holding approximately 60,000 items. The Cayvan Room with its many recordings and tapes is available for both the study and enjoyment of music.

## AIM AND PURPOSE

Calvin College aims to give young people an education that is Christian and is governed by the Christian faith as reflected in the Reformed standards. The arts and sciences cultivate in the student value-judgments which are grounded in a thorough knowledge of facts about man's relationship to God, to himself, to his fellowman, and to the world. The college encourages each student to offer all his talents—creative, imaginative, intellectual, and social—eagerly and earnestly in the service of God and his fellowmen. Thereby students are taught to acknowledge the Lordship of Christ over all things. Thus, the college seeks to promote in the student sound scholarship, earnest effort, and a sense of obligation to use his talents fully, in response to a divine calling.

The faculty members subscribe to the creedal position of the denomination, and in their teaching and personal relations strive to reflect the Lordship of Christ and the authority of the Word of God.

The college admits students not only from the Christian Reformed Church and from other evangelical protestant churches, but also others who are interested in the benefit of the Christian atmosphere and Reformed character of the academic programs of the college and in the aims of the college.

The end of Christian faith is Christian life. Informed and mature faith calls for a life of action and involvement. It seeks personal piety, integrity, and social responsibility. It recognizes that service to God and to fellowman is possible and necessary in all professions and all walks of life. It asserts that the life of Christian service must be lived now. Accordingly, at Calvin College many opportunities are provided for students to apply their learning to Christian action and service. Some of these are in the formal academic setting, some are voluntary in the broad urban community which surrounds the college, others include involvement in the churches of the area.

## GOVERNMENT

The corporate name of the college is CALVIN COLLEGE AND SEMINARY. It is governed by a single board of trustees which represents the ecclesiastical divisions of the church, arranged on geographical lines. Internally, the administration, the staff, the student body, and the physical facilities of the college and seminary are completely separate and independent. The membership of the board is constituted of ministers elected by the various classes and approved by synod, and laymen elected by synod. The board of trustees meets in February and May of each year. An executive committee, which meets on the second Thursday of each month, functions for the board throughout the academic year.

Calvin College, in accordance with Title VI of the Civil Rights Act of 1964, operates in a non-discriminatory manner with regard to race, color, or national origin. Furthermore, as required by Title IX of the 1972 Education Amendments, Calvin College does not discriminate on the basis of sex in its educational programs, activities, or employment policies. Inquiries regarding compliance with these federal requirements should be directed to Mr. Henry De Wit, Vice President, Calvin College Business Office, as Civil Rights and Title IX coordinator.

## ACCREDITATION

Calvin College is fully accredited by the North Central Association of Colleges and Secondary Schools. It is also accredited by the American Chemical Society and by the National Council for Accreditation of Teacher Education. It is on the American Association of University Women list of institutions qualified for membership in the association. It maintains membership in the American Council on Education, the Association of American Colleges, American Association of Colleges for Teacher Education, College Entrance Examination Board, National Education Association, the Mathematical Association of America, and the American Mathematical Society.

## CALENDAR, SUMMER SCHOOL

The academic calendar at Calvin College follows the typical 4-1-4 plan, consisting of two semesters, each approximately four months in length, plus a one-month interim term in January. Typically, during each of the two semesters a student takes four courses, each of equal academic value, and during the interim he takes one. A reading recess during the first semester and the spring vacation during the second provide an opportunity for students to do research and to complete major projects. As part of the 4-1-4 program an honors program has been established for the superior student as well as a special program of assistance for students admitted on probation.

The summer school consists of four consecutive three and a half week sessions; a student is permitted to register for one regular course during each session. A student who attends all four sessions may complete a full semester's program.

## THE CALVIN ALUMNI ASSOCIATION

The Calvin Alumni Association is composed of all persons who have attended Calvin College for at least one year or who have completed eight courses. Persons who have attended the Calvin Seminary for one year and those who teach at the college or seminary are also considered members of the association.

The purpose of this association is to provide an avenue for the exchange of ideas between the alumni and Calvin, to undertake projects which advance the college and seminary, to unite all alumni in support of their alma mater, and to be of service to the 25,000 alumni through a variety of contacts.

The Calvin Alumni Association is governed by a board of fifteen members who serve for three years upon election by ballot from all alumni. The board meets four times during the year, and the annual business meeting is held during the last week in May. Board meetings are open to all alumni, and alumni chapters are urged to send representatives to the May meeting.

The work of the association is supervised by a full-time director of alumni relations. The alumni-financed program of upperclassmen scholarships and freshmen grants is of special interest to students. Information concerning these may be obtained from the Alumni Office.



## *BROENE COUNSELING CENTER*

The **Broene Counseling Center**, a part of the Student Affairs Division, provides **professional** personal and career counseling for students. It offers **individual and group** counseling as well as workshops and other programs of **general interest** for students with needs in interpersonal relationships, **self understanding**, **setting and achieving** goals, **marriage preparation**, **test-anxiety**, and in **understanding** and developing values. It also provides guidance for those students **searching** for life careers, helping students to recognize their own **resources and talent**, and to explore the variety of careers and vocations available and **appropriate** for them. The center maintains a library of resource materials on **vocations and careers**. Adequate referral sources are available, when necessary.

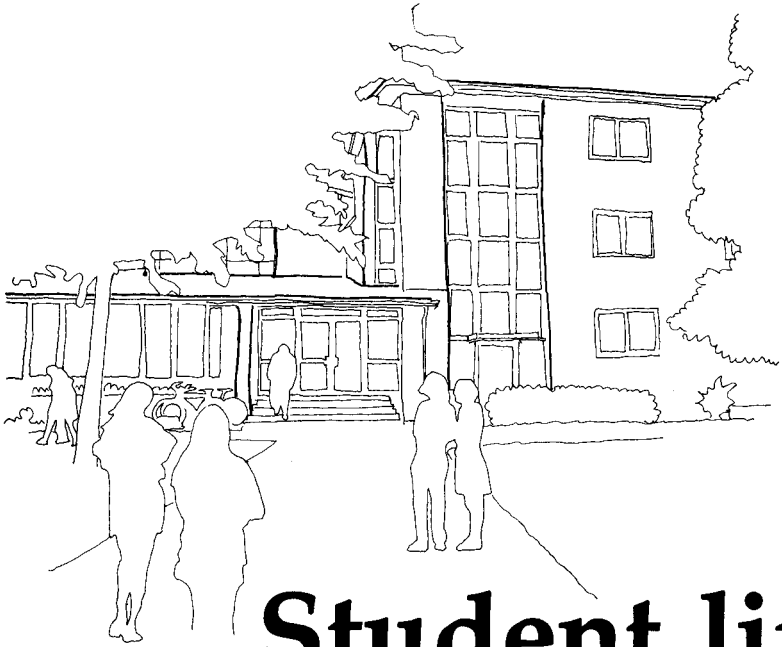
## *THE ACADEMIC SUCCESS PROGRAM*

The **Academic Success Program** provides support and special training for students who need help in order to succeed in the classes they are taking. **Although** the heart of the program is training in college-level study and reading skills, **specialized** tutorial sessions are available in most basic courses and **personal academic** counseling is provided by faculty members associated with the program and by peer tutors. Special intensive classes are offered in **English and mathematics** for students whose test scores indicate a serious need for **systematic reeducation** in these subjects, but remedial help can be provided in most basic subjects for students who recognize their needs. Reading tests and tests in the various **subject** areas are available to help students understand themselves and to **recognize** what they need to do to compensate for their previous education.

All students admitted on probation are incorporated into the **Academic Success Program** but special help is offered to any student who wishes to do better in any class. The program also provides intensive workshops and other public **opportunities** for general help in the various academic skills. The director of the **program** is Mrs. Kathryn Blok.

## *TEACHING-LEARNING MATERIALS CENTER*

The college maintains a **Teaching-Learning Materials Center** in the Science Building, which serves the instructional program of the entire college. It includes the **audio-visual** services, the audio-visual laboratory, a **graphics production center**, and **television demonstration classrooms**.



# Student life

*The student life on campus and its regulation*

THE AIM OF CALVIN COLLEGE is to prepare students to live productive lives of faith to the glory of God in contemporary society—not merely lives that have a place for religion, or lives which formally relate religious commitment to the academic disciplines, but lives which in every part, in every manifestation, in their very essence, are Christian. Accordingly, the college attempts through its rules, its organizations, and the counsel of its personnel, to show the student how a life of commitment is lived in his room, on the athletic field, in his academic work, and in his daily religious practices. This matter of being totally Christian cannot be deferred until graduation. Confrontation with the secular world, cooperation with Christians in common cause, and the development of personal expressions of faith must be part of current college life. This being in the world while not of it, this testing of the spirits, whether they be of God or not, this searching, seeking, learning, trying—this is the business of Christian education at Calvin.

## WORSHIP AND CHRISTIAN SERVICE

All students are expected to worship regularly at a church of their choice. Sunday worship services are held on the Knollcrest campus under the auspices of four local consistories. Students are encouraged to avail themselves of the counseling services of the local pastors or of the college chaplains.

**Chapel** services are held at 10 o'clock, Tuesday through Friday mornings. The **main chapel** is held in the Fine Arts Auditorium, but a variety of other services such as morning prayers, foreign language chapels, and group devotions are held at other places at this time. Students are expected to attend some chapel services during the week. In addition there are many opportunities for **voluntary religious** activities. Bible study groups, student prayer groups, **Christian service** activities, and evangelistic outreach are a few of these voluntary programs. This part of campus religious life is supervised by the Student Affairs Division, various committees, and the college chaplains. The latter are available for **counsel** at any time.

## MAINTENANCE OF COLLEGE STANDARDS

**Admission** to Calvin College is a privilege that may be withdrawn from any student who does not meet the academic standards of the college. In addition, the college not only expects a student to conduct himself both on and off campus in accord with his statement of religious commitment as he has indicated it in the application forms but also may refuse admission to, may discipline, or may expel any student who in its judgment displays conduct or attitudes unworthy of the standards of the college. The *Student Handbook* and *Residence Hall Living* describe the regulations and their implementation.

## HOUSING

**Freshman** and sophomore students under 21 years of age not living at home with their parents are required to stay in the Calvin College Residence Halls. Juniors and seniors (students who have successfully completed sixteen or more courses) and students 21 or older as of October 1 of the fall semester may choose their own type of housing and are permitted to reside off campus.

The college requires all students to register their place of residence with the Housing Office and to notify that office of all changes in residence during the period of their enrollment. Upperclass students may also arrange to work for their room and board. Information on available housing costs and further interpretation of these rules are available from the college Housing Office.

## THE FINE ARTS

Many sorts of fine arts activities thrive at Calvin both as part of the academic life and as the result of spontaneous student interest. Bands, orchestras, choral groups, and chamber ensembles are part of the program of the Department of Music for the participation of all qualified students. The dramatic productions of the **Thespians** as well as intercollegiate debating and other forensic activities are sponsored by the Department of Speech. Students from all departments participate. The long Calvin tradition of creative writing for publication and for private reading is encouraged by the members of the Department of English. *Dialogue* and *Chimes* provide opportunities for student publication. The Department of Art seeks to arouse interest in the various graphic and plastic arts.

The student senate, through several of its committees, provides a program of speakers, films, and entertainment for the entire campus. Other public per-

performances sponsored by various academic departments, by the alumni association, and by community groups are presented on campus.

## *ATHLETICS*

The core program of required physical education is organized to promote physical fitness, to introduce students to a variety of sports programs, and to create sufficient skill and interest so that they will continue to participate voluntarily. Accordingly, facilities for both indoor and outdoor recreation are conveniently and freely available. The intramural program is extensive throughout the entire year, with competition organized by sports clubs which may be based on residence units or independent groups. Calvin participates in eighteen intercollegiate sports and is a member of the Michigan Intercollegiate Athletic Association (MIAA) which is composed of Albion, Alma, Adrian, Calvin, Hope, Kalamazoo, and Olivet colleges. It is also a member of the State of Michigan Association for Inter-collegiate Athletics for Women (SMAIAW) and the National Collegiate Athletic Association (NCAA).

## *STUDENT SENATE AND OTHER ORGANIZATIONS*

The seventeen-member student senate plays an important role in the life of the college. Not only does it serve as the official voice of the student body, but also it supervises most student activities. It oversees the budgets of student organizations and concerns itself with student publications, homecoming, the film arts, the campus radio station, and similar groups. Student members serve on most faculty committees.

All residence halls have their own governing councils and judiciary committees. These units work in cooperation with the staff members to enhance community life in the halls.

Numerous clubs and societies exist on campus, many of which are related to particular academic departments. There are also many volunteer service groups which attract student participation, such as KIDS (Kindling Intellectual Desire in Students), an organization of Calvin students that supplies teachers' assistants, "big brothers" and "big sisters" for the local courts, and tutors for high school students with disadvantaged backgrounds. All organized clubs or similar groups must have formal approval and sponsorship.

## *HEALTH SERVICES*

The college provides limited medical service for all students. This is maintained by a fee incorporated in the tuition charge. The health center, located in the basement of Heyns Hall, is maintained by a full-time nurse and a team of college physicians who hold office hours each morning. This service is limited to out-patient treatment. All serious medical problems will be referred to the student's family physician, in the case of local students, or to a physician of the student's choice.

A Group Accident and Sickness Expense Protection Plan is available to all students on a low-cost, voluntary basis, and all students not covered by similar plans are strongly urged to participate. Married student family plans are also available. Information is available in the Business Office.

The Calvin College Blood Donor Club, sponsored by KIDS and chartered by the Michigan Community Blood Center, covers all blood needs of students, faculty, and staff. Campus blood drives provide a blood credit which is administered through the college health center. Blood not needed is made available to the needy of the community.

The college is not liable for injuries sustained by students in their activity as students, even though such injuries occur on college premises, in laboratory work, or in physical education classes. The college does not undertake to be the insurer of its students and its liability under the law must be based on fault. It is necessary, in order to establish the liability of the college for such injuries, not only to prove negligence or carelessness on the part of the college, but also to show that the student was free from any negligence or carelessness which might have contributed to the injuries. Accordingly, students are advised to be certain that they are covered by personal health and accident insurance.

### COUNSELING AND ADVISING

Shortly after arriving on campus each freshman is assigned to a faculty member or to a member of the college staff as his adviser. This faculty or staff member will keep in regular contact with him during his freshman year, and will review his grades and progress to assure a satisfactory transition from high school to college.

A student after his freshman year is expected to relate himself to some department or to some professor who will assist him in developing an appropriate academic program and in other matters. By the end of the sophomore year each student must work out a counseling form defining a program which will lead to graduation. This usually requires declaring a major in a given department or group of departments. The chairman or some other member of the department at this time becomes the student's adviser. Such majors and advisers may be changed whenever a student changes his academic interests.

Additional general and specialized services are provided for all students. The college chaplains, the deans of men and women, and the dean of student life are available to students. The Broene Counseling Center provides professional help for special problems, including personality and vocational testing and counseling. The college also has working relationships with outside consultants and agencies.

All new students are required to participate in a program of orientation held just prior to registration. At that time they will meet a number of faculty members as well as administrators, including the college president, the vice presidents, and deans. Information about college activities and facilities, and the distribution of registration materials are a part of the orientation program. Upperclassmen serve as orientation leaders for small groups of new students. The orientation information is mailed to new students during the month before registration.

### USE OF MOTOR VEHICLES

Motor vehicles owned or operated by Calvin students must be properly registered in the Security Office and must carry an official college vehicle permit. Motor vehicles may be parked only in approved student parking areas and the

drivers will be fined if they park elsewhere. Because parking areas are limited, parking regulations are enforced stringently. The driving regulations and requirements of the Michigan Motor Vehicle code apply to all driving on the campus.

### STUDENT RIGHTS AND STUDENT RECORDS

The Family Educational Rights and Privacy Act of 1974 declares that "institutions must provide . . . student access to official records directly related to students and an opportunity for a hearing to challenge such records on the grounds that they are inaccurate, misleading, or otherwise inappropriate; that institutions must obtain the written consent . . . before releasing personally identifiable data about students from records to other than specified lists of exceptions; that . . . students must be notified of these rights. . . ."

Calvin College assures the safekeeping and confidentiality of student records and files. It also recognizes the rights of students and the responsibilities incumbent on the college because of this legislation. The guidelines for the implementation of this legislation, intended to preserve confidentiality and to assure student access to their records, are available in the Office of the Registrar.

### GRADUATE PLACEMENT AND FELLOWSHIPS

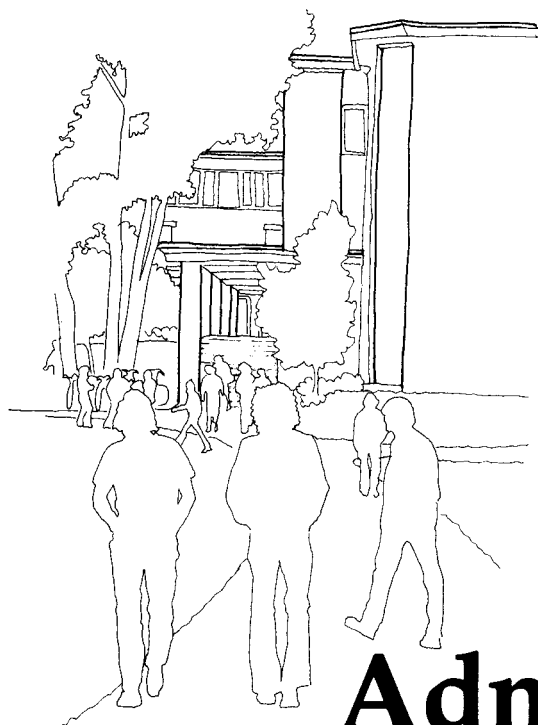
The college maintains a series of services for graduating students to assist them in securing fellowships to graduate school, teaching positions, and career placement.

The Teacher Placement Bureau assists graduates in securing teaching positions. All seniors and graduates of the college who have completed the requirements for teacher certification are eligible for this service without charge but must file all the appropriate data with the bureau to secure the service. Such information is made available to any interested school.

The Student Affairs Office assists job-seeking seniors by bringing company representatives to campus for interviews, by posting job opportunity notices, by sponsoring an annual Job Fair, and by announcing through the *Intra-Campus Bulletin* information which may be helpful to students seeking full-time employment. Seniors seeking post-graduation employment are encouraged to place their employment credentials with the Student Affairs Office. Copies of these credentials will be made available to prospective employers, if authorized by the student.

Various graduate school and graduate fellowship programs are supervised by the coordinator of graduate fellowships. The broadest of these is the Michigan Scholars program, which attempts to identify and encourage students of promise who are interested in graduate education. This program is administered cooperatively by five Michigan liberal arts colleges and the University of Michigan. Students who show outstanding promise are eligible for graduate fellowships. A number of competitive national fellowships are available to Calvin seniors, and information on these is also available through the coordinator. These include the Danforth Foundation fellowships, the Rhodes scholarships, the Marshall fellowships, the National Science Foundation fellowships, the vari-

ous **Fulbright** grants, and many others. The conditions for these grants vary from **year to year** as do the deadlines. For most of them, however, application must **be made** early in the fall and students are advised to take the Graduate Record Examination at the earliest possible date.



# Admission

*Regulations concerning admission, grading, etc.*

IN SELECTING STUDENTS for admission, Calvin College naturally looks for evidence of Christian concern and for the capacity and desire to learn. Students who are interested in the Christian atmosphere and curriculum at Calvin and show an interest in its aims are eligible for admission. Although the prospect of academic success is of primary consideration, the applicant's aspirations, the recommendations of his pastor and school, and the particular ability of Calvin to be of service to him will be considered. The college admits students of any race, color, and national or ethnic origin.

Any prospective student requesting application material will be sent forms necessary to apply for admission and for financial aid. He will be notified concerning his admission as soon as the office of admission has received his application form, his high school and college transcripts, and his pastor's recommendation. All application forms received later than June 1 must be accompanied by a \$10 late registration fee. In addition to these documents a prospective freshman student must submit the results of a college entrance examination, typically the American College Test or the Scholastic Aptitude Test. Candidates applying for scholarships should take their examination not later than December.

The following documents must support each application:



1. **SCHOLASTIC RECORD** The applicant's previous education must be reflected in a transcript from an accredited secondary school which shows the satisfactory completion of fifteen units of work and the school's appraisal of the candidate (a unit is the equivalent of five class hours a week for thirty-six weeks in one branch of study.) These fifteen units should include three units of English as well as a three-unit major sequence and two two-unit minor sequences chosen from a single foreign language, the mathematics-physics area, the natural sciences (excluding general science), and the social science area. The remaining units may be selected from those which count toward graduation in an accredited high school, but the Office of Admissions has the ultimate right of rejection. Candidates intending to follow the pre-seminary program are advised to complete a minimum of two units of Latin. Those intending to major in engineering, mathematics, or physics should complete four units of mathematics, if possible.

2. **REPORT OF COLLEGE ENTRANCE EXAMINATIONS** An entrance examination is required of all entering freshman students. This may be either the American College Test (ACT), the Scholastic Aptitude Test (SAT), or, for Canadians, the Preliminary Scholastic Aptitude Test (PSAT). Application for these tests must be made approximately a month prior to the testing date and candidates should sit for such examinations at the earliest convenient date.

The American College Test is given, normally, five times a year throughout the world. Application forms are generally available from high school principals and counselors but may be requested from the American College Testing Program, Box 168, Iowa City, Iowa 52240. This test is required by the State of Michigan for its competitive scholarship program. Testing dates for the next academic year are October 8, November 19, February 11, April 1, and June 17.

The Scholastic Aptitude Test will be given this academic year on November 5, December 3, January 28, March 11, May 6, and June 3. Application forms are generally available from high school principals and counselors but may be secured by students living east of the Rocky Mountains from the College Entrance Examination Board, Box 592, Princeton, New Jersey 08540. Those who live in the Rocky Mountain states or farther west, including those from Western Canada and foreign countries of the Pacific areas, should apply to the College Entrance Examination Board, Box 1025, Berkeley, California 94701.

3. **APPLICATION FOR ADMISSION**

4. **PASTOR'S RECOMMENDATION**

## **READMISSION**

Former students of the college and applicants who previously had been given papers entitling them to admission but who did not register must ask for readmission.

## **TRANSFER STUDENTS, ADVANCED STANDING**

Students transferring from other colleges or universities must follow the same procedures of applying for admission as freshmen, but they are not re-

quired to sit for entrance examinations and should have a cumulative grade point average of C (2.0) or higher. They will receive credit for work done in accredited institutions provided the courses were of an academic nature and the students have received an honorable dismissal. However, not more than sixteen credit hours for each semester in attendance will be accepted. No more than seventy semester hours of advanced credit will be allowed for work completed at an accredited junior college. Furthermore, no matter how much work done at other institutions may be accepted, a student must complete his last year in residence to graduate from Calvin.

A maximum of three course credits or nine semester hours will be allowed for courses taken by correspondence from accredited colleges and universities. Courses taken in residence at other accredited institutions are accepted, provided they have been approved by the registrar in advance. In no case, however, will work in a junior college be accepted after a student has accumulated more than twenty course units of credit at Calvin.

Veterans will receive credit, as recommended by the American Council on Education, for liberal arts courses taken through the USAFI and for a maximum of nine semester hours taken by correspondence courses from accredited universities in the program.

Entering freshman students may reduce the time required for a degree by giving evidence of knowledge in any course. Candidates for such advanced college credit must apply formally and may demonstrate their ability in any of four ways: they may have completed college-level work while in high school; they may submit a grade of 3 or higher on an Advanced Placement Examination of the College Entrance Examination Board; they may submit satisfactory scores on any of the Subject Examinations of the College-Level Examination Program administered by the College Entrance Examination Board; or they may pass special departmental examinations at Calvin College.

Completion of certain high school courses will excuse a student from specific college graduation requirements. Most high schools offer such courses in literature, foreign language, mathematics, and the various sciences. Students are encouraged to take such courses and in this way, as well as in others, to enter college with the strongest possible academic preparation. Consult pages 38 and 39 for a description how high school courses satisfy specific college requirements.

### *ADMISSION UNDER SPECIAL CONDITIONS*

The college is eager to serve any prospective student, including those with irregular academic histories, who shows promise of benefitting from a college education. Applicants who are at least twenty-one years of age but have not completed high school or its equivalent may be admitted on probation provided they have successfully completed the General Educational Development Test and submit satisfactory scores on one of the freshman entrance examinations.

Applicants who have not met the requirements as to prescribed high school work or as to the distribution of that work may be admitted with conditions. If possible the applicants should make up any deficiencies during the summer preceding their enrollment as freshmen. If the deficiencies have not been re-

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## MODEL HIGH SCHOOL PROGRAM

High school students should recognize that the quality of their high school education will determine the ease with which they will do college work and their ability to follow certain courses of study. At Calvin the nature and quality of a student's high school preparation may reduce his college graduation requirements (See pages 38-39). Although in general narrow specialization is not desirable in high school, at least two years of Latin are recommended for those intending to become ministers and four years of mathematics for those with a professional interest in engineering, mathematics, or the sciences.

English	4 units	
Mathematics	3 units	An additional unit is desirable for prospective mathematics, physics, or engineering majors.
Foreign language	2 units	Preferably three; ideally the last unit in grade 12; prospective ministers should complete two or more units of Latin.
Science	2 units	Biology, chemistry, or physics; one with a laboratory.
History	2 units	
Typing		
Electives	3 units	
	16 units	Additional units are desirable for students with special interests.

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moved before the student begins his first semester as a student the director of admissions will determine how they must be satisfied.

Some applicants with weak high school records may be admitted on academic probation because of other evidence of academic promise. Such students will receive special counsel, may enroll for no more than three regular courses, and are advised to restrict sharply their involvement in employment, in social life, and in campus activities. Applicants who meet all of the requirements for admission but who do not desire to become candidates for an academic degree may be enrolled as special students for such studies as their preparation qualifies them.

The Calvin College Summer Developmental Program aims to assist students with all sorts of backgrounds who have not yet met the academic admission requirements of the college. In 1978 the program meets during the four weeks of August. Through intensive testing, counseling, and personal teaching, students who have established marginal high school records are given the opportunity to develop themselves in areas in which they are deficient. Particular emphasis is made on developing basic English and basic mathematical skills. Those students who demonstrate ability to do college-level work are admitted to Calvin College.

### ADMISSION OF FOREIGN STUDENTS

Calvin College welcomes foreign students who can demonstrate their potential ability to meet the academic standards of the college, who are prepared to do college-level work in English, whose application is supported by the results of the American College Test (ACT) or the Scholastic Aptitude Test (SAT), and who can show evidence of their ability to pay most of the cost of their education. The ACT and SAT are given in foreign countries but are not required of students presenting a Senior Matriculation Certificate or who transfer from another college or university where they have earned at least one semester of credit. Such students should be certain that Calvin College offers the programs they need.

The college is approved by the United States Immigration and Naturalization Service as an institution of higher education for the training of non-citizens who are in the United States on student visas.

When such an applicant is accepted for admission he will be sent a formal letter of admission by the director of admissions and a copy of the required I-20 form. The prospective student should make application immediately with the United States Consul in his area for a student visa.

Applicants from non-English-speaking countries must demonstrate an adequate command of the English language. This can be done by passing either the English Test administered by the English Language Institute of the University of Michigan, Ann Arbor, Michigan 48104, or the Test of English as a Foreign Language administered periodically throughout the world by the Educational Testing Service of Princeton, New Jersey 08540.

### *ADMISSION TO THE NURSING PROGRAM*

Candidates for the joint nursing program of Calvin College and the School of Nursing at the Blodgett Memorial Medical Center must apply for admission to the college as outlined above and must also apply to the school of nursing. The candidate must be accepted by both the college and the school of nursing. Address inquiries to the Director, Blodgett Memorial Medical Center School of Nursing, 1840 Wealthy Street, S.E., Grand Rapids, Michigan 49506, phone: (616) 774-7898. Application forms with further directions are available beginning in August for entry the following year. Since the number of admissions is limited, application early in the fall is urged.

Required high school courses are: English three or four years; science, two years (biology, physics, and physiology recommended; one year of chemistry with laboratory required); mathematics, two years of algebra and/or geometry; social sciences, two or three years.

### *ENROLLMENT IN SEMINARY CLASSES*

Full-time college students may, as a part of a program worked out with their departmental advisers, carry up to two courses in the seminary in any one semester. Approval by the registrar of the seminary and the registrar of the college is required, and under no circumstances may credit for a single course be counted toward degree programs in both college and seminary. Full-time seminary students may enroll for not more than two courses in the college, provided the dean of the seminary and the college registrar approve.

### *STUDENT LOAD AND CLASSIFICATION*

The typical student load is four course units a semester. The normal load, however, may range from three to four and a half course units with courses in applied music, drama, and speech, and in required physical education not included in the maximum. A semester's participation in an applied arts course carries one-quarter course credit, but not more than two course units thus acquired may be applied toward graduation, except for music majors in certain applied music concentrations. Not more than four semesters of basic physical

education courses (one course unit) may be applied toward graduation. In exceptional cases a student may apply to carry more than four and a half course units; such an application requires the recommendation of his academic adviser or department chairman and the approval of the dean of the college.

Students with a minimum of seven course units of credit completed will be classified as sophomores; those with sixteen, as juniors; and those with twenty-five, as seniors. For the purposes of conversion, a course unit is considered to be equivalent to 3.5 semester hours or 5.25 quarter hours.

## GRADING SYSTEMS

Grades given during the regular semester are designated by letters A, excellent; B, good; C, average; D, just passing; and F, failure. When a student in the honors program takes a fifth course, it may be graded on the basis of satisfactory or unsatisfactory. Grade reports will be issued to the parents or guardians of a student unless the student files a written request to the contrary at the Registrar's Office.

For purposes of averaging grades, the following numerical values or grade points are assigned to each of the above grades: A, four points per course; B, three; C, two; D, one. A plus-grade is computed at three-tenths of a point above these figures and a minus-grade at three-tenths below. Grades for courses completed at other colleges and universities, including those earned at other institutions such as Grand Valley State Colleges in cooperative programs, are recorded on the student's record but are not included in the compilation of his average at Calvin.

Ordinary grades for the interim are H, honors; S, satisfactory; and U, unsatisfactory. These do not carry honor point values and are not averaged in the student's total record, but the student receives one course unit credit toward the thirty-six required for graduation for each interim course satisfactorily completed. Interim courses carrying core credit are graded according to the traditional letter system and will be included in the student's average.

A student who wishes to learn the content of a course without receiving academic credit may register as an auditor, unless that course is declared open to credit-seeking students only. He is expected to attend the classes and participate in all the assigned activities of that class. He may take all tests and submit any assigned papers but is not required to do so. However, if he fails to attend class, the instructor will give him a grade of W. A student may change his registration from audit to credit or from credit to audit but only during the first four weeks of the semester.

A student may alter his schedule during the first week of classes without the permission of the instructor whose course he is dropping and without a grade of W being recorded on his record. After that time, a grade of W, withdrawn, will be recorded if he leaves a course for any reason with the written approval of his instructor before December 1 of the first semester or May 1 of the second. He may not withdraw from a course after these dates. A student may withdraw from school at any time with the approval of the Dean of Women or the Dean of Men and the Registrar. He will be given a grade of W in all courses. A student who discontinues classes without notification or permission is not entitled to this grade but will be given an F in each course.

A student may repeat any course by properly registering for it. He shall inform his instructor that he is repeating it. Only the second grade, whether higher or lower, shall be included in the compilation of the student's cumulative grade point average. It shall be entered on the record preceded by an R. The original grade is not expunged from the record.

If a student fails to complete all the required work for a course or to sit for the final examination, the instructor may, if he considers that student's reasons valid, give him a grade of I—incomplete, rather than an F. The grade of I shall be computed as an F in determining the student's grade point average. A student given an I in the fall semester or in the interim must make up the deficiency prior to May 1 of the next spring semester; if given an I during the spring semester or summer session, he must make up the deficiency prior to December 1 of the next fall semester. If he fails to do so, the I will be changed to an F, which he can alter only by reregistering and retaking the course. The grade of I is never expunged from the record, but when the passing grade is submitted, the grade, credit, and honor points earned become a new and separate entry. If because of extended illness a student is unable to complete the work necessary to remove the I, he may petition the Registrar for an extension. He must do so in writing at least one week prior to the deadline.

Any student found guilty of dishonesty in any examination or test or in written work of any character will be given F for the course and will be subject to disciplinary action.

#### HONORS, PROBATION, ELIGIBILITY

Full-time students with an average grade of A – (3.50) or higher for any semester and a cumulative average of 3.1 or higher will be placed on the Dean's List. Students with cumulative averages below C (2.0) are placed on probation. Part-time students and those on academic or disciplinary probation may not participate in any organized extra-curricular activity. For details of these regulations, see the *Student Handbook*.

Students with cumulative averages below 2.0 (C) are not meeting the academic standards required for graduation and should consider reducing their academic load to three courses, should seek help in developing their academic skills either through a faculty adviser or through the Academic Success Program, and should reduce their outside employment and involvement. Students are subject to dismissal when they are ten or more grade points short of two for each course unit taken and may be readmitted after a year only upon evidence of the likelihood of their success.

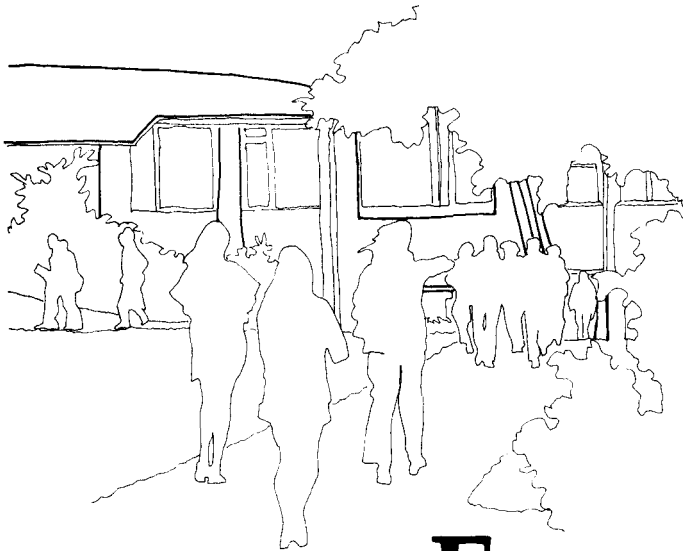
Students desiring to graduate with an honor designation must participate in the honors programs. Consult page 42 for details.

#### APPLICATION FOR DEGREES AND CERTIFICATES

In addition to the formal academic requirements for degrees described in the section on "The Academic Programs" beginning on page 38, every student must satisfy certain technical requirements. Normally, he must have completed his last year in residence at Calvin. He must have completed with his departmental adviser a Major Concentration Counseling Sheet and have met all the conditions

specified in it (these sheets are normally completed during the sophomore or junior years), and must have filed a formal application for a degree in the Office of the Registrar not later than the beginning of the semester in which he expects to graduate.

**Students** who meet the conditions for teacher certification in Michigan, as explained on pages 43-48, should apply for this certificate at the Department of Education at the end of the semester during which they have completed the requirements. They must apply within one calendar year after the completion of these requirements.



# Expenses

*Expenses, scholarships, and other financial aid*

## TUITION AND RELATED FEES

TUITION AND related fees are \$2230 for the year and \$1115 for a semester. This includes fees for student activities such as *Prism* and *Chimes*. The interim is considered an extra course which a student may take without an additional charge if he pays full tuition for either semester; if he does not, he will be charged at the one-course rate.

Calvin College is vitally interested in providing financial assistance for outstanding young men and women whose financial resources are inadequate to meet the basic cost of education. A significant amount of student financial support comes from the Christian Reformed Church in the form of institutional grants-in-aid. Students whose parents are members of the Christian Reformed Church, and who thus contribute regularly to the support of Calvin College, may apply for these institutional grants-in-aid at the time of registration. The amount of this grant-in-aid is determined in part by the distance between the student's home and Calvin College, as measured in a direct line. The home of an unmarried student is considered to be that of his parents; that of a married student to be that of his residence before enrolling at Calvin. If a student's parents are not members of the Christian Reformed Church, the grant-in-aid will be based on the location of the Christian Reformed Church of which the student is a member. The grant-in-aid for students whose need has been met by a State of Michigan Scholarship or Tuition Grant is adjusted to meet the regulations governing these programs. The combined institutional grant-in-aid and scholarship assistance for such students is limited to \$200. The institutional



grant-in-aid for Michigan students whose need is not met by a State of Michigan Scholarship or Tuition Grant is:

	per semester	per year
Within 10 miles of the campus	\$100	\$200
From 10 to 150 miles	140	280
More than 150 miles	180	360
The institutional grant-in-aid for out-of-state students is:		
From 0 to 300 miles	190	380
From 300 to 1000 miles	230	460
More than 1000 miles	270	540
Manitoba, Ontario, Quebec provinces of Canada	230	460
Alberta, British Columbia, and Saskatchewan provinces	270	540

The tuition rate for part-time students is \$285 for each course, with a \$25 institutional grant-in-aid for those who are members of the Christian Reformed Church. The auditing fee for part-time students is one-half of the regular tuition charge; there is no fee for auditing by full-time students.

### TUITION, FEES

Tuition, per sem.*	\$1115.00	Late application fee	\$10.00
Tuition, part-time, per course*	285.00	Late registration fee	10.00
Auditing, per course	142.50	Late payment fee	5.00
Room and board, per year	1170.00	Physical education deposit	5.00
Teaching internship fee, per sem.	10.00	Vehicle registration fee	3.00
Individual music instruction, per sem.	75.00	Transcripts	1.00
Residence hall social fee	16.00	Exemption examination fee	5.00
		Course credit by examination fee	20.00

\*See above for grants-in-aid for members of the Christian Reformed Church.

In addition to these direct charges, the student should allow about \$150 per year for the purchase of textbooks and classroom supplies. An annual budget for personal items such as clothing, transportation, entertainment, toilet articles, and miscellaneous supplies varies widely among students.

### PAYMENT OF FINANCIAL OBLIGATIONS

Students are encouraged to pay their tuition, fees, room and board in full at the time of registration each semester. For those students who need to make payments over a period of time, payment schedules are available at registration. These schedules will call for a down payment at the beginning of each term and payments of approximately one-third of the balance at the beginning of each subsequent month.

The minimum down payment required at registration for resident students is \$555 for tuition, room, and board; and the minimum down payment for non-resident students is \$375 for tuition.

Accounts that are not paid on time will be subject to a \$5 late payment fee. A fee of 1 percent per month is charged on all balances unpaid at the end of the term. If a student discontinues, the charge for tuition and for room and board

will be prorated in proportion to the time the student has been officially in attendance.

Transcripts will not be issued for students owing money to the college.

## SCHOLARSHIPS AND FINANCIAL AID

Calvin College administers scholarship programs designed to recognize academic excellence and financial aid programs designed to assist those who together with their family are not able to meet their educational expenses. The scholarship programs provide a minimum stipend to all scholarship recipients and an additional stipend to those who have financial need. The financial aid programs provide assistance in the form of grants, loans, and part-time jobs to those who have financial need.

### Scholarships

A number of scholarships are available for undergraduates of all classes, and each applicant should determine his own eligibility. Approximately two hundred and fifty scholarships are awarded annually to prospective freshmen and a like number to upperclassmen. Students who are selected to receive one of the special scholarships awarded by the college are usually not considered for the general scholarships of \$100 awarded to freshmen and upperclassmen.

Scholarships are awarded on the basis of academic achievement, character, promise of growth, and, in some cases, financial need. Any application for a scholarship based on financial need must be accompanied by an application for financial aid. All scholarships are one-year awards and are renewable on a competitive basis unless specified otherwise.

Cash stipends given to scholarship recipients vary in amount, depending on the student's need, and such stipends can be supplemented by grants, loans, and work opportunities provided by the college. Scholarship recipients who apply for scholarship amounts beyond the minimum stipend must also apply for financial aid. All students holding scholarships awarded by the college are expected to meet part of their own expenses.

Application forms for freshman scholarships are enclosed with admission forms. Applications are reviewed as they are received, beginning in December, and applicants are notified immediately of the results of this review. Applications must be submitted by February 1 to be guaranteed consideration. A freshman scholarship applicant must also have his Scholastic Aptitude Test or American College Test scores reported to the college before February 1, if these scores are to be used in evaluating the application.

Applications for upperclassman scholarships are available from the Office of Scholarships and Financial Aid unless specified otherwise and must be submitted by March 1.

### Freshman Scholarships and Awards

*Freshman Honor Scholarships.* Each year the college awards approximately thirty Honor Scholarships to students of superior academic achievement and potential. The minimum stipend of this scholarship is \$300 for direct educational expenses plus

\$50 for books other than textbooks. The scholarship can be supplemented by an additional stipend of up to 50 percent of the student's unmet need and by part-time jobs and interest-free loans. Students who apply for the Freshman Scholarship described below are automatically considered for the Honor Scholarship.

**National Merit Freshman Scholarship.** Calvin College awards a scholarship of \$200 to each prospective freshman who has been selected as a Semi-Finalist in the National Merit Scholarship Program. This can be supplemented by an additional stipend of up to 40 percent of the student's unmet need and by part-time jobs and interest-free loans.

**Freshman Scholarships.** These scholarships are awarded to entering freshmen who have done excellent work (better than B+) in high school. The minimum stipend of \$100 can be supplemented by an additional stipend of up to 40 percent of the student's unmet need and by part-time jobs and interest-free loans.

**Calvin College National Merit Scholarship.** Calvin College annually sponsors one four-year scholarship of \$250 or more per year for a National Merit Finalist. Prospective students who indicate to National Merit that Calvin College is their first choice institution will be considered for this award.

**Kent Medical Foundation Grants.** Each year the Kent Medical Foundation provides the college with funds to be awarded to students pursuing a career in medicine or in an allied health field. The grants are designated for students who are residents of

Kent County or counties bordering thereon and who have financial need.

**Leonard M. Krull Scholarship Aid Fund.** As a result of a bequest to Calvin College by the late Leonard M. Krull of Westborough, Massachusetts, three scholarships are available each year to prospective freshmen from the Whitinsville, Massachusetts, area. Two of the scholarships are one-year awards of \$200 each; the third scholarship is a \$500 award based on financial need and is renewable for up to four years of study. Selection is made by the Scholarship Committee in consultation with a representative committee from the Whitinsville area.

**Steelcase Foundation Scholarships.** The Steelcase Foundation of Grand Rapids, Michigan, offers eight scholarships annually of \$250 each to applicants who are children of Steelcase employees. The recipients are selected by the Scholarship Committee of the college, and the applicants are judged on the basis of scholastic ability, character, and need. If scholarships are not filled by children of Steelcase employees, for whatever reason, the scholarships are available to other Michigan residents.

**Stephen D. Lankester Scholarship Program.** As a result of a bequest by the late Stephen D. Lankester to the Grand Rapids Foundation, a number of \$500 scholarships are available each year to students from Kent County. The primary purpose of this program is to provide assistance to students with good academic records (B or better) who have financial need. Recipients of this scholarship who wish to be considered for renewal must reapply each year.

### Freshman Scholarships and Grants Not Administered by the College

**State of Michigan Competitive Scholarships.** Each year the Michigan Higher Education Assistance Authority awards a number of state scholarships to beginning freshmen. These scholarships are to be used for tuition and fees and are not to exceed \$1200. Scholarship winners must demonstrate college potential and financial need. To be eligible for consideration for a state scholarship each applicant must: (1) qualify as a result of his performance on the national test administered by the American College Testing Program, (2) be a continuous resident of Michigan since July 1 of the previous year, (3) have successfully com-

pleted the program of instruction at a Michigan high school or be currently enrolled as a student at such a school and engaged in a program which will be completed by the end of August, and (4) be a person of good moral character. Additional information and application forms can be secured from the counselor's office of any Michigan high school.

**Freshman Alumni Grants.** Since 1966 the Calvin Alumni Association has given a large number of freshman grants of \$150 or \$200 each to qualified high school seniors who are in need of special financial assis-

tance. Candidates for these awards are nominated by local alumni chapters or by high school principals and counselors.

*Calvin Alumni Chapter Scholarships.* Various alumni chapters offer scholarships to Calvin students which are administered locally. Candidates should consult a member of the local alumni chapter.

*The Atlantic Monthly Scholarship.* The Atlantic Monthly offers a \$500 scholarship each year to the winner of its Creative Writing Contest for high school students. Calvin College participates in this program by offering a supplementary grant based upon the needs of the winner, if he enrolls at Calvin College. The selection is made by The Atlantic Monthly Company. Complete details concerning this contest can be secured by writing to the Atlantic High School and Private School Contest, 8 Arlington Street, Boston, Massachusetts 02116.

*Henry Beets Mission Society Scholarship.* The Henry Beets Mission Society of the La Grave Avenue Christian Reformed Church provides an annual grant to promote the ministry of the Church to the American Indian. Initial funds for this grant were given by the Herrick Foundation of Detroit, Michigan. Those eligible are American Indians who intend, preferably, to minister as pastors or teachers to members of their own race. The amount of the grant is determined by the needs of the student. The

student should consult with the registrar when planning his program. Candidates should apply in writing to the Henry Beets Mission Society, La Grave Avenue Christian Reformed Church, 107 La Grave Avenue, Grand Rapids, Michigan 49503.

*George M. Pullman Educational Foundation Scholarships.* The George M. Pullman Educational Foundation awards each year a number of scholarships to college students with financial need. Applicants should be residents of Cook County, Illinois. Non-residents of Cook County, Illinois, are eligible for consideration only if they are sons or daughters of employees of the Pullman-Standard Car Manufacturing Company or of the Pullman Company.

Applications are accepted from entering freshmen and from current undergraduate students. The application deadline for entering freshmen is January 15, and for current undergraduate students April 15. High school seniors should obtain information about application procedures from high school placement officials. Other candidates should address their inquiries to the Educational Director, George M. Pullman Education Foundation, 1451 East 55th Street, Chicago, Illinois 60615. The National Merit Scholarship Qualifying Test or the College Board Scholastic Aptitude Test is required of prospective freshman candidates. Arrangements to take either of these tests must normally be made before December of the senior year of high school.

### Sophomore, Junior, and Senior Scholarships and Awards

*Upperclassman Scholarships.* Each year Calvin College offers a number of scholarships to members of the freshman, sophomore, and junior classes who have achieved superior records in their previous college work. The minimum stipend is \$100, but this can be supplemented by an additional stipend up to 40 per cent of a student's need and by work opportunities and loans. Holders of Freshman Honor Scholarships and Calvin College Scholarships, as well as other qualified students, are encouraged to apply for Upperclassman Scholarships.

*Alumni-Faculty Memorial Scholarships.* The Calvin Alumni Association each year provides the college, in memory of deceased college faculty members, with annual scholarship grants. Candidates for these scholarships are selected by the Scholarship Committee and are inter-

viewed by the Alumni Board. There are usually six scholarships of \$300 each awarded each year.

*Dr. John W. Brink Memorial Scholarship.* One scholarship of \$300 is awarded each year in memory of Dr. John W. Brink to a premedical student for use in the junior or senior year at Calvin College. Selection shall be on the basis of character, academic performance, and potential without regard to need.

*Dr. Harry Kok Memorial Scholarship.* A scholarship of \$400 is presented each year, in memory of Dr. Harry Kok, to a junior student for use in the senior year at Calvin College. The award is given primarily for achievement in scholarship, although other factors, such as financial need, will be taken into account. This scholarship is not limited to students who make formal application.

*Dr. John De Vries Memorial Award.* An annual award of \$200 in memory of Dr. John De Vries is presented each year to a student majoring in science for use in the junior or senior year. In making the award, the scholarship committee will give consideration to the applicant's scholarship, Christian character, financial need, personality, and promise of growth.

*Edward D. Vander Brug Memorial Scholarship.* Calvin College has received gifts from the Vander Brug family of Detroit, Michigan, the income of which is used to provide grant assistance to students of minority races. These gifts are in memory of the late Mr. Edward D. Vander Brug. Each year the college awards one grant of \$1000 or two grants of \$500 each to minority students who are selected on the basis of academic ability, character, promise of growth, and financial need. Recipients may apply for renewal.

*Henry Beets Mission Society Scholarship.* For information on this grant to American Indians, see the previous section.

*Dow-Employees Scholarship Fund.* The Dow-Employees Scholarship Fund provides Calvin College with an annual scholarship of \$500.

The stipend is to be given preferably to an outstanding science or engineering major in the junior year, or to a major in another department, if the college so elects, for use in the senior year. The recipient must have the ability, initiative, and personality to contribute to the student's field in coming years. The recipient is to be selected by the Scholarship Committee of the college on the recommendation of the department concerned.

*Dutch Immigrant Society Scholarship.* The Dutch Immigrant Society offers annually four scholarships of \$250 each to Calvin College upperclassmen. The applicant must be an immigrant or a child of immigrant parents. This award is granted on the basis of scholarship, Christian character and personality, and financial need. The application must specify why the candidate is eligible for this scholarship and indicate the student's need. The selection of candidates is made by the Scholarship Committee.

*Farmers' Insurance Group Scholarship.* Each year the Farmers Insurance Group of Los Angeles, California, provides the college with a gift of \$400. This is to be used to

award a scholarship to a second, third, or fourth year student in mathematics or business administration. Financial need is a primary factor in selecting a recipient; however, an academic record of C+ or better is also required.

*Spalink Memorial Missions Scholarship.* An annual scholarship award of \$500 is presented by Mr. and Mrs. John Spalink, in memory of their son, John Spalink, Jr. Its purpose is to encourage superior students to enter missions. The scholarship is awarded to a student of either sex who shows a definite interest in a missionary vocation. The award is given primarily for academic achievement, although other factors, such as financial need, will be taken into account. Generally, members of the Christian Reformed Church who aspire to a career with that church's missions will be shown preference. The Scholarship Committee makes final determination of the award.

*Kent Medical Foundation Grants.* Each year the Kent Medical Foundation provides the college with funds to be awarded to students pursuing a career in medicine or in an allied health field. The grants are designated for students who are residents of Kent County or counties bordering thereon and who have financial need.

*Steelcase Foundation Scholarships.* The Steelcase Foundation of Grand Rapids, Michigan, offers eight scholarships annually of \$250 each to applicants who are children of Steelcase employees. The recipients are selected by the Scholarship Committee of the college, and the applicants are judged on the basis of scholastic ability, character, and need. If scholarships are not filled by children of Steelcase employees, for whatever reason, the scholarships are available to other Michigan residents.

*Stephen D. Lankester Scholarship Program.* As a result of a bequest by the late Stephen D. Lankester to the Grand Rapids Foundation, a number of \$500 scholarships are available each year to students from Kent County. The primary purpose of this program is to provide assistance to students with good academic records (B or better) who have financial need. Recipients of this scholarship who wish to be considered for renewal must reapply each year.

*Talen Scholarship Program.* Each year Mr. Clare Talen of Menomonie, Wisconsin, provides the college with \$600 to be used

for two scholarships for upperclassmen. One scholarship is awarded to a junior pre-seminary student for use in the senior year; the other is awarded to a top student in any other area. Selection is made on the basis of academic achievement, potential, character, and financial need.

*Ralph Gelmer Vander Laan Memorial Scholarship.* Mr. and Mrs. Joseph W. Vander Laan, in honor of Mr. Vander Laan's brother, have provided the College with a fund, the income from which is used to award two scholarships of \$500 each year. One of the scholarships is awarded to a prospective junior or senior who is pursuing a program in the health professions, with preference given to those interested in missions or some other type of Christian service. The other scholarship is awarded to a top student in any area. Selection criteria include the student's academic record, character, and need.

*Shell Companies Foundation Scholarship.* Each year Calvin College receives a \$500 gift through the Shell Assists Program to be awarded to outstanding students majoring in science. The intent of the program is to provide assistance to U.S. citizens who do not qualify for government grants but who do have financial need.

*Ruth Zylstra Memorial Scholarship.* Each year Calvin College awards one scholarship of \$150 to a student in a nursing program who is entering the sophomore, junior, or senior year at Calvin. Selection is made by the Scholarship Committee on the basis of the student's academic record, potential, character, and financial need.

*The Cayvan Award in Strings.* An annual award of \$200 is offered to an outstanding sophomore or junior player of violin, viola, cello, or bass viol for use during the junior or senior year. Selection shall be made by the Department of Music on the basis of proficiency in performance on the instrument, evidence of sound musicianship, academic achievement, and participation in the college orchestra and in a chamber music ensemble. If this award affects the student's eligibility for either the Michigan Scholarship or Tuition Grant, \$100 of the award shall be used for two semesters of private lessons. Application blanks should be obtained from the Department of Music.

*Music Department Upperclassman Scholarship.* One or more annual awards of \$200 is of-

ferred to outstanding sophomore or junior music majors for use during their junior or senior years. The recipient will be judged by the following criteria in this order: academic achievement; evidence of sound musical understanding as demonstrated by such things as class papers, other creative achievements such as composition, performance ability and contribution; and the nature of the student's program. Selection will be made by the Music Department. If this award affects the student's eligibility for the Michigan Scholarship or Tuition Grant, \$100 of the award shall be used for two semesters of private lessons. Application blanks should be obtained from the Department of Music.

*Alumni Players Upperclassmen Music Award.* The Alumni Players of Calvin College have provided the Department of Music with funds to make one or more annual awards of \$200 each to an outstanding sophomore or junior music major for use in the junior or senior year. Applicants shall be judged by the following criteria: proficiency in performance, overall contribution to the musical life of the college, grade point average, particularly in music, and active participation in college ensembles. If this award affects the student's eligibility for a Michigan Scholarship or Tuition Grant, \$100 of the award shall be used for two semesters of private lessons. Application blanks should be obtained from the Department of Music.

*Helene Hekman Gezon Voice Award.* Contributions have been received by the college in memory of Mrs. Gezon which will provide the Department of Music with funds to make an annual award of \$300 to an outstanding sophomore or junior voice student for use in the junior or senior year. Applicants shall be judged on the basis of proficiency in performance as a singer, evidence of sound overall musicianship, and grade point average, especially in music. If this award affects the student's eligibility for a Michigan Scholarship or Tuition Grant, \$100 of the award shall be used for two semesters of private lessons. Application blanks should be obtained from the Department of Music.

*Summer School Scholarships.* Twelve scholarships in the amount of \$250 each, one for each National Union of Christian Schools district, will be available to Christian school teachers for study at Calvin College during the summer of 1978. The Na-

tional Union and Calvin College each contributes \$1500 for this program. The cash awards must be used for payment of tuition and other expenses involved in work for personal and professional enrichment, work toward the validation of a teaching certificate, or toward a degree at Calvin College.

To be eligible for a scholarship the teacher:

1. Must have completed two years of successful teaching in the Christian schools.
2. Must be able to produce satisfactory evidence of possessing:
  - a. Ability to pursue academic work successfully.
  - b. Qualities of personality, character,

and conviction that are assets to a Christian teacher.

- c. Loyalty to the Reformed faith.
- d. Superior teaching ability.
3. Must agree to serve a National Union member school at least one year after receiving a scholarship.
4. Must submit a statement of 250 words or less on the reason(s) for applying for a scholarship.

For details and applications for these scholarships and for grants-in-aid write directly to the Director of Scholarships, National Union of Christian Schools, 865-28th Street, S.E., Grand Rapids, Michigan 49508.

Application must be made by March 15.

### Financial Aid

Calvin participates in a variety of financial aid programs sponsored by the state and federal governments or by private agencies, and sponsors a number of its own programs as well in attempting to provide a broad program of financial assistance for its students. These include the Institutional Grant-In-Aid Program described on page 25, the scholarship, grant, and loan programs described on the following pages, and a placement service for part-time employment. The Office of Scholarships and Financial Aid places students in on-campus jobs and uses the services of the Michigan Employment Security Commission to place students in part-time off-campus jobs. The college urges each applicant to explore local or state sources of financial assistance as well.

A prospective student should not deny himself a Calvin College education because of cost without first exploring the possibilities of financial aid; however, financial arrangements should be made prior to registration. At that time a student should have in hand a substantial portion of the semester's expenses from his own resources, scholarships, grants, and loans, and if intending to carry a full academic load, should not plan to work more than twelve to fifteen hours per week.

Any student with financial need who feels he is eligible for any student aid program may request additional information from the Office of Scholarships and Financial Aid or request an application form. The office is located in the College Center. As a matter of policy, to be fair to all students, applications for financial assistance must be supported by a financial statement, which is reviewed for the college by the College Scholarship Service of the College Entrance Examination Board to determine the degree of need. Students who apply should be in good standing or, if freshmen, should be admitted to the college. Freshmen applications should be received by February 1 and upperclass applications by March 1 to receive maximum consideration. Applications for financial aid are enclosed with all admission forms.

*Basic Education Opportunity Grant.* The BEOG, funded by the federal government, is designed to provide grant assistance of

up to \$1800 per year to students whose parents' ability to contribute is very limited. The amount of the grant is reduced propor-

tionately if there are not sufficient funds to aid all eligible students. Applications for this grant must be made separately.

**Supplemental Educational Opportunity Grant.** This program, funded by the federal government, is for students with exceptional financial need. The maximum award a student can receive is \$4000 in four years or, in special circumstances, \$5000 in five years. The program is open to students at all undergraduate class levels.

**Calvin College Grants.** The college has established a program of grant assistance for students with good scholastic records who also have financial need. Prospective freshmen with a high school average of B or better and upperclassmen with a cumulative grade point average of B or better will be considered for this grant if they have not been selected to receive a scholarship. Students with an academic record slightly below a B will also be considered for this grant program on a review of other factors such as most recent grades, letters of recommendation, and, for prospective freshmen, admission test scores. The amount of this grant can be up to 40 percent of the student's financial need, with the remaining need being met with other grants, loans, and employment.

**Calvin College Grants-In-Aid.** Students with financial need who are not selected to receive a scholarship or grant from the college will be considered for a grant-in-aid. The amount of this grant can be up to 25 percent of the student's need, \$800 being the maximum award.

**SCORR Grants.** The Christian Reformed Church has authorized the Synodical Committee on Race Relations (SCORR) to provide grants of up to \$1000 per year to students of minority races who are within the fellowship of the Christian Reformed Church. The student may receive this award for four years if he continues to demonstrate financial need.

**Minority Grants.** The Student Senate of Calvin College has provided a limited amount of money to be used to assist students of minority races. A qualified student may receive up to \$500 in this program.

**College Work-Study Program.** Students who need employment to help pay for college expenses are eligible for employment by Calvin College or in approved off-campus agencies under this federally-supported

program for U.S. citizens. The student's eligibility depends on need, with preference being given to applicants with greatest need.

**National Direct Student Loan Program.** This program, sponsored by the federal government for U.S. citizens, provides long term loans to students with financial need. There is no interest charge on this loan while the student is attending college, and repayments can be deferred as long as the student continues to be enrolled at least half-time, or serves in the armed forces, in VISTA, or in the Peace Corps. After the borrower completes his service with one of the above mentioned organizations, or nine months after he ceases to be at least a half-time student, a ten-year repayment schedule commences with a 3 percent interest charge. If the borrower becomes a full-time teacher of handicapped children or teaches in a school "with a high concentration of low income families", part of the loan can be cancelled. If the borrower serves in the armed forces in an "area of hostilities" up to 50 percent of the loan may be cancelled.

**Guaranteed Loan Program.** Loans from private banks, guaranteed and subsidized by the federal government through various state and private agencies, are available from many banks and other lending institutions in amounts up to \$2500 per year. Repayment of the loan is deferred as long as the student is enrolled at least half-time and until nine months after leaving school. The repayment period can be as long as ten years, if needed, although a minimum payment of \$30 per month is usually required. The loan can be interest-free until repayment if the adjusted gross income of the family is less than \$25,000 or if recommended by the college on the basis of financial need. Applications for these loans are available from local lending institutions.

**Canada Student Loans.** The Canadian Government sponsors an interest-free loan program for Canadian citizens similar to the Guaranteed Student Loan Program described above with a maximum loan of \$1800 per year. Application forms are available from provincial offices of education.

**Albert Postman Loan Program.** This program provides loans of up to \$500 per year to members of the Christian Reformed Church who plan to enter full-time Christian service in the church or in its related



agencies. Preference is given to students from western Canada.

**Emergency Loans.** Short-term loans of up to

\$70 are available from funds provided by the *Royce Ulferts Memorial Loan Fund*, the *Eben Mumford Scholarship / Loan Program*, and the Kiwanis Club.

### Student Awards

**Anna Bruinsma Award in Music.** The interest on \$750, given by the late H. J. Bruinsma of Grand Rapids in honor of his deceased wife, one of Calvin's alumnae, is to be used in the Department of Music, two-thirds of it serving as first, and the remaining third, as second prize. This award is open only to seniors.

**Oratorio Society Applied Music Awards.** A number of awards of \$200 each are presented by the Calvin College Oratorio Society to prospective freshmen. These awards are given to instrumentalists and vocalists who have records of superior achievement in high school music activities, who give evidence of outstanding talent and musicianship in audition, and who will participate in the scheduled rehearsals and performances of at least one of the following: concert band, varsity band, orchestra, choir, oratorio chorus. For application procedure, see award below.

**Vander Heide Voice Award.** An award of \$200 is offered annually by Mr. and Mrs. Jan S. Vander Heide to a vocalist who has a record of superior achievement in high school music activities. The award is applied to four semesters of private voice lessons. The recipient will be expected to participate in the scheduled rehearsals and performances of at least one faculty-directed choral ensemble. Only freshmen are eligible. Applicants will be judged on the basis of evidence of talent and musicianship.

The deadline for applying for the Oratorio Society and Vander Heide awards is April 1. Application blanks and additional information are available from Mr. Geerdes of the Music Department. Awards are announced by April 15.

**Baker Extemporaneous Speaking Awards.** Through the generosity of the Baker Book House of Grand Rapids, Michigan, credit vouchers for the purchase of books are awarded annually to the first, second, and third place winners in both the men's and women's divisions of the Extemporaneous Speaking Contest. In each division the winners of first, second, and third places are awarded credit vouchers of \$25, \$10,

and \$5, respectively. The first place winners of each division represent Calvin College at the annual State Extemporaneous Speaking Contest.

**Broodman Oratorical Awards.** Through the generosity of the Broodman family of Grand Rapids, Michigan, a gold medal and a \$25 Savings Bond are awarded to the first place winner in a men's oratorical contest. Silver and bronze medals are given annually to the winners of the second and third places, respectively, in a men's oratorical contest. These awards are presented in memory of the late Dr. G. J. Broodman. The first-place winner represents Calvin College in the State Oratorical Contest of the Michigan Intercollegiate Speech League.

**Drama-Interpretative Reading Awards.** An anonymous donor annually presents the Speech Department with \$100 to be used as awards in the areas of drama and interpretative reading. This enables the Speech Department each year to make the following awards:

1. A \$25 award to a senior student who has done outstanding work in acting in Thespian productions.
2. A \$25 award to a senior student who has made valuable contributions in the areas of the technical aspects of Thespian productions.
3. \$15 awards to each of the two students selected to represent our college at the Junior Division of the Annual Interpretative Reading Festival.
4. \$10 awards to each of the two students selected to represent our college at the Junior Division of the Annual Interpretative Reading Festival.

**Harmon D. Hook Memorial Award in English**

An award of \$50 is offered each spring to an English major who has indicated a serious interest in English or American language and literature and whose work in the discipline gives evidence of personal enrichment and promise of future service. To be considered, a student should have demonstrated not only academic competence but also such qualities as humane interest in

letters and Christian concern for cultural and spiritual growth through literature. The English Department selects the person to receive the award.

*Monsma Speech Award.* Each year Dr. and Mrs. John W. Monsma, Jr., offer an award of \$100 to a student majoring in speech. The award is usually given to an undergraduate planning to return to Calvin for additional study and is given on the basis of the student's academic record, character, and personality. The Speech Department selects the nominee to receive the award.

*F. M. and E. P. ten Hoor Prize.* The college has received a bequest from the late Mrs. Marie M. ten Hoor, the income of which is to be awarded to an outstanding student at the college for use in the junior or senior year. This prize of \$50 will be awarded by the Scholarship Committee to a student with an outstanding record who has not been selected to receive one of the special scholarships awarded by the college.

*Thespian Oratorical Awards.* The Thespians, dramatics club of Calvin College, offers three awards in oratory for women, of \$15, \$10, and \$5.

The first award winner represents Calvin College in the State Oratorical Contest of the Michigan Intercollegiate Speech League.

*The Beets Calvinism Award.* The late Dr. and Mrs. Henry Beets established a fund, which now amounts to approximately \$1500, the income from which is used to award a prize

or prizes for the best research paper or papers on annually specified themes in Calvinism studies, written by Calvin College students, the prize or prizes to be awarded at the discretion of the Department of Religion and Theology.

*The William B. Eerdmans Literary Awards.* The late Mr. William B. Eerdmans, Sr., established the William B. Eerdmans Literary Awards in the interest of encouraging original, creative writing among Calvin College students.

Under the terms of the foundation three awards—first, \$35; second, \$25; third, \$15 are made. Any type of original writing is eligible for an award, whether it be poetry, fiction, or essay, creative or critical, seriously reflective, or delightfully amusing.

*The Rinck Memorial Award.* A fund of \$4000 has been subscribed by former students and friends as a memorial to William Rinck, Professor of Mathematics at Calvin College (1905 to 1920). The income of this fund is devoted to an award for outstanding work in mathematics. The prize is awarded annually to the senior student majoring in the Mathematics Department who has, in the opinion of the members of the department, done superior work in undergraduate mathematics.

*Jewish Evangelization Award.* Dr. and Mrs. William J. Yonker offer a prize of \$50 for the best essay and a prize of \$25 for the second-best essay on a subject bearing on the evangelization of the Jews. The contest is open to all college students.

## Post-Graduate Fellowships

*Board of Trustees Scholarship.* Calvin Seminary, under the authority of the Board of Trustees of Calvin College and Seminary, offers a scholarship consisting of \$500 to a member of the graduating class of Calvin College. The award will be made to a student who plans to enter Calvin Seminary and, eventually, the ministry of the Christian Reformed Church.

Applications should be in the hands of the Scholarship Committee by March 1.

*Competitive National Graduate Fellowships.* Many competitive national fellowships are available to Calvin seniors with outstanding records. These include the Danforth Foundation fellowships, the Rhodes scholarships, the Marshall fellowships, the

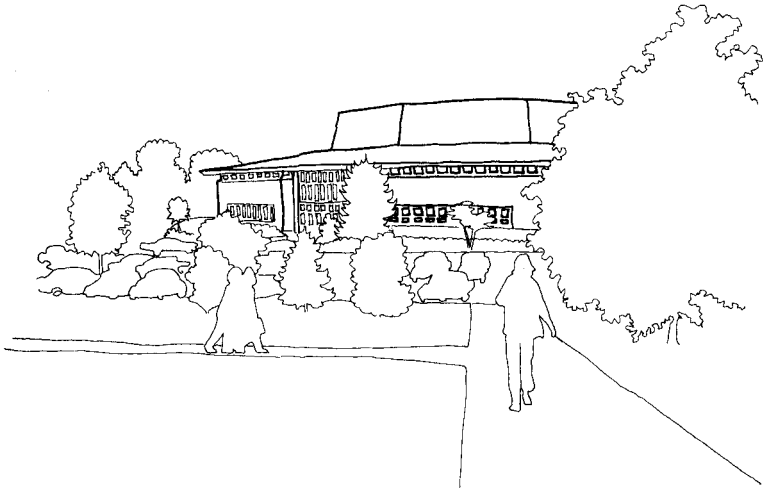
National Science Foundation fellowships, the various Fulbright grants, and many others. The conditions for these grants vary from year to year, as do the deadlines. For most of them, however, application must be made early in the fall and students are advised to take the Graduate Record Examinations at the earliest possible date. Students interested in any of these grants are advised to consult their departmental chairmen and the assistant dean for academic affairs.

*University of Michigan State College Fellowships.* These competitive, prestigious fellowships to the Graduate School of the University of Michigan, totalling \$2400 plus tuition for an academic year's work, are

open to students nominated through the Scholarship Committee. Up to twenty-four grants are made by the university to students nominated by various Michigan colleges and universities. For information, consult the assistant dean for academic affairs.

*University of Michigan Scholarships for Graduates of the Three-Year Engineering Course.* The University of Michigan offers several scholarships to students who have completed their three-year engineering course at Calvin College and who transfer

to the University of Michigan to complete their work for an engineering degree. Interested students should before March 1 consult with the chairman of the Engineering Department, which makes its recommendation on the following criteria: a minimum grade point average of 3.0, completion of a minimum of twenty-eight courses at Calvin College, demonstration of serious interest in the activities of the department, and intention to apply for a Calvin Bachelor of Science degree upon completion of the engineering degree requirements.



# Academic

*Requirements for degrees, honors, professional programs*

THE PRIMARY FOCUS of a Christian liberal arts education at Calvin College is on teachers and students together engaging in the various scholarly disciplines, directed and enlightened in their inquiries by the Word of God. The faculty believes that in a complete liberal arts education the student should be introduced to the disciplines on two different levels.

In the first place, he should acquire a general or extensive education by following a rationally determined pattern of required and optional courses in the various major disciplines, the fundamental unifying element in this pattern being the Christian perspective within which all courses are presented. From this extensive study it is hoped that the student will acquire a knowledge of the more significant results or products of the various disciplines; an understanding of the methodologies of the disciplines, which will enable him to judge the products of the disciplines; and an acquaintance with alternative approaches to the same subject matter.

Secondly, the faculty believes that in addition to such a general or extensive education, each student should also be required to concentrate in some particular discipline and thus to supplement his extensive study of the disciplines with an intensive study of some one discipline. This intensive study will have fundamentally the same aims as those for the extensive study. In his field of concentration, however, the student can achieve the same aims more fully, more intensively, in more detail.

The Christian liberal arts philosophy permeates all of the degree programs of the college. Traditionally most students complete the Bachelor of Arts or the Bachelor of Science degree programs, either of which may include a teacher certification component. A Bachelor of Fine Arts degree with a professional art

emphasis was introduced in 1974 and a Master of Arts in Teaching degree in 1976. Calvin College also offers a variety of cooperative bachelor of science degrees in conjunction with other institutions, in engineering, forestry, medical technology, natural resources, nursing, and special education (see pages 48-57) as well as a Bachelor of Science in Education degree in a combined curriculum plan with the Grand Rapids Baptist College.

### *BACHELOR OF ARTS, BACHELOR OF SCIENCE DEGREES*

Because of the flexibility of the Calvin curriculum and the many alternative ways of meeting the formal requirements, including fulfillment by examination, faculty advisers assist students in working out their schedules each semester and are available at any time.

A typical student carrying a normal load will complete thirty-seven and a half courses including four interims. However, to provide flexibility, the formal graduation requirements are the successful completion of thirty-six courses including three interims and the designated liberal arts core with a minimum average grade of C (2.0) both overall and in an approved program of concentration. Not more than one course credit of basic physical education or two in applied music, drama, and speech may be applied to graduation requirements except when such courses are a designated part of a required major program.

Upon the satisfactory completion of degree requirements, a student is eligible for a Bachelor of Arts degree. If he has completed at least fifteen courses in biology, chemistry, the earth sciences, engineering, mathematics, and physics, he may elect instead to receive a Bachelor of Science degree.

#### **I. PROGRAMS OF CONCENTRATION**

Every student must fulfill the requirements of some approved departmental or faculty-approved group concentration. Although such majors are not officially chosen until the end of the sophomore year, certain programs do presuppose the completion of certain freshman and sophomore courses. Admission to a major program is not automatic but requires the formal approval of the department or program chairman and the completion of a counseling form which details the student's remaining academic program. Each time a student changes his major he must work out an appropriate counseling form with the faculty adviser of the new program.

To be eligible for acceptance in a given program of concentration, a student must have secured a minimum grade of C (2.0) in the course or courses designed by the department offering the program, he must maintain this average in the program, and he must present at least this average in his program of concentration at the time of his graduation. A student not maintaining a minimum grade of C (2.0) in his program of concentration may be permitted to remain in a program for single semester of probation. Teacher education group majors and some departmental majors for teachers may be applied only to teacher certificate programs. The various programs of concentration are specified in the section of the catalog describing departmental programs and course offerings which begins on page 58.

Students may initiate cross-disciplinary programs of concentration other

than those formally approved by the faculty. Such student-initiated programs require the approval of the several department chairmen concerned and of the dean of the faculty, who will designate a program adviser.

## II. INTERIM COURSES

A student must complete a minimum of three interim courses for graduation. (Transfer students must complete one interim course for each year in residence.) Interim courses are graded honors (H), satisfactory (S), or unsatisfactory (U), except those course which satisfy core requirements, which are graded in the conventional A-F system. Students should not take more than two interim courses in a single department.

Calvin College is associated with a number of similar colleges with January interim programs, making possible the exchange of students during the interim. Specific information is available from Mr. Charles J. Miller, the assistant dean for academic affairs.

## III. THE LIBERAL ARTS CORE

The liberal arts core is planned to provide a broad and significant educational foundation in a Christian setting. Strong high school preparation reduces the number of required courses in the core and the number may be further reduced by examinations in any subject. Each student's high school record is evaluated at the time of admission and he is informed at his first registration of the requirements which remain to be completed.

Six of the liberal arts courses provide the context for a Calvin education (history, philosophy, theology); eight provide an introduction to the major systematic disciplines (the sciences, the social sciences, the fine arts); two and a half assure a skill in the basic competencies (written and spoken rhetoric and physical education); and two, when preceded by language foundation in high school, provide minimal command of a foreign language. These requirements may be met in many ways and by various courses during the student's four years at Calvin.

The various courses in each department which meet the liberal arts core are listed with the departmental offerings.

*Six courses are required in history, philosophy, and religion and theology*

History 101 or 102.  
Philosophy 151-152, or 153.  
Religion 103, 108, 207, 208, 327, or 328.  
Religion 206, 301, 303, 304, 308, 311, or 312.

The remaining courses may be Interdisciplinary 100 (Christian Perspectives on Learning), 234, or other courses from these departments; however, not more than two courses in history and philosophy and three in religion may be included in the required six courses. Philosophy 153 and Education 304 or Philosophy 209 are required in teacher education programs.

*Three courses are required in the sciences and mathematics*

Mathematics 109, 111, or 205.  
Physics 110, 112 (required in elementary teacher education programs), 123,  
Astronomy 110, or 201.

Biology 111, 115, 116, 121, or any other course in biology (105-106 must be taken as a unit).

The two-course science requirement may also be met by a full year's work in one of the following sciences: Biology 121-122, Chemistry 103-104 or 113-114, Geology 251-252, Physics 123-124, 126-225, 221-222.

Students who have completed Senior Mathematics in high school with a minimum grade of C are excused from the mathematics requirement; those who have completed a year of standard high school physics (not physical science) are excused from the physics requirement; and those who have completed a second year-long course in high school biology (Advanced Biology) are excused from the requirement in biology.

*One course is required in economics or political science and one in psychology or sociology*

Economics 151, Political Science 151, 201 (required in elementary teacher education programs), or 210 (for Canadian students).

Psychology 151, Sociology 151, 217, or Education 301 (which is required in teacher education programs).

A student who has completed a single high school course extending over two semesters in any of these subject areas is excused from the requirement in that area.

*Three courses are required in the fine arts*

A course in English literature from 200, 202, 203, 212, 303, or any other English course except 225.

A course from Art 151, 215 (for elementary education programs), 231, 232, 332, 340, Classics 221, Music 103, 233, 234, 235, 236, 238 (for elementary education programs), Speech 203, 219, 304, 317, 318, 325, 326, or a foreign language literature course.

A course from any of those listed above plus English 225.

The last requirement is waived for students who during their last two years in high school have completed a single course extending over two semesters in English or American literature, in art, or in music.

*Competency is required in written rhetoric, spoken rhetoric, and physical education*

English 100 or the passing of a competency examination in written rhetoric.

Speech 100, 200, 214 (required in elementary teacher education programs), 240, or the passing of a competency examination.

Four semesters of basic physical education from Physical Education 101-199. Students in elementary teacher education programs may substitute 221 for one such course.

*Competency is required in one foreign language*

Competency in one foreign language is usually demonstrated by an examination or by completing a 202-level course. Languages other than those taught at Calvin may be accepted and students for whom English is a second language may be exempt from this requirement. Students are advised to continue in languages they have studied previously and will be placed in classes at their level of ability.

Special three-course sequences (121-122-123), involving two semesters and an interim, are available in French, German, and Spanish for students whose high school records in the language were below C, who studied the language some time ago, or who are in teacher education programs without having studied a foreign language previously.

A student usually should complete the core requirements in mathematics, history, and written rhetoric by the end of his freshman year, and should com-

plete the requirements in physical science, biological science, physical education, spoken rhetoric, and foreign language by the end of the sophomore year. At least one course in religion and theology should be taken in each of the student's first two years at Calvin. However, because of the demands of various programs of concentration, the particular courses chosen to meet the student's core requirements and his schedule for completing them should be worked out early with his academic adviser.

#### *BACHELOR OF FINE ARTS DEGREE*

A student wishing to obtain a Bachelor of Fine Arts degree (B.F.A.) in Art must successfully complete thirty-six courses, including three interim courses, the liberal arts core courses designated below, and the designated program of concentration. Students wishing to enter the program must apply to the chairman of the Department of Art.

The program of concentration requires at least four courses in the history of art (231, 232, 332, 340); at least ten studio art courses (207, 208, 209, 210, 310, 311, 320, 325, and three from 312, 313, 321, 326, 327); two interim courses in art; and one course credit for a senior seminar which must include an exhibition. Not more than eighteen courses in art may be applied to the degree.

The liberal arts core must include six courses from the contextual disciplines (History 101 or 102; Philosophy 153 and 208; Religion and Theology 103 and 301; and one course from history, religion and theology, or Interdisciplinary 101, Christian Perspective on Learning); one core course from mathematics and the natural sciences; one core course from economics, political science, psychology, and sociology; either one foreign language through the second-year college level or two courses taught by a foreign language department from foreign culture and foreign literature in translation; the core requirements in written rhetoric (typically English 100), speech (typically Speech 100), and basic physical education; and a course in English or American literature and two additional fine arts core courses from two of the following: literature, music, or speech. This last requirement is reduced to a single course if the student has completed a year's course in high school in literature, music, or speech with a minimum grade of C. This program is not intended for those seeking teacher certification.

#### *MASTER OF ARTS IN TEACHING DEGREE*

The Master of Arts in Teaching (M.A.T.) program has been introduced to serve elementary and secondary teachers who wish further professional training and who need to satisfy the requirements for continuing or permanent certification. The program can also serve the needs of college graduates seeking initial certification and of those who wish endorsement in an additional teaching field or at a different level. With planning it can also satisfy the requirements of those states and provinces, such as California and Ontario, which require thirty semester hours of professional education beyond a bachelor's degree.

#### **ADMISSION**

The minimum requirements for admission to the program are a commitment to teaching, an appropriate bachelor's degree from an accredited college or



university, and appropriate letters of recommendation. Applications for admission should be addressed to the Office of Admissions.

#### REQUIREMENTS FOR THE DEGREE

Upon acceptance in the program a student is assigned by the director of graduate studies to an adviser in the student's declared area of interest. The student and the adviser will work out an appropriate program, subject to the approval of the director. All programs must include a minimum of nine courses, half of which must be taken in courses numbered 500 or above. The program must be completed within six years with a cumulative average of at least B (3.0 on a scale of 4.0) and only courses with grades of C+ or higher will be applied. Any student receiving a grade lower than C+ in any course is placed on probation. The minimum requirements are:

1. *Context of Education*: At least one designated course must be completed in psychology or sociology and education and another in history or philosophy and education. (Approved courses include Education 510, 512, 513, 535, 581; Philosophy 501, and Sociology 501.)
2. *Concentration*: At least three courses must be completed in an approved group or departmental concentration. Programs of concentration have been developed in art, English, history, mathematics, music, fine arts, language arts, social studies, science studies, and reading. Additional programs and courses are under consideration. Courses designated with an asterisk, which are renumbered in the 400 series, and those numbered 500 or higher may be applied to M.A.T. programs.
3. *Methods and Materials Course*: A course in curriculum must be completed in an area appropriate to the student's need and concentration.
4. *Project*: The student must complete a half or full course project which is planned to synthesize his graduate experiences.
5. *Electives*: A student must complete additional courses from the categories above or from elective courses to satisfy the nine-course requirement.

A M.A.T. program may be combined with one leading to a Michigan provisional teacher certificate. Such programs include Education 401, 403, Philosophy 501, and two to four course units of teaching internship and seminar or the equivalent. Prospective elementary teachers must also complete Education 422. Major, minor, and general education requirements, usually met by undergraduate programs, must also be met. Such combined programs usually require more than the minimum of nine courses.

#### EXEMPTION AND COURSE CREDIT BY EXAMINATION

Students may meet any core requirement by examination, thus receiving an exemption, and may, except when the department concerned deems this inappropriate, earn regular academic credit for any course by examination. A student's performance on such tests becomes a part of his academic record, and he will be charged an appropriate fee.

Students should apply to the registrar by October 1 for the first semester or

February 15 for the second if they wish to sit for either exemption or course credit examinations.

Entering freshmen are permitted to sit for a variety of examinations which either excuse them from taking a given course or which give them college credit for the course. These regulations are specified in the section on Advanced Standing on page 17.

### *THE HONORS PROGRAM*

Calvin College offers two types of honors programs. The General Honors Program provides flexibility and independence for the superior and self-motivated student. The Departmental Honors Program, which requires participation in the General Honors Program, intensifies the training in the student's major discipline and leads to an honors graduation designation.

A student is eligible for the General Honors Program if his cumulative grade point average is 3.3 or higher; incoming freshmen are eligible if their cumulative high school record meets this standard.

Students in the General Honors Program may register for a variety of types of honors courses—honors sections in large courses, special honors courses, or honors registration in regular courses for which intensified work will be required. No student may carry more than two such courses at a time. Students in the program may avail themselves of the right to be exempt from core course requirements by examination and of the right to propose cross-disciplinary programs of concentration.

To graduate with honors, students must complete at least six honors courses with an average of 3.0, including the structured honors requirements of their major departments, which must include at least two departmental honors courses. Before applying to the department the student must have completed at least two honors courses in any department and must be maintaining a cumulative average of 3.3 or higher. Juniors and seniors in such Departmental Honors Programs may, subject to the approval of their chairman, register for a fifth course, which may be graded on the basis of satisfactory or unsatisfactory.

The honors programs are under the supervision of Mr. Charles J. Miller, assistant dean for academic affairs.

### *YEAR-ABROAD PROGRAMS IN FRANCE, SPAIN, AND AUSTRIA*

In cooperation with Central College, Calvin College offers a nine-month study program in London or Wales; and a twelve-month, three-semester study programs in Paris; in Vienna, after a summer in Germany; and in Madrid. To be eligible a student must have completed the study of the appropriate language through the second-year level.

In the three-semester programs an intensive preparatory summer semester assists the student in developing a level of language proficiency which will enable him to enroll in regular university courses and to participate freely in the cultural life of the country. Such courses include not merely those in language and literature but may include those in art, history, music, philosophy, and psychology.

A student may earn up to three course credits during the summer and an

additional nine during the regular academic year. The international studies coordinator for these programs is Mr. James Lamse of the German Department.

### CHICAGO METROPOLITAN STUDY CENTER

The Chicago Metropolitan Study Center sponsored by Trinity Christian College in cooperation with Calvin, Central, Dordt, Hope, and Northwestern colleges provides an opportunity for students to receive a semester's credit while studying and being involved in an internship experience in the heart of Chicago. The program can be appropriate for a variety of majors including history, economics, psychology, and sociology. For details consult Mr. Ronald Vander Kooi of the Sociology Department.

### WASHINGTON SEMESTER PROGRAM

Calvin College is a participant in American University's Washington Semester Program, which enables selected students to spend a semester in Washington, D.C., at the American University, studying and observing political institutions and processes. Seminars, small group discussions with political leaders, a major independent research project, and observation of governmental institutions form the major portion of the program.

Typically students participate in the program during their junior year. At least one course in American politics and a 3.0 grade point average are the prerequisites for participation in the program. Mr. Paul Henry of the Political Science Department is the faculty adviser.

### TEACHER EDUCATION PROGRAMS

Students wishing to be teachers should apply for admission to a specific teacher education program at the Department of Education by April 1 of their sophomore year. At the time of admission and when applying for an assignment to a teaching internship (Education 345 or 346) a student must be maintaining a minimum cumulative average of C (2.0). Students entering the program after the sophomore year may need more than four years to complete their programs.

The requirements given below satisfy both the college requirements for a bachelor's degree and the State of Michigan requirements for a provisional teacher's certificate.<sup>1</sup> Students interested in teaching in Canada can meet all or most of the teacher licensing requirements for any province while attending Calvin College. Under the present requirements, a student completing the appropriate teacher education program at Calvin is able to go directly into teaching at the elementary or secondary level in all provinces except Ontario. To obtain a professional certificate for teaching at either the elementary or secondary level in Ontario, the student must complete: (1) An acceptable bachelor's degree containing 120 semester hours (or 36 course units) of liberal arts or science courses.

<sup>1</sup>In summary, the Michigan code requires: 40 semester hours of general education, a 30 semester hour departmental major or a 36 semester hour group major, a 20 semester hour departmental minor or a 24 semester hour group minor, and 20 semester hours of professional education.

Physical education courses and any courses offered by the Department of Education normally do not count towards this total. (2) 30 semester hours (or 9 course units) of professional education courses, including student teaching. A normal teacher education program at Calvin can be modified to meet this requirement. (3) A valid teacher's certificate from the local jurisdiction—in this case, the State of Michigan. This program would generally involve five years at Calvin, or four years after Grade 13. Students intending to teach in Christian schools in Ontario are not required to meet these standards but most school boards encourage teachers in Ontario Christian schools to satisfy them. Because Canadian standards are changing, it is wise to keep up to date on these matters. For current information or any further clarification, consult Miss Madge Strikwerda, director of teacher certification, or Mr. Charles J. Miller, assistant dean for academic affairs.

Graduates who have earned a Michigan Provisional Certificate since July, 1970, must complete a 5.2 course unit (18 sem. hrs.) planned program or enroll in a master's degree program to qualify for a Continuing Certificate. The Master of Arts in Teaching program at Calvin can be used not only to satisfy the requirements for continuing certification but also to develop additional areas for certification and to qualify for initial, provisional certification. Graduates seeking such certification should consult the coordinator of elementary or secondary education.

Because the specific requirements for students in the Bachelor of Science in Education degree in the combined curriculum plan with the Grand Rapids Baptist College differ from those given below, students in that program should consult the *Student Program Guide Book*...developed for that program.

School guidance and counseling programs normally require the completion of a certification program in either elementary or secondary education and several years of successful teaching experience before graduate training is permitted. Some concentration in psychology or sociology is desirable but not necessary.

*Elementary education.* The minimum elementary education program requires the completion of the general education requirements (See pages 36-39 for the courses recommended for students in teacher education); either an approved group concentration of ten and a half courses or a departmental concentration of at least eight and a half courses; a planned program of six courses in other subjects which are related to elementary education or a six-course departmental minor; and six professional education courses. Students interested in elementary education should secure copies of the *Student Program Guide Book*...from the Department of Education. Programs should be worked out with Mr. William Hendricks, coordinator of elementary education, and have the written approval of the adviser in the area of concentration.

An eight and a half course departmental concentration may be selected from the following subjects: biology, English, foreign language (French, Dutch, German, Latin, Spanish), history, mathematics, political science, and speech; and a ten and a half course concentration from art, music, and physical education.

Most students in elementary education programs, however, complete group concentrations which consist of at least ten and a half courses, of which a

minimum of five shall be in one subject in the group, a minimum of three in another subject, and the remaining courses in the same or related subjects. Model programs are listed below but students may consult the appropriate department for further advice.

**LANGUAGE ARTS STUDIES GROUP MAJOR.** English 100 and Speech 214 are required. Students majoring in this group must also complete one of the following five-course departmental programs: English 100, 200, 225, and two others; Speech 203, 214, 215, and two others; German 201, 202, 215, and two from 216, 217, 218, 250; French 201, 202, 321, and two other advanced courses; Latin 201, 202, 205, and two others; Spanish 201, 202, 321, and two other advanced courses. In addition students must complete the three designated courses from a second department in this group. The remainder of the ten and a half courses and the electives must be chosen from departments in this group with the approval of Mr. Henry Baron of the English Department.

**SOCIAL STUDIES GROUP MAJOR.** The four required courses for this major are History 101 or 102; Sociology 151; either Economics 151 or Political Science 201 (United States), 210 (Canada), or 151; and either Geography 101 or, if part of the three-course sequence below, Earth Science 113. Students must also complete one of the following five-course departmental sequences: Economics 151, 321 or 322, and three others; History 101 or 102 and four others; Political Science 151, 201, and three others; Psychology 151, 204, 310, and two others; Sociology 151 and four others. In addition a student must complete three courses from a second department in this group, including any course designated above, or from a sequence in geography consisting of Earth Science 113 and Geography 201 and 210. Students should not take sequences in both psychology and sociology. The remainder of the ten and a half courses and the electives must be chosen from departments in this group with the approval of an adviser from the department in which the greatest number of courses is taken.

**GENERAL SCIENCE STUDIES GROUP MAJOR.** The four required courses for this major are: Biology 111 or 121; Earth Science 113; Mathematics 109 or 111; and Physics 112, 123, 222, or 225. The five-course sequence can be met by either of two broad programs or by narrower departmental ones. The biological science sequence requires Biology 111 or 121, 115, 116, or two others; the physical science sequence requires Physics 112, Earth Science 113, Chemistry 113, Astronomy 110, and one other. The departmental sequences are: Biology 121, 122, 221, 222, and one other; Chemistry 103-104 or 113-114 and three others; Mathematics 111, 112, and three others; Physics 126, 225, 226, and two others or Physics 123, 124, 225, 226, and one other. In addition, a student must complete a three-course departmental sequence of Chemistry 103-104 or 113-114 and one other; Mathematics 109 and two others or Mathematics 111, 112, and one other; Physics 123-124, 126-225, or 221-222 and one other; Earth Science 113 or Geology 251 plus Geography 201 and 210, or Geology 251-252 plus Geography 201 or 210. The remainder of the required ten and a half courses and the electives must be chosen from other departments in this group with the approval of the science adviser, Mr. Clarence Menninga of the Physics Department.

**FINE ARTS STUDIES MAJOR.** Required are Art 215, Speech 214, and Music 238 or, if the student is completing a sequence in music, Music 239. Students majoring in this group must complete a five-course departmental sequence from: Art 151, 207, 208, 215, and one other; Music 103, 239, 233, 234, 237, and two semesters of 110, 120, 130, 140, 150, 160, 170, 131, 141, 161, or 171, or in drama, Speech 203, 214, 219, 317, and an elective from 304, 318, or an approved interim course. In addition, a student must complete one of the following three-course sequences: Art 151, 207, 215; Music 231 or 233, 232 or 234, 238 or 239; Speech 203, 214, and 219. The remainder of the ten and a half courses and the electives must be chosen from other departments in this group with the approval of Mrs. Helen Bonzelaar of the Art Department.

The appropriate education courses for students in elementary education are 301, 303, 304, 305, 322, 345, and 355. The six-course planned program required for Michigan certification typically is met automatically by students meeting the general graduation requirements. Courses recommended for this dual function include: Art 215, Biology 111, 115, or 116, English 100 and any literature course in English or in a foreign language, Earth Science 101 or 113, History 101 or 102 and any other history course, Mathematics 109 or 111, Music 238 or 239, Physics 112, 113, Psychology 204, Political Science 151, 201, or 210, and Speech 214. Physical Education 221 is recommended as a substitute for one semester of basic physical education.

*Middle school education.* The middle school program is planned for students who wish to teach in grades six, seven, or eight, or who are not ready to choose between elementary (k-8) or secondary (7-12) certification.

The requirements of both certification programs may be met by careful scheduling, permitting the student to defer choosing either an elementary or secondary certificate until graduation or until he has obtained a teaching position. The sections describing the requirements for elementary and secondary education refer to such middle school programs. A student internship seminar in middle school education will be scheduled during certain semesters. For information consult either Mr. William Hendricks, coordinator of elementary education, or Mr. Philip Lucasse, coordinator of secondary education.

*Secondary education.* The minimum secondary program requires the completion of the general graduation requirements (See pages 36-39 for the courses recommended for students in teacher education); a departmental concentration of at least eight and half courses or a group concentration of at least ten and a half courses; a minor of six courses in another department or a group minor of seven; and six professional education courses. Programs should be worked out with the appropriate departmental adviser. For general questions or those involving the professional component of the program a student should consult Mr. Philip Lucasse, coordinator of secondary education.

The programs of concentration should be selected from the following subject areas: art, biology, chemistry, Dutch, economics, English, French, German, history, Latin, mathematics, music, physical education, physics, political science, Spanish, and speech. Major in art, music, and physical education require ten and a half courses. The minor should be selected from these subject areas or from psychology, religion and theology (the academic study of religions), and sociology. Concentrations in business education, industrial arts, and home economics, subjects not taught at Calvin, are possible when work in these fields is completed at other accredited institutions.

Group concentrations have particular advantages for middle or junior high school programs but must be planned with care to meet the North Central standards defined in the paragraph below. A major group concentration consists of ten and a half courses, at least five of which must be in one department, three in another, and the remaining in either the same or related subjects. Such concentrations may be in the language arts (English, foreign language, speech), the

sciences (earth science, biology, chemistry, geography, geology, mathematics, and physics), and the social sciences (economics, history, and political science). Group minors of seven courses with the minimum of three in one subject may be chosen from the same areas and from the humanities (drama, literature in any language, philosophy, and religion and theology).

The North Central Association requires that teachers in the schools they accredit have the following minimum preparation in each of their teaching fields: art, seven course units; English, seven course units, one half of which may be in speech; foreign language, six course units in any language taught; mathematics, six course units; music, seven course units; physical education, six course units; science, a total of seven with at least three and a half in any science taught; social science (economics, U.S. history, world history, political science, sociology), a total of seven course units with at least two and a half in any subject taught; speech, seven course units, one half of which may be in English.

The appropriate education courses for students in secondary and middle school programs are: 301, 303, 304, 346, and 356; 307 is a recommended elective.

*The Bachelor of Science in Special Education degree program.* Calvin College in cooperation with Grand Valley State Colleges offers a Bachelor of Science in Special Education degree which leads to teacher certification at the elementary or secondary level as well as endorsement in at least two areas of special education. Students in the programs must complete a designated core of thirteen liberal arts courses, must meet the professional education requirements for either elementary or secondary certification, must meet an appropriate departmental or group major, must complete a six-course planned minor, and must meet the additional requirements for endorsement in special education.

Specific special education programs vary in length from a minimum of four years and one summer for those in the regular track programs to five years and three summers for those in the internship programs. Furthermore, the particular teaching major chosen and the type of certification and endorsement sought introduce additional variables. Students in special education fields requiring internships take their first Grand Valley course during the summer following their junior year; others take their first Grand Valley course during the first semester of their junior year. Students interested in special education should consult Mr. Thomas Hoeksema, coordinator of special education, as early as possible.

Endorsement can be obtained in the following combinations of disability areas:

1. Regular track: mentally impaired; emotionally impaired.
2. Regular track: mentally impaired; physically or otherwise health impaired
3. Internship program: learning disabled; emotionally impaired; mentally impaired.
4. Internship program: hearing impaired; physically or otherwise health impaired; learning disabled.

The liberal arts core for students in the special education programs is four courses from the contextual disciplines—Education 304, Philosophy 153, one core course in religion and theology, and one core course from history; two core

courses from biology, chemistry, earth science, mathematics, and physics; two core courses in the social sciences, which normally are met by the major or professional education programs; three core courses from art, literature, foreign language courses beyond the first year college level, music, speech, and foreign culture; English 100 or its equivalent; and a total of one course unit from core courses in speech and basic physical education.

The typical program given below suggests the desirable sequence of education and psychology courses:

<i>First year</i>	COURSES
English 100	1
History 101 or 102	1
Mathematics 109 or Physics 112	1
Philosophy 153	1
Physical education	1/2
Psychology 151 (first sem.), 204	2
Religion and Theology 103	1
Sociology 151	1
Elective (interim)	1
 <i>Second year</i>	 COURSES
Art 215	1
Earth Science 113 or other science core	1
Education 301-303 (second sem.)	2
Literature	1
Political Science 201 or Economics 151	1
Physical education	1/2
Psychology 211	1
Special Education 216 (first sem.)	1
Elective (interim)	1

## PROFESSIONAL AND PREPROFESSIONAL PROGRAMS

Programs at Calvin College prepare students for admission to the various professional schools and, in some cases, through cooperation with other institutions, for completion of professional programs while at Calvin. In most cases students may qualify for a degree from the college as well as from a professional program if they meet the appropriate requirements.

### ACCOUNTING

An accounting concentration may be added to the Business Economics concentration described under the Economics and Business Department by electing at least five accounting courses in addition to Economics 207 and 212, which are required by that program. The accounting courses offered at Calvin College are:

- Econ 207 *Introduction to Financial Accounting*
- Econ 209 *Income Tax*
- Econ 212 *Financial and Managerial Accounting*
- Econ 307 *Intermediate Accounting I*
- Econ 308 *Intermediate Accounting II*
- Econ 310 *Advanced Accounting*
- Econ 311 *Auditing*
- Econ 312 *Cost Accounting*



The academic requirements needed to qualify as a Certified Public Accountant (C.P.A.) vary among states; Michigan requires at least seven of the above courses including Economics 311.

## ARCHITECTURE

The program leading to the Master of Architecture degree, the professional degree in the field, typically requires six years, two of which may be completed at Calvin College. Students interested in such a program should consult Mr. Edgar Boevé of the Art Department or Mr. James Bosscher of the Engineering Department. The program incorporates a significant portion of the basic core curriculum as well as of the preprofessional requirements of the profession. A typical program would be:

<i>First year</i>	COURSES
Art 231	1
English 100	1
Engineering 101	1
Computer Science 107	1/2
Mathematics 111, 112	2
Interdisciplinary 100, Christian Perspectives (interim)	1
Economics 151	1
Philosophy 153	1
Speech 100	1/2
Physical Education	1/2

<i>Second year</i>	COURSES
Art, studio drawing or design	2
Chemistry, if none in high school; biology; or psychology	1
Physics 221, 222	2
Economics, history, political science, or sociology	2
Literature	1
Religion and theology	1

## BUSINESS ADMINISTRATION

Balanced preparation for a business career is provided by meeting the general degree requirements (page 37) and the Business Economics concentration in the Department of Economics and Business. This program provides a minimum of twelve courses—the equivalent of forty-two semester hours—in business economics and related mathematics courses. See page 76 for a full description of departmental major and cognate requirements. This concentration along with the general graduation requirements provides a substantial undergraduate coverage of the functions of the business firm, an understanding of the environment of business and human behavior, and an opportunity to develop one's personal Christian commitment and ethical sensitivity. Completion of the program provides a proper preparation for entry into a variety of business occupations as well as a foundation for graduate study in business.

A representative program is given below. Electives may be used for additional business courses or to fulfill other interests.

<i>First year</i>	COURSES
Interdisciplinary 100, Christian Perspectives	1
Economics 151	1

English 100	1
History 101 or 102	1
Foreign Language	2
Mathematics 205-206 or 111-112	2
206 or 343 are required for graduation.	
Physical education	½
Religion and theology	1
Speech 100 or 240	1½
<i>Second year</i>	<b>COURSES</b>
Art, music, speech	1
Biology 111	1
Economics, 207, 212	2
Computer Science 106 or 107	½
Philosophy 151-152 or 153 and 205 or 207	2
Physical education	½
Physics 110, Physical Science	1
Psychology or sociology	1
Elective	1
<i>Third year</i>	<b>COURSES</b>
Economics 309	1
Economics 313	1
Economics 316	1
Economics 322	1
Literature	1
Religion and theology	1
Electives	3
<i>Fourth year</i>	<b>COURSES</b>
Economics 318	1
Economics 321	1
Economics 331-339 or 400	1
Electives	5-6

Students may also complete two years at Calvin prior to transferring to another institution for a B.B.A. program.

## ENGINEERING

Students planning to enter the engineering program should consult with Mr. James Bosscher, chairman of the Department of Engineering, when arranging their programs. Students wishing to graduate from Calvin College on the combined curriculum plan are advised to complete the twenty-eight and a quarter course program below. (A minimum of twenty-seven courses and a minimum cumulative grade point average of C are required.) If a student completes this program and subsequently completes a degree program at a recognized school of engineering, which typically requires an additional three semesters, he will also receive a degree from Calvin College—Bachelor of Science in Letters and Engineering on the combined curriculum plan.

A typical program for engineers is given below. With the advice of the engineering faculty, a student may select from the electives and options indicated those courses which meet his interests and the program of the school to which he intends to transfer.

<i>First year</i>	COURSES
Chemistry 103	1
Engineering 101	1
Engineering 102	1/2
Mathematics 111, 112	2
Physics 126 and 186	1 1/4
Interdisciplinary 100, religion and theology, or approved history	1
Economics 151	1
English 100	1
Computer Science 108	1/2
Physical education	1/2
<i>Second year</i>	COURSES
Engineering 205	1
Engineering 202 or an engineering elective	1
Engineering 308	1
Mathematics 211, 212	2
Physics 225	1
Literature	1
Philosophy 153	1
Social science interim	1
Speech 100	1/2
<i>Third year</i>	COURSES
Engineering elective	1
Technical elective, from 200 or 300 level courses in biology, chemistry, engineering, mathematics, or physics	2
Interim, engineering	1
Philosophy, 200 series course	1
Religion and Theology	1
Literature, if needed for graduation, or a non-technical elective	1
Fine arts elective	1
Elective	1

By special arrangements with the University of Michigan, qualified engineering students in certain fields can elect a five-year program leading to a bachelor's degree from Calvin College and a master's degree in engineering from the university. Group majors involving engineering, mathematics, and the sciences may lead to a bachelor of science degree in four years. Students should discuss these options with Mr. James Bosscher.

## FORESTRY

Students wishing to prepare themselves to become certified foresters can do so by enrolling in the combined-curriculum program in forestry. This program requires a student to take his first three years at Calvin College, a minimum of twenty-seven completed courses, and his final two years in the School of Natural Resources at the University of Michigan. At the end of his third year at Calvin, the student attends the University of Michigan summer camp.

After completion of the first full year's work in the School of Natural Resources at the university, the student is eligible for the Bachelor of Science in

Letters and Forestry degree from Calvin College. At the conclusion of the second year at the university the student will receive the Bachelor of Science in Forestry degree from the University of Michigan, if he has met the requirements for the degree.

The science requirements for the program are: Biology 121, 122, 221, 222, and three from Biology 332, 341, 346, 352; Mathematics 111-112 or 205-206; Geology 251; and a two-course sequence in chemistry and/or physics from Chemistry 103-104, 113-114, Physics 221-222, or Chemistry 113 with Physics 223. The liberal arts requirements are: one course each in history, philosophy, religion and theology with an additional course from one of the three or Interdisciplinary 100 in the interim; Economics 151 plus one additional course from economics, sociology, psychology, or political science (by the end of the fifth year a student must have completed four courses in this area with two recommended in economics); one course in American or English Literature with two additional courses in art, literature, music, speech, or foreign culture; English 100; and Speech 100 plus two semesters of basic physical education, or four semesters of basic physical education.

Students wishing to consider the combined-curriculum program in forestry or forestry programs other than the combined-curriculum plan should consult Mr. Alan Gebben.

## LAW

There is no structured program specifically designed for the student planning to enter a law school after graduation. Law school applicants must have a college degree (B.A. or B.S.) and must take the Law School Admission Test. But law schools do not require that applicants have taken specific courses or have a particular major concentration. Prospective law students should complete the requirements for a Bachelor of Arts degree as they are listed on pages 37. The pre-law adviser, Mr. Johan G. Westra, can advise students on suitable electives and can help them plan programs which provide good preparation for law school. Because admission to law schools has become very competitive, some students may be advised to plan programs that will also prepare them for alternate careers in other fields such as business, social work, or teaching. Pre-law students are advised to consult the pre-law adviser before or during each semester's registration.

## MEDICINE AND DENTISTRY

All students planning to enter the premedical or predental programs should consult Mr. Henry Bengelink or Mr. Peter Tigchelaar, faculty advisers of the premedical and predental programs. Students should also note the premedical entrance requirements on page 16.

The minimum science requirements for these programs are Biology 121, 122, 221, and two courses from 323, which is recommended, 222, 331, or 336; Chemistry 103-104, 301-302, and one course from 201, 204, or 303; Physics 221-222 or the equivalent. Mathematics 111-112 is recommended and, ideally, should be taken before the physics course. Majors in any department are possible.

Most medical and dental schools give preference to students who complete

a four-year college course. However, students with an exceptionally high grade point average who wish to secure a baccalaureate degree from Calvin College on the combined curriculum plan should complete twenty-seven courses, including the program prescribed above, and as much of the core curriculum as possible. For their electives, students should choose such subjects as are required for admission to the particular medical or dental school which they expect to attend. Upon satisfactory completion of this course and one year of successful work in a recognized medical or dental school, the student will be eligible on the combined curriculum plan for the degree of Bachelor of Science in Letters and Medicine, or Bachelor of Science in Letters and Dentistry.

It is the responsibility of the student who desires to secure a baccalaureate degree on the combined curriculum plan to notify the registrar's office by April 1 of the year in which he expects to receive the degree.

### MEDICAL TECHNOLOGY

To qualify for the degree of Bachelor of Science in Letters and Medical Technology on the combined curriculum plan a student must complete twenty-seven courses plus twelve months of successful work in an accredited school of medical technology. Students wishing to enter the medical-technology program should consult Mr. Gordon Van Harn. The following courses are prescribed: Biology 121, 122, 221, 336, plus one other in biology; Chemistry 103, 104, 253, 254, and one other; one mathematics course from 109, 111, or 205; English 100; History 101 or 102; one course in philosophy; one course in religion and theology; one additional course from history, philosophy, religion and theology, and interdisciplinary 100; two courses from economics, political science, psychology, and sociology; three courses from art, literature, music, speech, and foreign culture including one from English or American literature; the total of one course unit credit from the core courses in speech and basic physical education; and one foreign language through the first year college level, a requirement which may be fulfilled by two years of high school study.

A typical student program is as follows:

<i>First year</i>	COURSES
Biology 121, 122	2
Chemistry 103, 104	2
English 100	1
Foreign language (See paragraph above)	2
History 101 or 102	1
Interim	1
Physical education	1/2
 <i>Second year</i>	 COURSES
Biology 221, 222	2
Chemistry 253-254 or 301-302	2
Other required courses	4
Interim	1
Physical education	1/2
 <i>Third year</i>	 COURSES
Biology 336	1
Chemistry 201, 204, or other chemistry course	1

Other required courses	4
Free elective	1
Interim, biology	1
<i>Fourth year</i>	COURSES
Internship in an accredited school of medical technology.	

## THE MINISTRY

Calvin College, the college of the Christian Reformed Church, maintains a close relationship with Calvin Theological Seminary, the seminary of the Christian Reformed Church. Calvin Theological Seminary is a fully accredited member of the American Association of Theological Schools and is maintained primarily to provide theological education for those aspiring to the ministry in the Christian Reformed Church. The seminary stands as a representative of the historic Reformed faith, its theological standpoint being formulated in the Belgic Confession, the Heidelberg Catechism, and the Canons of Dordt. Students who may wish to attend other theological seminaries can meet their admission requirements while attending Calvin College. Catalogs of such seminaries are available in the library.

A student seeking to qualify for admission to Calvin Theological Seminary should meet all of the regular requirements for a Bachelor of Arts or a Bachelor of Science degree as well as the specific course requirements of the seminary. To qualify for admission as a degree candidate, he should earn a grade-point average of 2.67 or higher. A student may present a concentration in either a single department or in a group of related departments, as permitted in the college curriculum, provided a minimum of seven courses is presented in a single department. Concentrations of particular relevance to theological studies are: English, Greek, history, philosophy, and also psychology and sociology.

Calvin Seminary requires the following courses for admission:

	COURSES
Economics, political science, and/or sociology	2
Education and/or psychology	2
English	3
Greek	4
History	3
Latin (May be met by two years in high school)	2
Modern foreign language (See paragraph below)	0-4
Science	2
Philosophy (excluding courses in logic)	3
Religion and theology	2
Speech	2

The seminary expects that Calvin College students planning to enter the seminary will satisfy the above requirements by including the following courses in their programs: Education 301, Greek 205-206, History 301 or Classics 211, at least two philosophy courses chosen from the Intermediate or Advanced Historical Courses, and Speech 100 and 200. Speech 203 and 240 are recommended and, in exceptional cases, either of these courses may be substituted for Speech 100. The preseminary adviser is Mr. L. Vos.

The foreign language requirement may be met by the successful study of

one foreign language through the second-year college level or by demonstrated competence at this level. Dutch is recommended as the preferred language and German as the second choice, but other languages are acceptable.

## NURSING

Students interested in nursing have several options. They may follow a two and a half year program leading to a nursing diploma without a college degree. (Blodgett Memorial Medical Center and Calvin provide this option.) They may also follow a four-year program leading to a Bachelor of Science in Nursing degree. (Calvin has a cooperative arrangement with Grand Valley State Colleges to provide this option.) One or two years of such programs typically may be completed at Calvin. Students interested in any of these programs should work out their programs with the nursing adviser, Miss Beverly Klooster.

The diploma program with Blodgett Memorial Medical Center School of Nursing requires thirty months, the first nine months of which involve courses in both the college and the school of nursing (see page 20). The first semester courses at the college are Biology 105 and 107, English 100 or, if that is not required, some other course in English; and Psychology 151 with Fundamentals of Nursing I taught at the school of nursing. During the second semester students take Biology 106, Sociology 151, and Speech 100 at the college and Chemistry 101, Fundamentals of Nursing II, and Nutrition at the school of nursing.

Upon successful completion of this program, the student is awarded a diploma in nursing by Blodgett Memorial Medical Center School of Nursing and is eligible to write the examinations given by the state board of nursing. After passing these examinations a person is licensed to practice as a registered nurse.

A Bachelor of Science in Nursing degree may be begun at Calvin, but must be completed at another college or university which offers the Bachelor of Science in Nursing degree. Many state colleges and universities offer such programs, which typically are divided into two parts: first, a one to two year pre-nursing curriculum which may be completed at any approved college, and, second, a two to three-year clinical or professional nursing curriculum which must be completed at the school which grants the degree.

Most of Calvin's pre-nursing students complete their degree requirements at Grand Valley State Colleges (a state-supported institution about twenty minutes drive from Grand Rapids), but others have transferred to other schools of nursing such as Cornell or Columbia in New York City, University of Illinois, University of Michigan, Colorado State University, Northern Michigan University, and Eastern Michigan University.

Because the courses required vary from school to school, students are advised to select the school from which they wish to earn this degree prior to enrolling in courses at Calvin to permit them to complete the proper pre-nursing sequence. Students who do not wish to prepare to transfer to Grand Valley State Colleges are encouraged to communicate, prior to enrolling at Calvin, with schools in their home states which give a degree in nursing to insure that they will be taking the proper courses to fulfill course requirements for transfer into one of these programs.

Students preparing for transfer to the nursing program at Grand Valley State Colleges take the following:

<i>First year</i>	COURSES
Biology 121	1
Biology 122	1
Chemistry 103	1
Chemistry 104	1
English 100	1
Psychology 151	1
Mathematics 101, 102, or appropriate course	1
Fine Arts elective	1
Interim required but not designated	1

<i>Second year</i>	COURSES
Biology 221	1
Biology 336	1
Chemistry 253	1
Chemistry 254	1
Physics 223	1
Psychology 201	1
Sociology	1
Humanities elective	1
Interim on anatomy required	1

Other schools in Michigan which offer a Bachelor of Science in Nursing degree are Andrews University, Madonna College, Nazareth College, Mercy College, Michigan State University, Wayne State University, Oakland University, and the University of Michigan.

#### NATURAL RESOURCES

Calvin College, in cooperation with the University of Michigan, provides a five-year program leading to a Bachelor of Science in Letters and Natural Resources. Three years are spent at Calvin and two at the university. At present there is no professional degree in this field. The adviser for all programs in natural resources is Mr. A. Bratt.

The basic courses required are: Biology 121, 122, 221, 222, 341, 346, 352, and Geology 251. Cognate courses typically include Chemistry 103-104; Physics 221-222 or Physics 112 and Chemistry 113; and Mathematics 111-112. Because there are different concentrations possible within the field of natural resources, individual programs must be worked out with the adviser. The liberal arts core requirements are the same as those specified for forestry.

A two-year program preparing for transfer to the wildlife management program at the university is also possible. Such students should complete: Biology 121, 122, 221, 222, and 323; Mathematics 111-112; and as many of the core requirements as possible. The university requires twelve semester hours in the humanities and twelve in the social sciences.

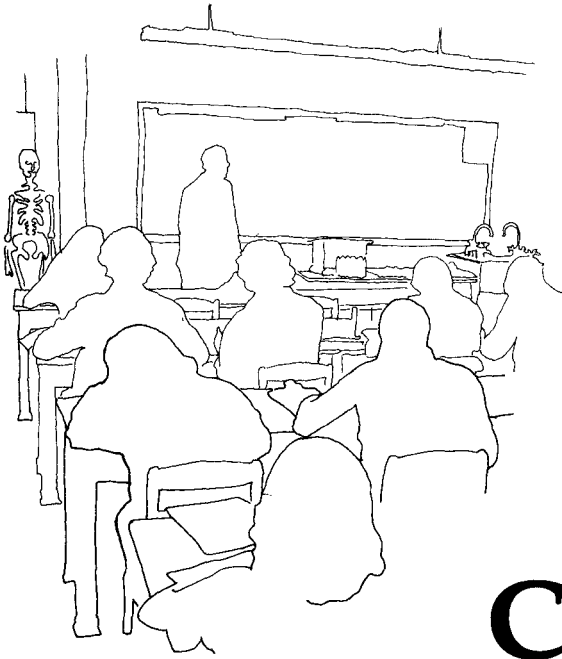
Other schools require similar preparation for transfer students. Employment opportunities are limited in the field of natural resources, however, for persons holding only a bachelor's degree. It is advisable to complete additional training at the graduate level. Persons interested in research or management



positions are advised to complete a regular four-year program at Calvin, with a major in biology, then to specialize in natural resources at the graduate level.

#### OTHER PROFESSIONAL PROGRAMS

Students interested in preparing for any profession should see the registrar of the college. Curricula can be arranged to enable such students to remain at Calvin for one or two years.



# Courses

*Description of courses offered in departments and programs*

The symbols F (Fall), I (Interim), and S (Spring) indicate when each course is offered. The term *core* designates those courses in each department which meet the general graduation or core requirements of the discipline. The few courses which carry more or less than a single course credit are indicated; all others carry a single course credit. Courses regularly offering honor sections are indicated; honor registration in any course is possible subject to the approval of the instructor. Interim courses numbered I-10 - I-49 have no prerequisites; those numbered I-50 - I-99 have either prerequisites or other conditions. Courses numbered 500 and above and those marked with an asterisk may be applied to Master of Arts in Teaching programs.

Faculty members on leave of absence for the academic year are indicated by a dagger †, those on leave for the first semester by an asterisk (\*), and those on leave the second semester by double asteriks (\*\*).

## Interdisciplinary

100 CHRISTIAN PERSPECTIVES ON LEARNING. An introductory study of the relationship between Christian faith and learning. Beginning with a consideration of some

contemporary alternatives and challenges to Christianity, the course proceeds to an examination of current statements of the nature of Christian faith and discipleship.

The course culminates in an examination of how different views of Christian faith and its relation to culture produce different kinds of secular and Christian colleges. The ground is thus laid for a critical examination of one's academic experience at Calvin College. Taught by a committee representing the several disciplines and open to freshmen and sophomores. A. Bratt, J. Brink, G. De Blacy, R. De Kock, E. Greenway, W. Hendricks, G. Huisman, S. Leestma, R. Manweiler, C. Mulder, R. Pauw, G. Spykman (chairman), B. Steen, L. Stegink, H. Vander Goot, S. Vander Ploeg, S. Wiersma.

234 THE CONTEMPORARY AMERICAN RELIGIOUS SITUATION. S. A description and analysis of current American religious developments in historical, sociological, and theological perspective. Institutional and non-institutional developments, within and outside of the Judeo-Christian tradition, will be examined. Satisfies as a third core course in Religion and Theology. Mr. J. Primus and Mr. W. Smit.

301 INTRODUCTION TO BILINGUAL EDUCATION. This course is designed to prepare teachers who will be qualified to teach in classrooms where English is the second language. Students will be concerned with both the theory and the skills necessary to teach speaking, reading, writing, and comprehension in a bilingual situation. The course includes such matters as linguistics, language interference, vocabulary, sentence structure, idioms, teaching English as a second language, placement of the newly-arrived student, choice of learning materials, and the use of specialized audio-visual aids. After the completion of the course each student will observe and then practice in local bilingual classrooms. Prerequisite: completion of a 202-level course in an appropriate modern foreign language. Staff.

## GRADUATE COURSES

570 WORKSHOP IN EDUCATION. An intensive course for inservice teachers involving philosophy, theory, curriculum, and practice as they are brought to bear on an identified problem area of education. Although such courses may touch topics considered in regular courses, the primary focus of each workshop is on retraining teachers in newly recognized areas of need, in new materials, and in new approaches. Work-

shops may be offered by any department involved in teacher education. Staff.

## JANUARY 1978 INTERIM

I-10 OUR DAILY BREAD. This course deals with various aspects of the production, processing, distribution, and consumption of food especially as they are related to providing "our daily bread." Topics covered include ecology and agricultural methods of food production; packaging and preservation of food for profit, convenience, and/or nutrition; local, national, and international patterns of food distribution; stewardship of "our daily bread." A choice of a laboratory or literature project is also required. Mr. K. Piers, Mr. U. Zylstra.

I-11. THE RAILROAD AS PART OF A MODERN TRANSPORTATION SYSTEM. This course, which considers a short history of the railroad as a transportation mode, places particular emphasis on economic and political aspects. Most of the course is devoted to the railroad today, with emphasis on energy, efficiency, competitive stance, etc. Mr. C. Sinke.

I-12. YOUR USE OF GOD'S WORLD. God created our planet and its resources for man's use and charged man to care for it. However, man has abused the earth more often than he has tended it. During the 1977-78 academic year the Calvin Center for Christian Scholarship will be considering man's responsibility in caring for this planet. Students in this course will examine that topic and will be taught by the Fellows of the Calvin Center. The course will begin with a detailed examination of currently available natural resources, with special emphasis upon energy and food. Current resource-use patterns will be considered, as well as projected depletion of these resources. World population levels will be studied as they relate to the diminution of our resources. Throughout, the course will examine and emphasize our responsibility as Christians in the use of the earth and its resources. Mr. V. Ehlers and the other Calvin Fellows.

I-13. INTRODUCTION TO PHOTOGRAPHY. Students will be introduced to various aspects of black and white photography such as camera operation, film choice, film development, and techniques for making an expressive print worthy of display. After demonstration of procedures, students will do their own camera and darkroom work.

The first part of the course will deal primarily with basic techniques for all students. During the second part the class will be divided into two sections. One section will explore photography as an art form, while the other will use photography as reportorial tool related to schools, industry, and other institutions. A portfolio of finished photographs will be required at the end of the interim. A fee of \$15 will cover dark-room expense and some initial supplies; students will incur additional expense for other supplies. Each student must have use of an adequate camera, preferably a single lens reflex, with provision for manual control of focus, shutter speed, and aperture. Prerequisite: Written permission by one of the instructors. *Mr. P. Lucasse, Mr. H. Van Till.*

I-14. IDEOLOGICAL CONFLICTS IN SOUTHERN AFRICA: PHILOSOPHICAL ANALYSIS OF CULTURAL CONFLICTS. A study of the problems of South Africa by a philosopher from the Institute of Christian Studies who has spent considerable time there trying to understand the issues of principle and philosophy. Students will work with books, newspapers, and other contemporary sources. The primary concerns are philosophical rather than merely political. *Mr. H. Hart.*

I-50. TRANSFORMING AMERICAN SOCIETY: SOCIAL REFORM IN AN ERA OF REFORM. A study of certain phases of American social history, from 1830-1860, including the sources of the reformist impulse, the character of social reform, and the major forms of social reform—criminal reform, the temperance movement, and the common-school movement. Lectures, readings, papers presented in class for discussion. Prerequisite: a course in American literature or history. *Mr. P. De Boer.*

I-51. FACING UP TO TECHNOLOGY: A COURSE FOR NON-TECHNOLOGISTS. An examination and analysis of the social, moral, and religious involvements of technology. The course is intended to provide a theoretical basis for evaluation of the role of technology in contemporary society. The course will involve discussions, field trips, consultations, and practice on the specific problem of the private passenger car and its alternatives in the decades ahead. Students will be asked to address this problem as responsible Christian citizens, sensitive not only to technical and utilitarian considerations but to related biblical imperatives as

well. Not open to engineers. Prerequisite: upper class standing or permission of an instructor. *Mr. C. Orlebeke, Mr. L. Van Poolen.*

I-52. THE BIBLE IN LITERARY PERSPECTIVE. The emphasis of this course is on literary study and analyses of selected portions of biblical literature. The implications of the fact that the Bible is *written* revelation, a book, that it uses language and, therefore, literary structures and patterns, will be explored. The Bible will be the primary text; some recently published textbooks will also be used as secondary sources for exploration of various literary approaches to and interpretations of Biblical narratives. Biblical allusions in fiction, poetry, and drama (some on film) will also be examined. Lectures, readings, discussions, short papers, and critiques. Prerequisite: a college literature course in any language. Satisfies teacher education concentrations in English or the academic study of religion. *Mr. H. Hoeks, Mr. S. Vander Weele.*

I-53. PROBLEMS IN PROBLEM SOLVING. Many students experience difficulty in applying mathematical techniques to "non-mathematical" problems. In this course an attempt will be made to determine the nature and sources of this difficulty as well as possible remedies for it. In particular, the instructors will work intensively with the students to develop their analytical and problem-solving abilities. Open by invitation only. *Mr. T. Jager, Mr. R. Griffioen.*

I-54. CHILDREN'S LANGUAGE DEVELOPMENT. Although often taken for granted, the development of language in children is indeed a remarkable achievement. This course will consider: 1. the phonological, syntactic, semantic aspects of normal language acquisition and development in young children and the various theories which seek to explain these developments; and, 2. deviations from normal development, such as autism, aphasia, deafness, and mental retardation. Readings, lectures, film, and field trips will be utilized. Travel fee: \$10. Prerequisite: Psychology 204, Speech 215, or permission of the instructor. *Mr. R. Stouwie, Mr. M. Vande Guchte.*

I-55. FAIRY TALES. This course will investigate the origin, function, and meaning of fairy tales from a literary as well as psychological point of view. Literary analysis will include discussion of fairy tale narrative, plot structure, characters, and

themes. Psychological analysis will deal with the portrayal of life themes, prototypical experiences, and the psychic significance of fairy tales for the reader-hearer. Those students with sufficient language

experience in German will be encouraged to study the *Märchen* in the original. Prerequisite: a course in German or psychology is desirable. Mrs. B. Carvill, Mrs. M. Vander Goot.

# Art

Associate Professors E. Boevé (chairman), C. Huisman, R. Jensen,\*\* C. Overvoorde.

Assistant Professor H. Bonzelaar

Instructors R. Pederson, B. Van Halsema, T. Van Laar

**THE ART PROGRAM** at Calvin has been conceived within the framework of the liberal arts tradition. The department also offers a program for those who wish to teach art in the elementary and secondary schools. Students intending to major in the field must secure a minimum grade of C (2.0) in 207. The minimum major program is 207, 208, 209, 210, 231, 232, 320, 325, one course from 326, 310, or 311 and either 332 or 340. During the spring semester of their senior year all art majors will be required to present an art exhibition on campus. The ten and a half course major program for elementary and secondary education includes: 207, 208, 209, 215, 216, 231, 232, 310 or 311, and 320 or 325; the seven course minor concentration includes: 207, 208, 209, 216, 231, and 232. Advisers for these programs are Mr. Boevé and Mrs. Bonzelaar.

The Bachelor of Fine Arts (B.F.A.) program, with a greater professional emphasis, is fully described on page 40. This is not a preparation for a teacher certificate.

The core requirements in the fine arts may be met by 151, 215 (elementary education students), 231, 232, 332, or 340. Art 231 and 232 may be part of the teaching minor in the academic study of religions.

151 **INTRODUCTION TO ART.** F and S, core. Lecture and participation in the basic elements and principles of art. Emphasis placed upon the student's involvement and response to materials and ideas. Not ordinarily a part of major or minor program. Staff.

207 **TWO DIMENSIONAL DESIGN.** F and S. A course that teaches two-dimensional design through the use of basic art elements and principles. Staff.

208 **THREE-DIMENSIONAL DESIGN.** F and S. A course that teaches three-dimensional design through the use of basic art elements and principles. Prerequisite: 207. Staff.

209 **DRAWING I.** F and S. A course teaching basic composition while introducing students to basic drawing media. It includes an introduction to historical development and to drawing terminology. Prerequisites: 207, 208. Mr. R. Jensen, Mr. T. Van Laar.

210 **DRAWING II.** S. Continuation of Drawing I, developing the drawing media and teaching the proportion and volume of the human figure. Mr. C. Huisman.

215 **PRINCIPLES OF ELEMENTARY ART EDUCATION.** F and S, core. A course emphasizing methods and techniques of organizing and motivating art instruction on the elementary school level. It includes lectures, demonstrations, and art teaching experiences in the school situation. Research paper required. Recommended for elementary teacher training programs. Mr. E. Boevé, Mrs. H. Bonzelaar.

216 **PRINCIPLES OF SECONDARY ART EDUCATION.** S, core. A course emphasizing methods and techniques of organizing and motivating art on the secondary school level. Media explored will emphasize clay, enameling, jewelry-making, weaving, batik, printmaking, and painting. Prerequisites: 207, 208, 209. Mrs. H. Bonzelaar.

231 **AN INTRODUCTION TO THE HISTORY OF**

**THE FINE ARTS. F, core.** A survey of the history of architecture, painting, and sculpture in Ancient, Medieval, and Renaissance times. A study of the character of ancient art from Egypt through Rome is followed by a study of medieval art from its beginning in the early days of the Christian era to its climax in the Gothic period of the thirteenth century. *Mr. E. Boevé, Miss B. Van Halsema.*

**232 AN INTRODUCTION TO THE HISTORY OF THE FINE ARTS. S, core.** Continuation of 231. The study of painting from 1500 to the present. *Mr. E. Boevé, Miss B. Van Halsema.*

**310 SCULPTURE I. F.** Exploration of traditional and contemporary sculpture materials. Application of their use and control for personal expression. Prerequisites: 207, 208, 209, 210. *Mr. R. Pederson.*

**311 CERAMICS. F and S.** Creation and study of ceramic forms. Exploration of the expressive and functional possibilities of the media. History of ceramics from the pre-Columbian times to the present. Prerequisites: 207, 208, 209, 210. *Mr. C. Huisman.*

**312 SCULPTURE II\*. F.** Continued exploration of materials and techniques discovered in 310, with the opportunity for an in-depth study of such areas as carving, casting, construction, and modeling. Prerequisite: 310. *Mr. R. Pederson.*

**313 CERAMICS II\*. F and S.** Continued exploration of the chemical composition of clay bodies, glazes, and stains. Prerequisite: 311. *Mr. C. Huisman.*

**320 PRINTMAKING I. F and S.** An introduction to the four basic printmaking media—relief, intaglio, serigraphy, and planography—through slide presentations, lectures, readings, and demonstrations. Each student will explore in depth one or two of the basic media in the print studio. Prerequisites: 207, 208, 209, 210. *Mr. C. Overvoorde, Mr. T. Van Laar.*

**321 PRINTMAKING II\*. F and S.** Continued development of the visual ideas and the techniques of relief, intaglio, serigraphy, and planography. Continuation of work in intaglio can lead to exploring various sub-techniques—aquatint, hard ground, soft ground, engraving, mezzotint, and drypoint. Other options are also open. Prerequisite: 320. *Mr. C. Overvoorde, Mr. T. Van Laar.*

**325 PAINTING I. F and S.** A study of the tradition in painting, emphasizing techniques and methods of communicating ideas visually. Studio work will give opportunity to experiment in various techniques and subjects. Prerequisites: 207, 208, 209, 210. *Staff.*

**326 PAINTING II.\* F and S.** Continuation of 325. Prerequisites: 207, 208, 209, 325. *Staff.*

**327 PAINTING III.\* F and S.** A study of painting techniques not studied in 326 and of methods such as tempera, fresco, varnish, for communicating ideas visually. Studio work provides opportunity for developing a more personal expression than is available in 325 and 326. Prerequisite: 326. *Staff.*

**332 HISTORY OF DUTCH PAINTING.\* F, core.** A historical survey of Dutch painting from the Gothic to modern times. Emphasis on the images created and the ideas expressed by the major painters such as Van Eyck, Bosch, Brueghel, Rubens, Rembrandt, Van Gogh, and Mondriaan. *Mr. C. Overvoorde.*

**340 CONTEMPORARY PAINTING AND ARCHITECTURE.\* S, core.** A study of painting from Impressionism to the present with emphasis on Expressionism, Abstractionism, Non-objectivism, and Abstract Expressionism. Architecture is studied in relation to programming, technology, materials, and site, beginning with Sullivan, Eiffel, and Gaudi, and continuing into the twentieth century with Wright, Le Corbusier, Mies vander Rohe, and Saarinen. Outside reading and papers will be required. *Mr. E. Boevé.*

**390 INDEPENDENT STUDY.\* F, I, S.** A student wishing to register for the interim must submit a project to the chairman for his approval.

**395 SEMINAR AND EXHIBITION.\* S.** An opportunity from a Christian perspective to integrate the study of art history, aesthetics, and the other liberal arts as well as the work in studio art. The seminar will include regular meetings with the faculty, the writing of a scholarly statement of the candidate's philosophy of art, a study of exhibitions in art galleries and museums, and the presentation of a one-man show. Prerequisite: senior status and a concentration in art. *Mr. E. Boevé.*

## GRADUATE COURSES

580 **WORKSHOP IN METHODS, MATERIALS, AND RESEARCH IN THE FINE ARTS.** The course will attempt to show the interrelationships of the Fine Arts—art, music, speech—and to establish a curricular basis for the teaching of the Fine Arts from a Christian perspective. *Staff.*

590 **INDEPENDENT STUDY** (graduate). F.I.S. *Staff.*

595 **GRADUATE PROJECT.** F.I.S., full or half course. The prospectus for each Master of Arts in Teaching project must be developed under the supervision of a faculty member and must be approved by the student's graduate adviser. *Staff.*

## JANUARY 1978 INTERIM

I-10. **CINEMATOGRAPHY AS A CREATIVE ART FORM.** An introduction to the creative art of cinematography. The various techniques of filmmaking will be explored as well as film history, film production, and film criticism. Members of the class will produce experimental super-8 films while involved in the total filmmaking process—creating a shooting script, learning camera techniques, lighting, editing, splicing, and sound synchronization. The course will include lecture/discussion, lab work, out of class individual and group film production, special resource personnel, example films, and field trips. All necessary filmmaking equipment (super-8) will be available to the class. *Mr. R. Jensen.*

I-11. **THE IMPRESSIONIST YEARS.** This course will concentrate on French painting from 1860 to 1890, the years encompassing the Impressionist era. The work of the artists Manet, Monet, Pissarro, Renoir, Degas, and Morisot will be examined, for these men and women painted in the regions of Fontaine Bleau, the Normandy coast, along the banks of the Seine, and in the Parisian suburbs. Students will have an opportunity to read personal memoirs and the critics' reactions to the exhibitions of this Impressionist group. A look at the gen-

eral academic studio and salon situation in France will also be included. Readings and a paper will be required; an excursion to the Chicago Art Institute is planned. *Miss B. Van Halsema.*

I-50. **ART AND ARCHITECTURE IN ENGLAND.** The course will pursue the Perpendicular Gothic tradition in English cathedrals and the Classical tradition of the churches designed by Wren. The course will also study the traditions in painting from Hogarth to the twentieth century with an emphasis upon Gainsborough, Reynolds, Constable, Blake, and Turner. Several days will be spent in London concentrating on the art in the National Gallery; the Victoria and Albert Museum; the British Museum; and the Tate. A ten-day tour will investigate the cathedrals and chapels in Cambridge, Ely, Lincoln, Coventry (a two-day stop in Stratford), Oxford, Wells, Salisbury, Winchester (a stop at Stonehenge), and Canterbury. Upon the return to London the Wren churches including St. Paul's will be studied. Fee for travel and lodging. Prerequisite: approval of the instructor. *Mr. E. Boevé.*

I-51. **STUDENT ARTISTS IN RESIDENCE.** Student artists will demonstrate their art by working in a studio provided in public places such as schools, apartment complexes, and community social organizations. By working in public, students will have the opportunity to realize their own philosophies of art more clearly and to recognize the role of the artist in society. Prerequisites: cultivated artistic talent and permission of instructor. *Mrs. H. Bonzelaar.*

I-52. **CASTING AS AN APPROACH TO SCULPTURAL FORM.** The exploration of sculptural forms through the following techniques: waste mold, piece mold, open mold, investment mold, and sand molding. Forms will be cast in plaster, cement, clay, plastic, and metal. Lecture-demonstration, films, assigned readings, projects, critiques, and field trips will be used in the teaching of this course. Prerequisite: Art 208, with Art 310 recommended. *Mr. C. Huisman.*

# Astronomy

*Professors V. Ehlers (chairman, Department of Physics), H. Van Till*

**STUDENTS INTERESTED** in graduate work in astronomy should major in physics and should plan their program with the chairman of the Physics De-

partment. The sixteen-inch telescope in the observatory and portable telescopes are available for student use through the director of the observatory, Mr. Van Till.

110 PLANETS, STARS, AND GALAXIES. F and S, physical science core. A survey of the major astronomical objects, such as planets, stars, and galaxies; a study of their characteristics and their organization into a dynamic, structured universe; an investigation of the processes now occurring in the universe and the methods used to study them. The course includes a presentation of the evidence of the history and development of the universe, a description of cosmological models, and a discussion of possible Christian responses to them. *Mr. H. Van Till.*

201 CONTEMPORARY ASTRONOMY. F, core.

An introduction to modern astronomy and astrophysics for students concentrating in the area of science and mathematics. Major topics include the nature of stars and galaxies, the physical processes occurring in various celestial objects, and the current cosmological theories. The course includes lectures, laboratory exercises, and observing projects. Prerequisites: Mathematics 111 and one course in college physics other than 110 or 112. *Mr. H. Van Till.*

390 INDEPENDENT STUDY. F, I, S, half or full course. Independent readings and research in astronomy. Prerequisite: permission of the chairman. *Mr. H. Van Till.*

# Biology

*Professors J. Beebe, A. Bratt (chairman), A. Gebben, B. Klooster, B. Ten Broek, G. Van Harn*

*Associate Professor P. Tigchelaar*

*Assistant Professors H. Bengelink, U. Zylstra*

VARIOUS PROGRAMS of concentration in biology prepare a student for graduate study, for teaching, and for professional training in medicine and related fields. To be admitted to a concentration in biology a student must have a minimum average of C (2.0) in 121 and 122 or in an equivalent program approved by the department.

The program of concentration requires 121, 122, 221, 222; at least one investigative course; two additional 300-level courses; and 395. Required cognates include either Mathematics 111-112 or Mathematics 205-206 or a year of college physics, and the completion of a second year of college chemistry. Students who have previously been admitted to a concentration in the department may satisfy the requirements which were in effect when they enrolled.

The secondary school teaching major is the same as the program of concentration except that an additional 300-level course is required. The required cognates constitute a minor in the physical sciences. Prior to the internship semester, a student must pass a screening test administered by the department. The advisor for elementary teacher education programs is Mr. Clarence Menninga.

A group major in science and mathematics meets the needs of some students, particularly those in professional programs. These majors, however, are not appropriate for students who anticipate attending a graduate school or who are in teacher education programs. Such group majors require twelve courses in the sciences and mathematics, ten of which must be from two departments with no fewer than four from either, with the remaining two courses chosen from a third department. The courses in biology must be chosen from the "Program of



Concentration Courses" and the two-course cognate is 121 and 122. The departmental chairmen of the three departments must approve each such program.

The core requirement in biological science may be met by Biology 105-106 or by any other course in biology. Most students satisfy this requirement by completing 111, 115, 116, or 121. The requirement may also be met by completing two years of biology in high school concluding with the course, Advanced Biology.

### NURSING PROGRAM COURSES

105 **INTRODUCTORY HUMAN ANATOMY AND PHYSIOLOGY.** F. An introduction to the study of human biology, including elements of anatomy, histology, and physiology. *Mr. P. Tigchelaar.*

106 **INTRODUCTORY HUMAN ANATOMY AND PHYSIOLOGY.** S. Continuation of 105. *Mr. P. Tigchelaar.*

107 **INTRODUCTORY MICROBIOLOGY.** F. An introduction to the principles and techniques of microbiology, with emphasis on the bacteria. *Miss B. Klooster.*

### GENERAL COLLEGE COURSES

111 **BIOLOGICAL SCIENCE.** F and S. An introduction to the principles and concepts of biology and the history and philosophy of biological thought for the general college student. Prerequisites: none, but Mathematics 109 and Physics 110 recommended. *Staff.*

115 **HUMAN BIOLOGY.** F and S. A study of the normal biological structure and function of man. *Staff.*

116 **FIELD BIOLOGY.** F. An introduction to the study of the common plants and animals in their natural environment. The course will provide acquaintance with general concepts and methods used in field biology and will give experience in the identification of plants and animals and their inter-relationships. *Mr. H. Bengelink.*

### PROGRAM OF CONCENTRATION COURSES

#### Basic Courses

121 **CELL BIOLOGY.** F. The structure and function of prokaryotic and eucaryotic cells are examined at the molecular, subcellular, and whole cell levels. The plant cell is emphasized in the discussion of eucaryotic cells and the laboratory work includes plant

cells as units of structure and function within multicellular plants. *Staff.*

122 **ANIMAL STRUCTURE AND FUNCTION.** S. An introduction to the anatomy, development, and physiology of the vertebrate animal. Prerequisite: 121. *Staff.*

221 **GENETICS AND DEVELOPMENT.** F. A study of the development of contemporary concepts of the gene and an introduction to the study of biological development, including both embryonic and post-embryonic systems. Prerequisites: Biology 121 and 122. *Staff.*

222 **ECOLOGY AND EVOLUTION.** S. An introduction to the study of biological populations and communities and contemporary concepts of organic evolution. Prerequisites: Biology 121, 122, 221. *Staff.*

#### Investigative Courses

*Prerequisites for all investigative courses include Biology 121, 122, 221, and 222.*

351 **INVESTIGATIONS IN GENETICS AND DEVELOPMENT.** S. Laboratory studies of genetic and developmental phenomena of selected organisms. *Mr. J. Beebe and Mr. B. Ten Broek.*

352 **INVESTIGATIONS IN ECOLOGY.** F. Laboratory and field studies of biological populations and communities. *Mr. A. Gebben.*

#### Advanced Courses

*Prerequisites for all advanced courses include Biology 121, 122, 221, 222, or their equivalent.*

323 **COMPARATIVE VERTEBRATE ANATOMY.\*** S. A study of the comparative anatomy of vertebrates. *Mr. H. Bengelink.*

331 **COMPARATIVE ANIMAL PHYSIOLOGY.\*** F. A comparative study of basic functional mechanisms of animals. Additional prerequisite: Chemistry 254 or equivalent. *Staff.*

332 PLANT PHYSIOLOGY.\* S. A study of plant function. Course topics include photosynthesis, photomorphogenesis, plant hormones, and the movement of water and solutes. Additional prerequisite: Chemistry 254 or equivalent. *Mr. J. Beebe.*

336 GENERAL MICROBIOLOGY.\* S. A study of the structure and function of microorganisms with emphasis on the bacteria. Additional prerequisite: Chemistry 254 or equivalent. *Miss B. Klooster.*

340 THE DIVERSITY OF ORGANISMS. F. A systematic study of the classifications, morphological patterns, and evolution of plants and animals. (This course will satisfy the requirement for an Investigative Course in 1977-78.) *Mr. A. Bratt, Mr. A. Gebben.*

341 ENTOMOLOGY.\* F. Study of the biology of insects, with emphasis on systematics. *Mr. A. Bratt.*

346 PLANT TAXONOMY.\* S. Identification, nomenclature, and classification of vascular plants. Lectures, laboratories, and field trips, including some on Saturdays. *Mr. A. Gebben.*

#### Seminar and Research Courses

390 INDEPENDENT STUDY.\* F, I, S. Prerequisite: Approval of department.

395 BIOLOGICAL PERSPECTIVES.\* S. A study of the history of biology and its major ideas and concepts; a study of the biological literature; and a critical analysis of various philosophies of science. Prerequisite: senior status in biology program of concentration. *Staff.*

#### GRADUATE COURSES

510 BASIC IDEAS IN CONTEMPORARY BIOLOGY. A study of contemporary ideas in biology involving all of the organizational levels (the molecular, cellular, organ, organism, population-species, community-ecosystem). The laboratory work will emphasize the methods of inquiry of biology especially as they pertain to the concepts of biology which are being taught in the elementary and junior high schools. Prerequisite: at least three courses in biology including either Biology 111 or 121. *Staff.*

590 INDEPENDENT STUDY (graduate). F, I, S. *Staff.*

595 GRADUATE PROJECT. F, I, S., full or half course. The prospectus for each Master of

Arts in Teaching project must be developed under the supervision of a faculty member and must be approved by the student's graduate adviser. *Staff.*

#### JANUARY 1978 INTERIM

I-10. NATURAL HISTORY OF THE NATIONAL PARKS. A study of the physical factors of the National Parks and Monuments and how these relate to the plants and animals of the area. This study will illustrate the advantage of travel to such places for potential elementary teachers. Satisfies elementary teacher education concentrations. *Mr. H. Bengelink.*

I-50. INVESTIGATIONS IN MAMMALIAN ANATOMY. This course in mammalian anatomy includes both lecture and laboratory sessions. The lecture period will be devoted to a discussion of the organ systems of the mammal. The laboratory will include dissection of a cat, comparative study of cat and human anatomy, and an introduction to elements of histology. This course is intended for B.S. in Nursing students and others who need credit in gross anatomy. Prerequisite: one course in biology. *Mr. P. Tigchelaar.*

I-51. SEMINAR IN CARDIOVASCULAR PHYSIOLOGY. A study of the principles and problems of cardiovascular physiology. The course will include a discussion of heart structure and function, blood vessels, blood pressure and flow relationships, and circulatory control. Seminar participants will prepare and present reviews of the cardiovascular literature. The course may be elected to satisfy the Senior Seminar requirement in the Biology Program of Concentration. Prerequisites: four courses in biology. *Mr. G. Van Harn.*

I-52 PROPAGATION OF HORTICULTURAL PLANTS. An introduction to the propagation of plants, especially those used for household and conservatory display. Plant propagation techniques are studied and practiced. Recognition of commonly cultivated species by common name will be required. Elements of botany are included as necessary background for understanding propagation methods. The course includes assigned readings, classroom sessions, greenhouse and laboratory experiences, and field trips to local greenhouses. Prerequisite: one college course in biology. *Mr. J. Beebe, Mr. A. Gebben.*

I-53. **INVESTIGATIONS IN PLANT PROPAGATION.** This course in plant propagation methods and problems includes both classroom and laboratory experiences. Commonly used techniques of plant propagation will be examined and practiced. Taxonomic relationships among horticultural plants will be discussed. Recognition of commonly cultivated species by both scientific and common names will be required. Each student will be expected to complete a laboratory project on some problem in plant propagation as well as a literature search report on problems in the propagation of plants in a select genus or plant family. The course may be elected to satisfy the Investigations Course requirement in the Biology Program of Concentration. Those electing the course to meet the investigation course requirement will receive letter grades. This course meets in full-day sessions including classroom, laboratory, greenhouse, and field trip activities. Prerequisite: Biology 221 or permission of an instructor. *Mr. J. Bebbe, Mr. A. Gebben.*

I-54. **LABORATORY EXPERIENCES IN BIOLOGY.** Questions that can be answered experimentally arise from laboratory exercises. If you have had such questions in your biology courses, this is your chance to work on them in a laboratory setting. This course will also be designed to familiarize the student in medical technology programs with the basis for some of the diag-

nostic techniques used in the clinical laboratory (such as hematology and microbiology). Prerequisite: at least one laboratory course in biology. *Miss B. Klooster, Mr. B. Ten Broek.*

I-55. **SUPERVISION OF LABORATORY WORK IN BIOLOGY.** This course is an opportunity to gain valuable experience preparing materials for biology exercises while assisting a group of less experienced students to do experiments in biology (Biol I-54). Students will work closely with the instructor of the course and will be responsible for a team of students. Prerequisite: junior or senior biology major status or equivalent. May be applied to biology major in secondary education. *Miss B. Klooster, Mr. B. Ten Broek.*

390 **INDEPENDENT STUDY IN BIOLOGY.** A course based on a laboratory project resulting from a literature survey. The project will be conducted in consultation with an instructor. Group meetings will include progress reports and a final report session. At this final report session, a paper will be presented by each student summarizing the literature on the topic and the accomplishments made on the project during the interim. Prerequisites: Biol 395 and permission of the instructor and departmental chairman. Limited enrollment. Satisfies major concentration. *Mr. G. Van Harn.*

Idis I-10. **OUR DAILY BREAD.** *Mr. U. Zylstra*

# Chemistry

*Professors R. Albers, H. Broene, T. Dirkse, K. Piers, W. Van Doorne (chairman)*  
*Associate Professors R. Blankespoor, R. DeKock, †A. Leegwater*

**PREREQUISITE TO BEING** admitted to a concentration in chemistry is a minimum average of C (2.0) in 103, 104, and 201 or 301.

For students who do not plan to pursue graduate study in chemistry, additional courses required are: 277-278 and either 253-254 or 301-302. Required cognates are Mathematics 111-112 and a year of college physics.

For students preparing for graduate study in chemistry, the certification requirements of the American Chemical Society for professional training in chemistry may be met by completing the eleven courses: 103-104, 201, 277-278, 301-302, 305, 309, 310, and 303 or 306. Mathematics 111-112, 211-212; Physics 126 and 225 or 123, 124, and 225. A reading knowledge of German is required and of French is recommended. Computer Science 108 is recommended.

The nine-course chemistry major for teacher education students includes 103-104, 201, 204 or 277, 253-254 or 301-302, two courses in physics other than

110 or 112, and one chemistry course chosen from 278, 303, 305, 309, 310, or an approved interim course. The teaching minor is 103-104, 204, 253-254 or 301-302, and either an elective or an approved interim course.

The teaching group major in chemistry and physics consists of Chemistry 103-104 and 253-254 or 301-302; Physics 123, 124, 181, 182, 225, and 226; and two and a half courses in chemistry and/or physics which are approved by the Science Division Education Coordinator. Recommended courses include: Chemistry 201, 277, 278, Physics 381, and 382.

A group major in science and mathematics meets the needs of some students, particularly those in professional programs. These majors are not appropriate for students who anticipate attending graduate school or who are in teacher education programs. Such group majors require twelve courses in the sciences and mathematics, ten of which must be from two departments with no fewer than four from either, with the remaining two courses chosen from a third department. The departmental chairmen of the three departments must approve each such program.

The Science Division Education Coordinator and Elementary Education Adviser is Mr. Clarence Menninga of the Physics Department.

**101 CHEMISTRY FOR NURSES.** S. A one-semester survey of inorganic, organic, and biological chemistry as applied in the field of medicine. Open only to students in the Blodgett Memorial Medical Center nursing program. *Mr. T. Dirkse.*

**103 GENERAL CHEMISTRY.** F. A study of the basic principles of chemistry, with emphasis on the laws of chemical combination, theories of atomic structure and chemical bonding, the periodic law, kinetic theory, and chemical and physical equilibria. Laboratory. A high school chemistry course is strongly recommended. *Staff.*

**104 GENERAL CHEMISTRY.** S, core. A continuation of 103, with emphasis on acid-base theory, reaction rates, ionic equilibria, redox reactions, electrochemistry, and nuclear chemistry. The laboratory work involves the systematic separation and identification of cations and anions. Laboratory. Prerequisite: 103. *Staff.*

**113 FUNDAMENTALS OF CHEMISTRY.** F. This course is intended for elementary education students and for those who need only one course in general chemistry to satisfy various paramedical professional requirements. The fundamental concepts of chemical science are presented together with selected topics in descriptive chemistry. Emphasis is placed on the language of chemistry, the mole concept, chemical bonding, stoichiometry equilibrium processes, and periodicity. Laboratory. *Mr. W. Van Doorne.*

**114 INTRODUCTION TO ORGANIC AND BIOCHEMISTRY.** S. A study of the fundamental classes of organic compounds, their syntheses and reactions, followed by a survey of compounds and chemical changes occurring in living systems, of photosynthesis, metabolism, respiration, etc. Laboratory. Prerequisite: 113. *Mr. R. Albers.*

**201 QUANTITATIVE ANALYSIS.** F. A study of the theory and practice of titrimetric and gravimetric methods of analysis. Laboratory. Prerequisite: 104. *Mr. T. Dirkse.*

**204 PHYSICAL CHEMISTRY FOR THE BIOLOGICAL SCIENCES.** S. A one semester survey of physical chemistry with some applications to biological systems. This course treats the same topics covered in 277 and 278, but a knowledge of calculus is not required. Prerequisite: 104. *Mr. H. Broene.*

**253 ORGANO-BIOCHEMISTRY.** F. A study of organic compounds, reactions, and reaction mechanisms, emphasizing their biochemical significance. Laboratory. Prerequisite: 104. *Mr. E. Wolthuis.*

**254 ORGANO-BIOCHEMISTRY.** S. A continuation of 253, concluding with a study of the chemistry of metabolism and the application of quantitative methods to biochemical analyses. Laboratory. Prerequisite: 253. *Mr. R. Albers.*

**277 PHYSICAL CHEMISTRY.** F. A study of the properties of gases and the kinetic molecular theory; introduction to thermodynamics and phase equilibria. Prereq-

quisites: 201 or concurrent registration, **Mathematics** 112, and a high school or college **physics** course. *Mr. H. Broene.*

278 **PHYSICAL CHEMISTRY.** S. A study of the **kinetics** of chemical processes and of **electrochemistry**, including the nature of **electrolytic** solutions. Electrochemistry is treated from a kinetic as well as a **thermodynamic** point of view. Laboratory consists of a study of experimental methods used in these areas and their application to **analytical** chemistry, including work in **polarography**, potentiometric titrations, and **amperometric** titrations. Prerequisite: 277. *Mr. T. Dirkse.*

301 **ORGANIC CHEMISTRY.** F. A detailed study of **organic** compounds, their synthesis and reactions, presented within the **framework** of modern physico-chemical theory, together with an introduction to modern methods of analysis and identification. Laboratory. Prerequisite: 104 and preferably 201. *Mr. B. Blankespoor, Mr. K. Piers.*

302 **ORGANIC CHEMISTRY.** S. A continuation of 301. Laboratory. Prerequisite: 301. *Mr. K. Piers.*

303 **BIOCHEMISTRY.\*** F. A study of proteins, **carbohydrates**, lipids, enzymes, **coenzymes**, hormones, vitamins, metabolism, **biosynthesis**, and bioenergetics. Laboratory. Prerequisite: 254 or 302. *Mr. R. Albers.*

305 **ORGANIC SYNTHESIS AND ANALYSIS.\*** F. Lectures consist of a study of selected topics in **advanced** organic chemistry. Laboratory work consists of literature searches on **assigned** multi-step syntheses, followed by the **preparation** of the required compounds, and chemical and instrumental analyses at various stages of the syntheses. Prerequisite: 302. *Mr. K. Piers.*

306 **QUANTUM CHEMISTRY.** S. An introduction to the principles of quantum mechanics, with special emphasis on their application to a variety of problems in atomic and molecular structure and reaction mechanisms. Prerequisites: 301, **Physics** 225, and **Mathematics** 212. Computer **Science** 108 is recommended. *Mr. R. DeKock.*

309 **INTRODUCTION TO SPECTROSCOPY AND INSTRUMENTAL METHODS OF ANALYSIS.\*** S. A study of various forms of spectroscopy, including **visible**, ultraviolet, infrared, and **NMR**. This study will emphasize both the

theoretical aspects and their application to analytical procedures. Prerequisite: 277. *Staff.*

310 **ADVANCED INORGANIC CHEMISTRY.\*** S. A study of the chemical elements from the standpoint of periodicity and the nature of chemical bonding. Crystal field theory and ligand field theory are discussed in connection with the chemistry of the transition elements. Laboratory. Prerequisite: 278. *Mr. W. Van Doorne.*

390 **SENIOR RESEARCH.\*** F, I, S. Library and laboratory research on an assigned problem. Open only to approved seniors majoring in chemistry. *Staff.*

395 **SEMINAR.\*** F and S. Meets one hour per week for discussion of selected topics. The program features visiting speakers, student reports on projects and senior research, staff presentations of their research, and discussion of topics of general interest. All juniors and seniors in the chemistry program are advised to participate. *Staff.*

#### JANUARY 1978 INTERIM

I-50. **CLINICAL CHEMISTRY.** A survey of the principles and methods used in clinical analyses with emphasis on enzymatic analysis of common, biochemically important substances. Daily lectures and laboratory. Appropriate for programs in medical technology and some nursing programs. Prerequisites: Chemistry 114 and 253 or 301. *Mr. R. Albers.*

I-51. **INTRODUCTORY RADIOCHEMISTRY.** A study of natural and induced radioactivity, including the detection and measurement of radiation, and its effects upon chemical and biological systems. Laboratory work will include the use of radioisotopes in chemical experimentation. The prospects for an environmental impact of nuclear power development will be discussed. May be applied to science studies or medical technology majors. Prerequisite: high school chemistry, 103, or 113. *Mr. H. Broene.*

I-52. **OLD FASHIONED CHEMISTRY.** A unique and unusual course in beginning chemistry presented in terms of the chemical knowledge of about 1800. The course will follow the textbook, *Elements of Chemistry*, written in 1789 by A. Lavoisier, who is considered to be the father of modern chemistry. Sections of the book will be as-

signed for reading each day and this material will be discussed in class. One aim of the course is to give students a greater appreciation for the work of chemists of former times. In this textbook Lavoisier states, perhaps for the first time, the Law of Conservation of Matter. He also introduces the modern ideas of what a chemical element is and how it is to be defined. Prerequisite: one course of high school or college chemistry. *Mr. T. Dirkse.*

I-53. THE CHEMISTRY OF MACROMOLECULES. From rocks, to wood, to human skin, almost all familiar materials are macromolecular, or polymeric, in na-

ture. In the study of polymers there can be seen, more strongly than anywhere else, the correlation between the molecular structure, the physical and chemical properties, and the usefulness of materials. Polymers will be studied from the points of view of synthesis, of structure, and of properties, with a strong emphasis on the interrelation of these factors. The course will involve lectures and selected laboratory experiments. Field trips will be scheduled, if convenient. Prerequisite: 301 or 253. *Mr. W. Van Doorne.*

Idis I-10. OUR DAILY BREAD. *Mr. K. Piers*

## Classical languages

*Professors \*G. Harris, R. Otten, R. Wevers (chairman)*

*Assistant Professor E. Van Vugt*

*Instructor K. Bratt*

THE DEPARTMENT OFFERS THREE programs of concentration: in Classical languages, in the Greek language, and in the Latin language. The Classical languages program is designed for graduate studies, the Greek language program is for preseminarians and any others wishing to concentrate in Greek language and literature, and the Latin language program is for those intending to teach the language at the secondary school level. Modified concentrations are available to other students.

The Classical languages program requires fourteen courses and one interim, including six elementary or intermediate courses chosen from: Latin 201-202, Greek 101-102, 201-202, 203-204; six intermediate or advanced courses selected from: Latin 205-206, 301-302, 303-304; Greek 201-202, 203-204, 301, 302; and two culture and civilization courses selected from: Classics 211, 221, 231, 311, 312, History 301. Reading competence in French and German is strongly recommended.

The Greek language program requires six courses selected from: Greek 101-102, 201-202, 203-204, 205, 206, 301, 302; and two additional courses selected either from this group or from Classics 211, 221, 231, 311, 312, History 301. At least one course must be a 300-level Greek language course. The recommended preseminarian program is: Greek 101-102, 201-202 or 203-204, 205-206, History 301 or Classics 211, and a 300-level Greek language course.

The recommended Latin program, which prepares for a secondary teaching certificate, includes Latin 101-102, 201-202, 205-206, 301-302, 303-304 and three Classics courses or approved interim courses. The specific nine-course program depends on the student's high school preparation. The teacher education adviser is Mr. Van Vugt.

A Latin teaching minor requires five courses beyond the 100-level and one Classics course.

**Students** who have completed one year of high school Latin should enroll in **Latin 101**; two years in 201 (except that the unusually well qualified student, even with only two years of high school Latin, may with department approval enroll directly in Latin 205 and so meet the graduation requirement for language with one college course); those with three years, in either 202 or 205; more than three years, in 205 or 206. Those who have completed one year of college Latin should enroll in 201.

The core requirements in the fine arts may be met by Greek 202, 204, 301, 302, any Latin course numbered 202 through 304, Classics 221, and designated interims. The "foreign culture" requirement of certain designated pre-professional programs may be met by Classics 211. Classics 231, Classical Mythology, may be part of the teaching minor in the Academic Study of Religions.

## CLASSICS

211 **GRAECO-ROMAN CULTURE.** F. A survey of Graeco-Roman culture as reflected in various art forms, but with the main emphasis upon works of literature which express distinctive features of the mind of the Greeks and Romans. Slides, films, and other illustrative materials will be used, and students will be expected to read extensively in anthologies of Greek and Roman literature. No knowledge of Greek or Latin will be required. Satisfies the "foreign culture" option of certain preprofessional programs, and can be a substitute for ancient history in the seminary entrance requirements. *Mr. K. Bratt.*

221 **ART AND ARCHITECTURE.** S, fine arts core. A study of the major monuments and sites of ancient Greek and Roman civilization from the Bronze Age to the late Empire. Primary attention is devoted to the origins and development of Greek sculpture, painting, and architecture, and to their transformation in the arts of Rome. Ancient literary sources supplement the study of physical remains in this investigation of Graeco-Roman culture. Slide lectures, written reports. *Mr. K. Bratt*

231 **CLASSICAL MYTHOLOGY.** A study of the major themes in Classical mythology via the literature and art of Greece and Rome. Major literary sources (Homer, the Greek Dramatists, Vergil, and Ovid) are read in translation and supplemented by slides of Greek and Roman mythological art. Attention is given to various interpretations of the myths and their influence on Western culture. A course paper or project is required. Lectures, discussions, oral reports, and slides. Not offered 1977-78.

311 **GREEK HISTORY.\*** F. The political, social, and cultural history of the Greek city states up to the time of the Roman conquest. Some attention is also given to the history of the Near and Middle East. Not offered 1977-78.

312 **ROMAN HISTORY.\*** S. The history of Rome from the foundation of the city to A.D. 565, the death of Justinian. The emphasis falls on the development of the constitution and its effect upon, and how in turn it was affected by, the expansion of Rome over the Mediterranean. Economic, social, and literary history studied in their relation to the political. The decline of paganism and the rise of Christianity are viewed in their relation to each other. Prerequisite: Greek 311. Not offered 1977-78.

## GREEK

101 **ELEMENTARY GREEK.** F. Text: Crosby and Schaeffer, *An Introduction to Greek.* *Mr. K. Bratt, Mr. R. Wevers.*

102 **ELEMENTARY GREEK.** S. Continuation of 101. Completion of the text and the reading of the selected prose passages. *Mr. K. Bratt, Mr. R. Wevers.*

201 **INTERMEDIATE GREEK A.** F. Readings in the early dialogues of Plato. Special emphasis is put on gaining reading proficiency in Greek prose. Prerequisite: 102. *Mr. R. Otten.*

202 **INTERMEDIATE GREEK A.** S, core. Readings in Homer's *Iliad.* Attention is given to the characteristics of Homer's world. Prerequisite. 201 or 203. *Mr. R. Otten.*

203 INTERMEDIATE GREEK B. F. Readings in Herodotus. Special emphasis is put on gaining reading proficiency in Greek prose, with some attention to the characteristics of Herodotus as historian in relation to Thucydides. Prerequisite: 102. Not offered 1977-78.

204 INTERMEDIATE GREEK B. S, core. Readings in the Attic orators and Plato's *Apology*. Attention is given to certain matters of style. The readings are viewed in relation to, and as documentation for, the history of fourth-century Athens. Prerequisite: 203 or 201. Not offered 1977-78.

205 NEW TESTAMENT GREEK: THE GOSPELS. F. The Gospel according to St. Mark is read with some notice of the parallel passages in the other Gospels. A study is made of the special features of Hellenistic Greek. The significance of lexical and syntactical detail for the interpretation of the text is everywhere emphasized. Prerequisite: 102. *Mr. R. Otten, Mr. R. Wevers.*

206 NEW TESTAMENT GREEK: THE EPISTLES. S. A study is made of some of the Pauline Epistles. Prerequisite: 205. *Mr. R. Otten, Mr. R. Wevers.*

301 PLATO'S REPUBLIC.\* F, core. The Greek text is studied. This course aims at an understanding and evaluation of Plato's views as presented especially in the *Republic*. Prerequisite: four courses in Greek. *Mr. G. Harris.*

302 GREEK DRAMA.\* S, core. A reading of selected Greek tragedies with attention given to their poetic and dramatic qualities. Those matters of Greek culture, literary tradition, and history which help to understand the plays are noted. Assigned outside reading in other Greek plays. Prerequisite: 301. Not offered in 1977-78.

## LATIN

101 ELEMENTARY LATIN. F. For students who have had only one unit of high school Latin or who have had no Latin. Emphasis is placed on the essentials of grammar and a basic vocabulary with constant comparison to English. *Sententiae* from the principal Latin authors will be read. *Staff.*

102 ELEMENTARY LATIN. S. A continuation of 101. Emphasis is placed on grammar and the early reading of longer selections of authentic Latin dealing with Roman history and culture. Prerequisite: 101 or its equivalent. *Staff.*

201 INTERMEDIATE LATIN. F. A thorough review of the essentials of grammar will accompany the reading of selected Latin prose. Prerequisite: two units of high school Latin or two courses of college Latin. *Staff.*

202 INTERMEDIATE LATIN: VERGIL AND THE ANCIENT EPIC. S, core. A study of the *Aeneid* and the ancient epic in translation. Selected books in the *Aeneid* will be read in Latin with a study of the prosody of Vergil. Prerequisite: three units of high school Latin or three courses of college Latin. *Staff.*

205 READINGS IN LATIN LITERATURE. F, core. Intensive reading in the major writers of prose from the Late Republic to the Early Empire. Collateral readings in the literary history of the period. Prerequisite: 202, three years of high school Latin, or approval of instructor. *Mr. R. Otten.*

206 READINGS IN LATIN LITERATURE. S, core. Intensive reading in the major writers of poetry from the Late Republic to the Early Empire. Collateral readings in the literary history of the period. Prerequisite: 202. *Mr. R. Otten.*

301 LATIN PHILOSOPHICAL LITERATURE: LUCRETIVUS AND SENECA.\* F, core. Selections from Lucretius and Seneca, designed to portray some of the major ethical and political issues raised in Roman thought. Collateral reading and reports. Prerequisite: 205 or 206. Alternates with 303. *Mr. R. Otten.*

302 LATIN PHILOSOPHICAL LITERATURE: CICERO AND AUGUSTINE.\* S, core. Readings in Cicero and Augustine, selected to complete the survey begun in 301 and to present the first major Christian critique of classical thought. Collateral readings and reports. Prerequisite: 205 or 206. Alternates with 304. *Mr. R. Otten.*

303 LATIN LYRIC POETRY.\* F, core. A study of Latin lyric poetry from Catullus through the elegiac poets, with some attention to early Christian and medieval poetry. Collateral reading and reports. Prerequisite: Latin 205 or 206. Alternates with Latin 301. Not offered 1977-78.

304 TACITUS AND PLINY.\* S, core. Readings in the historical works of Tacitus and the correspondence of Pliny as sources and commentary on the political issues and movements of the Early Empire. Collateral reading and reports. Prerequisite: Latin 205 or 206. Alternates with Latin 302. Not offered 1977-78.



## JANUARY 1978 INTERIM

I-10. **ATHENS IN THE AGE OF PERICLES.** An investigation of the Athenian achievement in the mid-fifth century B.C., a period which witnessed the emergence of mankind's first radical democracy, greatest tragic and comic poetry, earliest writers of history, and finest expressions of "classic" art and architecture. The career of Pericles will provide a convenient focus for the study of Athens' development as an imperial power in the Aegean and as the intellectual center for a revolution in Greek thinking. Extensive readings in Greek literature of the fifth century (in translation) will be complemented with an archaeologi-

cal review of the physical remains of Periclean Athens. A course paper will be required. Lectures, discussions, slides. *Mr. K. Bratt.*

I-50. **REVIEW GREEK.** This course is intended for students who have completed Greek 101, and will involve no assignments beyond what can be done in the hours when the class actually meets. An afternoon session will be available for students whose regular interim class meets in the morning, and a morning session for those with afternoon interim classes. Non-credit. Prerequisite: successful completion of Greek 101. *Mr. G. Harris.*

# Computer science

Professors *L. Nyhoff, P. Zwier (chairman, Department of Mathematics)*  
Associate Professor *S. Leestma*

THE DEPARTMENT OF MATHEMATICS OFFERS three programming courses for students who plan to use the computer in their disciplines. An introductory course to computer science (Computer Science 243) and Numerical Analysis (Mathematics 341) are offered for students in applied mathematics or those who plan to do graduate work in computer science.

The Honeywell 636 computer, located in the College Center, is available for use by the students via teletypes located in various places on campus. Students not enrolled in a computer science course and who wish to use the computer should contact Mr. S. Leestma.

106 **COMPUTER PROGRAMMING FOR BUSINESS.** S, half course. Introduction to computer programming using the COBOL language. Applications will be taken from business data processing including accounting, inventory control, file maintenance, and report generation. *Staff.*

107 **COMPUTER PROGRAMMING FOR SOCIAL SCIENCE.** F and S, half course. Introduction to computer programming using BASIC and FORTRAN languages. Intended for students majoring in areas other than mathematics and science. No mathematics prerequisite. Topics include computer-orientated solutions of problems in elementary numerical methods, computational algorithms, systems simulation, statistical calculations, and string variable manipulation. *Mr. S. Leestma.*

108 **COMPUTER PROGRAMMING FOR SCIENCES AND MATHEMATICS.** F and S, half

course. Instruction in BASIC and FORTRAN languages, with applications of numerical methods to problems in biology, chemistry, engineering, mathematics, and physics. Intended for students majoring in mathematics and science. Prerequisite: Mathematics 111, which may be taken concurrently. *Mr. S. Leestma.*

243 **INTRODUCTION TO COMPUTER SCIENCE.** S. An introduction to the fundamental ideas used in the operation and the organization of a computing system. Topics to be considered include: compilers; basic structure of operating systems; organization of computer systems, addressing schemes, introduction to symbolic coding and assembly systems; and digital representation of data. Prerequisite: 108 or 107 with the consent of the department. *Mr. L. Nyhoff.*

## GRADUATE COURSES

511 COMPUTING AND COMPUTER SCIENCE FOR TEACHERS. This course includes a discussion of computer organization and operation and the applications of computing to science and mathematics. Some of the topics to be considered are: nondecimal numeration systems, especially binary, octal, and hexadecimal; digital representation of data; Boolean algebra and its application to design of arithmetic units; machine lan-

guage and assembly language programming; computer system software. This will provide a basis for an introduction to computer programming using the BASIC language, including flow-charting and development of algorithms. Programs will be written for solving problems in areas such as number theory, matrix algebra, and numeric calculus. Special attention will be given to applications in secondary education. Prerequisite: some knowledge of calculus and linear algebra. *Staff.*

# Dutch

Professors J. Lamse (chairman, Department of Germanic Languages), W. Lagerwey, Queen Juliana Chair of Language and Culture of the Netherlands (program coordinator)

PREREQUISITE to concentration in Dutch is a minimum average of C (2.0) in 101, 102, 201, and 202 for students without a background in the language or in 203 and 204 for those with. In addition to this basic language foundation a student must complete three courses from the 300 level and two interims approved by the department.

101 ELEMENTARY DUTCH. F. An introductory course in the comprehension and use of spoken and written Dutch. *Mr. W. Lagerwey.*

102 ELEMENTARY DUTCH. S. Continuation of 101. *Mr. W. Lagerwey.*

201 INTERMEDIATE DUTCH. F. Selected readings of modern Dutch prose and poetry. Review of grammar and syntax. *Mr. W. Lagerwey.*

202 INTERMEDIATE DUTCH. S. Continuation of 201. *Mr. W. Lagerwey.*

203 INTERMEDIATE DUTCH. F, core. A course intended to serve students who already have some knowledge of the Dutch language but who are deficient in their ability to speak, comprehend, and write the language. *Staff.*

204 INTERMEDIATE DUTCH. S, core. A continuation of 203. *Staff.*

305 DUTCH CLASSICS.\* Core. Study and discussion of several Dutch literary texts representative of the classical and modern periods of Dutch literature. *Staff.*

306 DUTCH CLASSICS.\* Core. A continuation of 305. *Staff.*

307 READINGS IN DUTCH CHURCH HISTORY.\* F. A study in the Dutch language of source documents pertaining to the history of the Reformed churches in the Netherlands during the period 1450-1700. *Staff.*

308 READINGS IN DUTCH CHURCH HISTORY.\* S. A continuation of 307 for the period 1700-1945. *Staff.*

309 NETHERLANDS CIVILIZATION.\* A study conducted in the Dutch language of several important aspects of Netherlandic civilization: language, literature, history, religion, art, architecture, social structure, and education. *Staff.*

## JANUARY 1978 INTERIM

I-50. NETHERLANDIC INTERIM. This class, which will be held in the Netherlands and Belgium, will provide the student with an opportunity to develop competence in the Dutch language. The course will introduce students to significant aspects of contemporary Dutch and Flemish life and culture, particularly those social and religious values which are the foundation of the social order of the Netherlands, and which are reflected in social institutions, in the arts,

and in the language. The student will have an opportunity to visit places of historical interest, the most important cultural monuments, and the most famous museums of both countries. Students will visit several churches which are historical and cultural monuments, including several

Reformed churches. Upon completion of the three weeks of study the student will have approximately five days for personal travel. Fee for travel, housing, and board. Prerequisites: a year of college Dutch or its equivalent and permission of instructor. *Mr. W. Lagerwey.*

# Earth science, geography, geology

*Professors V. Ehlers (chairman, Department of Physics), C. Menninga*

**STUDENTS PREPARING** for an elementary school certificate in general science studies must take 113; those preparing in social studies may take 101 or 113. A three-course sequence consisting of 113, 201, and 210 may be applied to a group concentration in either general science studies or social studies. For those selecting only one course, 113 is recommended for students expecting to teach in the primary grades, and 101 for those in the intermediate grades.

Students preparing to teach science at the junior high level should take 113 or 251-252. Those wishing to qualify for teaching earth science should take Geology 251-252, Astronomy 110, and an approved elective. Geology 251-252 satisfies the natural science core requirement.

101 **INTRODUCTION TO GEOGRAPHY.** F and S. A study of several aspects of geography—cultural, economic, and physical—in the context of world regional studies. The course seeks to develop a geographic perspective on current ecological and demographic problems using the principles and procedures of the discipline. *Mr. G. Oosterman.*

113 **EARTH SCIENCE.** F and S. A study of the physical characteristics of the earth. It includes consideration of the place of earth in space, the structure of earth's crust and interior, rocks and minerals, and processes giving rise to changes in earth's crustal and surface features. Includes laboratory. *Mr. C. Menninga.*

201 **INTRODUCTION TO CULTURAL GEOGRAPHY.\*** F. A study of man's interaction with his environment, including his climatic and physiographic setting. Consideration of the geographer's approach to gaining, organizing, and displaying information. Prerequisite: 113. *Mr. G. Oosterman.*

210 **GEOGRAPHY OF NORTH AND SOUTH AMERICA.\*** S. A comparative study of the

physical, cultural, and economic aspects of both North and South America. Ecological and demographic factors will be considered in some detail. *Mr. G. Oosterman.*

251 **PHYSICAL GEOLOGY.\*** F. A study of the geological structure of the earth. Topics included are: minerals and rocks; formation and alteration of rocks in the earth's crust; earth's interior and surface structure; processes producing geological changes; earth as a representative planetary body in space. Includes laboratory. Prerequisite: previous or concurrent study in chemistry. *Mr. C. Menninga.*

252 **HISTORICAL GEOLOGY.\*** S. A study of geological structures that have existed in the past and of the changes and development that have taken place in the earth's crust. Evidences for these past structures and events are taken from present rock strata, including the fossil record. Includes laboratory. Prerequisite: 251. *Mr. C. Menninga.*

261 **MINERALOGY.** Major topics considered are: the geometric arrangement of atoms within the mineral crystal; the external

crystal form; the physical and optical properties of minerals; and the use of the petrographic microscope. Laboratory. Prerequisite: Geology 251. *Mr. C. Menninga.*

**390 INDEPENDENT STUDY IN GEOLOGY.** Full course or half course. Prerequisite: permission of department. *Mr. C. Menninga.*

### GRADUATE COURSES

**520 EARTH SCIENCE FOR ELEMENTARY TEACHERS.** This course includes consideration of the main ideas which serve as unifying principles in earth science. Recent discoveries and current research projects are reviewed. The course highlights ideas resulting from studies in earth sciences which have increased our understanding of the relationships between the earth and its human inhabitants. Topics include applications of geology to environmental problems, contributions of space research to understanding the earth, and the relationship between the results of geological study and teachings of the Bible. Special attention is given to ideas which can be incorporated into elementary school materials and activities. Prerequisite: Earth Science 113 or equivalent. *Staff.*

**590 INDEPENDENT STUDY (graduate).** F,I,S. *Staff.*

**595 GRADUATE PROJECT.** F.I.S., full or half course. The prospectus for each Master of Arts in Teaching project must be developed under the supervision of a faculty member and must be approved by the student's graduate adviser. *Staff.*

### JANUARY 1978 INTERIM

**I-10. A TALE OF THREE CITIES: URBAN GEOGRAPHY AS EMBEDDED IN CHICAGO, GRAND RAPIDS, AND DETROIT.** A study of what constitutes a city, its historic role, its changing demographics, transportation, and commercial patterns, as well as the differing life-styles of urban areas. Changing urban patterns and functions will be analyzed in terms of traditional as well as emerging models. The course will include a two-day field trip to either Detroit or Chicago, lectures, readings, films, and the writing of papers on selected aspects of the cultural, physical, or economic geography of one of these three cities. No prerequisites, but Geography 101 is desirable. Satisfies teaching concentrations in science studies. Fee to cover travel costs. *Mr. G. Oosterman.*

**I-50. VOLCANOES: THE GEOLOGY OF HAWAII.** This is a field study course in Hawaii. Includes visits to and observations of the Kilauea volcano, which has been erupting nearly continuously since 1964. Field studies of volcanoes, lava flows, and volcanic landforms on three islands—Hawaii, Maui, and Oahu. Includes observations of effects of weathering and erosion on volcanic deposits by comparative studies of fresh, young craters such as Haleakala, and still older eroded remnants such as Diamond Head. Study of beach formation and structures and of such coral reef structures as water conditions permit. Housing will be in campgrounds for much of the field study. Backpacks required for the two-day hike through Haleakala Crater. No prerequisite, but preference will be given to students who have studied geology or earth science. Approximate cost of \$800 per student. *Mr. C. Menninga.*

## Economics and business

*Professors G. Monsma (chairman), D. Pruis*

*Assistant Professors E. Dykema, D. Ebels, K. Kuipers, J. Tiemstra*

*Instructor J. Wassenaar*

*Lecturers L. De Lange, H. Petersen*

PRINCIPLES OF ECONOMICS (151) must be completed with a minimum grade of C (2.0) for admission to any of the departmental programs of concentration. An appropriate concentration must be selected from the three listed below: the economics concentration provides thorough coverage of economic theory and

analysis, the business economics concentration is the usual business administration program, and a group concentration may be arranged to accommodate particular interests. For teacher education, requirements are given below with each concentration.

Economics concentration requirements are 151, 207, 321, 322, six other courses (five for teacher education) including at least four (three for teacher education) from 331-342 and 395, and the mathematics cognate.

Business Economics concentration requirements are 151, 207, 212, 313, 316, 318, 321, 322, two other courses including at least one from 331-339 and 395 (one other course from 331-339 and 395 for teacher education), and the mathematics cognate. An accounting major may be added to this concentration by electing five courses from 209, 307, 308, 310, 311, and 312.

Economics Group concentration requirements are 151, 207, 321 or 322, three other economic courses (four for teacher education), and three courses in either history, political science, psychology, or sociology. For teacher education, one additional social science course is required. One approved interim course may be included in a program of concentration.

The minimum mathematics cognate requirement is 205 and 206, which should be completed in the sophomore year. In view of the importance of mathematics in the study of economic theory and its applications in economic and business analysis, Mathematics 111, 112, 211, 212, and 343 are recommended. In the cognate requirements, 111 may be substituted for 205, and 343 may be substituted for 206.

An interdisciplinary group concentration involving six courses in economics and business and six courses in mathematics is possible. Interested students should consult the chairman.

For teacher education, an appropriate minor should be approved by the chairman. Economics minor requirements are 151, either 321 or 322, and four additional courses which may include two interims. To accompany either the Economics or Business Economics concentration, a minor in mathematics or a group minor including mathematics may be arranged.

The core requirement in the social sciences is met by 151.

151 **PRINCIPLES OF ECONOMICS.** F and S, core. A study of the principles of resource allocation, income distribution, prices, production, income and employment levels, and economic growth with an emphasis on the market system. The course is planned to help students understand basic domestic and international economic problems and to prepare them for further work in economics, history, and government. Mr. D. Ebels, Mr. G. Monsma, Mr. J. Tiemstra, Mr. J. Wassenaar.

207 **INTRODUCTION TO FINANCIAL ACCOUNTING.** F. An introduction to accounting with emphasis on principles of asset valuation and income determination. Prerequisite: completion or concurrent registration in 151. Mr. K. Kuipers, Mr. L. De Lange, Mr. D. Pruis.

209 **INCOME TAX.** A study of Federal income tax law and of tax cases to provide a basis for an understanding and evaluation of that law and of the rate structure. Includes the implications of income taxation for business decisions. Emphasis on taxation of individuals with limited coverage of partnerships and corporations. Prerequisite: 207. Mr. L. De Lange.

212 **FINANCIAL AND MANAGERIAL ACCOUNTING.** S. Continuation of Economics 207. Interpretation of published financial statements. Introduction to cost accounting and to reporting to management. Prerequisite: 207. Mr. L. De Lange, Mr. D. Pruis.

307 **INTERMEDIATE ACCOUNTING I.\*** F. A study of financial accounting theory and generally accepted accounting principles as applied to the measurement and valuation

of assets and liabilities. Prerequisite: 212. *Mr. K. Kuipers.*

**308 INTERMEDIATE ACCOUNTING II.\* S.** Continuation of 307. A study of financial accounting theory and generally accepted accounting principles as applied to the measurement and valuation of stockholders' equity, issues related to income determination, and preparation and analysis of corporate financial statements. *Mr. K. Kuipers.*

**309 LAW IN BUSINESS. F. and S.** An introduction to American business law: origins, development, legal institutions, and processes. The legal environment of business; Uniform Commercial Code and case law of business transactions; other topics selected from agency, property, partnership, corporation, regulatory, and administrative law. *Mr. T. Waalkes.*

**310 ADVANCED ACCOUNTING.\* S,** odd years. Preparation of consolidated financial statements, accounting for partnerships, and accounting for installment and consignment sales. Introduction to governmental or fund accounting. Prerequisite: completion of or concurrent registration in 308. *Staff.*

**311 AUDITING.** The theory and philosophy of auditing, including an examination of the ethical and other professional standards required of the Certified Public Accountant. Prerequisite: completion of or concurrent registration in 307. *Mr. R. Lubbers.*

**312 COST ACCOUNTING.\* F.** Principles and methods of accounting for manufacturing and operating costs, with emphasis on analysis and reporting to management to facilitate planning, control, and decision-making. Prerequisite: 212. *Mr. D. Pruis.*

**313 BUSINESS ORGANIZATION AND MANAGEMENT.\* F.** A study of the principles and problems of organization and management for optimal administration of the general management function in the firm, with emphasis on effective utilization of the human resources of the firm. Prerequisites: 151 and 207. *Mr. H. Petersen.*

**316 FINANCIAL PRINCIPLES. S.** A study of the principles and problems involved in the optimal administration of the finance function in the firm, including financial aspects of the form of organization, and the allocation of capital to and within the firm. Prerequisites: 151 and 207. *Mr. K. Kuipers.*

**318 MARKETING. S.** A study of the principles and problems involved in the optimal administration of the marketing function in the firm, including production and promotional policy, price determination, and distribution channels. Prerequisite: 151. *Mr. H. Petersen.*

**321 THE NATIONAL INCOME. F.** An intermediate course in macroeconomic theory which studies the theory of aggregate demand, the level of employment, the general level of prices, and economic growth. Prerequisite: 151. *Mr. D. Ebels.*

**322 THE PRICE SYSTEM.\*** An intermediate course in microeconomic theory, emphasizing the role of the price system in organizing economic activity and an evaluation of its efficiency and equity. Prerequisite: 151. *Mr. G. Monsma.*

**331 CREDIT AND MONETARY THEORY.\* F.** A study of the principles of money, banking, and credit with emphasis on monetary theory and policy and their role in domestic and international economics. Prerequisite: 151. *Mr. J. Tienstra.*

**334 INDUSTRIAL MARKETS AND PUBLIC CONTROL.\* S.** A study of the structure, control, and market behavior of American industry, and the public policies for the control of economic power. Prerequisite: 151. *Mr. J. Tienstra.*

**335 LABOR ECONOMICS.\* S.** A study of the labor market and its relation to the economy as a whole, with emphasis on wage theory, the economic impact of trade unions, unemployment, social security, human capital formation, manpower policies, and public policy. Prerequisite: 151. *Mr. G. Monsma.*

**338 INTERNATIONAL ECONOMICS.\* S.** A study of international economic relations, stressing the fundamentals of trade theory, the balance of payments, problems of international disequilibrium, trade barriers, and efforts to promote international economic stability and growth. Prerequisite: 151. *Staff.*

**339 THEORY OF PUBLIC FINANCE.\* S.** A study of the economics of government expenditures, taxation, and debt, with emphasis on allocation of resources, income distribution, and level of employment and production in the economy. Prerequisite: 151. *Mr. D. Ebels.*

**342 HISTORY OF ECONOMIC THOUGHT.\* S.** An examination of the development of eco-

conomic ideas, mainly in the last two hundred years, in the context of the philosophical and historical conditions in which they emerged. Prerequisite: 151 or the permission of the instructor. *Mr. E. Dykema.*

390 READINGS AND RESEARCH.\* F, I, S. Prerequisite: permission of the chairman.

395 ECONOMICS SEMINAR.\* F. A concentrated study of one or more significant problems in economics, designed primarily for majors planning to pursue graduate studies. Emphasis on oral and written reports and on extensive reading in current economic journals. Prerequisites: senior rank and consent of the instructor.

### JANUARY 1978 INTERIM

I-50. THE ECONOMICS AND OPERATION OF FINANCIAL MARKETS. This course will begin with a survey of the economic logic of the various financial markets including the stock exchanges. The description and analysis of financial market operations will be concluded with an evaluation of the social utility of financial markets based on their past performances. Understanding the whole system of financial markets pre-

pares the student for a more serious study of one of its parts, namely investments. The remainder of the course will examine the role of investments in the American economy and analyze and evaluate the latest theoretical and practical developments in the investment field. Questions and problems related to the required reading will be assigned daily. In addition, each student is required to apply the concepts of this course to a particular company in a written report. Prerequisite: 151. *Mr. K. Kuipers.*

I-51. ECONOMIC STATISTICS AND RESEARCH. An investigation of the methodology and reliability of economic statistics and an evaluation of their usefulness for economic analysis and forecasting. Each student will be required to report on selected statistics and either prepare a forecast or test an hypothesis making use of statistical data. Emphasis on independent work and individual consultation with the instructor. An initial class meeting with later meetings for presentation of papers. Students must consult with instructor before Christmas holiday. Satisfies departmental concentrations. Prerequisites: 151 and Mathematics 206 or 343. *Mr. D. Pruis.*

# Education

*Professors G. Besselsen, \*N. Beversluis, P. De Boer (chairman), P. Lucasse, D. Opperwal, J. Wiersma*

*Associate Professor C. Mulder*

*Assistant Professors K. Blok, W. Hendricks, T. Hoeksema, L. Stegink, D. Westra*

*Instructor B. Bosma*

*Director of Teacher Certification and Placement M. Strikwerda*

THE VARIOUS TEACHER EDUCATION PROGRAMS are described in detail on pages 42-47. Prospective secondary teachers should consult with an adviser in the department in which they expect to major. The coordinator of secondary education is Mr. Philip Lucasse and the coordinator of special education is Mr. Thomas Hoeksema. Prospective elementary teachers should consult with Mr. William Hendricks, coordinator of elementary education.

The elementary teacher education program requires nine courses: 301, 303, 304, 305, 322; and, during the internship semester, 345 and 355. The secondary teacher education program requires seven courses: 301, 303, 304, and, during the internship semester, 346 and 356.

220 TEACHING ARITHMETIC IN ELEMENTARY SCHOOLS. Both content and methods in arithmetic as it is taught in the grades will be considered. Prerequisite: 301 or equivalent. Not offered 1977-78.

301 PSYCHOLOGY OF EDUCATION.\* F and S, core. Orientation to the field of psychology. A study of the learner, the learning process, and the kinds of learning. Should be taken during the junior or senior year. *Staff.*

303 INTRODUCTION TO TEACHING.\* F and S. An analysis of the teaching-learning process in the classroom. Includes observation and participation in school activities. Prerequisite: concurrent registration 301. *Staff.*

304 PHILOSOPHY OF EDUCATION.\* F and S, core. An analysis of the assumptions, aims, and practices of two major educational philosophies—experimentalism and essentialism—followed by an analysis of the theory and practice of Christian education. Readings in typical writers from all three perspectives. Study of how educational changes tend to reflect changed social and philosophical climates and of how to evaluate these changes in the light of a biblical perspective of man, society, and human calling in the world. Students will work out a biblical approach to the theory and practice of Christian education. Prerequisite: 301, 303, and Philosophy 153. *Mr. H. Beversluis, Mr. P. De Boer, Mr. D. Oppeval.*

305 ELEMENTARY TEACHING METHODS.\* F and S. A study of the methods of teaching the various subjects taught in the elementary school. Prerequisite: 303. *Staff.*

307 TEACHING READING SKILLS IN CONTENT AREAS.\* F and S, one half course. An analysis of the problems encountered by students reading in typical expository texts; a presentation of the responsibilities and qualifications of teachers in content fields for applying principles of reading in daily assignments; demonstrations of techniques that can be used to meet the wide range of reading levels found in the average classroom. Optional tutoring experiences. A recommended elective for students in secondary teacher education and any student interested in refining college-level reading skills. *Mrs. B. Bosma.*

322 METHODS OF TEACHING READING IN THE ELEMENTARY GRADES.\* F and S. A study of the nature of the reading process and of the basic skills needed in learning to read; preparation of systematic instructional episodes; reading research and field experience. Prerequisites: Education 301 and 303; Speech 214 is recommended. *Mrs. B. Bosma, Mrs. K. Blok.*

345 TEACHING INTERNSHIP FOR ELEMENTARY TEACHERS.\* F and S, one to three course units. Includes classes and seminars in teaching the various subjects offered in the elementary school. Each course unit of

345 and 355 involves at least ninety clock hours of practice teaching. Prerequisites: approval of the department and a cumulative grade point average of C (2.0). *Staff.*

346 TEACHING INTERNSHIP FOR SECONDARY TEACHERS.\* F and S, one to three course units. Includes classes and seminars in teaching the various disciplines. Each course unit of 346 and 356 involves at least ninety clock hours of practice teaching. Prerequisites: approval of the department, approval of the major department, cumulative grade point average of C. (2.0). *Staff.*

355 SEMINAR IN ELEMENTARY TEACHING METHODS.\* F and S. Sections are taught by supervisors in elementary education. Each student will bring to the seminar his experiences and problems of relating education theory to classroom practice. Prerequisite: concurrent registration in 345. *Staff.*

356 SEMINAR IN SECONDARY TEACHING METHODS.\* F and S. Sections are taught in the academic disciplines and will focus on effective methods of teaching. Prerequisite: concurrent registration in 346. *Staff.*

## SPECIAL EDUCATION

216 EDUCATION OF EXCEPTIONAL CHILDREN. F and S. An orientation to all disability areas included within the field of special education. The course acquaints the students with the basic information and the specialized vocabulary needed for dealing with handicapping conditions. Consideration of the major issues in special education as well as with contemporary educational practices. *Mr. T. Hoeksema.*

306 MENTAL RETARDATION.\* F. Study of cognitive, affective, and social characteristics of the mentally impaired, with attention given to several common etiologies. Examination of issues involved in defining mental retardation. Investigation of diagnostic treatment and preventive techniques. Differentiation of mental retardation from related conditions. Discussion of research and emerging concepts within the field. Special Education 216 must be taken previously or concurrently. *Mr. T. Hoeksema.*

352 SOCIETY AND MENTAL RETARDATION.\* S. Implications of mental retardation on adaptive behavior with particular emphasis on adult status. Consideration of crucial social needs of the mentally impaired and critical analysis of past and



present programs and services for the retarded. Study of the impact of retarded persons on family systems. Mr. T. Hoeksema.

## GRADUATE COURSES

510 **HISTORY OF AMERICAN EDUCATION.** A study of the American school systems in their historical setting from colonial times to the present. Special attention is given to the ways in which social and intellectual movements affect educational theory and practice. Satisfies context of education requirement in education and history. *Staff.*

512 **THEORIES OF SCHOOLING.** This course examines psychological, socio-psychological, and educational concepts relevant to an analysis and evaluation of the schooling process. Intellectual skills required for the construction of micro-theory and the interpretation and implementation of research will also be stressed. Satisfies context of education requirement in education and psychology. *Staff.*

513 **PSYCHOLOGY AND THE TEACHING OF READING.** A study of the dynamics of learning to read, including research from child psychology, psycholinguistics, educational psychology, and learning theory. Readings, lectures, and analysis of reading practices and materials from the psychological point of view will be used to improve reading instruction in all grades. Prerequisite: at least one course in reading and one in psychology. Satisfies context of education requirement in education and psychology. *Staff.*

515 **MORAL EDUCATION.** The study of a number of theories of moral education, some of which stress the cognitive approach and others the affective. Kohlberg, Rath, and Simon theories are examples. Individual projects and construction of teaching units. *Staff.*

530 **EDUCATION OF THE GIFTED.** This course focuses on several manifestations of intellectual, social, and artistic giftedness. Several aspects of the educational and guidance process are studied, such as identification of talent and giftedness, curriculum considerations, teaching methods, role models, and guidance procedures. Prerequisite: graduate standing and teaching experience. *Staff.*

531 **TEACHING CHILDREN WITH LEARNING PROBLEMS.** An orientation to the variety of

handicapping conditions which affect school-age children. This course for regular classroom teachers acquaints them with the basic information and specialized vocabulary needed for dealing with handicapping conditions in the typical classroom. It will include consideration of major issues and contemporary practices in the education of exceptional learners. *Staff.*

532 **INSTRUCTIONAL GAMING.** Introduction to the theory and practice of simulation and non-simulation gaming for instructional purposes. Both commercially available games and games developed in class will be used and evaluated in terms of their instructional and motivational value at various grade levels and in various subject fields. *Staff.*

533 **MOTIVATING THE UNDER-ACHIEVING STUDENT.** A diagnosis of the learning climate of the classroom as it is affected by the socio-cultural environment of the community and an assessment of the individual factors that affect each student's readiness to learn. Compensatory and motivational teaching materials and styles will be evaluated for their relevance to the under-achieving student. Students will relate this content to a specific classroom situation and to the broader problems of motivation and under-achievement. *Staff.*

534 **SCHOOL ADMINISTRATION.** A study of the structure, organization, administration, and management of the school, primarily the elementary school, including the role of the teacher-principal. Includes the development of professional leadership and supervisory practices. *Staff.*

535 **THE SCHOOL AS A SOCIAL ORGANIZATION.** A study of the religious premises and theoretical bases of organizations, with special emphasis on school systems. Particular attention is paid to the teacher functioning in a school organization. A major goal of the course is an attempt to formulate a Reformed Christian theory of organizations. Mr. L. Stegink.

536 **THE YOUNG CHILD IN A PRESCHOOL SETTING.** A review and critique of the basic theories of child development. Observation and intensive analysis of the behavior of a particular child in a preschool setting as related to the major theories. Prerequisite: Psychology 204. Miss D. Westra.

537 **CURRICULUM FOR EARLY CHILDHOOD EDUCATION.** An evaluation of the major ap-

proaches to building a curriculum for early childhood education (up to age eight), the underlying assumptions of each approach, and the effects of each approach on the children. Prerequisites: one course in education and one in psychology. *Miss D. Westra.*

540 **READING PROBLEMS IN THE ELEMENTARY CLASSROOM.** This course is designed to enable experienced elementary teachers to work with problem readers in their own classrooms. The course includes: a study of the various kinds of reading problems encountered at the elementary level and their causes; the use of the most common formal and informal diagnostic tests with an emphasis on the strengths and weaknesses of each; a critical introduction to the reading materials available for the classroom; and a field experience involving both the diagnosis of reading problems and the use of appropriate corrective measures. Prerequisite: 322 or the permission of the instructor. *Staff.*

541 **READING PROBLEMS IN THE SECONDARY CLASSROOM.** This course is designed to help secondary-level teachers recognize the reading problems they are most likely to find in their classrooms and to understand what is needed to correct the problems—including the development of separate reading programs. The course includes: a study of the nature of the reading process; a survey of basic reading and study skills; an examination of the reading problems students face when they read typical high school textbooks; a consideration of alternative ways of working with problem readers; a survey of the reading and study skills materials that are appropriate at this level; the use of the most common formal and informal diagnostic tests with an emphasis on the strengths and weaknesses of each; and the development of a model program for use in a particular high school class. Prerequisite: 307, 322, a year's teaching experience on the secondary level, or the permission of the instructor. *Staff.*

542 **DIAGNOSIS AND REMEDIATION OF READING DISABILITIES.** An advanced course for the training of reading specialists who may serve as consultants to classroom teachers and may work individually with severely disabled readers. The course includes a discussion of reading theory, a study of the specialized and general testing tools emphasizing validity and interpretation, the development of prescriptive pro-

grams for remediating the problems identified, and the consideration of how to work with regular classroom teachers to implement such programs in a normal classroom. A field experience with a severely disabled reader will involve the development and administration of an appropriate battery of tests, the designing of a remedial program, and creation of an evaluation procedure. Prerequisite: 540, 541, or permission of the instructor. *Staff.*

580 **CURRICULUM THEORY AND DEVELOPMENT.** A study of conflicting and complementary curriculum theories for elementary and secondary schools and how these theories ought to be conceived and practiced. A project in designing curriculum is required at the appropriate level and in the student's area of concentration. *Staff.*

581 **EDUCATIONAL PHILOSOPHY AND CURRICULUM DECISIONS.** The course examines the philosophical views of selected thinkers on curriculum. The course focuses on the differences among the best of secular and of Christian curriculum theories, with special emphasis on the way curriculum theory is related to the religious vision and the major learning goals of education. Satisfies context of education requirement in education and philosophy. Prerequisite: at least one course in philosophy or philosophy of education. *Staff.*

590 **INDEPENDENT STUDY (graduate).** F,I,S. *Staff.*

595 **GRADUATE PROJECT.** F,I,S., full or half course. The prospectus for each Master of Arts in Teaching project must be developed under the supervision of a faculty member and must be approved by the student's graduate adviser. *Staff.*

## JANUARY 1978 INTERIM

I-10. **MAINSTREAMING HANDICAPPED CHILDREN.** This course, designed for prospective elementary teachers, will explore the integration of handicapped students in regular school programs through a study of existing models, through observation in schools, and through interaction with local school personnel. Implications of the mainstreaming model for Christian schools will be considered. Students will develop strategies for dealing with diverse learner needs within the regular classroom. *Mr. T. Hoeksema.*

I-11. **GROWING UP LIKE TOPY?** A study of the young child—the influences on growth and development, the problems surrounding child care, and present-day answers to yesterday's questions. Each student will select an area for special study, such as TV for children, day care centers, preschools, foster children, child abuse, working mothers, the single parent, play, sexism in children's books, and others. There will be readings, discussions, preschool observations, films, and visits with personnel from agencies serving children. *Miss D. Westra.*

I-12. **APPALACHIAN INTERIM.** This course provides a cross-cultural, teacher-aiding experience in the Appalachian region of Western North Carolina, using Mars Hill College as a base. Students will serve as teacher aides three days a week in a mountain community school and will spend two days in seminars discussing appropriate learning theory, developing instructional materials, and examining the culture. Additional work will be done with the Mars Hill College Appalachian Studies Group. Background reading required before the interim. Fee for transportation, materials, etc. \$105; for room and board, \$95. January 3 to 21. Prerequisite: permission of the instructor. *Mr. G. Besselsen.*

I-13. **USING PUPPETRY IN EDUCATION.** This course will focus on the construction and use of puppets as an instructional device for use in both day school and church education at the elementary and secondary levels. It will give some attention to the history of puppetry in theater arts. Students will devise their own puppets, with accompanying stories and characters for them, for use in remedial reading, language arts, social studies, religious education, and theater arts. No prerequisite. *Mrs. J. Stoppels.*

I-14 **EXCEPTIONAL CHILDREN COME IN SMALL PACKAGES.** This course examines current practices in the education of preschool handicapped children, identifying their needs, and developing strategies to meet those needs. Topics included are early intervention with infants, assessment of developmental needs, working with families, preschool programming and funding, and the legal rights of parents. Students will observe infant and preschool

programs and will practice formal and informal testing of such children, write prescriptive teaching plans, and do research on a given topic. *Mrs. C. Rottman.*

I-52. **WORKSHOP AND PRACTICUM: INSTRUCTIONAL DEVICES.** This course will examine and analyze a wide variety of instructional devices presently being used in elementary classrooms; it will help students individually and in groups to construct instructional devices; it will evaluate the success of the devices in relation to appropriate criteria, and it will test the usefulness of the devices in an elementary classroom. The course will culminate in the preparation by each student of a booklet which will contain a sketch or description of each device, an objective which describes the purpose of each device, and a recommended procedure for the construction and use of each device. Prerequisite: 301-303. *Mrs. K. Blok.*

I-53. **USE OF CHILDREN'S LITERATURE IN THE ELEMENTARY CLASSROOM.** Lectures, demonstrations, and workshop activities to develop the interest in and appreciation for children's books as an important element in a stimulating teaching experience. The use of children's books will be evaluated particularly as it relates to the reading program and to the learning of other classroom subjects. Activities will be planned for integrating the reading of such books into the child's total experience. Extensive reading of children's books is required. Students should have such knowledge of children's literature as is provided by English 225. *Mrs. B. Bosma.*

I-54. **MEDIA IN THE CLASSROOM.** This course will focus on the nature of print and non-print educational media, the uses of media to individualize instruction, sources of media for the classroom, and tools for evaluation of media. Activities will include readings, lectures, field trips to local media sources and centers, observations of various classroom uses of media, and implementation of media in an actual unit of instruction. Emphasis will be on grades 4 to 12. Prerequisites: 301-303. *Mrs. K. Weaver.*

Idis I-13. **INTRODUCTION TO PHOTOGRAPHY.** *Mr. P. Lucasse.*

Idis I-50. **TRANSFORMING AMERICAN SOCIETY.** *Mr. P. De Boer.*

# Engineering

Professor J. Bosscher (chairman), L. Van Poolen

CALVIN COLLEGE offers a basic engineering program which, after the candidate's subsequent study of approximately three semesters in an accredited school of engineering, can result in the awarding of a bachelor's degree from each school attended. For details see pages 50-51.

101 GRAPHICAL COMMUNICATION AND CONCEPT DESIGN. F. Graphical techniques for spatial analysis; a study of basic topics in engineering and architectural drawing to provide facility in the transmission of ideas through accepted graphical means. Areas covered include orthographic projection, free-hand sketching, pictorial representation, auxiliary views, sections and conventions, and basic dimensioning; an introduction to the design process by means of lectures and assigned architectural or engineering projects. Readings are also assigned in design-related areas of creative thinking, aesthetics, models, economics, and human satisfaction. *Mr. L. Van Poolen.*

102 ENGINEERING COMMUNICATION, ANALYSIS AND DESIGN. S, one-half course. A continuation of 101 in which the graphical presentation culminates in the working drawing. The concept of a tolerance is added to that of dimensioning. Analysis tools such as graphical mathematics and data presentation including graphical algebra and calculus, the determination of empirical equations from experimental data, functional scales, and basic nomography are presented. An introduction to computer graphics is given. An engineering project is assigned to further enhance creative skills in concept design. Prerequisites: Mathematics 111, Engineering 101, and enrollment in Computer Science 108. *Mr. L. Van Poolen.*

202 STATICS AND DYNAMICS. S. Study of fundamental principles of mechanics and their application to the problems of engineering. Vector algebra, forces, moments, couples, friction, virtual work, kinematics of a particle, kinematics of a rigid body, dynamics of particles and rigid bodies, impulse, momentum, work and energy are presented in two and three dimensions. Must be preceded by Physics 126 and 182 and accompanied by Mathematics 211. *Mr. J. Bosscher.*

205 PRINCIPLES OF MATERIALS SCIENCE. F. An introductory course in the science of engineering materials. Engineering properties are correlated with internal structures: atomic, crystal, micro, macro, and service environments: mechanical, electrical, thermal, chemical, magnetic, and radiation. Prerequisite: Chemistry 103. *Mr. J. Bosscher.*

305 MECHANICS OF MATERIALS. F. Application of principles of mechanics to solution of problems in stress and strain of engineering materials, including resistance to force, bending, torque, shear, eccentric load, deflection of beams, buckling of columns, compounding of simple stresses, introduction to theories of failure and energy methods. Laboratory experiments are used to emphasize principles. Prerequisite: 202. *Mr. J. Bosscher.*

308 INTRODUCTION TO CIRCUIT ANALYSIS AND ELECTRONICS. S. An introduction to the theory of electronic circuits and devices and their applications. The following are included: basic A.C. circuit concepts; diode and transistor characteristics and applications; amplifiers; feedback circuits; oscillators; operational amplifiers and their applications; logic elements and digital circuits. This course assumes a prior knowledge of basic D.C. circuit concepts, including node and loop methods and transient circuits, but begins with a brief review of these topics. Individualized laboratory stations are utilized to emphasize basic concepts. Prerequisites: Mathematics 211 and Physics 225. *Staff.*

309 FLUID MECHANICS. F. Basic properties of real and ideal fluids. Fluid statics. Lagrangian and Eulerian descriptions of flow. Continuity, energy, and linear momentum equations in differential and integral forms for compressible and incompressible flows. One-dimensional flow analysis. Introduction to boundary layer theory and one-dimensional compressible flows. Dimen-

sional analysis and laboratory experiments utilized to determine significant flow parameters. Prerequisites: Mathematics 212 and Physics 225. Mr. R. Hoeksema.

310 THERMODYNAMICS. S. An introduction to concepts of work and heat, properties of a pure substance, first law, second law, entropy, thermodynamic relations, mixtures, and an introduction to statistical thermodynamics. Prerequisites: Mathematics 212 and Physics 225. Mr. L. Van Poolen.

312 PRINCIPLES OF ANALOG COMPUTATION. F. half course. An introduction to the theory and techniques of analog computation, including computer solutions for representative forms of linear and non-linear differential equations. Includes introduction to iterative analog computation using the AD-256 computer. Prerequisite: Mathematics 212 or permission of the instructor. Mr. R. Hoeksema.

314 VIBRATION ANALYSIS. S. Analysis of mechanical vibration in both transient and steady state regimes, employing analytical and computer techniques for solution. Linear and non-linear problems are investigated with original inquiry suggested and encouraged. Prerequisites: Mathematics 212 and Physics 225. Staff.

316 HEAT TRANSFER. S. An introduction to the analysis of steady and unsteady conduction, of free and forced convection, and of radiation modes of heat transfer. Laboratory experiments are used to emphasize principles. Prerequisites: Mathematics 212 and Physics 225. Mr. L. Van Poolen.

318 CONTROL SYSTEMS ANALYSIS. S. An introduction to linear feedback control theory, including transient and frequency response; stability; systems performance; control modes and compensation methods. Hydraulic, electrical, pneumatic, and inertial components and systems are investigated and employed. Prerequisites: Mathematics 212 and Physics 225. Staff.

390 INDEPENDENT STUDY. F, I, S. Independent readings and research. Prerequisite: permission of the chairman. Staff.

## JANUARY 1978 INTERIM

I-50. CONTROL SYSTEMS ANALYSIS. An introduction to linear feedback control theory, including transient and frequency response; stability; systems performance; control modes; and compensation methods; hydraulic, electrical, pneumatic, and inertial components and systems are investigated and employed. Satisfies major. Prerequisites: Mathematics 212 and Physics 225. Mr. J. Kuiper.

I-51. VIBRATION ANALYSIS. Analysis of mechanical vibration in both transient and steady state regimes, employing analytical and computer techniques for solution. Linear and non-linear problems are investigated with original inquiry suggested and encouraged. Satisfies major. Prerequisites: Mathematics 212 and Physics 225. Mr. J. Bosscher.

Idis I-51. FACING UP TO TECHNOLOGY: A COURSE FOR NON-TECHNOLOGISTS. Mr. L. Van Poolen.

# English

Professors E. Ericson, \*\*G. Harper, I. Kroese, K. Kuiper, P. Oppewall, H. Ten Harnsel (chairman), R. Tiemersma, S. Van Der Weele, C. Walhout, S. Wiersma  
Associate Professors H. Baron, C. Otten, J. H. Timmerman, M. A. Walters  
Assistant Professor R. Meyer  
Instructor L. Spoelman  
Assistant Instructor M. Hietbrink

THE ENGLISH DEPARTMENT offers a major in English, a minor in English, and a major in English Education. To become eligible for any of these programs, a student must complete 100 and 200 with a minimum average of C (2.0).

The recommended program for a major in English is ten regular courses and one interim course; the program includes 100, 200, 303, 310, 311, 329 or 330, four other literature courses, and one interim.

The recommended program for secondary education is 100, 200, 202, 203, 310, 311, 313 or 315, 329, and 336. Students for this program must pass a screening test, which is given in November, April, and July. Senior majors in teacher education programs must take 336 in the fall and Education 346 and 356 in the spring. The program for elementary education requires 212 and 225 instead of 310 and 311. The adviser with particular concern for these programs is Mr. K. Kuiper.

The recommended minor is 100, 200, 202, 203, 212, and 313 or 315. An interim course may substitute for any course in this program except 100.

The core requirement in written rhetoric is met by 100 or by examination. The first literature core requirement is typically taken from 200, 202, 203, 212, and 303, but any course in literature (as distinguished from language, composition, and film) except 225 may fulfill this requirement. Any course in the English Department, except for composition courses, will satisfy additional core requirements in the fine arts.

100 WRITTEN RHETORIC. F and S. A study of written English rhetoric, including a review of grammar, extensive practice in writing expository essays, and the preparation of a research paper. *Staff*.

200 INTRODUCTION TO LITERATURE. F and S. A study of the forms and genres of literature, with critical exercises, selected readings, and a course paper. *Staff*.

202 A SURVEY OF ENGLISH LITERATURE. F. A comprehensive study of English literature from Chaucer through Johnson. The course is conducted intensively in the major authors rather than inclusively. *Staff*.

203 A SURVEY OF ENGLISH LITERATURE. S. A continuation of 202. The course proceeds from Wordsworth through Eliot. *Staff*.

212 AMERICAN LITERARY CLASSICS. F and S. A critical study of American masterpieces as the literary embodiment of the evolving minds, ways, and values of the American cultural process. Emphasis upon eight major authors. Not open to students who have had 310 or 311 or to English majors. *Staff*.

214 BLACK AMERICAN WRITERS. S. An intensive study of the selected works of major Black American writers against the background of the development of Black American writing. *Mr. P. Oppewall*.

225 CHILDREN'S LITERATURE. F and S. Through intensive reading this course develops the history of children's literature, some standards for evaluating children's books, and knowledge of some of the best literature for children. Prerequisite: English 100 or its equivalent. *Mrs. C. Otten, Mrs. M. Zylstra*.

235 INTERMEDIATE COMPOSITION. S. A second course in rhetoric and composition designed for students who wish additional instruction in writing. Includes readings, a review of basic rhetorical principles, and extensive practice in writing a variety of short papers. Prerequisite: 100 or its equivalent. *Staff*.

251 INTRODUCTION TO CINEMA. S. A study of the development and structure of cinema as an art form and as a cultural medium. The course aims to develop the student's understanding of cinematic language and to guide him in assessing films and film values. Course work includes readings in film history and criticism as well as the viewing and analysis of movies. *Mr. I. Kroese, Mr. L. Sweetman*.

302 MEDIEVAL ENGLISH LITERATURE.\* F. A study of Chaucer's *Canterbury Tales* and *Troilus and Criseyde* as reflecting Chaucer's literary genius and the major cultural phenomena of his time. Supplementary study in translation of *Beowulf*, *Gawain and the Green Knight*, and portions of *Piers Plowman*. *Mr. R. Meyer*.

303 SHAKESPEARE.\* F and S. A study of selected works of William Shakespeare. *Staff*.

304 ENGLISH LITERATURE OF THE SIXTEENTH CENTURY.\* S. A study of the lyricists and sonneteers, the prose writers, and the dramatists (exclusive of Shakespeare). An intensive study of the poetry of Spenser and the drama of Marlowe. *Mr. S. Wiersma*.

305 ENGLISH LITERATURE OF THE SEVENTEENTH CENTURY.\* F. A study of important poetry and prose in England from Donne to

- Dryden, with particular emphasis upon the poetry of Donne, Herbert, Vaughan, Traherne, and Herrick, and upon the prose of Donne, Browne, and Taylor. *Mrs. C. Otten.*
- 306 MILTON.\* S. An intensive study of the poetry and prose of John Milton. *Mr. E. Ericson.*
- 307 ENGLISH LITERATURE OF THE EIGHTEENTH CENTURY.\* S. A study of English poetry and prose in the eighteenth century, with emphasis on the neo-classicists, Pope, Addison, Swift, and Johnson, and a study of the beginnings of the romantic outlook in Gray, Thomson, and Cowper. *Mr. S. Vander Weele.*
- 308 ENGLISH LITERATURE OF THE NINETEENTH CENTURY.\* F. A study of the Romantic writers of England in both poetry and prose, with intensive critical work on Blake, Wordsworth, Coleridge, Byron, Shelley, and Keats. *Mr. I. Kroese.*
- 309 ENGLISH LITERATURE OF THE NINETEENTH CENTURY.\* S. A continuation of 308. A study of the Victorian writers of England in both poetry and prose, with intensive critical work on Tennyson, Browning, and Arnold among the poets, and Arnold, Newman, Huxley, and Ruskin among the prose writers. *Mr. R. Tiemersma.*
- 310 AMERICAN LITERATURE.\* F. A study of important writings in the colonial and revolutionary periods, with emphasis upon the culture and writings of the New England group. *Staff.*
- 311 AMERICAN LITERATURE.\* S. A continuation of 310. Intensive study of Whitman and Twain. A survey of the realistic movement, the new poetry, and important twentieth-century fiction and criticism. *Staff.*
- 313 MODERN ENGLISH AND AMERICAN POETRY.\* S. A study of the lyric and dramatic poetry of England and America from 1890 to the present. *Staff.*
- 314 THE ENGLISH NOVEL.\* S. A survey of the English novel from its beginnings through Conrad, with emphasis upon the art and thought of the major novelists. Special attention is paid to the development of realistic, romantic, epic, and symbolic strains in modern fiction. The course includes the reading of at least twelve novels. Prerequisite: English 200. *Miss H. Ten Harnsel.*
- 315 CONTEMPORARY BRITISH AND AMERICAN FICTION.\* F and S. Intensive reading of selected works of major twentieth century British and American novelists. *Mr. P. Oppewall.*
- 318 STUDIES IN AMERICAN LITERATURE.\* S. Intensive studies of three or four American writers selected from different periods of American literary history, with the selection changed from year to year. Typical groupings are: Hawthorne, James, Faulkner; Whitman, Dickinson, Frost, Stevens; Thoreau, Twain, Ellison, Baldwin; and Melville, Hemingway, O'Neill. Prerequisites: 310, 311. *Mr. J. Timmerman, Sr.*
- 320 WORLD LITERATURE.\* S. A course of selected readings and lectures in the literature of non-English speaking people, ancient and modern, with special emphasis on the period from Dante to Solzhenitsyn, and with particular attention to significant forms and themes. *Mr. S. Vander Weele.*
- 321 MODERN DRAMA.\* F. Plays by the following authors are read and discussed in relation to the major movements in modern drama: Ibsen, Chekhov, Shaw, Brecht, Pirandello, Beckett, O'Neill, Miller, Williams, Albee, Pinter. *Miss M. A. Walters.*
- 329 LINGUISTICS.\* F. A course that requires previous mastery of a traditional grammar as background to assigned readings in scholarly non-structural, structural, and transformational grammars. The course gives attention to assumptions informing the nomenclature, methodology, and scope of the assigned grammars. The course incidentally considers the relationship of these grammars to the study of composition and literature. *Mr. S. Wiersma.*
- 330 HISTORY OF THE ENGLISH LANGUAGE.\* S. An analysis of the changes that have occurred throughout the history of the English language, based on an intensive study of selected portions of the *Oxford English Dictionary* and passages from Chaucer, Shakespeare, and various English translations of the Bible. *Mr. S. Wiersma.*
- 331 LITERARY CRITICISM.\* S. A course in critical theory, historically and normatively pursued. Analysis of the principal contributions to Western literary criticism, as well as some practice of criticism on very recent literature. *Staff.*
- 332 ADVANCED COMPOSITION AND RHETORIC.\* S. A practical course in advanced expository writing. Readings in the

formal essay, with much systematic writing in such types of composition as description, the formal and informal essay, the informative and feature article, the editorial, and the book review. Open to students who have a B (3.0) in 100 and permission of the instructor. *Mr. S. Vander Weele.*

333 THE WRITING OF PLAYS, POEMS, AND STORIES.\* S. A course in the principles of composition of plays, poems, and stories. Works by contemporary authors are analyzed in the light of these principles. Students will practice writing in all three forms. Admittance to the class may be granted by the instructor on the recommendation of the student's instructor in 100. Prerequisite: a grade of B (3.0) in 100. *Mr. J. H. Timmerman.*

336 TEACHING OF WRITING.\* F. An introduction to various approaches to composition in the secondary school English curricula with an emphasis on pedagogy in the teaching of writing. Extensive reading and frequent exercises in composition, revision, and evaluation. Senior majors in teacher education programs must take this course in the fall and Education 346 and 356 in the spring semester. *Mr. H. Baron.*

390 READING AND RESEARCH. F, I, S. Prerequisite: permission of the chairman.

395 SEMINAR.\* F. *Staff.*

### GRADUATE COURSES

510 LITERATURE FOR THE ADOLESCENT. A survey and evaluation of adolescent literature, an examination of reference tools and approaches to the teaching of adolescent literature, a consideration of criteria for selection, and a critical study of several representative works. *Staff.*

511 STUDIES IN ANALYTICAL APPROACHES TO THE TEACHING OF LITERATURE: An examination of the theoretical considerations underlying various approaches to teaching literature at the secondary level, and application of critical approaches to selected literary works. The specific subject matter will be defined each time the course is offered. *Staff.*

580 PRINCIPLES, PRACTICES, AND PROGRAMS IN SECONDARY ENGLISH EDUCATION. An advanced methods course for those teachers involved at the junior high school or high school level. It involves general principles, materials, and pedagogical prac-

tices with emphasis on current trends and developing problems. Each student will make a special study of a given area of language, composition, or literature. *Staff.*

590 INDEPENDENT STUDY (graduate). F,I,S. *Staff.*

595 GRADUATE PROJECT. F.I.S., full or half course. The prospectus for each Master of Arts in Teaching project must be developed under the supervision of a faculty member and must be approved by the student's graduate adviser. *Staff.*

### JANUARY 1978 INTERIM

I-10. ERNEST HEMINGWAY: THE MAN AND HIS WORK. This course is designed to meet the interests of general students as well as those of English majors. Students will read five of Hemingway's novels, one of his plays, many of his short stories, and one biography. The course will focus on three major themes which take expression in his works: war, love, and the good life. There will be daily discussions, some lectures, and several important films. The reading list for the course is available in the English Department Office. *Miss M. Hietbrink, Mr. K. Kuiper.*

I-11. MELODRAMA AND MINSTREL SHOWS. A course in the reading of popular American plays of the nineteenth century. Because they exhibit notions about society, politics, and morality commonly held by Americans in the nineteenth century, these plays constitute a social history of the United States at that time. The course will include a thorough study of the themes and stereotypes found in early American drama with special emphasis on those themes and stereotypes which are distinctly American. Students will read several short plays from a collection including melodramas, social dramas, minstrel shows, patriotic plays, and regional plays. *Mrs. L. Spoelman.*

I-12. LITERATURE OF VISION AND FANTASY. The title of this course has also become a title for a literary method. Essentially, authors of such literature possess a vision of spiritual or mythic truth, and select as their means of revealing such a vision the literary method of fantasy. Such literature is often probing, often revealing, often fun. Works to be studied include: R. Tolkien, *The Hobbit*; Charles Williams, *All Hallow's Eve*; C. S. Lewis, *The Lion, the Witch and the Wardrobe*, and *The Last Battle*; Arthur C. Clarke, *Child-*



hood's End; and possibly one from Isaac Asimov, *The God's Themselves*; Robert Heinlein, *Stranger in a Strange Land*; and Tennyson, *Idylls of the King*. Mr. J. H. Timmerman.

I-13. **ALEKSANDR SOLZHENITSYN.** Extensive reading of Solzhenitsyn's texts, with an option of some other reading in Russian literature and culture. The course will focus on locating Solzhenitsyn's significance in the contexts of Russian and world literature, current world politics, Christian thought, and contemporary culture. Mr. E. Ericson.

I-50. **CREATIVE WRITING WORKSHOP: WRITING CHILDREN'S FICTION AND POETRY.** The aim of this course is to help the student prepare a manuscript for publication. Two things will be stressed: writing and market research. *On Writing:* the students may choose to write the short story, the short novel, poetry; to translate or to retell fiction or poetry. *On Market Research:* the student will concentrate on the area of his writing project and will become thoroughly familiar with recent publications in that field. Class session will focus on sharpening writing skills and on sharing market information. Prerequisite: 100 or creative writing experience. Mrs. C. Otten.

I-51. **INTRODUCTION TO CANADIAN LITERATURE.** A study of some of the major Canadian writers since the seventeenth century, with an emphasis on the literary conventions and thematic concerns of twentieth-century writers. Some of the authors included will be Margaret Atwood, Margaret Avison, Morley Callahan, Emily Carr, Leonard Cohen, Hugh Garrer, Alice Munro, and Mordecai Richler. The course will include informal lectures, class discussions, reports on Canadian novels, and guest lecturers. Prerequisite: one college-level literature course. Mr. H. Baron.

I-52. **GOD'S GRANDEUR: THE POETRY OF GERARD MANLEY HOPKINS.** A careful study of the poetry of Gerard Manley Hopkins, poet-priest, within a context of his letters, his love of nature, his personal spiritual struggles, his theological and philosophical views, and his innovative poetic style (sometimes called "more modern than the moderns"). Daily lectures or discussions, oral and written analyses of poems, guest lectures, and tutorials will allow a variety of approaches to the "Pied Beauty" of Hopkins' great Christian poetry. The course will climax in an informal presentation—"An

Afternoon with Gerard Manley Hopkins"—prepared by students. This course should appeal to all who are interested in learning how a first-rate poet affirmed his faith in an age of skepticism. Prerequisite: 200 or permission of instructor. Miss H. Ten Harmset.

I-53. **STUDIES IN SHAKESPEARE. (TAUGHT WITH FILMS.)** An examination of eight of Shakespeare's plays—comedies, histories, and tragedies—through careful reading and interpretation of the texts and a viewing of film versions of plays. Possible attendance of live performances; hearing and preparing oral interpretations of various kinds. Not open to English majors except those in teacher-education programs. Prerequisite: 100. Mr. R. Meyer, Miss M. Walters.

I-54. **THE LITERATURE OF THE MODERN SOUTH.** The striking emergence of important writers in the South in the twentieth century has led many critics to use the term "Southern Renaissance" and to consider the origins, the unity, and the spiritual contours of this body and regional literature. The writers will be selected from Wolfe, Faulkner, Ransom, Tate, Warren, Williams, McCullers, Welty, O'Connor, Jarrell, Styron, Agee, Dickey. The specific selections will be available before Christmas vacation. Students are expected to read Wolfe's *Look Homeward Angel* before the interim term begins. Prerequisite: 200. Mr. C. Walhout.

I-55. **THE FILMS OF ALFRED HITCHCOCK.** "Kim, this is only a movie. Let's not go too deeply into these things. It's only a movie." Hitchcock was responding to Kim Novak's uncertainty about the character she was playing in *Vertigo*. Hitchcock's films are "only movies," but to study these movies is to discover that Hitchcock himself goes into these things deeply enough. To study his work as a whole is virtually to study the development of the artistry of cinema, for Hitchcock spans movie history itself—from the silent era to the present time. To study his work is to study the film as a popular medium with serious implications. It is to study the relationship between simple fun and serious art, between "mere entertainment" and the subtle revelation of a thorough-going vision of life. Films to be viewed and discussed include *Easy Virtue*, *Blackmail*, *The Man Who Knew Too Much*, *Sabotage*, *The 39 Steps*, *The Lady Vanishes*, *Foreign Correspondent*, *Strangers on a Train*, *Dial M for Murder*, *Vertigo*, *North by North-*

*west, Psycho, and Frenzy*. Prerequisite: at least sophomore status or permission of an instructor. *Mr. I. Kroese, Mr. L. Sweetman.*

I-56. **BASIC JOURNALISM.** This course aims to give a taste of journalism by means of textbook readings, class exercises, reporting assignments, guest speakers, and tours of a newspaper and television station. It includes the fundamentals of news writing, with emphasis on attractive news leads and the standard, inverted pyramid organization of news stories used by newspapers. An "on assignment" sequence of several days includes coverage of events such as a campus talk, a meeting of a local unit of government, a sports event, a music event, a drama event, and the like. A human interest feature is also required. Adaptation of writing style to the time demands of broadcasting is taught via class exercises and simulated television newscasting. Local journalists will speak to the class on journalistic technique as well as on contemporary ethical issues in journalism. Tours of the Grand Rapids *Press* and a local TV studio are arranged. Correct grammar and spelling are stressed. A student who is weak in these areas should review a grammar handbook and should be willing to rewrite when requested in order to do satisfactory work. Typing ability useful but

not required. Previous experience on a student newspaper helpful but not required. Prerequisite: 100. *Mr. P. Oppewall, Mr. R. Ver Hulst.*

I-57. **THREE MODERN ANGLO-WELSH POETS: DAVID JONES, R. S. THOMAS, AND VERNON WATKINS.** A review of the diverse poetic achievements of three Anglo-Welsh poets, David Jones, R. S. Thomas, and Vernon Watkins, all of whom write in English but display certain facets and themes of Welsh culture. Each represents a distinct religious tradition: Jones is a convert to Roman Catholicism, Thomas is a priest of the (Anglican) Church of Wales, and Watkins is a secular mystic. Although only Thomas and Watkins are Welsh speakers, all write in distinctive idioms traceable to their being Welsh. Special attention will be paid to Jones's poetry of World War I, and to his likeness in style to the prose works of James Joyce, the Irish writer. The course will begin with a brief review of the history of Wales and Welsh literature, of British poetry of the Twentieth Century, and of what has come to be called Modernism. Prerequisite: a course in English other than 100, 225, or 330. *Mr. G. Harper.*

Idis I-52. **THE BIBLE IN LITERARY PERSPECTIVE.** *Mr. S. Wiersma.*

## French

*Professors A. Otten (program coordinator), R. Wevers (acting chairman, Department of Romance Languages)*

*Assistant Professor L. Read*

*Instructors C.-M. Baldwin, †E. Monsma*

STUDENTS may declare for a program of concentration in French after having completed two units of college French with a minimum average grade of C (2.0). The program of concentration includes 201, 202, 217, 218, 311, 312, 313, 314, 321, and 322. The major program for prospective teachers requires 201, 202, 217, 218, 321, 322, and three from the following: 311, 312, 313, 314, 372, and French Interim Abroad. The minor program for prospective secondary teachers requires 201, 202, 217, 218, 321, 322. Programs for students beginning French in college, including prospective secondary teachers, should be worked out with the program coordinator. Cognates in a second foreign language, art (231, 232), and English or American literature (202, 203, 212, 303) are recommended. A year-abroad program is available in Paris. All courses above 102 meet core requirements; 217, 218, 311, 312, 313, 371, and 372 meet core requirements in the fine arts.

## LANGUAGE

101 **ELEMENTARY FRENCH. F.** An introductory course in the comprehension and use of spoken and written French. In order to take into account differences in student needs, abilities, and interests, instruction is individualized. With close guidance and help from the instructor and from assistants, the student determines the pace and method which will best help him meet the goals of the course. *Mr. A. Otten.*

102 **ELEMENTARY FRENCH. S.** Continuation of 101. Prerequisite to a program of concentration are 101 and 102. *Mr. A. Otten.*

121-122-123 **INTRODUCTORY AND INTERMEDIATE FRENCH. F-I-S.** A closely integrated sequence involving two semesters and the interim for students who have completed two years of high school French with less than a C average or for students who studied French in the tenth and eleventh grades. Students in the teacher education programs who have had no foreign language in high school may register for this course if they have the permission of the department. Students who have previously studied French are assigned to this class on the basis of a placement test administered at the time of fall registration. *Mrs. C.-M. Baldwin.*

201 **INTERMEDIATE FRENCH. F,** honor section. Further training in spoken and written French, study of the structure of the language, and reading of important literary texts. Conducted almost exclusively in French. *Mrs. L. Read.*

202 **INTERMEDIATE FRENCH. S.** Continuation of French 201. *Mrs. L. Read.*

321 **ADVANCED FRENCH. F,** half or full course. For the advanced student who wishes to improve his facility in the language to an exceptional degree, or who is preparing for graduate study or for the teaching of French. The student may register either for both the spoken and written sections or may elect one section per semester, thus completing the two-course sequence (321-322) over a two-year period. The section in spoken French stresses oral fluency through a variety of activities such as topical discussions based on selected readings by modern authors, basic and idiomatic vocabulary drills, and pronunciation work in the laboratory. The section in written French stresses competence

through the systematic study of vocabulary, grammatical structures, and a progression of written assignments designed to develop the student's capacity to write in the different genres, including the *dissertation*. Prerequisite: 202. *Mrs. C.-M. Baldwin.*

322 **ADVANCED FRENCH. S,** half or full course. Continuation of 321. *Mrs. C.-M. Baldwin.*

## LITERATURE

*French 217 or 218 is prerequisite to all other courses in literature.*

217 **INTRODUCTION TO FRENCH LITERATURE. F.** An introduction to the major writers, movements, and themes in French literature. Extensive reading, lectures, *explications de texte*, reports. Conducted in French. *Mr. A. Otten.*

218 **INTRODUCTION TO FRENCH LITERATURE. S.** Continuation of 217. French 217 and 218 are designed to give the student an acquaintance with a large number of important works in French literature as well as the basic knowledge and historical framework necessary for further literary study. *Mr. A. Otten.*

311 **FRENCH DRAMA.\*** S odd years. A study of dramatic literature from the Middle Ages to the present day, with emphasis on classical and contemporary drama. Conducted in French. *Staff.*

312 **THE FRENCH NOVEL.\*** F odd years. A study of fiction from the Middle Ages to the present day with special emphasis on the nineteenth and twentieth centuries. Conducted in French. *Mrs. C.-M. Baldwin.*

313 **FRENCH POETRY.\*** F even years. A study of the history and nature of French poetry by means of extensive reading and intensive examination of major poets, with special attention to the themes, forms, and techniques of poets of the modern period, beginning with Baudelaire. Conducted in French. Not offered 1977-78.

314 **FRENCH PROSE.\*** S even years. A study of major writers expressing French thought, spirit, and sensibility in nonfiction from Montaigne to Sartre. Special attention is paid to Calvin, Pascal, *les philosophes*, and the existentialists. Conducted in French. Not offered 1977-78.

371 **LITERARY DOCTRINES AND PROBLEMS.** S even years. An advanced course devoted

largely to literary theory, using as its point of departure a selection of such significant documents in the history of French literature as Du Bellay's *Défense et illustration de la langue française*, the various statements relating to the *Querelle des anciens et des modernes*, Hugo's *Préface de Cromwell*, the transcript of Flaubert's trial, and others. This course includes an examination of the situations and writings which elicited these documents. Normally this course should be taken after completion of the genre courses. Conducted in French. Not offered 1977-78.

390 INDEPENDENT STUDY.\* I. Introduction to the materials and methods of research. In consultation with the instructor, the student will define a problem in literary history, criticism, or theory, will do research in it, and present the results of his study in an organized *dissertation*, written in French. Limited to the senior prospective graduate student. *Staff*.

395 SEMINAR.\*

### CIVILIZATION

372 FRENCH CIVILIZATION. F odd years. A study of examples of non-literary artistic expressions of the French mind in painting, architecture, and music, and of French religious, political, and social institutions. Designed to enhance the student's knowledge of French culture and to enrich his literary studies, this course is a complement to, rather than a substitute for, literary studies. Conducted in French. *Mrs. L. Read*.

### JANUARY 1978 INTERIM

I-10. FRENCH INTERIM ABROAD. Five weeks in France with a study program in Paris and a one-week trip to the châteaux of the Loire valley. Lectures and visits to

monuments, museums, and *quartiers* important in the historical culture of France, as well as plays, concerts, and excursions. Readings, required use of the French language. Five days for independent study and travel at the end of the course. A special fee of approximately \$850 will be charged (the exact cost will be known three months prior to departure.) Prerequisites: 201 or its equivalent, and approval of instructor. May be applied to a French concentration. *Mrs. L. Read*.

I-50. MODERN QUEBEC NOVELS: REFLECTIONS OF A PEOPLE. One of the most outstanding features of recent French-Canadian culture has been the emergence and growth of a distinctly *québécois* literature which ever since the late forties has developed both as a valid art form and as an important aspect of the French-Canadian mind and civilization. In turn, it has cultivated French-Canadian self-awareness and self-esteem. This course will study the development of this literature through a study of the French-Canadian literary history. Several major novels will be studied closely. Readings, lectures, and films will be in French. Prerequisite: 201. *Mrs. C.-M. Baldwin*.

I-51. THE FRENCH NOVEL OF THE NINETEENTH CENTURY. A close examination of three or four recognized masterpieces of French fiction, chosen from among Balzac's *Père Goriot*, Stendhal's *The Red and the Black*, Flaubert's *Madame Bovary*, and Zola's *Germinal*. Critical examination of the texts, study of theories of the novel, with a survey of the culture and the tradition which produced these works. No knowledge of the French language required. Students should plan on having read two of these novels prior to the beginning of the interim term. Prerequisite: a course in literature in any language. *Mr. A. Otten*.

# Geography and geology

See the section, EARTH SCIENCE, GEOGRAPHY, AND GEOLOGY for information on geography and geology.

# German

Professors W. Bratt, J. Lamse (chairman, Department of Germanic Languages)

Associate Professor C. Hegewald

Assistant Professor B. Carvill

Instructor S. DeHaan

STUDENTS should complete their first college year of German with a minimum average of C (2.0) before applying for admission to the major program. This concentration normally includes 201, 202, 215, 217, 218, and four additional courses. Students enrolled in the teacher education program must include 216 and 250. A teaching minor consists of a sequence of six courses including 201, 202, 215, and three additional courses. Students contemplating either a German major or minor are encouraged to consult with a departmental adviser early in their programs. A year-abroad program is available in Austria and Germany.

All courses numbered 217 and above, excluding 361, may be applied toward the fulfillment of the fine arts core requirement.

101 ELEMENTARY GERMAN. F. A beginners' course stressing both written and spoken German and including an introduction to German culture. *Staff.*

102 ELEMENTARY GERMAN. S. Continuation of 101. *Staff.*

121-122-123 INTRODUCTORY AND INTERMEDIATE GERMAN, F-I-S. A closely integrated sequence involving two semesters and the interim for students who have completed two years of high school German with less than a C average or, in some cases, for students who studied German in the tenth and eleventh grades. Students in the teacher education programs who have had no foreign language in high school may register for this course if they have the permission of the department. Students who have previously studied German are assigned to this class on the basis of a placement test administered at the time of fall registration. *Staff.*

201 INTERMEDIATE GERMAN. F, core. Selected readings, with a continued emphasis on the development of spoken and written German. Prerequisites: 101-102, or four units (two years) of high school German. *Staff.*

202 INTERMEDIATE GERMAN. S, core. Continuation of 201. Prerequisite: 201. *Staff.*

203 INTERMEDIATE GERMAN. F, core. A one-semester course intended specifically

for students who have successfully completed three years (six units) of high school German. Selected readings and continued language study. *Mr. W. Bratt.*

215 INTERMEDIATE ORAL AND WRITTEN COMPOSITION. F. Exercises, compositions, and drills designed to develop in the student intermediate competence in speaking and writing idiomatic German. Prerequisite: 202. *Mr. J. Lamse.*

216 ADVANCED ORAL AND WRITTEN COMPOSITION. S. Continuation of 215. *Mr. J. Lamse.*

217 READINGS IN MAJOR GERMAN AUTHORS. F, core. Basic introduction to German literature. Selected readings in major German authors from 1750 to 1850. Assigned readings and papers. Prerequisite: 202. *Mr. W. Bratt.*

218 READINGS IN MAJOR GERMAN AUTHORS. S, core. Continuation of 217. Readings in major German authors from 1850 to the present. Prerequisite: 202. *Mr. W. Bratt.*

250 GERMAN CIVILIZATION. F, odd years, fine arts core. A study of the German spirit as it finds expression particularly in social customs and institutions, religious and political life, and the fine arts. Lectures and discussions. Prerequisite: 202. *Mr. C. Hegewald.*

301 CLASSICISM.\* F, even years, core. A study of the origins, nature, and literary manifestations of the classical ideal in eighteenth-century Germany. Readings from Lessing, Goethe, and Schiller. Prerequisite: 217, 218, or permission of the instructor. *Mr. J. Lamse.* Not offered 1977-78.

303 ROMANTICISM.\* S, odd years, core. The literary theory and philosophical-religious basis of the German romantic movement as reflected in representative works of both earlier and later Romantics. Prerequisite: 217, 218, or permission of the instructor. *Mr. J. Lamse.*

304 REALISM.\* S, even years, core. Readings in the literary prose of the latter half of the nineteenth century. A survey of the intellectual and cultural changes immediately preceding this era and an analysis of some literary works characteristic of the period. Prerequisite: 217, 218, or permission of the instructor. *Mr. C. Hegewald.* Not offered 1977-78.

305 NINETEENTH CENTURY DRAMA.\* S, even years, core. A comprehensive study of the lives and works of leading German dramatists of the nineteenth century. Assigned readings and papers. Prerequisite: 217, 218, or permission of the instructor. *Mr. W. Bratt.* Not offered 1977-78.

307 EARLY TWENTIETH CENTURY LITERATURE.\* F, odd years, core. Selected readings in German and Austrian literature from 1890 to 1940, with special emphasis on the works of Hofmannsthal, Mann, Kafka, Brecht, and Hesse. Lectures, discussions, and assigned papers. Prerequisite: 217, 218, or permission of the instructor. *Mrs. M. J. Lamse.*

308 POSTWAR LITERATURE.\* S, odd years, core. Readings in German literature from 1945 to the present from such writers as Andersch, Frisch, Böll, and Grass. Seminar papers are required. Prerequisite: 217, 218, or permission of the instructor. *Mr. S. De-Haan.*

390 INDEPENDENT STUDY.\* This course is tailored to meet the needs of the individual student, to enable him to broaden his familiarity with the more important German literary works, and to deepen his understanding of them in tutorial discussions. Prerequisite: approval of the chairman. *Staff.*

395 SEMINAR.\*

## COURSES IN ENGLISH

361 INTRODUCTION TO MODERN GERMAN CULTURE. S, fine arts core for students in designated preprofessional programs. A survey of the German cultural tradition of the past two centuries as it finds expression in the various arts, with particular emphasis on representative works of literature in translation. Open to all students, but planned primarily for those in designated preprofessional courses whose programs include the "foreign culture" option. No knowledge of German is required. *Mr. W. Bratt.*

## JANUARY 1978 INTERIM

I-10. NAZI GERMANY. A study of Nazi Germany, 1933 to 1945, concentrating on the origins and growth of Nazism, life in Hitler's Germany, and the last days of the Third Reich. The course will be conducted in English. The following instructional techniques and media will be employed: slides, movies, demonstrations, records, textbooks, quizzes, conversations, lectures, presentations of projects, and eyewitness reports. *Mr. C. Hegewald.*

I-50. GERMAN INTERIM ABROAD. This course will be approximately five weeks in length, and will be conducted in West and East Germany. A brief tour through Northern Germany will be followed by ten days of study in Husum, Schleswig-Holstein. A second study-phase of the course will be conducted in West Berlin, and will be followed by a tour of East Germany. Course participants will be given five days for independent study and travel prior to returning to the U.S. Satisfies departmental concentrations. Prerequisites: permission of instructor and 215 or the equivalent. Fee of approximately \$800. *Mr. W. Bratt.*

I-51. EINSAME MENSCHEN IN ITS CULTURAL CONTEXT. An intensive study of *Einsame Menschen*, a late nineteenth century play by Gerhart Hauptmann, accompanied by character, thematic, and structural analyses and an extensive examination of the cultural context from which it issued, all of which is preliminary to presenting the play in German as the culmination of the course. Students, in addition to preparing for a specific task in the production of the play, will participate in extended discussions of the character analyses which they themselves shall write. They will all be

engaged in preparing and presenting reports on various aspects of the political, philosophical, and religious background against which this play was written. A limited number of additional plays written in the same philosophical and literary tradition will be read and discussed in an effort to increase the students' breadth and depth of understanding of the era. Since the course is to culminate in the production of the play, it will also include a careful study of the staging directions provided by Hauptmann for *Einsame Menschen* as well as

an examination of the technical problems involved in producing the play. The course will be conducted in English, but a reading knowledge of German (201 or its equivalent) is a prerequisite. Course work will include lectures, discussions, reports, films, student reports, and outside reading, the design and preparation of sets and costumes, and, for the students assigned acting roles, the learning of their lines. *Mr. S. De Haan.*

Idis I-54. FAIRY TALES. *Mrs. B. Carvill.*

## Greek

SEE THE DEPARTMENT OF CLASSICAL LANGUAGES for a description of courses and programs of concentration in Greek.

## History

*Professors R. Bolt, H. Brinks, H. Ippel, D. Jellema, G. Marsden, H. Rienstra, E. Van Kley (chairman)*

*Associate Professors \*B. De Vries, \*\*F. Roberts, D. Van Kley, R. Wells*

*Assistant Professors D. Diephouse, †S. Greydanus, W. Te Brake*

PROGRAMS for students majoring in history will be worked out for them by departmental advisers. Such programs will reflect the student's interests both within the field of history and in related departments, his anticipated vocational goal, and the demands of the historical discipline. A minimum grade of C (2.0) in 101 or 102 is required for admission to major programs. For most programs a proficiency in either French or German is advised. Students are asked to consult with departmental advisers early in their college careers concerning their choice of a foreign language and, if secondary teaching is their goal, concerning the various types of programs leading to certification.

The minimum requirements for a major concentration are nine courses in history including 101 or 102, or 102 Honors, the departmental seminar (395), and a program emphasizing either American, European, or World History concentrations. The European concentration requires at least three courses from 301-305, at least one course from 310-312, and at least one additional course from 310-312 or from 355 and 356. The American concentration requires at least three courses from 310, 311, 312, 355, and 356 and at least two courses from 301-305. The World History concentration requires one course from 301-305 (from 301-302 if the student has taken 102), one course from 310-312, and at least four courses from 201, 202, 203, 204, and 320. A 390 in a non-western field is also advised. A world-history concentration is designed primarily for teacher education students. Other teacher education programs require two to three courses from both the European and the American sequence with electives from non-

western history. A secondary school minor includes 101 or 102, two from 310, 311, or 312 or 211 and one from 355, 356, and 360. The elementary school minor is 101 or 102, 202, 204, 211, 320, and one other. The ideal teaching minor should include the designated courses in both programs. Students seeking special advice on teacher education programs, including group majors for middle school teaching, should consult Mr. E. Van Kley.

The core requirement in history must be met by 101 or 102, or 102 Honors; any other regular course in the department will satisfy the additional requirements in the contextual disciplines. Upperclass students who have not completed their core requirements in history should discuss alternative ways of satisfying the requirement with the chairman.

### AREA SURVEYS

101 WESTERN CIVILIZATION. F and S, core. A study of the main cultural currents of Western Civilization with primary emphasis on the period from antiquity through the sixteenth century. *Staff.*

102 WESTERN CIVILIZATION. F and S, core. A study of the main cultural currents of Western Civilization with primary emphasis on the period since the Reformation. *Staff.*

101 HONORS WESTERN CIVILIZATION. F, core. An intensive study of the last century of the Roman Republic. This is not a survey course in the traditional sense. Rather, the focus will be on the problems of reconstructing the history of the ancient world from sources such as Cicero, Sallust, and other Roman writers and historians. The course will require two or three papers, but no examination. Enrollment is limited to students with a 3.3 grade point average or higher. *Mr. H. Rienstra.*

201 ANCIENT NEAR EAST.\* F. A cultural history of the ancient Near East from prehistory to the rise of Islam. Based on evidences from archaeology and cultural anthropology as well as on ancient texts in translation, Biblical accounts, and contemporary historical records. Special consideration is given to geographical setting, artistic and linguistic traditions, and cultural contacts with European civilizations. Not offered 1977-78.

202 MODERN NEAR EAST.\* S. A study of the transformation of the Near East from the rise of Islam through the establishment of independent national states following World War II. Particular attention is given to the institutionalization of Islam, the classical Arab Caliphates, the Crusades, the Ottoman Turkish and Safavid Persian states,

the Near East Question, the modernist movements in Islam, and the problems of the contemporary states. Not offered 1977-78.

203 TRADITIONAL EAST ASIA.\* F. An introduction to the history of East Asian civilizations from the earliest times to the nineteenth century. Primary emphasis is placed on the civilization of China and Japan. Study of the growth and development of traditional East Asian society is supplemented by topical discussions of religion, philosophy, art, music, and literature. *Mr. E. Van Kley.*

204 MODERN EAST ASIA.\* S. A study of the transformation of East Asian society resulting from the intrusion of the West, from the sixteenth century to the present. Primary emphasis is placed on the civilizations of China and Japan and on the contacts between East Asia and the West. Topics on East Asian religion, philosophy, art, literature, and music are included. *Mr. E. Van Kley.*

### NATIONAL HISTORIES

211 SURVEY OF AMERICAN HISTORY. F and S. Selected themes in American history from colonial times to the present. This course is not intended for those who plan to take period courses in American history. *Mr. R. Bolt.*

212 ENGLAND. F. A survey of English history including the Anglo-Saxon background; the medieval intellectual, religious, and constitutional developments; the Tudor and Stuart religious and political revolutions; the emergence of Great Britain as a world power; the growth of social, economic, and political institutions in the modern period. *H. Ippel.*



215 **CANADA.**\* F. A tracing of the founding and character of New France and a more careful examination of nineteenth and twentieth century Canada. *Mr. H. Groenewold.*

218 **RUSSIA.**\* F. A study of Russian and East European history from Byzantine and Slavic origins through the Russian Revolution of 1917 and the development of the contemporary Soviet state. *Mr. D. Jellema.*

220 **THE HISTORY OF FRANCE.**\* A survey of the history of France from the "new monarchy" of Louis XI to the present. Particular attention is given to the religious wars of the sixteenth century, the growth of the French monarchy at the expense of other institutions, the character and influence of the French Enlightenment, the nature and repercussions of the French Revolution, and the causes of France's political decline in the late nineteenth century. *Mr. D. Van Kley.*

221 **THE NETHERLANDS.**\* S. An introduction to the history of the Netherlands; the medieval times; the Burgundian period; the Reformation; the Dutch "Golden Age"; the French Revolution; the revival of Calvinism during the later nineteenth century; the changing role of the Netherlands in the twentieth century. *Mr. D. Jellema.*

223 **THE HISTORY OF GERMANY.**\* F. A survey of German history with particular attention given to the period from the Reformation to the present. Included in the course are medieval background, the Reformation and its impact on later German developments, the religious wars, intellectual developments of the eighteenth and nineteenth centuries, the movement toward political unity in the nineteenth century, World War I, the Weimar Republic, the rise of the Nazi movement. *Mr. F. Roberts.*

#### STUDIES OF HISTORICAL PERIODS

301 **CLASSICAL HISTORY.**\* F and S. A study of the history of Greece and Rome from the Minoan Age through the reign of the Emperor Theodosius. The emphasis is on the political and economic changes which were the background for the shifts in intellectual styles. Particular problems are studied in depth: the emergence of the city-state; the Periclean age of Athens; the age of Alexander; the crisis of the Roman Republic; and the Decline. The two units of

Greek 311 and Latin 312 may be substituted in history concentrations for this one-unit course. *Mr. B. De Vries, Mr. G. Harris.*

302 **MEDIEVAL EUROPE.**\* F and S. A study of European society from 400 through 1350. The broad sweep of political, economic, and intellectual change is focused on the analysis of particular topics, such as the emergence of a Christian society, the rise of Feudalism, the tensions between asceticism and humanism, the Crusades, and the Regnum-Sacerdotium controversy. *Mr. H. Rienstra.*

303 **RENAISSANCE AND REFORMATION EUROPE.**\* F and S. Studies in topics in European history from 1300 to 1650. Attention to such problems in intellectual history as the nature of humanism, the character of religious reform, and the rise of science. Requires readings in narrative histories and sources. *Mr. H. Rienstra.*

304 **EARLY MODERN EUROPE.**\* F and S. A history of Europe from 1600 to 1815, from the Thirty Years War through the French Revolution, with considerable emphasis on the Age of Reason and Enlightenment. *Mr. D. Van Kley.*

305 **MODERN EUROPE.**\* F and S. Western Europe from 1815 to 1914. A study of the political and economic phenomena of this century; and examinations of nationalism, liberalism, Darwinism, imperialism, and militarism. *Mr. D. Diephouse.*

310 **COLONIAL UNITED STATES.**\* F and S. A study of the colonial origins of the United States from the first settlements to about 1790, with primary emphasis on the intellectual, social, and religious developments and on the European origins of American thought. Attention is given to political, imperial, military, and economic changes. This course is designed to serve as one of the American sequence and as an introduction to History 355, Intellectual History of the United States. *Mr. H. Brinks.*

311 **NINETEENTH CENTURY UNITED STATES.**\* F and S. An examination of United States history from the end of the revolutionary era to 1901. Attention is given to the Federalist period, the origins of political parties, Jeffersonian and Jacksonian democracy, sectionalism, slavery, the Civil War and reconstruction, economic expansion and the rise of big business, political corruption and reform, and imperialism. *Mr. R. Wells.*

312 TWENTIETH CENTURY UNITED STATES.\* F and S. A study of politics, diplomacy, labor, industry, and scientific achievement since the 1890's with emphasis on such developments as the Progressive movement, World War I, the retreat from international responsibility; the roaring twenties, the Great Depression, the New Deal, World War II, and domestic and foreign developments since World War II. *Mr. R. Bolt.*

320 CONTEMPORARY WORLD.\* F. Western Europe from World War I to the present; the breakdown of colonialism and the resulting emergence of non-European powers; World War II and its role of changing the balance of power; the Cold War and the era of little wars. Topical studies include: the changing character of world economics; the conflict of ideologies; cultural relativism; the new age of conservatism. *Mr. D. Diephouse.*

### TOPICAL STUDIES

334 UNITED STATES CONSTITUTIONAL HISTORY.\* A study of the development of American legal and political traditions using the constitution as the focal point. Emphasis is on such themes as the interrelationship among the three branches of government and the relationship between legal education and the decisions of the courts. Particular attention is given to the Supreme Court decisions as they have reflected or molded social, intellectual, economic, and political change. Not offered 1977-78.

351 ENGLISH CONSTITUTIONAL HISTORY.\* S. A study of the origins and subsequent developments of English law, legal institutions and constitutional usages from 1066 to the present. Major topics considered are: the nature of English constitutional monarchy, the growth of Parliament, the development of English Common Law, the Tudor and Stuart revolutions, the Whig oligarchy, and the significant reforms of modern Britain. *Mr. H. Ippel.*

355 INTELLECTUAL HISTORY OF THE UNITED STATES.\* F. An analysis of the changing intellectual patterns in American society from about 1790 to the present as exemplified in religious, philosophical, political, social, and scientific thought. Emphasis is placed on the interaction of thought and society and some attention is given to European influence on American thought. A general

knowledge of American history is assumed. *Mr. G. Marsden.*

356 SOCIAL AND CULTURAL HISTORY OF THE UNITED STATES.\* S. A study of the development of American society from 1776 to the present with reference to developments other than those primarily political or intellectual, such as social reform movements, popular culture, art and architecture, educational developments, the labor movement, immigration, nativism and racism, and urban problems. Prerequisite: a general knowledge of American history. *Mr. R. Wells.*

360 AFRO-AMERICAN HISTORY.\* S. An intensive inquiry into the role of the Afro-American in the history of the United States, including an evaluation of past and present assumptions of the place of the Afro-American in American life, and an acquaintance with the historiography on this subject. Not offered 1977-78.

380S FIELD WORK IN MIDDLE EAST ARCHAEOLOGY. Summer. An on-site introduction to archaeological field work in the Middle East designed to expose the student to the methodologies involved in stratigraphic excavation, typological and comparative analysis of artifacts, and the use of non-literary sources in the writing of Middle East history. Prerequisite: consent of the instructor. *Mr. B. De Vries.*

390 INDEPENDENT STUDY.\* F, I, S. *Staff.*

395 SEMINAR IN HISTORY.\* F and S, honor sections. A course taught by the staff in historiography, the philosophy of history, historical bibliography, and the writing of history. *Staff.*

### GRADUATE COURSES

571 STUDIES IN HISTORY: Students will engage in a concentrated investigation of a particular topic or period of history. Advanced reading and discussion of the source materials, literature, problems, interpretations, and more recent findings on a selected period or topic are included. Topic will be selected each time the course is offered. *Staff.*

580 RESOURCES FOR TEACHING HISTORY AND THE SOCIAL STUDIES. An exploration of research in the various approaches to the teaching of history and the social studies on the secondary level. Course requirements include the development of a bibliography

of **resources** for the teaching of history and the **social studies** and will relate these to the **curriculum** and philosophy of social studies teaching from a Christian perspective. *Staff.*

581 **HISTORIOGRAPHY.** The course focuses on **historical** writing as reflective of different **personal** and cultural styles and on the **role of history** in the intellectual adventure of **man**. Historians will be studied to **determine** their diverse opinions and **interpretations**. The focus is on understanding **historical** writing so that it can be taught **more effectively**. Assigned readings, **seminar participation**, and papers are required. *Staff.*

590 **INDEPENDENT STUDY** (graduate). F,I,S. *Staff.*

595 **GRADUATE PROJECT.** F.I.S., full or half course. The prospectus for each Master of Arts in Teaching project must be developed under the supervision of a faculty member and **must** be approved by the student's graduate adviser. *Staff.*

### JANUARY 1978 INTERIM

I-10. **A TALE OF TWO CITIES: POOR PEOPLE IN PARIS AND LONDON IN THE EIGHTEENTH CENTURY.** A study of the physical conditions of **life**, forms of sociability, crime and **criminality**, and types of collective violence of the "inferior classes" or "little people" of eighteenth century London and Paris. The **course begins** with a Dickensian view and then **proceeds** to a sampling of recent scholarly work on the subject. Reading, **discussion** and a short paper. *Mr. D. Van Kley.*

I-11. **A HISTORY OF GRAND RAPIDS.** A study of Grand Rapids' history from its **early beginnings** to the present time. The study will include important political, economic, **social** and cultural developments that **have been** significant in the shaping of **Grand Rapids**. Students will be encouraged to **utilize** primary as well as secondary sources. *Mr. R. Bolt.*

I-12. **EXPLOSION IN THE GARDEN: VIENNA, BERLIN, AND THE BIRTH OF TWENTIETH CENTURY CULTURE.** A study of the upheaval in **European** culture between 1880 and 1930 which gave birth to the distinctive new **forms** and styles of much twentieth century **music**, literature, and art. Concentrating on **developments** in Vienna and Berlin, the **course will** explore the connections be-

tween social crisis and aesthetic crisis and will analyze the search for new artistic languages reflected in, for example, expressionist drama, atonal music, and abstract painting. Films, slides, recordings, and student presentations will be included in addition to lectures and assigned readings. *Mr. D. Diephouse.*

I-13. **RELIGION AND THE AMERICAN REVOLUTION.** What are the "religious" dimensions of the American Revolution? Topics to be considered include: the "religious" causes of the American Revolution, the attitude of American and British Christian leaders to the rebellion, the impact of the Revolution on British and American Church history, and the American Revolution as a case study in the question of the "right of rebellion." *Mr. H. Ippel.*

I-14. **ETHNIC AMERICA.** As a continuing counterpoint to the idea of the American "melting pot," ethnic groups have made important contributions to American culture while retaining their own traditions. This course will study in detail the attempts of some immigrant groups, particularly the Irish and the Jews, to retain their own cultural identity. The general question of cultural assimilation to American Society versus cultural pluralism within American culture will also be discussed. No prerequisites, but a general interest in American and European history will be assumed. *Mr. R. Wells.*

I-50. **THE ASIAN CONNECTION: THE IMPACT OF THE EAST ON WESTERN CIVILIZATION.** A study of the ways in which Europe learned about Asia, particularly in the period after 1500, and a consideration of how the information gained about the East in turn had consequences in the development of Western culture. A general interest in East-West relations is presupposed. A major part of the course will be student reports on selected topics. Prerequisites: sophomore standing and either 101 or 102. *Mr. E. Van Kley.*

I-51. **GALILEO GALILEI AND THE SCIENTIFIC REVOLUTION.** Through the reading of Galileo's classic *Dialogue Concerning the Two Chief World Systems: Ptolemaic and Copernican*, and some of his letters, an understanding of the man and his role in the scientific revolution will be sought. There will be three components to the course: 1. the life and works of Galileo (1564-1642); 2. the re-

ligious and scientific context of his time; and 3. the concept of a "scientific revolution." Prerequisites: 101 and 102 or Physics 110 or 112. *Mr. H. Rienstra.*

I-52. **CHRISTIANIZATION AND SECULARISM AS HISTORICAL PROBLEMS.** This course will be taught at the Institute for Christian Studies in Toronto with C. T. McIntire of the Institute as joint instructor. It will be an attempt to define a Christian view of history and culture, focusing on the questions of whether there has been or could be a Christian culture in this age and on what the "Christianization" of culture might amount to. These questions will be examined especially in the light of the process of secularization of Western civilization during the past few centuries. Theoretical works and some historical case studies will be considered. Fee of approximately \$150.

Prerequisite: permission of instructor. *Mr. G. Marsden.*

I-53. **PEASANT SOCIETY.** Using readings from both anthropology and history, this course examines the role of peasants in traditional, agricultural societies. Too often seen simply as a uniform and unchanging backdrop to the history of diplomacy and high cultures, peasant societies have, in fact, undergone important historical developments which have varied remarkably from nation to nation and from region to region. Particular emphasis is on the turbulent history of the European peasantry and the different ways in which peasants helped to create modern European industrial society in an area where the remnants of earlier peasant societies have all but disappeared. Readings, lectures, short papers, and student reports. Prerequisite: 101 or 102. *Mr. W. Te Brake.*

## Latin

SEE THE DEPARTMENT OF CLASSICAL LANGUAGES for a description of courses and programs of concentration in Latin.

## Mathematics

*Professors P. Boonstra, S. Leestma, L. Nyhoff, C. Sinke, G. Van Zwalenberg, P. Zwier (chairman)*

*Associate Professors T. Jager, J. Kuipers*

*Assistant Professors D. Brink, R. Konyndyk*

*Instructor L. Vredeveld*

FRESHMEN DESIRING TO MAJOR in the department should have completed four years of high school mathematics; those with deficiencies in algebra or trigonometry should complete 101 or 102. A minimum grade of C (2.0) in 211 is required of all students applying for a program of concentration in the department. The program includes 111, 112, 211, 212, 351, three additional courses numbered 300 or above, and one upper-level interim course. Majors are expected to prepare and present a talk at the mathematics colloquia. Students preparing to teach mathematics should complete a nine-course program including the five courses designated above in the general program plus 321, 331, 343 and one upper-level interim course. The six-course minor for prospective teachers consists of 111, 112, 211, 321, 351, and one additional 300-level course.

A teaching group major in physics and mathematics consists of Mathematics 111, 112, 211, 212, 321, and 351; Physics 123, 124, 225, 226, 381, and 382. A

group minor in the same fields consist of Mathematics 111, 112, and 211; Physics 123, 124, 225, and 226. The elementary teacher education adviser is Mr. Clarence Menninga.

A group major in science and mathematics meets the needs of some students, particularly those in professional programs. These majors are not appropriate for students who anticipate attending graduate school or who are in teacher education programs. Such group majors require twelve courses in the sciences and mathematics, ten of which must be from two departments with no fewer than four from either, with the remaining two courses chosen from a third department. The departmental chairmen of the three departments must approve each such program. Group concentration involving economics, philosophy, and other departments are possible on an individual basis.

The core requirements in mathematics may be met by Senior Mathematics in high school or by 109, 111, or 205.

101 **ALGEBRA.** F and S, half course. Review of elementary algebra; topics in college algebra including inequalities, linear and quadratic functions, and mathematical induction. Intended for those with an inadequate background in high school algebra. Prerequisite: one year of high school algebra. May be taken concurrently with 102. Staff.

102 **TRIGONOMETRY.** F and S, half course. Review of elementary trigonometry, with emphasis on introduction to the trigonometric functions and their properties; trigonometric identities, inverse trigonometric functions. Intended for those who have not had trigonometry in high school or those who wish to review the subject. Prerequisite: one year of high school geometry and one year of high school algebra. May be taken concurrently with 101. Staff.

109 **ELEMENTS OF MODERN MATHEMATICS.** F and S. An introduction to the content, methodology, and history of mathematics. Among the topic which may be covered are cardinal numbers and set theory, axiomatic systems, probability theory, computer programming, groups and fields, and number theory. Prerequisite: a year of high school algebra. Staff.

111 **CALCULUS AND ANALYTIC GEOMETRY.** F and S, honor section, core. Rates of change, limits, derivatives of algebraic functions, applications of the derivative, integration, applications of the integral. Staff.

112 **CALCULUS AND ANALYTIC GEOMETRY.** S, honor section. Transcendental and hyperbolic functions, formal integration, analytic geometry, polar coordinates, vec-

tors, parametric equations. Prerequisite: 111. Staff.

205 **ELEMENTARY ANALYSIS.** F and S, core. Real number system; field properties; polynomial, exponential, and logarithm functions and their graphs; elementary differential calculus; rules for differentiation; applications of the derivative to maximum-minimum problems; elementary integral calculus; definite and indefinite integrals; rules for integration; applications of the integral to area problems; some elementary differential equations and application to problems such as population growth. Intended for students other than mathematics and science majors. Prerequisite: Two years of high school mathematics. Staff.

206 **FINITE MATHEMATICS, PROBABILITY AND STATISTICS.** S. Sequences including arithmetic and geometric progressions, applications to mathematics of finance; algebra of matrices, applications to solutions of systems of linear equations and linear programming; elementary probability theory, binomial and normal distributions, distribution of sample statistics, statistical inference, regression analysis. Prerequisite: 111 or 205. Staff.

209 **MATHEMATICS FOR ELEMENTARY TEACHERS.\*** S. This is a course for elementary teachers which covers concepts that must be known in order to teach elementary mathematics effectively. The principal focus is geometry. Included is a study of axiomatic system, congruence, parallelism, similarity, measure, coordinate geometry, and plane transformations. Other topics will depend on the students' background. These may include probability, statistics,

computer programming, and introduction to BASIC. Prerequisite: 109. *Staff*.

211 CALCULUS AND ANALYTIC GEOMETRY. F, honors section. Solid analytic geometry, vectors in three dimensions, infinite series, partial derivatives, multiple integrals. Prerequisite: 112. *Staff*.

212 LINEAR ALGEBRA AND DIFFERENTIAL EQUATIONS. S. Vector spaces, linear transformations, matrices, determinants, other topics from linear algebra; introduction to differential equations. Prerequisite: 112. *Staff*.

313 TOPICS IN ADVANCED ANALYSIS.\* F. Fourier series, Laplace transform, series methods in ordinary differential equations, orthogonal functions, vector field theory, and partial differential equations. Intended for engineers, physicists, and others interested in applications of analysis. Prerequisite: 211. *Mr. P. Zwier*.

314 COMPLEX VARIABLES.\* S. Complex numbers, complex functions, integration and the Cauchy integral formula, power series, residues and poles, conformal mapping. Prerequisite: 211. *Mr. G. Van Zwalenberg*.

321 FOUNDATIONS OF GEOMETRY.\* F. Consideration of Euclidean geometry as an axiomatic system, introduction to non-Euclidean geometry, the Poincaré model. Prerequisite: 112. *Mr. P. Boonstra*.

323 LINEAR AND PROJECTIVE GEOMETRY.\* S. Transformations in the Euclidean plane, review of algebra of vector spaces, affine spaces, projective space, projectives and their groups, cross ratio, theorems of Desargues and Pappus. Prerequisite: 352. Not offered 1977-78.

331 HISTORY OF MATHEMATICS.\* S. A study of the historical development of certain basic mathematical concepts from early times to the present, with consideration of the problems that mathematicians have faced in each age. Prerequisite: 211. *Mr. P. Boonstra*.

341 NUMERICAL ANALYSIS.\* S. Analysis of errors in numerical methods, real roots of equations, approximations using polynomials, calculus of finite differences, numerical methods for differentiation and integration, applications to differential equations, applications to matrix algebra, inversion of matrices, characteristic values.

Prerequisites: Computer Science 107 or 108 and Mathematics 212. *Mr. D. Brink*.

343 PROBABILITY AND STATISTICS.\* F. Probability, probability density functions; binomial, Poisson, and normal distributions; central limit theorem, limiting distributions, sample statistics, hypothesis tests, estimators. Prerequisite: 212. *Mr. R. Konyndyk*.

351 ABSTRACT ALGEBRA.\* F. Set theory, relations and functions, equivalence relations; the integers, mathematical induction, and elementary number theory; groups, rings, fields, and polynomials. Prerequisite: 211. *Mr. L. Nyhoff*.

352 ADVANCED LINEAR ALGEBRA.\* S. Vector spaces, matrices, linear equations, linear transformations, determinants, polynomial algebras, eigenvalues and eigenvectors, inner-product spaces, spectral decompositions, canonical forms for matrices. Prerequisite: 211. *Mr. C. Sinke*.

361 GENERAL TOPOLOGY.\* F. Elementary set theory, topological spaces, separation properties and connectivity, continuous mappings, homeomorphisms, product and quotient spaces, invariants under continuous mappings, compactness, metric spaces and completeness. Prerequisite: 211. Not offered 1977-78.

362 REAL ANALYSIS.\* F. The real number system, Lebesgue measure and integration, differentiation and integration of real functions, classical Banach spaces, abstract measure theory. Prerequisite: 212. *Mr. D. Brink*.

390 READINGS IN MATHEMATICS.\* F, I, S. Independent study of topics of interest to particular students, under supervision of a member of the department staff. Open to qualified students with permission of the chairman. *Staff*.

395 SENIOR THESIS IN MATHEMATICS.\* F, I, S. The course requirements include an expository or research paper and an oral presentation on a selected topic in mathematics. Open to qualified students with the permission of the chairman. *Staff*.

## GRADUATE COURSES

510 ADVANCED GEOMETRY FOR TEACHERS. A study of geometry from the point of view of groups of transformations, including considerations of isometries, translations,

glide reflections, and similarities. Applications to theorems in Euclidean geometry. Consideration of affine, projective, hyperbolic, and elliptic geometries, and models for each. Prerequisite: Mathematics 321 or its equivalent. Staff.

512 PHILOSOPHY AND FOUNDATIONS OF MATHEMATICS. A study of the philosophical problems which arise in the context of mathematics; logicism; intuitionism, and formalism; metamathematics and the theorems of Gödel, Church, and Tarski; some philosophical implications of these theorems. Some attention is paid to the philosophical stance of materials and texts written for the classroom. Prerequisite: undergraduate mathematics minor or permission of instructor. Staff.

513 REAL ANALYSIS AND TOPOLOGY FOR TEACHERS. Construction of the real number system; metric space topology with applications to Euclidean spaces, limits, continuous functions, differentiation, and Riemann-Stieltjes integration. Prerequisite: 211. Staff.

580 METHODS AND MATERIALS FOR TEACHING SECONDARY SCHOOL MATHEMATICS. A study of methods which can be used to teach mathematics in the junior and senior high school. Consideration is also given to materials, both commercial and teacher-made, which can be used to teach mathematics. Prerequisite: mathematics minor or major. Staff.

590 INDEPENDENT STUDY (graduate). F,I,S. Staff.

595 GRADUATE PROJECT. F.I.S., full or half course. The prospectus for each Master of Arts in Teaching project must be developed under the supervision of a faculty member and must be approved by the student's graduate adviser. Staff.

### JANUARY 1978 INTERIM

I-10. MATHEMATICS AND CULTURE. The impact of culture on mathematics and of mathematics on culture will be viewed as the main theme of the course. Certain historical facts of importance to the development of fundamental concepts of mathematics are considered. Important and interesting mathematical concepts are developed and explained. The topics consid-

ered fall within the range of a liberal arts course in mathematics: history of mathematics, number systems, axiom systems, the world through simple equations, algebraic and transcendental numbers, infinite sets. Satisfies mathematics core. Mr. G. Van Zwalenburg.

I-50. LINEAR AND DYNAMIC PROGRAMMING. This course is concerned with the theoretical, computational, and applied aspects of linear and dynamic programming. The necessary background material on vector spaces, convex sets, and linear inequalities will be reviewed. Then the simplex method, the revised simplex method, and the duality problems of linear programming will be considered. Applications include the general transportation problem, production scheduling problems, and inventory control problems. Richard Bellman's Dynamic Programming will comprise the last part of the course. The discrete problem will be solved and applications to transportation and scheduling will be covered. Some discussion of the continuous problem and its applications will conclude the course. Prerequisite: 212. Mr. D. Brink.

I-51. PARTIAL DIFFERENTIAL EQUATION. This course is designed for those students of mathematics, physics, chemistry, and engineering who would like a deeper mathematical knowledge of partial differential equations. Topics to be included will be: linear partial differential equations; solution of second order partial differential equations with constant coefficients; classification of second order equations with constant coefficients (parabolic, elliptic, and hyperbolic); The Wave Equation; The Heat Equation; and La Place's Equation. In addition to lecture sessions, there will be practicum sessions during which students will solve assigned problems under the direction and with the help of the instructor. The textbook used will be *Partial Differential Equation: An Introduction* by Eutiquio C. Young, Allyn & Bacon, Inc., Boston, 1972. Prerequisite: 212 or its equivalent. Mr. P. Zwier.

Idis I-11. THE RAILROAD AS PART OF A MODERN TRANSPORTATION SYSTEM. Mr. C. Sinke.

Idis I-53. PROBLEMS IN PROBLEM SOLVING. Mr. T. Jager.

# Music

Professors J. Hamersma, H. Slenk, D. Topp (chairman)

Associate Professors H. Geerdes, C. Kaiser, C. Stapert, J. Worst

Assistant Professor G. Huisman

Professional Staff T. Knol, R. Rus

STUDENTS MUST COMPLETE 103, 104, 114, and 124 with a minimum grade of C (2.0) in each before they will be considered for a music major concentration. Applicants will be informed of the department's action within a month after completing these courses.

Students preparing for graduate study in music must take 103, 104, 113, 114, 123, 124, 203, 204, 213, 214, 223, 224, 303, and 304; 121, 131, 141, 161, or 171 each semester; 180 each semester; and four additional courses from one of the following areas of specialization: *music history*, 311, 312, 313, 314, or approved interim courses; *theory-composition*, 311, 312, and two from 315, 316, 317; or *applied music*, eight semesters from 210, 220, 230, 240, 260, or 270, including a solo recital. (The adviser for the applied music program is Mrs. R. Rus.)

Students desiring to teach music in the schools can choose one of three programs. A fifteen-course concentration enables graduates to teach music in grades k-12. Such programs, with a primary emphasis on the secondary level, require 103, 104, 113, 114, 123, 124, 203, 204, 223, 224, 237, 239, 303, and 304; 180 each semester; 131 or 141 each semester for vocal music or 161 or 171 each semester for instrumental music; plus four additional courses from one of the following concentrations: *instrumental music*, 197, 198, 315, and four semesters of 140, 150, 160, or 170; *vocal music*, 213, 214, 311 or 312, 313 or 314, or an approved interim; two semesters of 120; and four semesters of 130. This is the appropriate program for students interested in doing graduate work in music education.

A ten-and-a-half-course concentration qualifies graduates to teach in a regular elementary classroom and to teach music in grades k-8. The program requires 103, 104, 113, 114, 123, 124, 203, 204, 233, 237, 239; 180 each semester; and three additional courses from one of the following concentrations: *instrumental music*, 197, 198, two semesters of 140, 150, 160, or 170; and two semesters of 161 or 171; *vocal music*, two semesters each of 120, 130, and 131 or 141; one course from 311-319; and a half-course elective from 213, 214, 223, 224, or applied music. Fine Arts Studies group majors are available for students who wish some courses in music.

The seven course music minor for secondary teachers leads to a certificate for grades 7-12. It requires 103, 113, 123, 233, 234, 237, 239; two semesters of 110, 120, 130, 140, 150, 160, or 170; two semesters of 131, 141, 161, or 171; and one course elective in music. The adviser for all teacher education programs is Mr. D. Topp.

A nine-course general education program is available for students not expected to teach or to enter graduate school. This program includes 103, 104, 203, 204, 113, 114, 123, 124, and may be completed by either 233, at least one course in applied music, and two electives or by 303, 304, at least one course in applied music, and one elective.



All transfer students must consult Mr. J. Hamersma at their first registration for an evaluation of their transfer credits in music and to receive counseling into the appropriate sequence of music courses. During their first semester at Calvin transfer students must also validate their transfer credits in keyboard harmony with Mrs. T. Knol or enroll in 113 and in aural perception with Mrs. R. Rus or enroll in 123.

All music majors must successfully complete the Princeton Comprehensive Music Examination during April of the spring in which they take 304. (Majors whose programs do not include 304 must take this examination in the spring following their completion of 103, 104, 203, 204, and 233.) Scores of this test become part of the student's departmental record and may be used by the music department when making recommendations for graduate schools, scholarships, and teaching positions.

The fine arts core requirement may be met in several ways. Students with a minimal musical background may prefer 231, 232, 236, or 238. Students with greater musical background should take 233, 234, or, possibly, 103. Because 103 satisfies the core requirement and is the initial course in all concentrations involving music, freshmen considering any of these programs should take 103 along with 113 and 123, both quarter courses, which are also part of such programs.

#### GENERAL COURSES

231 **F and S. AN INTRODUCTION TO MUSIC LITERATURE.** F, core. For students with limited musical background who are interested in increasing their knowledge and enjoyment of music. The emphasis is on intelligent and perceptive listening. This year the course will concentrate on music from the Baroque and Classical periods. Listening, term paper, concert attendance. No prerequisite. *Mr. J. De Jonge, Mr. J. Worst.*

232 **F and S. AN INTRODUCTION TO MUSIC LITERATURE.** F, core. A course similar to 231 but with different content. Includes the music of representative composers of the Romantic and Modern-Contemporary periods. Listening, term paper, concert attendance. No prerequisite. *Mr. J. De Jonge, Mr. J. Worst.*

233 **HISTORY OF MUSIC\*.** F, core. A study of the art of music from its origins through the Baroque. Score studies, listening repertory, and reading. *Mr. C. Stapert.* To be offered annually beginning 1978-79.

234 **HISTORY OF MUSIC\*.** S, core. A study of the art of music from Bach to the present. Score studies, listening repertory, and reading. *Mr. C. Stapert.*

235 **CHAMBER MUSIC\*.** F odd years, core. A general course designed to provide the historical and musical background neces-

sary for perceptive listening to music for small ensembles. The Cayvan Collection of recordings and scores will be used to give the student an insight into music written for trios, quartets, and quintets of string or wind instruments. Not offered 1977-78.

236 **CHURCH MUSIC\*.** I, F odd years, core. A historical survey of the worship music of the Hebrews, early Christian church, the Roman church, and the churches of the Reformation. Principles of appropriate worship music are discussed in the light of the history of church music. No prerequisite. Recommended for pre-seminary students. *Mr. C. Stapert.*

237 **CONDUCTING.** F and S, half course. A course in basic, general conducting leading to the conducting of either instrumental or choral literature. Two hours of class and two hours of conducting laboratory per week. Should be taken by instrumental music education majors, nine-course majors, and music minors during the spring semester of their sophomore year and by fifteen-course vocal music education majors during the fall semester of their junior year. Prerequisite: 104. *Mr. H. Geerdes, Mr. H. Stenk.*

#### BASIC COURSES

103 **THE MATERIALS OF MUSIC I.** F, core. A course in the development of the ability to

grasp and notate the rhythmic, melodic, and harmonic elements of music. Students anticipating any concentration involving music must take 113 and 123 concurrently. See note above concerning the use of this course to meet fine arts core requirements. *Mr. J. Hamersma, Miss G. Huisman, Mr. C. Kaiser, Mr. H. Slenk.*

104 THE LITERATURE AND MATERIALS OF MUSIC II. S. A continuation of 103. A coordinated study of the historical, theoretical, and practical aspects of music by means of lectures, score study, written exercises, listening, performance, and reading. A study of the music of the late Baroque and of the Classical eras. Students intending to major in music must take 114 and 124 concurrently. Prerequisite: 103. (Formerly 204. Present upperclassman take this in place of 204.) *Staff.*

113 KEYBOARD HARMONY I. F, quarter course. A course in the development of the ability to play at the keyboard the rhythmic, melodic, and harmonic elements of music. To be taken concurrently with 103. Prerequisite: piano skills. Others will be required to take remedial piano. *Mrs. T. Knol.*

114 KEYBOARD HARMONY II. S, quarter course. A continuation of 113. *Mrs. T. Knol.*

123 AURAL PERCEPTION I. F, quarter course. A course in the development of the ability to hear and to sing at sight the rhythmic, melodic, and harmonic elements of music. To be taken concurrently with 103. *Mrs. R. Rus.*

124 AURAL PERCEPTION II. S, quarter course. A continuation of 123. *Mrs. R. Rus.*

203 THE LITERATURE AND MATERIALS OF MUSIC III\*. F. A continuation of 104. A study of the music of the Romantic era. Prerequisite: 104. Students whose programs require 213 and 223 must take those courses concurrently. (Formerly 303. Present upperclassmen take this in place of 303.) *Mr. J. Worst.*

204 THE LITERATURE AND MATERIALS OF MUSIC IV\*. S. A continuation of 203. A study of post-Romantic and Contemporary music. The class presents a concert of contemporary and *avant garde* music in early May. Prerequisite: 203. Students whose programs require 214 and 224 must take these courses concurrently. (Formerly 304. Present upperclassmen take this in place of 304.) *Mr. J. Worst.*

213 KEYBOARD HARMONY III. F, quarter course. A continuation of 114. To be taken concurrently with 203. Prerequisite: 114. *Mrs. T. Knol.*

214 KEYBOARD HARMONY IV. S, quarter course. A continuation of 213. *Mrs. T. Knol.*

223 AURAL PERCEPTION III. F, quarter course. A continuation of 124. To be taken concurrently with 203. Prerequisite: 124. *Mrs. R. Rus.*

224 AURAL PERCEPTION IV. S, quarter course. A continuation of 223. *Mrs. R. Rus.*

303 THE LITERATURE AND MATERIAL OF MUSIC V\*. F. A continuation of 204. A study of Western music prior to 1500. Prerequisite: 204. (Formerly 104.) *Mr. C. Stapert.* Not offered 1977-78.

304 THE LITERATURE AND MATERIALS OF MUSIC VI\*. F and S. A continuation of 303. A study of the Western music of the late Renaissance and early Baroque eras. Prerequisite: 303. (Formerly 203. Present upperclassmen take this in the fall of 1977 in place of 203.) *Mr. C. Stapert.*

#### ADVANCED COURSES

311 VOCAL POLYPHONY OF THE RENAISSANCE\*. S odd years. A study of the vocal style of Palestrina. Exercises in modal counterpoint. Listening repertory of compositions. Prerequisite: 303. Not offered 1977-78.

312 INSTRUMENTAL AND VOCAL POLYPHONY OF THE LATE BAROQUE\*. S. A study of contrapuntal practice of late Baroque composers, principally J. S. Bach. Exercises in tonal counterpoint. Listening repertory of compositions. Prerequisite: 304 or 104 and 233. *Staff.*

313 MUSIC OF THE CLASSICAL PERIOD\*. F. A study of the Classical style of Haydn, Mozart, and Beethoven. Analytical score studies of representative works. Listening repertory of compositions. Several short papers. Prerequisite: 104. *Staff.*

314 MUSIC OF THE ROMANTIC PERIOD\*. F even years. A study of the principal forms of the Romantic period from Schubert and Schumann through Wagner. Analytical score studies of representative works. Listening repertory of compositions. Several short papers. Prerequisite: 203. *Mr. H. Slenk.* Not offered 1977-78.

315 **ARRANGING, ORCHESTRATION, AND SCORING\***. F and S. Survey of the history of the orchestra and orchestration, and problems involved in writing for orchestra, band, and stage band. A survey of the technical limitations of each instrument and the human voice. Projects written by class members will be performed by department organizations whenever practicable. Prerequisite: 104. *Mr. J. Worst.*

316 **ARRANGING, ORCHESTRATION, AND SCORING\***. S. Continuation of 315, which is prerequisite. *Mr. J. Worst.*

317 **COMPOSITION\***. F. Writing in contemporary forms and according to contemporary practice. Prerequisite: 104 or permission of the instructor. *Mr. J. Worst.*

319 **CHURCH MUSIC FOR CONCENTRATES. I, S odd years.** A study of the worship music of the major Christian traditions in relation to their liturgies. Principles of appropriate worship music are discussed in the light of the history of church music. Prerequisite: 203. Not offered 1976-77.

## MUSIC EDUCATION

238 **ELEMENTARY SCHOOL MUSIC\***. F and S, core. A study of the content and methods for teaching music in the elementary school classroom. Includes consideration of philosophy and materials. This course is recommended for elementary education students. (Music 239 is required of elementary music education majors.) *Mrs. P. Koning, Mr. D. Topp.*

239 **SCHOOL MUSIC\***. F. A study of the philosophy, methods, and materials for teaching elementary and secondary school music with emphasis upon research, planning, and teaching. This course is required of secondary music education majors, music minors, and elementary music education majors, and is also open to elementary education majors with a background in music. *Mr. D. Topp.*

## APPLIED MUSIC

### INDIVIDUAL LESSONS

*Students enrolling in any course in this section must also register for 180.*

110 **ORGAN.** Quarter course. Individual lessons in organ emphasizing skills for the church organist. *Mr. J. Hamersma and Staff.*

120 **PIANO.** Quarter course. Individual lessons in piano. *Mrs. R. Rus, Mrs. T. Knol, Mrs. M. Slenk.*

130 **VOICE.** Quarter course. Individual lessons in voice. *Mr. C. Kaiser.*

140 **BRASSES.** Quarter course. Individual lessons in cornet, horn, baritone, trombone, or bass horn.

150 **PERCUSSION.** Quarter course. Individual lessons in snare drum, tympani, and other percussion instruments.

160 **STRINGS.** Quarter course. Individual lessons in violin, viola, violoncello, or bass viol.

170 **WOODWINDS.** Quarter course. Individual lessons in flute, oboe, clarinet, bassoon, or saxophone.

210 **ADVANCED ORGAN.** Half course. Individual lessons for the music major concentrating in organ. *Mr. J. Hamersma.*

220 **ADVANCED PIANO.** Half course. Individual lessons for the music major concentrating in piano. *Mrs. R. Rus, Mrs. T. Knol.*

230 **ADVANCED VOICE.** Half course. Individual lessons for the music major concentrating in voice. *Mr. C. Kaiser.*

240 **ADVANCED BRASSES.** Half course. Individual lessons for the music major concentrating in cornet, horn, baritone, trombone, or bass horn.

260 **ADVANCED STRINGS.** Half course. Individual lessons for the music major concentrating in violin, viola, violoncello, bass viol, or classical guitar.

270 **ADVANCED WOODWINDS.** Half course. Individual lessons for the music major concentrating in flute, oboe, clarinet, bassoon, or saxophone.

### CLASS LESSONS

180 **REPERTORY CLASS AND STUDIO CLASSES.** F and S, no credit. Performance classes for students of applied music for the purpose of gaining experience in public performance and increasing knowledge of music literature. Attendance is required of all music majors and students registered for individual lessons in applied music. *Staff.*

197 **STRINGS AND BRASSES.** F odd years. Class lessons in string and brass instruments for the music major concentrating in

instrumental music education and others wishing to learn a secondary instrument. *Mr. H. Geerdes.*

**198 WOODWINDS AND PERCUSSION.** Even years. Class lessons in woodwind and percussion instruments for the music major concentrating in instrumental music education and others wishing to learn a secondary instrument. *Mr. H. Geerdes.*

#### ENSEMBLES

**121 COLLEGIUM MUSICUM.** Quarter course. Music for small instrumental and/or vocal ensembles from all periods is studied and performed. This is an honors ensemble open to singers and instrumentalists who also participate in the choir, band, or orchestra. It is also open to keyboard, woodwind, and brass instrumentalists who are interested in performing on old wind and keyboard instruments and who meet the demands of musicianship. *Staff.*

**131 CAMPUS CHOIR.** Quarter course. Representative works in the field of choral literature are studied and sung. Emphasis given to the development of singing and sight-reading skills as well as to regular performances. Open to music majors and others who meet the requirements of voice and musicianship. *Mr. M. Mustert.*

**141 CAPELLA.** Quarter course. Representative works in the field of choral literature are studied and a limited number of selections are prepared for concert performance. Membership is maintained at a set limit and is open only to those who meet the demands of voice, sight reading, and choral musicianship. *Mr. H. Slenk.*

**151 STUDIO LAB BAND.** No credit. Representative works from traditional, contemporary, and experimental jazz and rock music are studied and prepared for public performance. Open to a limited number of instrumentalists who meet the demands of musicianship. Does not meet the music major ensemble requirement.

**161 CONCERT BAND.** Quarter course. Representative works in the field of band literature are studied and prepared for concert performance. Open to all students who meet the demands of musicianship. Three rehearsals a week. *Mr. C. Vander Puy.*

**171 ORCHESTRA.** Quarter course. Representative works in the field of chamber and symphony orchestra literature are studied

and prepared for concert performance. Open to all students who meet the demands of musicianship. One full orchestra rehearsal per week, plus one string orchestra rehearsal. *Mr. J. Bartlett.*

**181 ORATORIO CHORUS.** No credit. The study of representative works of the great masters of choral writing with a view to public performance. Handel's *Messiah* is performed annually at Christmas time and another oratorio is presented in the spring. Open to all who meet the requirements of voice and musicianship. One rehearsal a week. *Mr. H. Geerdes.*

**THEORY.** The elements of music will be studied with an emphasis on rhythm, melody, and harmony. Includes lectures, class discussion, practice sessions, and daily written assignments. Work includes listening to, singing, playing, and writing of rhythms, melodies, and harmonies, and the study of selected compositions that illustrate these musical elements. Recommended for students with musical performing skill who have little or no theory background; for students considering a music major or major involving music, and for students who did poorly in first semester music classes who wish to continue in some form of music major. Prerequisite: ability to read music in at least one clef. *Mr. J. Worst.*

**I-13. PIANO PEDAGOGY.** A course designed to prepare students to give instruction in piano. Emphasis on goals, methods, and materials, class discussions, outside reading, films. The course will be followed second semester with required teaching experiences involving children, under the guidance of the instructor. Prerequisite: permission of the instructor. *Mrs. T. Knol.*

**I-50. MUSIC FOR THE CHURCH ORGANIST.** An introduction to everything a musician need to know to play a church service effectively. The course includes a survey of hymn preludes and their uses, a summary of basic organ techniques and their application to the interpretation of organ literature, a study of hymns and how to use and play them, and an introduction to organ design and registration. Methods: lectures, demonstrations, class lessons, record and tape listening assignments, service playing, church visits. Three hours practice per day. Prerequisites: one or more years of organ lessons, or one or more years of experience playing services, or an excellent piano background. *Mr. J. Hamersma.*

I-51. **MUSIC FOR THE CHURCH CHOIR DIRECTOR.** An introduction to the basic skills of choral conducting: score study, rehearsal and conducting techniques, and choral repertoire. The course will include daily lectures in score study and manual technique, plus daily laboratory sessions in conducting practice. There will also be lectures on repertoire for the church choir. Prerequisites: the ability to read a four-part choral score. *Mr. H. Slenk.*

I-52. **THE CONCERTO.** A study of the concerto from early Baroque times into the twentieth century. Representative works will be analyzed to show the different ways the concerto principle is manifested in different musical styles. Listening, analysis, assigned readings, written and oral reports, and tests. Prerequisites: junior music major status or permission of instructor. *Mr. C. Stapert.*

I-53. **ACCOMPANYING FOR PIANISTS.** A course designed to give pianists specific skills in the art of accompanying. Students may select their own soloists-singers and/or instrumentalists. They will be guided in this by the instructor and by the particular needs of the department. Basic piano practice will be both a requirement and an asset. The course will end with a public presentation of the most successful ensemble work of each student. Prerequisite: Permission of instructor. *Mrs. R. Rus.*

## GRADUATE COURSES

511 **SCHOOL INSTRUMENTAL MUSIC.** A survey of music and materials available for instrumental classes, small ensembles, bands, and orchestras at the elementary, middle school, and high school level. The course covers such topics as the techniques for evaluating materials in terms of their musical value as well as for their effectiveness as teaching tools, the history and the development of literature for the wind band, and the principles of good programming. *Staff.*

510 **SCHOOL CHORAL MUSIC.** An examination of the significant choral literature from the Renaissance to the present day. For daily research projects the student will use the reference works, scores, and recordings in the Calvin libraries. The instructor will call attention to the repertoire suitable for junior and senior high school choirs. Prerequisite: undergraduate major or minor in music or permission of instructor. *Staff.*

512 **USING MUSIC TO TEACH OTHER SUBJECTS.** An examination of the ways in which music may support the learning of such other subjects as history, literature, geography, physical education, basic school skills, Bible, psychology, sociology, and foreign languages. Students will learn how to find, evaluate, and present music in areas that they select. No previous musical skills are required. Students electing the course for only one-half course credit will do less research. *Staff.*

581 **ADVANCED METHODS AND MATERIALS FOR MUSIC EDUCATION.** An examination of music teaching methods and materials in a philosophical and historical context. Students will use readings in the philosophy and history of education combined with related lectures and class discussions as material for developing their own attitudes toward music education. Includes organization of programs for personal and professional growth. *Staff.*

590 **INDEPENDENT STUDY** (graduate). F,I,S. *Staff.*

595 **GRADUATE PROJECT.** F,I,S., full or half course. The prospectus for each Master of Arts in Teaching project must be developed under the supervision of a faculty member and must be approved by the student's graduate adviser. *Staff.*

## JANUARY 1978 INTERIM

I-10. **THE MUSIC LISTENING CAFETERIA.** An introductory course in music listening for students of any class level with any sort of background in music. Following a two-day introduction for all students, each student will elect three units from the list that appears below. Each unit will require the purchase of a paperback or record and will consist of three days of classroom presentation and discussion, a fourth day for individual conferences and review, and a fifth day for testing. Each unit will be completed before the next begins. Students will do listening and reading assignments. Topical units are: oratorio, symphony, descriptive music, basic listening skills (required of those who fare poorly in the introductory unit), chamber music, opera, piano music, music of various historical eras. Satisfies fine arts core. *Mr. H. Geerdes, Mr. C. Kaiser, Mr. D. Topp.*

I-11. **AN INTRODUCTION TO MUSIC**

# Philosophy

Professors P. De Vos, D. Hoitenga, \*K. Konyndyk, R. Mouw, C. Orlebeke (chairman),  
\*\*A. Plantinga, \*\*E. Runner, J. van der Hoeven, J. Van Hook, \*N. Wolterstorff  
Assistant Professor W. S. Vanderploeg  
Instructor R. Pauw

BEFORE APPLYING for admission to a major program a student must have completed either 151 or 153 with a minimum grade of C (2.0). The program of concentration requires eight courses including one course in logic, two courses in Perspectives in Philosophy (151-152), two historical period courses (210, 220, 230, 240), one historical figure or movement course, and two courses in systematics, including one from the advanced level. Students may also meet the departmental requirements by completing Introduction to Philosophy (153) and an intermediate-level systematics course instead of 151-152, provided the historical period courses are chosen from 210, 220, and 230. A four-unit cognate sequence approved by the student's adviser is required in another department.

If a student wishes to present one course toward the core requirement in philosophy, it should be 153. If he wishes to present two courses, they should be: 151 and 152; 153 and either 171 or 173; 153 and any intermediate level course; or, if he is in teacher education, 153 and 209 or Education 304.

## ELEMENTARY COURSES

151 and 152 PERSPECTIVES IN PHILOSOPHY. F and S. A year-long introduction to philosophy which aims to give the student a Christian philosophical framework for his thinking, along with some awareness of important alternative philosophical perspectives. It also aims to give the student some sense of the history of philosophy. 151 is a prerequisite to 152. Mr. R. Mouw.

153 INTRODUCTION TO PHILOSOPHY. F and S. A one-semester introduction to philosophy, with fundamentally the same aims as the Perspectives in Philosophy course, except that it will not aim to acquaint the student with the history of philosophy. Staff.

171 INTRODUCTION TO LOGIC. F and S. A course in elementary deductive and inductive logic with emphasis upon the use of logic in evaluating arguments. Suitable for freshmen; not recommended for students majoring in philosophy. Mr. D. Hoitenga, Mr. C. Orlebeke.

173 INTRODUCTION TO SYMBOLIC LOGIC. F and S. A course in elementary symbolic logic, including some modal logic. This course is designed for students majoring in

philosophy, science, and mathematics. Open to qualified freshmen. Mr. K. Konyndyk, Mr. R. Pauw.

## INTERMEDIATE SYSTEMATIC COURSES

All intermediate courses presuppose one course in philosophy.

203 PHILOSOPHY OF SCIENCE.\* F. A study of philosophical problems arising out of the methods and results of modern science. Staff.

204 PHILOSOPHY OF RELIGION.\* F. A study of some philosophical questions arising from religious belief. Mr. K. Konyndyk.

205 ETHICS.\* F and S. A course designed to deal both historically and situationally with the persistent problems of the moral life. Mr. D. Hoitenga, Mr. W. S. Vanderploeg.

206 PHILOSOPHY OF HISTORY.\* S. An examination of several topics in both the speculative and analytical philosophy of history. Some consideration will be given to individual thinkers such as St. Augustine, Hegel, and Collingwood, but the course will be structured around questions

of the nature and meaning of historical knowledge. Mr. M. H. Rienstra.

207 **POLITICAL AND SOCIAL PHILOSOPHY.**\* F and S. A systematic study of the problems of social and political thought, historically oriented, with emphasis on political and social ideals, such as political and social justice; equality and the law; the basis of social and political authority; rights and obligations. Mr. R. Mouw.

208 **AESTHETICS.**\* S. A study of the nature of art and aesthetic judgments. Mr. N. Wolterstorff.

209 **PHILOSOPHY OF EDUCATION.**\* A study of the nature, aims, and principles of education. Not offered 1977-78.

### INTERMEDIATE HISTORICAL COURSES

All intermediate courses presuppose one course in philosophy.

210 **HISTORY OF ANCIENT PHILOSOPHY.** F. A history of philosophy in the Greek and Hellenistic periods. Mr. C. Orlebeke.

220 **HISTORY OF MEDIEVAL PHILOSOPHY.** F. A history of philosophy from Augustine to the Renaissance. Mr. A. Plantinga.

230 **HISTORY OF MODERN PHILOSOPHY.** F and S. A study of selected philosophies of the seventeenth and eighteenth centuries. Mr. J. Van Hook.

240 **HISTORY OF CONTEMPORARY PHILOSOPHY.** S. A study of major movements in recent and contemporary Anglo-American philosophy. Preparation in the history of philosophy is strongly recommended. Not offered 1977-78.

243 **AMERICAN PHILOSOPHY.**\* S. A critical study of major movements in the history of American philosophy with special emphasis on the pragmatism of Peirce, James, and Dewey. Not offered 1977-78.

244 **NEO-MARXISM.** F. A survey of twentieth-century neo-Marxist philosophy, including the so-called Frankfurt School. Special attention will be devoted to topics in the philosophy of social science. Mr. J. van der Hoeven.

### ADVANCED HISTORICAL COURSES

All advanced courses presuppose at least two courses in philosophy, normally two courses

from the intermediate historical group including 230.

312 **PLATO AND ARISTOTLE.** S. Advanced study of Plato and Aristotle. Mr. C. Orlebeke.

331 **KANT.** S. A study of the *Critique of Pure Reason*. Mr. N. Wolterstorff.

332 **HEGEL.** F. Mr. J. van der Hoeven.

335 **NINETEENTH CENTURY PHILOSOPHY.** F. A study of the major figures in nineteenth century continental European philosophy. Not offered 1977-78.

340 **TWENTIETH CENTURY CONTINENTAL PHILOSOPHY.** F. A study of major figures in recent phenomenology and existentialism. Suggested preparation: 335. Mr. E. Runner.

### ADVANCED SYSTEMATIC COURSES

All advanced courses presuppose at least two courses in philosophy, normally two courses from the intermediate historical group.

371 **EPISTEMOLOGY.**\* F. A study of the nature, sources, types, and limits of human knowledge. Mr. A. Plantinga.

375 **PHILOSOPHICAL ANTHROPOLOGY.**\* S. A critical examination of major philosophical discussions of the nature of man, with special attention to the concepts of mind, body, action, soul, and immortality. Mr. W. S. Vanderploeg.

381 **ADVANCED LOGIC.**\* S. Topics include the formalization of propositional and quantificational logic. Mr. R. Pauw.

390 **READINGS AND RESEARCH.**\* F, I, S. Prerequisite: permission of chairman. Staff.

395 **ONTOLOGY.**\* S. A study of selected topics of ontology. Not offered 1977-78.

### GRADUATE COURSES

501 **THE EDUCATIONAL ENTERPRISE: A PHILOSOPHICAL PERSPECTIVE.** An examination of factors presently operative in the educational enterprise from the perspective of the history of Western philosophy. Satisfies context of education requirement in education and philosophy. Staff.

590 **INDEPENDENT STUDY (graduate).** F, I, S. Staff.

595 **GRADUATE PROJECT.** F, I, S., full or half course. The prospectus for each Master of Arts in Teaching project must be developed

under the supervision of a faculty member and must be approved by the student's graduate adviser. *Staff.*

## JANUARY 1978 INTERIM

I-10. THE MORAL, SOCIAL, AND RELIGIOUS THOUGHT OF JACQUES ELLUL. An examination and evaluation of several books (in translation) of the French Reformed cultural critic and lay-theologian Jacques Ellul. Emphasis is placed upon his diagnosis and critique of modern technological culture, his reflection on Christian ethics, and his view of the political responsibility of Christians. Lectures and discussions of assigned readings. Each student will be required to write a research paper on some aspect of Ellul's thought. While there is no prerequisite, some background in philosophy (especially ethics or political philosophy) is helpful. *Mr. J. Van Hook.*

I-11. ETHICS IN THE PROFESSIONS. A study of ethical principles and practices in business, medicine, education, law, and government. Case studies and ethical codes are drawn from diverse professions. Main topics include: the nature and current status of the professions, the nature of moral decision making, and social responsibility of corporations. Objectives include providing students with the intellectual framework for an appropriately ethical analysis of a situation and the fostering of understanding across professional lines. Readings, audio-visuals, guest speakers, lectures, discussions, written reports. *Mr. D. Hoitenga.*

I-50. INDIVIDUALISM. This course will attempt to identify and evaluate the ideas and themes associated with the label, "individualism." What are the patterns of thought to which this label has been applied? What do "individualisms" in various areas—economics, politics, ethics, religion—have in common? What options are available to persons who wish to reject individualism? Special attention is given to assessments of individualism in three areas: politics, sociological theory, and religious life. Prerequisite: one course in philosophy. *Mr. R. Mouw.*

I-51. CAN THE USE OF VIOLENCE BE MORALLY JUSTIFIED? A philosophical exam-

ination of violence and arguments for and against the use of violence. Is it morally permissible to use violence in self-defense, in police work, in war, in revolution, or in civil disobedience? Or is it never permissible to use violence? The course examines some traditional Christian answers to these questions, along with their supporting arguments, especially those from the "Just War" tradition and the Pacifist tradition. Is either of these traditional modes of argument supported by Scripture? How ought we to answer these questions? Lectures, discussions, papers, including student presentations in class. Prerequisite: one course in philosophy. *Mr. K. Konyndyk.*

I-52. MAURICE MERLEAU-PONTY: HIS PHILOSOPHICAL PSYCHOLOGY AND PHENOMENOLOGY. Merleau-Ponty was one of the most significant thinkers of the twentieth century. Topics to be studied include his criticisms of behaviorism, his development of Gestalt theory, and his theory of the role of the body in perception. Chief sources for the course are his *The Structure of Behavior* and *Phenomenology of Perception*. Lectures, class reports, and papers. Of interest to students of philosophy, psychology, and recent European thought. Prerequisite: one course in philosophy. Also helpful: 340. *Mr. E. Runner.*

I-53. DIVINE SIMPLICITY. One of the absolutely crucial doctrines in all classical theology, no matter what ecclesiastical tradition, is the doctrine that God is *simple*—that is, without any internal distinctions or differentiations. In the classical structure of Christian theology it is on this one that many other doctrines hang—for example, the doctrine of God's eternity, of his immutability, theories concerning our predications about God, etc. This course will examine this doctrine and assess its correctness. Students will see its origins in Greek thought and then follow its development in Augustine, Boethius, Aquinas, some of the classical Reformed theologians, etc. Readings, discussions, and either a paper or an "intellectual diary." Prerequisites: two philosophy and two religion courses or permission of the instructor. *Mr. N. Wolterstorff.*

Idis I-51. FACING UP TO TECHNOLOGY: A COURSE FOR NON-TECHNOLOGISTS. *Mr. C. Orlebeke.*



# Physical education

Professors B. Steen, M. Zuidema (chairman)

Associate Professor J. Timmer

Assistant Professors R. Honderd, J. Pettinga, D. Tuuk, D. Vroon, D. Zuidema

Instructors N. Van Noord, D. Hageman

Assistant Instructor K. Hoesch

**THE DEPARTMENT SERVES** dual functions—it provides a required but flexible two-year sequence of physical education for all students; it also offers professional training for physical education teachers and coaches.

**Admission** to the professional concentration, which also satisfies the certification requirements for teaching k-12 or the elementary and secondary levels, requires the approval of the department chairman. The ten-and-a-half-course program includes 201, 212, 215, four courses from the 230 series, 301, 302, 380, and Biology 115. Physical Education 221 is also required and may be substituted for one quarter-course in basic physical education or for one of the 230 courses. With the approval of the department 312 may be substituted for 230 in major programs. The seven-course teaching minor includes three quarter-courses from 100-199, 201, 212, 221, 302, 380 as a half course, and Biology 115.

## BASIC PHYSICAL EDUCATION COURSES

**The Basic Physical Education** program is part of the liberal arts core and consists of an initial personal inventory (101) followed by four quarter courses (normally three from 120-198 plus 199). Veterans with two or more years of military experience will be exempted from the core requirements in physical education if they present discharge papers at the Registrar's Office.

**All students** must register for PE 101 (Diagnosis-Classification) as their first physical education course. The first five weeks of this course are devoted to a diagnostic inventory to determine fitness, skills, understanding of physical education, psycho-social needs, and recreational goals. On the basis of the results, the student and his instructor plan an appropriate sequential program of courses including fitness and skill developmental activities, aquatics, and recreational sports. Older or handicapped students typically satisfy the requirements with courses from the Adaptive Program (110). All students must register for Physical Fitness (199) as the fourth quarter course in the sequence.

**Physical Education** majors and minors and elementary education students may substitute 221 for one quarter course in basic physical education (110-198).

**101 DIAGNOSIS-CLASSIFICATION.** F and I, non-credit. This course substitutes for the first five weeks of the student's first basic physical education course. Each student undergoes a thorough diagnostic inventory to assist him and his instructor in planning an appropriate program of college physical education for the student. *Staff.*

**110 ADAPTIVE PROGRAM.** F, I, and S, quarter course. This is a specialized program for older students and those with physical handicaps whose needs cannot be met in the regular programs (120-198). Adaptive

and corrective activities are developed for each student. Students are assigned to regular activities or special programs. The college physician is consulted in the case of physically handicapped students. Students who are eligible for this course should consult the departmental representative at registration. The course may be repeated. *Mr. M. Zuidema.*

**120-159 GUIDED INSTRUCTIONAL PROGRAM.** F, I, and S, quarter courses. Various developmental and recreational courses planned to develop one or more aspects of

personal efficiency are offered. Examples of such courses are: physical conditioning, weight training, motor training, rhythmic, wrestling, gymnastics, badminton, bowling, tennis, golf, handball, paddleball, and volleyball. Up to three quarter courses may be taken in this program. *Staff.*

160-198 SPECIALIZED INSTRUCTIONAL PROGRAM. F, I, and S, quarter course. Specific courses are developed with a departmental representative and may include, among others, aerobic fitness, individual and group experience in creative movement expression, and programmed learning in self-defense, skiing, cycling, or mountain climbing. Such programs may be arranged by individuals or groups and for more advanced students may include instructional clubs in various leisure-time sports. Up to three quarter courses may be taken in this program. *Staff.*

199 PHYSICAL FITNESS. F and S, quarter course. This course is the final one in the basic physical education sequence and, accompanied by a review of the results of the student's initial personal inventory, aims to give him a basis for maintaining life-long physical fitness. *Staff.*

221 ELEMENTARY SCHOOL ACTIVITIES AND PROGRAMS. See description under Professional Courses.

### PROFESSIONAL COURSES

201 HISTORY AND PERSPECTIVE.\* F. The course deals with two areas—the history of physical education in the civilized world, and the problems, purposes, and philosophical implications of physical education as they affect man in general and educational institutions in particular. *Mr. B. Steen.*

212 KINESIOLOGY. F. A study of human motion from the scientific standpoint. Particular attention is given to a mechanical analysis of musculoskeletal movements as applied to games, sports, and daily living. Prerequisite: Biology 115. *Mr. R. Honderd.*

215 PHYSIOLOGY OF PHYSICAL ACTIVITY.\* S. A study of physical efficiency and physiological principles involved in human exercise. Emphasis will be placed on the responses of the respiratory, cardiovascular, and muscular systems. The course includes the physiology of factors affecting performance such as the environment and the use

of tobacco, alcohol, and drugs. Prerequisite: Biology 115. *Mr. J. Timmer.*

221 ELEMENTARY SCHOOL ACTIVITIES AND PROGRAMS.\* F and S, half course. The course provides a working knowledge of the fundamentals of physical education planning for elementary school children. It substitutes for one quarter course in basic physical education (110-198) for physical education majors and minors, and for elementary teacher education students. *Mr. M. Zuidema and staff.*

230-239 THE TEACHING AND COACHING OF ACTIVITIES. Half course. Students with a major concentration in physical education must combine various courses to total the required two-course credit. Prerequisite: a record of participation in skill performance or completion of the same activity in 380. Students must complete Laboratory A and Laboratory B while registered for their first two courses in the 230 series.

LA Motor Learning Principles. F and S. *Mr. M. Zuidema.*

LB Psychology of Teaching/Coaching. F and S. *Mrs. D. Hageman.*

230 Field Hockey. S. *Mrs. D. Hageman.*

231 Basketball. F. *Mr. D. Vroon.*

232 Baseball/Softball. S. *Mr. J. Pettinga.*

233 Track and Field. S. *Mr. D. Tuuk.*

234 Soccer. F. *Mr. M. Zuidema.*

235 Volleyball/Tennis. F. *Miss K. Hoesch, Miss N. Van Noord.*

236 Football. F. *Mr. J. Pettinga.*

237 Gymnastics. S. *Miss N. Van Noord.*

238 Wrestling. S. *Staff.*

301 MEASUREMENT AND EVALUATION IN PHYSICAL EDUCATION.\* S. A study of the evaluation techniques in physical education. Emphasis on evaluation of physical fitness, body mechanics, growth, motor ability, sport skills, knowledge of health practices and sports activities, and program evaluation. Consideration is given to the organization of evaluation programs and the use of such programs. The course gives opportunity for practical experience in administering tests. *Mr. M. Zuidema.*

302 ORGANIZATION OF THE CURRICULUM AND PROGRAMS OF PHYSICAL EDUCATION. S. A study of the structure and curricula of modern physical education programs of elementary and secondary schools and the closely-related areas of administration of athletics, intramurals, recreation, and health programs. Opportunity is given to construct total programs of physical education for selected schools. *Mr. B. Steen.*

**303 LEADERSHIP IN RECREATION PROGRAMS.** S, half course. This course studies the organization of recreation programs and gives opportunity for observing programs in action, for structuring new programs, and for developing leadership skills. *Mr. D. Tuuk.*

**312 PHYSIOLOGY OF CONDITIONING AND INJURIES.** F, half course. The study of physiological principles as they apply to physical training and rehabilitation from injury. Specific types of training programs are studied. Laboratory topics will include athletic injury treatment, taping techniques, and first aid procedures. May substitute for 230 in major programs with the approval of the department. Prerequisite: Biology 115. *Mr. J. Timmer.*

**380 INDIVIDUAL COMPETENCES.** F, I, and S, full or half course. This course offers opportunity for physical education majors and minors to develop the physical condition and skill necessary to be beginning teachers in physical education. It requires active participation and competence in a variety of physical education skills. Students should register for this course when they are admitted to a major or minor in the department and remain registered for it until they have completed the other departmental requirements. Majors, who need a full course credit, must earn 210 points, and minors, who receive a half course credit, must earn 105. Periodic competency examinations are given. Elements of this course are prerequisites for 230 courses. *Mr. B. Steen, Miss K. Hoesch.*

### JANUARY 1978 INTERIM

**I-10. TEACHING SPECIAL AND ADAPTIVE ACTIVITIES.** This course deals with using and adapting gross motor activities as tools to meet educational goals for special popu-

lations. Goals such as building self images, cultural orientation, group interaction, assertive training, etc., are defined. Methods for adapting activities for therapy with such populations as emotionally disturbed adolescents, physically handicapped citizens, and senior citizens are studied. Students will participate in lab sessions emphasizing practical applications. Field experiences working with the various populations will be required. Students must be prepared to take leadership roles and spend time outside of class in various settings. Prerequisite: ability to take leadership responsibilities. *Mrs. D. Hageman, Miss N. Van Noord.*

**I-50. OUTDOOR EDUCATION.** This course is designed to give the student opportunities to develop knowledge and appreciation for the out-of-doors through direct experiences, research projects, and field trips. It involves the theory for such activities and the practice. Direct experiences could include: cross-country skiing, orienteering, snow shoeing, ice fishing, tracking, hiking, and winter camping. Visiting lecturers and field trips to area nature centers will be included. A lab fee of \$20.00 must be paid in advance. Students are responsible for securing their own cross-country skiing equipment. Prerequisite: sophomore standing or above. *Miss K. Hoesch, Miss D. Zuidema.*

**I-51. EXERCISE THERAPY.** An introduction to the role of exercise in rehabilitation and preventive medicine. The course looks at the influence exercise has on the problem of disability—disability defined as the restrictive influence which disease, injury, and age exert upon neuro-psychomotor performances. Topics to be surveyed will include: cardiac rehabilitation, muscular rehabilitation, and uses of exercise in remedial motor learning settings. Prerequisite: 215. *Mr. J. Timmer.*

# Physics

*Professors V. Ehlers (chairman), R. Griffioen (acting chairman), A. Kromminga, C. Menninga, H. Van Till, J. Van Zytveld*  
*Assistant Professor R. Manweiller*

**STUDENTS INTENDING** to major in physics are advised to enter college with four years of mathematics and to take their required courses in mathematics

(Mathematics 111, 112, 211, 212) and physics (Physics 123, 124, 181, 182, 225, 226) during their freshman and sophomore years. Computer Science 108 is also recommended for the first semester of the freshman year. Students may apply for admission to the department before completing 226 and Mathematics 212, but they must have completed the designated courses with a minimum average grade of C (2.0) before they can be admitted to the major program.

The major program of concentration in physics consists of a total of nine courses, including the required basic physics courses listed above. Each student's program of concentration must be approved by the department and must include an appropriate distribution of theory and laboratory courses as well as cognate courses in mathematics.

Students with physics majors from Calvin may, with appropriate planning, earn a degree in mechanical engineering (M.E.) from the University of Michigan School of Engineering with one additional year of study. Such programs should be planned with the department chairman.

Students planning to pursue graduate study in physics should take, in addition to the introductory courses, 335, 345, 346, 375, 376, 380 or 381, a minimum of a half course credit of Modern Physics Laboratory, 365 or 379, 395 and 396 or an interim course in research, and Mathematics 313.

The major program of concentration in physics for secondary education students requires a minimum of nine college courses, including Philosophy 203, Physics 123, 124, 181, 182, 225, 226, 380 or 381, a minimum of a half course credit of Modern Physics Laboratory, plus approved electives from the Advanced Courses. The minor program for secondary education students requires 123, 124, 181, 182, 225, 226, 380 or 381, plus approved electives from Advanced Courses. Each student's program must be approved by the chairman of the department.

The teaching group major in physics and mathematics consists of Mathematics 111, 112, 211, 212, 321, and 351; Physics 123, 124, 181, 182, 225, 226, 381, and a minimum of a half course credit of Modern Physics Laboratory. A group minor in the same fields consists of Mathematics 111, 112, and 211; Physics 123, 124, 181, 182, 225, and 226. The elementary teacher education adviser is Mr. Clarence Menninga.

The teaching group major in physics and chemistry consists of Physics 123, 124, 181, 182, 225, 226; Chemistry 103, 104, and either 253-254 or 301-302; and two and a half courses approved by the Science Division Education Coordinator, Mr. Clarence Menninga. Courses recommended for such electives include Physics 380, 381, 382, Chemistry 201, 277, and 278.

A group major in science and mathematics meets the needs of some students, particularly those in professional programs. The majors are not appropriate for students who anticipate attending graduate school or who are in teacher education programs. Such group majors require twelve courses in the sciences and mathematics, ten of which must be from two departments with no fewer than four from either, with the remaining two courses chosen from a third department. The departmental chairmen of the three departments must approve each such program.

The physical science core requirement may be met by a year of high school physics, by 110, 112, 124, 222, 225, Chemistry 104, Astronomy 110, 201, Geology 252, or interim courses in physics and chemistry which are designated as satisfy-

ing the core. Students preparing to be elementary teachers should take 112 and must complete 113 if any other course is taken instead.

## INTRODUCTORY COURSES

**110 PHYSICAL SCIENCE.** F and S, core. This course evaluates the basic assumptions used in the scientific study of nature, discusses the methods of scientific investigation and the development of scientific theories, and presents the results of scientific investigations in the fields of physics and chemistry. It also acquaints students with the fundamental laws of physics and chemistry and explains certain important physical phenomena. This course is designed primarily for non-science majors and is not open to those who have taken (or plan to take) Physics 112, 123, 126, or 221. Laboratory. Prerequisites: high school algebra and Mathematics 109 or its equivalent. Staff.

**112 PHYSICAL SCIENCE.** F and S, one and a half courses, core. The major objectives of this course are the same as those of 110 except that a laboratory-oriented approach is used to achieve the objectives. Emphasis is placed on the processes and structure of science. The course is open only to future elementary school teachers and makes use of elementary school science programs and materials. Not open to those who have taken or plan to take 110, 123, 126, or 221. Prerequisites: high school algebra and Mathematics 109 or their equivalent. Mr. C. Manweiler, Mr. J. Van Zytveld.

**113 SCIENTIFIC PROCESSES AND SCIENCE TEACHING.** S, half course. A study of the processes and structure of science, designed to acquaint future elementary school teachers with the fundamentals of science and their use in elementary school science programs. Extensive use is made of programmed modules and elementary school science materials. For students entering elementary education programs who have taken 110 or Astronomy 110 previously rather than 112, the preferred course. Not open to students who have taken 112. Prerequisite: 110 or Astronomy 110. Staff.

**123 INTRODUCTION TO MODERN AND CLASSICAL PHYSICS.** F, half course. This course, along with 124, which is its continuation, serves as an introduction to both classical and modern physics for students planning to major in science or mathematics. Mathematically qualified students are encouraged to satisfy the core requirement

with 123 rather than with 110. Topics in classical physics include mechanics and thermodynamics. The nature of scientific study in general and its place in one's world and life view will be discussed. Prerequisites: concurrent registration in or completion of 181, Mathematics 111, and, if possible, Computer Science 108. Mr. H. Van Till.

**124 INTRODUCTION TO MODERN AND CLASSICAL PHYSICS.** S, core. A continuation of 123, which is a prerequisite. Prerequisites: Mathematics 111 and concurrent registration in Mathematics 112 and Physics 182. Mr. H. Van Till.

**126 INTRODUCTORY PHYSICS: MECHANICS AND HEAT.** S. An introduction to classical Newtonian mechanics applied to linear and rotational motion; a study of energy and momentum and their associated conservation laws; an introduction to the concept of heat and a study of the first and second laws of thermodynamics. This course serves as a preparation for 225 and is intended primarily for engineering students and others who cannot fit 123-124 into their programs. Laboratory. Prerequisites: Mathematics 111 and concurrent registration in Mathematics 112. Staff.

**221 GENERAL PHYSICS.** F. One and one-quarter course. This course is designed for those who do not intend to do further work in physics. The major areas of physics are discussed: mechanics, heat, electricity and magnetism, light, waves, relativity, and quantum theory. Laboratory. Prerequisites: plane trigonometry and high school algebra. Staff.

**222 GENERAL PHYSICS.** S, core. One and one-quarter course. A continuation of 221, which is a prerequisite. Laboratory. Staff.

**223 PHYSICS FOR THE HEALTH SCIENCES.** F. An introduction to those topics in physics which are basic to work in a variety of health science fields. The course is oriented toward understanding some of the basic laboratory techniques and instruments which are fundamental to medical and para-medical instrumentation. Topics include physical measurements and data analysis, basic mechanics, heat, electric and magnetic fields, electric circuits, basic electronics and instrumentation, optics,

radioactivity, and X-rays. Prerequisites: High school geometry and algebra. *Mr. J. Van Zytveld.*

225 **INTRODUCTORY PHYSICS: ELECTRICITY, MAGNETISM, AND WAVES.** F, core. A study of the properties of electric and magnetic fields and of the integral forms of Maxwell's equations which describe these fields; a mathematically unified treatment of alternating current circuits, general wave phenomena, and geometrical and physical optics. Laboratory. Prerequisites: 124 or 126, Mathematics 112, and concurrent registration in Mathematics 211. *Mr. R. Griffioen, Mr. A. Kromminga.*

226 **INTRODUCTORY MODERN PHYSICS.** S. An introduction to quantum effects and the wave-particle duality of matter and radiation: a study of the structure of atoms, molecules, solids, nuclei, and fundamental particles as described by Schroedinger theory. Einsteinian relativity is also considered. Prerequisites: 225, Mathematics 211, and Computer Science 108. *Mr. R. Griffioen.*

### ADVANCED COURSES

*Prerequisites for all of the 300-level physics courses are Computer Science 108 or its equivalent and Mathematics 212.*

335 **CLASSICAL MECHANICS.\*** F. The motion of particles, of systems of particles, and of rigid bodies is studied by Newtonian and Lagrangian techniques. Topics included are: oscillatory motion, motion in a central force field, motion in non-inertial reference frames, motion of charged particles, and the inertia tensor of rigid bodies. Hamilton's canonical equations are developed and applied to simple systems. Prerequisite: 124 or 126. *Staff.*

345 **ELECTROMAGNETISM.\*** S. The basic equations of the classical electromagnetic interaction theory are developed. Applications are made to electromagnetic fields in material media, boundary-value problems, electromagnetic energy, radiation, and physical optics. Relativity with its connection to this theory is studied. The basic theory and some applications are considered in 345, while the remaining applications and relativity are reserved for 346. Prerequisite: 225. *Staff.*

346 **ELECTROMAGNETISM.\*** F. A continuation of 345, which is a prerequisite. *Mr. R. Manweiler.*

365 **THERMODYNAMICS AND STATISTICAL MECHANICS.\*** F. Discussion of the equation of state and the laws of thermodynamics with application to some simple systems; the thermodynamic potentials: kinetic theory. Treatment of statistical mechanics dealing mainly with ensembles and distribution functions, calculation of entropy and the thermodynamic potentials with application to crystals and gases. Quantum statistical mechanics is considered. Prerequisite: 335. *Staff.*

375 **QUANTUM MECHANICS.\*** F. The main emphasis is on wave mechanics and its application to atoms and molecules. One-electron atoms are discussed in detail. Additional topics discussed are electronic spin and atomic spectra and structure. Nuclei, the solid state, and fundamental particles are also considered. Prerequisite: 226. *Mr. A. Kromminga.*

376 **QUANTUM MECHANICS.\*** S. A continuation of 375, which is a prerequisite. *Mr. A. Kromminga.*

379 **CONTEMPORARY PHYSICS.\*** S. An introduction to the major areas of current research in physics. Primary emphasis is placed upon solid-state, atomic, nuclear, and elementary-particle physics. Prerequisite: Physics 375. *Staff.*

380 **ANALOG AND DIGITAL ELECTRONICS.\*** S. An introduction to electronic circuits and devices and their applications. The following topics are included: A.C. circuit analysis; diode and transistor characteristics; amplifiers; oscillators; operational amplifiers; digital logic gates; flip-flops; counters; and integrated circuits. Laboratory exercises in all of the above topics are performed. Prerequisite: Physics 225. *Staff.*

390 **INDEPENDENT STUDY IN PHYSICS.\*** F, I, S, half or full course. Independent readings and research in physics, under the supervision of a member of the departmental staff. Prerequisite: permission of the chairman. *Mr. R. Griffioen.*

### LABORATORY COURSES

181 **BASIC ELECTRICAL MEASUREMENTS.** F, quarter course. An introduction to basic D.C. electrical measurements including Kirchhoff's Laws, potentiometer circuits, and bridge circuits. Techniques of data handling and analysis and a brief introduction to A.C. circuits are included. *Mr. H. Van Till.*

182 **ELECTRICAL MEASUREMENTS.** S, quarter course. Applications of D.C. electrical measurements; A.C. circuits, including experiments on frequency response and resonance; and an introduction to digital circuitry. Prerequisites: 181 and Mathematics 111. *Mr. H. Van Till.*

186 **INTRODUCTORY PHYSICS LABORATORY.** S, quarter course. An introduction to basic D.C. electrical measurements and their use in studying various mechanical systems and thermodynamic phenomena. Corequisite: 126 or the permission of the instructor. *Staff.*

381 **ELECTRONICS.\*** S, half course. An introduction to, and an analysis of, some of the basic digital and analog electronic circuits commonly used in science and engineering research. Prerequisites: 225 or a year of college physics and permission of instructor. *Staff.*

382 **MODERN PHYSICS LABORATORY.\*** F. Quarter course. An introduction to the basic laboratory techniques in atomic, nuclear, and solid-state physics and a study of some of the more important experiments on which modern physical theory is based. This course may be repeated with the permission of the instructor. Prerequisite: 380, 381, Engineering 308, or a year of college physics and permission of the instructor. *Mr. R. Griffioen.*

395-396 **PHYSICS SEMINAR AND RESEARCH.\*** F, S, half course; I, full course. Experimental or theoretical research on an approved topic and presentation of the result of the research in a departmental seminar. Prerequisite: 382 and the approval of the department. *Mr. R. Griffioen.*

## GRADUATE COURSES

510 **PHYSICAL SCIENCE AND CONTEMPORARY SOCIETY.** This course is designed to show the elementary or middle school teachers how physical science and its resulting technology interact. It does not deal primarily with the concepts and theories of physical science, but will focus on the societal impact of physical science. Topics of major interest include energy sources and energy use, supply and use of other material resources, and the limitations of

physical science in solving societal problems. Prerequisite: Physics 112 or its equivalent. *Staff.*

590 **INDEPENDENT STUDY** (graduate). F, I, S. *Staff.*

595 **GRADUATE PROJECT.** F, I, S., full or half course. The prospectus for each Master of Arts in Teaching project must be developed under the supervision of a faculty member and must be approved by the student's graduate adviser. *Staff.*

## JANUARY 1978 INTERIM

I-10. **QUANTUM PHYSICS.** When one enters the extremely small world of the atom and the nucleus, the laws of physics take on an entirely different form when compared to the familiar laws we encounter in our everyday macroscopic world. This course presents the unusual discoveries made in probing this sub-microscopic world. In particular, it examines the discrete (discontinuous) nature of mass, energy, and electric charge. Other topics discussed include: the nature of the electron and other fundamental particles, the structure of atoms and nuclei, and the interaction of light with matter. Readings will be from popular paperbacks in quantum physics. Satisfies core, substituting for 110 but not 112. *Mr. A. Kromminga.*

I-51. **MODERN PHYSICS LABORATORY.** An introduction to the basic laboratory techniques in atomic, nuclear, and solid-state physics and a study of some of the more important experiments on which modern physical theory is based. Prerequisite: 380, or a year of college physics and permission of the instructor. *Mr. J. Van Zytveld.*

390 **INDEPENDENT STUDY IN PHYSICS.** F, I, S. Independent readings and research in physics, under the supervision of a member of the departmental staff. *Mr. J. Van Zytveld.*

Idis I-12. **YOUR USE OF GOD'S WORLD.** *Mr. V. Ehlers.*

Idis I-13. **INTRODUCTION TO PHOTOGRAPHY.** *Mr. H. Van Till.*

Idis I-53. **PROBLEMS IN PROBLEM SOLVING.** *Mr. R. Griffioen.*

# Political science

Professors \*J. De Borst, J. Westra (chairman)

Associate Professor P. Henry

Assistant Professors R. De Vries, J. Penning, C. Smidt

TO BE ADMITTED to a major program in political science a student must have completed 151 with a minimum grade of C (2.0). In addition to 151 the program requires 201, 203 or 303, 207, 305 or 306, and four additional courses in the department. Required cognates include Economics 151 and an approved three-course sequence in one of the following departments: economics, history, psychology, or sociology. Students planning to pursue graduate study in political science should take 302 and both 305 and 306.

Students preparing for a secondary teaching certificate should meet the general major requirements in political science and, as far as possible, in the cognate fields; 202 is recommended but not required. A departmental minor requires 151, 201, 202, and any other three courses. Mr. R. De Vries is the adviser for teacher education.

The core requirements in political science normally are met by 151. Elementary education students may satisfy the core requirement with 201 and Canadian students with 210.

**151 INTRODUCTION TO POLITICS.** F and S, core. An introduction to political science. Analyzes the nature of the political process, the methods political scientists use in studying it, and some of the key concepts and terminology they have developed to explain it. *Staff.*

**201 AMERICAN POLITICS.** F and S. A study of American national politics. Emphasis is on the social context, constitutional foundations, and the major institutions, processes, and functions of American politics. *Staff.*

**202 AMERICAN STATE AND LOCAL POLITICS.** S. A study of American politics on the state and local levels. A comparative approach is used to analyze existing problems and the differences and similarities in political patterns. *Mr. J. Penning.*

**203 COMPARATIVE GOVERNMENT—EUROPE.** S. A study of the government and politics of four major European states: Great Britain, France, Germany, and the Soviet Union. Prerequisite: 151. *Mr. C. Smidt.*

**207 INTRODUCTION TO INTERNATIONAL POLITICS.** F. Analysis and critique of various theoretical approaches to the study of international politics; concepts of power;

the nation-state and the doctrine of sovereignty; diplomacy; nationalism; imperialism; war; balance of power; collective security; and world government. *Mr. R. De Vries.*

**209 PUBLIC ADMINISTRATION.** F. An introduction to the political process. Principles of administrative organization, methods of administrative control, and budget management. The organizational and administrative problems encountered by government agencies charged with carrying out public policies. *Mr. J. Penning.*

**210 CANADIAN GOVERNMENT AND POLITICS.** F. A study of the political system of Canada with emphasis on national (federal) government and politics. Major topics covered include the origins and development of Canada's political institutions; Canada's constitution, the British North American Act; Canadian federalism; the operation of the parliamentary-cabinet system in Canada; political parties and elections; social forces and trends in Canadian politics. This course carries core credit for Canadian students only. *Mr. J. Westra.*

**302 POLITICAL BEHAVIOR.\*** F. Analysis of the political behavior and opinions of the non-office holding citizen. A study of the theory and methods of the behavioral



orientation in political science is included. Emphasis is on the the United States. *Mr. C. Smidt.*

303 COMPARATIVE GOVERNMENT—THE NON-WESTERN WORLD.\* F. A study of the politics of Asian and African states. Emphasis is on the issues and problems posed by the modernization process. *Mr. R. De Vries. Not offered 1977-78.*

305 HISTORY OF POLITICAL THOUGHT TO THE REFORMATION. F. The development of political thought from ancient Greece to the sixteenth century. *Mr. P. Henry.*

306 HISTORY OF MODERN POLITICAL THOUGHT. S. Representative political theorists from the Reformation to the present. *Mr. J. Westra.*

308 PRINCIPLES OF AMERICAN FOREIGN POLICY.\* S. An analytical view of American foreign policy; its domestic sources; process of formulating policy; instruments of American diplomacy; the nature of U.S. relations with hostile powers, allies, the emerging nations, and the United Nations; the limitations and potentials of American foreign policy. *Mr. R. De Vries.*

309 INTERNATIONAL ORGANIZATIONS.\* S. An examination of regional and universal international organizations; their processes, functions, and impact on the international system. The United Nations system as well as economic and political integration within the North Atlantic area, among Communist states, and in the Third World. *Mr. R. De Vries.*

310 THE JUDICIAL PROCESS AND CIVIL LIBERTIES.\* S. The judicial process in American politics. Special consideration of the Supreme Court's interpretations of the Constitution, with emphasis on civil liberties. *Mr. J. De Borst.*

312 LEGISLATIVE BEHAVIOR.\* F. A study of legislators, legislatures, and the legislative process. The impact of institutional structures, political parties, outside forces, and personal norms on the legislative process. The role of legislatures in the democratic process. State and non-American legislatures are considered but the emphasis is on the federal Congress. *Mr. P. Henry.*

313 POLITICAL PARTIES. F. A study of political parties and their role in the political process. The approach will be comparative: different types of party systems; typologies and classifications of parties; dif-

ferent patterns of leadership, membership, organization. Emphasis will be on parties in Western democratic systems with special attention given to American political parties. *Mr. C. Strikwerda.*

390 INDEPENDENT STUDY.\* F, I, S. Reading or directed projects for majors. Open with the permission of the chairman and the instructor under whom the work will be done. *Staff.*

395 SEMINAR.\*

## JANUARY 1978 INTERIM

I-10. THE AMERICANS IN VIETNAM. This course will examine and reflect upon the Vietnam War. A general historical review will provide the background necessary for an examination of the events, political beliefs, and the individuals which contributed toward the build-up of the American military presence in Southeast Asia. Attention is given to the effects of this American presence on the Vietnamese, on American domestic politics, and on the role of the United States in international politics. Moral and ethical questions raised by the American involvement will also be discussed and study will be made of the manner in which various religious groups confronted or supported the state. The instructor will comment on his own experience in the military in Vietnam. Various books, articles, and films will be used in teaching the course. A paper will be required. *Mr. C. Strikwerda.*

I-11. THE POLITICAL NOVEL. A study of politics as seen through the eyes of the literary artist and expressed through the form of the novel. Lecture material will survey the development of the political novel in England and the United States. Class discussion will focus on three American novels, which will be required texts. Students will also read and report on a political novel of their own choice. *Mr. J. Westra.*

I-51. UNITED NATIONS INTERIM IN NEW YORK. A study of the activities, functions, and structure of the United Nations system through an extensive series of briefings with personnel of the U.N. secretariat and specialized agencies as well as with members of some of the national missions to the U.N. Readings and seminars will be integrated with the briefings. Some of the areas of study will include peacekeeping, disarmament, the role of the secretary-general,

economic development, population, food, and the environment. Students will prepare a report on one of these topics. Prerequisites: permission of the instructor and one course in political science. A fee of \$45 plus the cost of room, board, and transportation. The total estimated cost is \$365. May be applied to departmental concentrations and to teaching minors in political science and social studies. *Mr. R. De Vries.*

I-52. **THE POLITICS OF EDUCATION.** Education, like apple pie and motherhood, is often said to be "above the reach of politics." This course will study the intensely political nature of the struggles over the governance, financing, and goals of the educational enterprise, utilizing contemporary readings, lectures, and significant visitors. The primary topics will be: 1. higher education—particularly the competition among the public, private, the four-year, and community institutions and the problems of coordinating their activities; 2. elementary and secondary education—the struggle for a broader tax basis, the politics of millage elections, the proliferation of "categorical" programs, and declining enrollments as they relate to the oversupply of teachers and the growth of teacher's

unions; and 3. social issues such as desegregation, bilingualism, cultural pluralism, sexism, testing, and curricular reform. Prerequisites: one course in political science for students in teacher education; two courses for others. *Mr. P. Henry.*

I-53. **WORK-STUDY IN STATE/LOCAL GOVERNMENT.** This course is designed to provide a work/study opportunity in state or local government for a select group of students. Each student will be assigned to work with a field instructor in a state or local government agency or in the office of an elected or local official. The college instructor, the student, and the field instructor will together plan a program designed to build on the program of instruction at the college and the student's career goals. Normally, forty hours of work per week on a regular schedule are required. Weekly seminars. Opportunities for students majoring in both natural and social sciences. May be applied to departmental concentrations and to teacher education minors in political science and social studies. Prerequisite: sophomore, junior, or senior status and permission of instructor. *Mr. J. Penning.*

# Psychology

*Professors W. Joosse, A. Reynolds, R. Stouwie, \*\*R. Terborg*

*Associate Professors M. Bolt, W. Sanderson (chairman)*

*Assistant Professors J. Benthem, J. Brink, D. Snuttjer, M. Vander Goot, G. Weaver*

*Assistant Instructor A. Shoemaker*

INTRODUCTORY PSYCHOLOGY (151) must be completed with a minimum grade of C (2.0) by students intending to major in the department. The nine course major consists of 151, 250, 306, three 300-level electives, one of which must include a laboratory experience, and three electives from the offerings of the Psychology Department. Not more than one interim and no independent studies (390) may be included in the first nine courses of a major.

Students intending to pursue graduate education in psychology or related fields should consult a department member for advice. There are a number of options open which require different types of preparation.

A teaching minor consists of six courses: 151, 212, 306, 311, one from 330, 331, 332, and one elective.

The core requirement in psychology is best met by 151. For students in teacher education programs, Education 301 satisfies graduation requirements but does not serve as a prerequisite for advanced psychology courses.

151 **INTRODUCTORY PSYCHOLOGY.** F and S, core. An introductory course intended to give the beginner some orientation to the field of psychology in general. The psychology core requirements for students in teacher education programs should be met by Education 301 rather than by this course. Staff.

201 **DEVELOPMENTAL PSYCHOLOGY: LIFE-SPAN.** S. An overview of human psychological development from birth to death. The primary objective is to understand the behavior characteristic of each stage of development and the psycho-social factors which influence that behavior. Primarily for students in the health science programs and not open to students who have taken or plan to take 204, 207, or Adult Psychology. Prerequisite: 151. Mr. W. Joosse.

204 **DEVELOPMENTAL PSYCHOLOGY: CHILD.\*** F and S. A basic overview of normal development from birth to adolescence. Organization is chronological (infant, toddler, etc.) and conceptual (cognitive development, social-personality development, etc.). Prerequisite: 151. Mr. R. Stouwie, Mrs. M. Vander Goot.

207 **DEVELOPMENTAL PSYCHOLOGY: ADOLESCENT.** F. A study of the transitional years of human development from puberty to early adulthood. Emphasis is on developmental changes and on the tasks which the adolescent faces in his different roles. Prerequisites: 151 and 204. Mr. R. Stouwie.

211 **PERSONALITY AND ADJUSTMENT.** F. A study of psychological theory and research pertinent to personality dynamics and adjustment. Coverage includes concepts of mental health, need fulfillment, sources of conflict and stress, the nature and effects of anxiety, the self concept, and principles of emotional and interpersonal competence. Attention will be given to the personal application of these topics. Prerequisite: Psychology 151. Mr. W. Joosse.

212 **PSYCHOPATHOLOGY.\*** F and S. A study of the wide range of abnormal behaviors. Emphasis is on causes, dynamics, and classification, with some attention to treatment approaches. Prerequisite: Psychology 151. Mr. J. Benthem, Mr. G. Weaver.

216 **PSYCHOLOGY OF THE EXCEPTIONAL CHILD.\*** S. A basic overview of the "other" children, those who differ physically, mentally, or behaviorally from "normal" chil-

dren. Emphasis on causal factors, characteristics, and diagnosis. Prerequisite: 151. Mr. R. Stouwie.

250 **DESCRIPTIVE STATISTICS FOR SOCIAL SCIENCES.\*** F and S. An introduction to the major forms of descriptive statistics (measures of central tendency, variability, linear transformation, area transformation, correlation). Both an understanding of and proficiency in the application of these concepts and techniques in the areas of education, psychology, sociology, etc., will be sought. Mr. A. Reynolds.

306 **HISTORY OF PSYCHOLOGY.\*** F and S. A study of the origins of contemporary psychology within science and within philosophy, and of the development of various systematic approaches to psychology as a separate academic discipline in Europe and the United States. Prerequisites: two courses in psychology. Mr. W. Sanderson.

308 **INTRODUCTION TO EXPERIMENTAL PSYCHOLOGY.** S. A critical study of experimental methods, problems, materials, results, and conclusions, with major emphasis on perception and learning. Laboratory work will be required. Open only to juniors and seniors intending to major in psychology who have either 250 or Mathematics 206. Mr. A. Shoemaker, Mr. R. Terborg.

310 **SOCIAL PSYCHOLOGY.\*** F and S. A critical study of the individual's relationship to other individuals, groups, and cultures. Attention is given to such topics as beliefs, attitudes, and values; social influence and conformity; interpersonal perception and attraction; aggression and social conflict; altruism; and collective behavior. Students may not receive credit for this course and Sociology 310. Prerequisite: Psychology 151. Mr. M. Bolt, Mr. J. Brink.

311 **THEORIES OF PERSONALITY.\*** F and S. An introduction to modern American and European theories concerning the psychological structure, dynamics, and development of the human personality. Prerequisites: 151, 212. Mr. J. Brinks, Mr. W. Sanderson.

312 **PRINCIPLES OF PSYCHOLOGICAL MEASUREMENT.\*** F and S. An introduction to the theoretical and practical issues, viewpoints, and techniques of psychological testing in the areas of intelligence and personality. Test construction, including those that measure academic achievement, is em-

phasized. Prerequisite: 250, Mathematics 205, or Mathematics 343. *Mr. A. Reynolds.*

314 CLINICAL PSYCHOLOGY. F. An introduction to the science, techniques, and art of employing psychological means to promote the welfare or mental health of persons. Prerequisites: 212, 311, and 312. *Mr. J. Benthem.*

315 PRACTICUM IN A CLINICAL SETTING. An introductory course in theoretical and applied psychotherapy, taught in a hospital setting, and appropriate for students interested in clinical and general psychology. This course deals cognitively and critically with various modes of psychotherapy from a Christian perspective, gives the student an acquaintance with a variety of mental hospital procedures, and offers the opportunity to begin in a minimal way and under supervision some direct experience with the disturbed. Prerequisites: junior-senior standing; departmental approval; 151, 212, and 311. *Mr. J. Benthem.*

322 PERSPECTIVES OF PSYCHOLOGY. In this course the purpose is to explore relationships of psychology to (or its involvement in) various issues in our culture, in such areas as literature, religion, art, or morality. Normally, in any given semester, major emphasis will be focused on only one of these areas. Permission of the instructor is necessary to enroll in this course. *Staff.*

330 PSYCHOLOGY OF MOTIVATION.\* S. A thorough discussion of the psychological study of motivation. Recent research findings as well as theory formation in the areas of emotion and motivation are included. Prerequisite: 151. Two-hour laboratory each week. *Mr. G. Weaver.*

331 PSYCHOLOGY OF SENSATION, PERCEPTION, AND COGNITION.\* F. A detailed examination of the functions of perception and thought in human beings. Various theories as well as current research trends will be discussed. Two hour laboratory each week. Prerequisite: 151. *Mr. D. Snuttjer.*

332 PSYCHOLOGY OF LEARNING PROCESSES.\* F and S. A presentation of empirical strategies and theory formation in the area of the psychology of learning. The importance of learning theory for psychology in general is stressed. Two-hour laboratory each week. Prerequisite: 151. *Mr. D. Snuttjer, Mr. R. Terborg.*

333 PHYSIOLOGICAL PSYCHOLOGY. S. An intensive investigation of the physiological

bases of behavior. Theories and research concerning the relationship between the nervous system and several aspects of behavior will be discussed. Discussion of the mind/brain problem. Two hour laboratory each week. Prerequisite: 151. *Mr. D. Snuttjer.*

390 READING AND RESEARCH.\* F, I, S, Prerequisite: permission of the chairman.

395 SENIOR RESEARCH SEMINAR ON ISSUES IN CONTEMPORARY PSYCHOLOGY.\* F. The preparation, presentation, and discussion of papers based on current psychological literature and upon individual empirical research. Open to seniors majoring in psychology. Prerequisite: 308. *Mr. M. Bolt.*

## GRADUATE COURSES

510 EDUCATIONAL MEASUREMENT. This course provides a theoretical and practical background which will enable classroom teachers to construct or select tests for specific purposes. It is designed to enable teachers to use test scores wisely and effectively in the learning process. A major paper requires knowledge and application of the concepts of reliability and validity as well as practical considerations in the evaluation of a standardized test of the student's choice. *Staff.*

511 INTRODUCTION TO GUIDANCE AND COUNSELING. A survey of principles, major theories, and resources which shape guidance and counseling efforts in the schools. The course focus is on how a teacher can best contribute to and benefit from those efforts. *Staff.*

512 MENTAL HEALTH AND THE CLASSROOM. An analysis of the mental health dimensions of education, emphasizing the developmental needs and adjustment challenges of students. Includes the influence of teacher behavior and school programs. *Staff.*

590 INDEPENDENT STUDY (graduate). F,I,S. *Staff.*

595 GRADUATE PROJECT. F,I,S., full or half course. The prospectus for each Master of Arts in Teaching project must be developed under the supervision of a faculty member and must be approved by the student's graduate adviser. *Staff.*

## JANUARY 1978 INTERIM

I-10. SOCIAL PSYCHOLOGY THROUGH LITERATURE. An introduction to basic concepts

and theory in social psychology through fiction. Selected novels and short stories such as *Caine Mutiny*, *Ox-Bow Incident*, and *In Cold Blood* will be used in an attempt to gain insight into contemporary social psychological issues. Readings, discussions, and films based on literature. Not recommended for students who have taken or who intend to take 310. Mr. M. Bolt.

I-11. NON-VERBAL ASSESSMENT OF PERSONALITY. This course will explore several unusual approaches to the assessment of personality. Analysis of handwriting, figure drawings, dreams, expressive body movements, and non-language IQ measures will be explored. Students will be expected to report on readings, develop and use techniques and scoring procedures, collect data, and relate findings to current theories. Mr. A. Reynolds.

I-12. ISSUES IN PSYCHOLOGICAL EDUCATION. Psychological education is a relatively new phase of educational psychology which examines the psychological development of the student as the result of the schooling process. It stresses the psychological outcomes of schooling rather than the academic outcomes, the ones that have been stressed traditionally. Topics will include: educational social psychology, the "hidden curriculum", self-esteem, values, moral development, and Christian education. Mr. A. Shoemaker.

I-13. THE COLLEGE EXPERIENCE. This course will attempt to promote the student's understanding of various dimensions of the college experience. Coverage will include: college goals and individual motivations, determinants of academic performance, choosing a major and vocation, peer relations and sexuality, emotional adjustments and difficulties, maximizing personal growth, and one's evolving identity and life-view. Films, guests, and varied activities will be used but those enrolled will be expected to do considerable outside reading, to involve themselves in personalized, small-group discussions, and to write thoughtful logs. There will be a pervasive emphasis on Christian values and self-understanding. Mr. W. Joosse.

I-50. THE PSYCHOLOGY OF CONSCIOUSNESS. Consciousness is a dimension of the human psychological experience that until recently has received little attention in the psychological literature. The historical causes of this lack of attention will be

traced, and recent insights into the nature of human consciousness will be investigated. Several topics will be considered within this context including the following: altered states of consciousness achieved through meditation techniques and drugs, split-brain research, brain stimulation investigations, information processing abilities of individuals, and biofeedback. Assigned readings and student reports will provide the basis for class discussions. Prerequisite: 151. Mr. D. Snuttjer.

I-52. THE PSYCHOLOGY (AND PHILOSOPHY) OF WILLIAM JAMES. William James has been called the "Father of American Psychology," and he has also had a powerful influence on philosophy. This course will involve the study of James' psychology from his own works and an analysis of his philosophy. The way in which these two aspects of his thought emerge in his *Varieties of Religious Experience* will be considered. The course will consist largely in discussion in an informal setting and in brief daily papers relevant to assigned readings. Prerequisite: one course in philosophy or one course in psychology. Mr. W. Sanderson.

I-53. BIOFEEDBACK AND SELF CONTROL. A study of recent advances in the theory and technology of biofeedback in the modification of biological and psychobiological functions. Topics include treatment applications in psychophysiological disorders, control of brain wave activity, and autonomic nervous system control. Because of the embryonic development of this field most readings will be from professional journals. Each student will be required to do research and present a paper on a particular application of biofeedback technology. There will be exposure to and training in the use of biofeedback equipment. Prerequisite: 212 or permission of the instructor. Mr. J. Benthem.

I-54. WHY DO WE CHANGE OUR MINDS? A review of recent research regarding attitude change. Topics to be covered include: experimental procedures for manipulating and measuring attitudes, recent designs for studying attitudes in laboratory and field situations, the application of psychological theory to present social problems (e.g., energy conservation, preventive medicine, economic planning), the ethics of the social psychology experiment, and the relationship between psychological models of attitude formation and a Christian under-

standing of man. Reading and discussion of journal articles and experience in designing, conducting, and evaluating attitudinal research. Prerequisites: 151 and junior or senior status. *Mr. G. Weaver.*

Idis I-54. CHILDREN'S LANGUAGE DEVELOPMENT. *Mr. R. Stouwie.*

Idis I-55. FAIRY TALES. *Mrs. M. Vande Goot.*

# Religion and theology

*Professors W. De Boer, \*\*H. Hoeks, †D. Holwerda, J. Primus, G. Spykman (chairman), \*C. Vos, L. Vos*

*Associate Professors L. Sweetman, S. Woudstra*

*Assistant Professors D. Cooper, P. Holtrop, H. Vander Goot*

*Instructor C. Libolt*

THE DEPARTMENT offers a major in Religion and Theology, a major in Religion and Education, and a teaching minor in the Academic Study of Religions. To be eligible for the major programs a student must have completed either 103 or 108 with a minimum grade of C (2.0).

The program for the Religion and Theology concentration requires ten courses including 206, 207, 208, 301, 303, 308, and 395. An approved four-course sequence in another department is also required. The adviser for this program is the chairman.

The program in Religion and Education is for students who expect to serve as directors of education in churches, or in some cases, to serve as Bible teachers in the Christian day school system. The major concentration includes 103, 206, 303, 308, 319, 327 or 328, 395, plus three electives in the department and Education 301, 303, 304, and 346-356 or an internship in a church. Two of these electives may be satisfied by Greek 205-206 (New Testament Greek) and one by an approved interim course. Students who plan to serve as directors of education in churches should plan to do graduate work in the field of Church Education. The adviser for this program is Mr. Louis Vos.

The teaching minor leading to certification in the Academic Study of Religions requires seven courses. All students complete a four-course sequence consisting of Religion and Theology 151, 305, 395, and Interdisciplinary 234. Three additional courses are chosen in consultation with the adviser of the program. Normally two courses are chosen from Philosophy 204, 205, 207, Religion and Theology 206, 207, 208, 301, 303, 308, 311, 313, 327, 328, and approved interim courses. One course, normally, is chosen from Art 231, Classics 231, History 201, 202, 203, 204, Sociology 217, 311. The adviser of this program is Mr. Henry Hoeks.

The core requirements in religion and theology may be met by selecting one from the following courses in Biblical studies: 103, 108, 207, 208, 327, and 328, and one from the following courses in Theological, Historical and Religious-cultural studies; 206, 301, 303, 304, 308, 311, and 312. Any departmental course except interims may be chosen by students electing a third core course in religion and theology.

151 INTRODUCTION TO RELIGION STUDIES. prospective teachers, and required of those F. An introductory course appropriate to students who wish to minor in the

**Academic Study of Religions.** This course deals critically with views of the origin, nature, and function of religions as they are found in the disciplines of cultural anthropology, the history and literature of religion, the phenomenology of religion, the psychology of religion, and the sociology of religion. This course also includes a study of the relevant Supreme Court decisions, a consideration of the problem of objectivity, an introduction to alternative pedagogical approaches to the study of religions, and an exposure to materials and media appropriate to teaching religion studies. *Mr. H. Hoeks.*

### BIBLICAL STUDIES

**103 BIBLICAL THEOLOGY.** F and S, core. A study of the unfolding of the history of redemption as set forth within the historical framework of the Old Testament, intertestamentary, and New Testament eras. Biblical books and Apocryphal literature are analyzed and the major themes of Scripture are explicated. Students may not take this course and 108. Open only to freshmen and sophomores. *Staff.*

**108 NEW TESTAMENT BIBLICAL THEOLOGY.** F and S, core. A more complete coverage of the biblical theology of the New Testament than can be offered in 103. Open only to freshmen and sophomores. *Mr. W. De Boer.*

**207 OLD TESTAMENT PROPHETS.** S, core. An intensive study of the place and role of the major and minor prophets in the Old Testament, the commentary they offer upon the history of redemption in Old Testament times, together with an exploration of their basic themes and their continuing relevance. Not open to freshmen. *Mr. C. Vos.*

**208 NEW TESTAMENT LETTERS.** F, core. An intensive study of the place and role of the epistles in the canon of the New Testament, the doctrinal and ethical interpretations which these epistles give of the redemption portrayed in the Gospels, the light they shed on the early Christian Church, and their abiding relevance and significance. Not open to freshmen. *Mr. W. De Boer.*

**302 BIBLICAL ARCHAEOLOGY.\*** S. A study of the pertinent archaeological data which provide a background for or throw light upon the biblical narrative. Prerequisite: one course in Biblical Studies and junior or

senior standing. *Mr. B. Van Elderen.* Not offered 1977-78.

**327 OLD TESTAMENT INTERPRETATION.\*** S, core. An intensive study of the basic principles and methods of biblical interpretation developed in the context of the biblical-theological themes of the Old Testament. Designed especially for departmental majors. Also open for core credit to juniors and seniors. *Mr. C. Vos.*

**328 NEW TESTAMENT INTERPRETATION.\*** S, core. An intensive study of the basic principles and methods of biblical interpretation developed in the context of the biblical-theological themes of the New Testament. Designed especially for departmental majors. Also open for core credit to juniors and seniors. *Mr. D. Holwerda.*

### THEOLOGICAL STUDIES

**206 REFORMATION THEOLOGY.** F and S, core. A study of Christian doctrine as formulated in the Protestant Reformation and refined and elaborated by later Reformed theologians. Comparisons are drawn between the Reformed system and those of other branches of Christendom. Calvin's *Institutes of the Christian Religion* serves as a basic text. Not open to freshmen. *Staff.*

**308 CONTEMPORARY THEOLOGY.\*** F, core. Selected writings of significant contemporary theologians are read and evaluated. Prerequisite: junior or senior standing. *Mr. G. Spykman.*

**312 EARLY CHRISTIAN THEOLOGY.\*** S, core. A study of the growth of the church towards self-conscious commitment to an articulation of its faith from the sub-apostolic age through St. Augustine. Development and growth of thought will be emphasized and selected writings of major theologians will be studied. Prerequisite: junior or senior standing. *Staff.*

**313 ROMAN CATHOLIC THEOLOGY.\*** S. The development of Roman Catholic theology from the medieval era to present times, finding its climax in contemporary changes growing out of Vatican II. The Council of Trent, Counter-Reformation Theology, papal encyclicals, Vatican I, and major schools of thought and shifting practices will be examined. Prerequisite: junior or senior standing. *Mr. G. Spykman.* Not offered 1977-78.

## HISTORICAL STUDIES

303 GENERAL CHURCH HISTORY.\* S, core. A survey of the history of the Christian Church from its beginning to the present time, noting deviations from apostolic faith and practice, the interplay with the political, the great Church councils, the crises that emerge, divisions and reunions, and the confluence of forces that determine the complexion of the Christian Church today. Not open to freshmen. *Mr. F. Roberts.*

304 AMERICAN RELIGIOUS HISTORY.\* F, core. A consideration of the religious history of our country from the immigration period to the present. Attention is paid to the European background, the early church beginnings in their diversity, the colonial era, the westward movement, current ecumenism, and the major social and political developments in their influence upon the American religious scene. Consideration will also be given to the historical antecedents and the development of the Christian Reformed Church in America. Not open to freshmen. *Mr. J. Primus.*

## RELIGIO-CULTURAL STUDIES

Interdisciplinary 234 THE CONTEMPORARY AMERICAN RELIGIOUS SITUATION may be applied to certain concentrations in this department.

301 CHRISTIANITY AND CULTURE (Studies in Calvinism).\* F and S, core. An historically-oriented study of the Reformed Christian tradition in the Western world—its origin and development, its basic concepts and life-perspectives, its cultural impact and contemporary relevance. Not open to freshmen. *Staff.*

311 BASIC CHRISTIAN ETHICS. F, core. A biblical-theological study of moral issues, both personal and social, considering relevant ethical principles and practices as they developed in the Judeo-Christian tradition. *Mr. P. Holtrop.*

## MISSIONS AND WORLD RELIGIONS

203 THEOLOGY OF MISSION. S. A survey of biblical material pertaining to mission. These materials are used in evaluating the contemporary problems of mission: i.e., nascent non-Christian religions, ecumenism, mission in the ferment of social revolution. Not open to freshmen. *Staff.* Not offered 1977-78.

204 HISTORY OF MISSIONS. F. The record of missionary history through the ancient, medieval, and modern periods is examined with a view to ascertaining the principles that come to expression, the methods employed, the areas covered, the chief figures, and the measure of success or failure. In the modern period the great missionary conferences of the twentieth century are analyzed and evaluated. Not open to freshmen. *Mr. J. Bratt.* Not offered 1977-78.

305 WORLD RELIGIONS.\* F. An analytical and critical study of the phenomena, the conceptual pattern, and the sacred texts of the major non-Christian religions: "Primitivism," Hinduism, Buddhism, Shinto, and Islam. Each religion is studied as a total perspective for life which is embodied in inter-personal and communal life, in cult, and in ideology. The study includes "popular" as well as "official" expressions of the religions. Not open to freshmen. *Mr. L. Sweetman.*

## RELIGION AND EDUCATION

319 FOUNDATIONS OF RELIGIOUS EDUCATION.\* S. This course begins with an historical survey of informal and formal religious educational practices from early Hebrew times to those of contemporary North American homes, churches, and schools. The course proceeds to a consideration of some salient socio-cultural, theological, and developmental considerations involved in religious education. Not open to freshmen. *Mr. H. Hoeks.*

390 READING AND RESEARCH.\* F, I, S, full course or half course. Prerequisite: permission of the chairman. *Staff.*

395 SENIOR SEMINAR.\* This course will focus on significant theological issues (hermeneutical, systematic, or historical), provide a thorough introduction to theological bibliography, and require a major research paper. *Staff.*

## JANUARY 1978 INTERIM

I-10. THOMAS MERTON: MAN OF PRAYER, WRITER, SOCIAL CRITIC. A study of the spiritual pilgrimage of the late monk from the Abbey of Gethsemani in Kentucky. After an introduction to the contemplative tradition within Christian history, major emphasis will be on the writings of Merton (1915-1968). The course will include a



one-week stay at the Abbey of Gethsemani in Trappist, Kentucky. *Mr. D. Cooper.*

I-11. **THE STORY OF THE BIBLE.** A study of how we got our Bible, concentrating on the areas of manuscripts, transmission of the text, canon, and translations. The course will focus on the Bible as a book, on its history, rather than on the understanding of the contents of the Bible. Readings, papers, and class presentations will be required. *Mr. L. Vos.*

I-12. **FIDDLERS ON OUR ROOF: JEWS IN AMERICA.** A survey and analysis of the American Jewish community. Attention will be given to the origin and development of the three main religious divisions of American Judaism: Orthodox, Conservative, and Reform, as well as to Reconstructionism and Zionism. An attempt will be made to assess the reciprocal influences be-

tween Judaism and American culture. Special attention will be given to contemporary problems and trends. Lectures, discussions, books, articles, films, student papers, and guest speakers will be utilized. *Mr. J. Primus.*

I-14. **PAUL'S LETTER TO THE ROMANS.** This letter is often called "The Gospel according to Paul." Time and again it has touched off important spiritual movements—including those associated with Augustine, Luther, Wesley, Barth. It bears study and re-study. The course seeks to probe the scholarly resources available in Romans and to discuss the practical issues arising from the letter. *Mr. W. De Boer.*

Idis I-52. **THE BIBLE IN LITERARY PERSPECTIVE.** *Mr. H. Hoeks.*

Idis I-55. **THE FILMS OF ALFRED HITCHCOCK.** *Mr. L. Sweetman.*

# Sociology

*Professors H. Holstege (chairman), R. Rice, T. Rottman, \*W. Smit, D. Wilson*  
*Associate Professors G. De Blaey, P. De Jong, D. Smalligan, R. Vander Kooi*

**STUDENTS MUST COMPLETE 151** with a minimum grade of C (2.0) to be eligible for admission to the major program. A concentration in sociology requires 151, 318, 320, and six additional courses, excluding 210, 300, and 301. One interim course in sociology may be included among the additional courses. Students may earn a semester's credit at the Chicago Metropolitan Study Center, applying some of that work to departmental programs. The teacher education adviser is Mr. D. Wilson.

Students interested in social work may major in various departments but should include work in economics, history, political science, psychology, and sociology in their programs. The social work courses are 300, 301, 303, and 380; 300 and 301 are taken in addition to the courses required for a sociology major. Students interested in social work should consult with Mr. Donald Smalligan, the adviser for such programs, not later than the beginning of their sophomore year.

The core requirement in sociology may be met by 151 or 217. Sociology 311 and 217 may be a part of the teaching minor in the academic study of religions.

151 **SOCIOLOGICAL PRINCIPLES AND PERSPECTIVE.** F and S, core. A general introduction to the discipline. Provides a brief theoretical and conceptual grasp of sociology as a body of knowledge dealing with group relationships as these affect both the individual and society. An attempt is made to articulate this knowledge and to demon-

strate its use by showing how a sociological perspective offers a rational interpretation of issues current in our society. *Staff.*

210 **PHYSICAL ANTHROPOLOGY.** F and S. A critical analysis and evaluation of the areas of primate paleontology, human varia-

tion, and prehistoric archaeology. *Mr. D. Wilson.*

217 **SOCIAL ANTHROPOLOGY.** F and S, core. A study of the historical trends in anthropology that have led to its present day perspective. The concepts of functionalism and cultural relativism are examined and evaluated. The course surveys various cultural patterns around the world. *Mr. D. Wilson.*

300 **HISTORY AND THEORY OF SOCIAL WELFARE AND SOCIAL WORK.** F. A study of the social, cultural, political, and economic factors in social welfare. The ways social welfare approaches social problems and social change are discussed. An analysis of the trends in social work and the issues involved in its various fields. *Mr. D. Smalligan.*

301 **SOCIAL WORK PRACTICE.** S. Introduction to social work techniques and the strategies of intervention in problem solving. Basic social work concepts and their application in practice are stressed. Prerequisite: 300 and, if possible, Speech 240 and Psychology 311. *Mr. D. Smalligan.*

302 **URBAN SOCIOLOGY AND COMMUNITY ORGANIZATION.\*** F and S. A descriptive and theoretical analysis of urban society and urban sub-communities. The emphasis is on urban processes and problems and sub-cultures within the city as well as on such contemporary issues as urban renewal and planning. *Mr. H. Holstege, Mr. R. Vander Kooi.*

303 **CHILD WELFARE AND FAMILY SERVICES.\*** F. A study of social policy and service delivery in child welfare and family service agencies. Major topics include: a history of child welfare and family service policy in Europe and North America and the factors causing changes in these policies; a description and evaluation of the contemporary service delivery system and treatment methods; a study of unmet needs and present trends; and a sociological analysis of the relationship between the family, courts, politics, and contemporary American society. Prerequisites: 300 and 301 or the permission of the instructor. *Mr. D. Smalligan.*

304 **THE FAMILY.\*** F and S. An intensive culturally comparative and historical analysis of the family as an institution. The contemporary courtship, marriage, and divorce patterns of the American family are also discussed. *Mr. H. Holstege.*

306 **SOCIOLOGY OF DEVIANCE.\*** F and S. An analysis of deviant behavior: its causes, manifestations, prevention, and programs of control. Special attention is given to the role of social norms in generating as well as controlling deviance. Emphasis is put on ways in which social structures generate and label deviance. Implications are drawn for various institutions, particularly the school and the church. *Mr. T. Rottman, Mr. R. Vander Kooi.*

308 **POPULATION AND SOCIETY.\*** F. Introduction to demographic analysis of society. Includes a consideration of the major demographic theories of population growth and how these contribute to an understanding of population explosion; review of how the socio-cultural dimension of human society affects major sources of population growth: fertility, mortality, migration, and how variations in these reciprocally affect society; and analysis of causes and consequences of population size, distribution, and composition for human society. *Mr. R. Rice.*

309 **SOCIOLOGY OF EDUCATION.\*** S. A study of education as a social institution and the school as an organization. Emphasis is on discussing the functions of education for society and the effects of society on education and schools. The school class as a special system is also analyzed with special consideration given to the role of the teacher. Prerequisite: 151 or permission of the chairman. *Mr. G. De Blacey.*

310 **SOCIAL PSYCHOLOGY.\*** F and S. Human behavior as a consequence of man's psychological make-up and his socio-cultural environment. Attention is given to social interaction as it occurs in small group settings. Attention is also given to theoretical frameworks emphasizing self-concept and role playing. Students may not receive credit for this course and Psychology 310. Prerequisite: 151, Psychology 151, or permission of the chairman. *Mr. G. De Blacey.*

311 **SOCIOLOGY OF RELIGION.\*** F. A study of the organizational forms of religion, with special attention being given to the influence and effectiveness of the church in its function as a social institution and to the social influences which have, in turn, affected the church. *Mr. W. Smit.* Not offered 1977-78.

312 **THE SOCIOLOGY OF COMMUNITY.\*** S. A cross-cultural analysis of the changing nature of the community as a human ecologi-

cal organization and as a structured system of status and power. Man's utopian dreams of ideal communities are contrasted with the types of communities actually found in primitive, agrarian, and industrial societies. *Mr. W. Smit.* Not offered 1977-78.

314 CONTEMPORARY SOCIAL PROBLEMS: CULTURAL AND SOCIAL RESPONSES TO DEATH AND DYING.\* F. This course begins with a discussion of various theoretical orientations to the study of social problems generally. It then relates these theories to the particular problems associated with death and dying from the perspectives of contemporary culture and society, of those close to the dying person, and of the dying person himself. Special attention will be given to the extent to which the conceptions and customs surrounding death and dying are functional in their own terms and compatible with biblical norms. *Mr. T. Rottman.*

318 SOCIOLOGICAL THEORY.\* F. An assessment of sociological theory in terms of its historical development and current role in understanding human behavior. Particular attention is given to the function of theory in the research process. Direction is given to the student in the formulation of sociological hypotheses from data. Prerequisite: 151. *Mr. H. Holstege, Mr. T. Rottman.*

320 SOCIOLOGICAL RESEARCH.\* S. An assessment of the nature of the research process as applied to the study of theoretical problems in social science. Guides the student in designing and conducting a research project, involving definition of the problem, consideration of appropriate methods, and the collection and analysis of data. Prerequisites: 151 and 318. *Mr. P. De Jong, Mr. R. Rice.*

380 FIELD INSTRUCTION IN SOCIAL AGENCIES. F and S. This field-based course provides a perspective on the various levels of intervention and types of services provided by social agencies. Each student will be assigned to work with a field instructor in a social agency. The college instructor, the student, and the field instructor will plan a program of involvement in the agency that will build on the student's previous instruction on campus and toward his career goals. Prerequisites: 300 and 301 or the permission of the instructor. *Mr. D. Smalligan.*

390 INDEPENDENT STUDY.\* F, I, S. Prerequisite: permission of the chairman and of the instructor. *Staff.*

## GRADUATE COURSES

501 SCHOOL IN COMMUNITY. A study of the reciprocal relationship between the school and the community. Particular attention is paid to the interrelationship between the school and religious, familial, political, and economic institutions. Satisfies context of education requirement in education and psychology. *Staff.*

590 INDEPENDENT STUDY (graduate). F, I, S. *Staff.*

595 GRADUATE PROJECT. F, I, S., full or half course. The prospectus for each Master of Arts in Teaching project must be developed under the supervision of a faculty member and must be approved by the student's graduate adviser. *Staff.*

## JANUARY 1978 INTERIM

I-10. CITY LIFE. An examination of the city and its human uses, good and bad. There is an overall negative attitude on the part of America's people, including its intellectuals, toward the city. Sociologists describe the city as a "heterogeneous and concentrated population"; its social characteristics are said to include "anonymity, superficiality, interaction based on monetary motives" and other similarly negative characteristics. The negative expectations that exist often lead to negative results. Middle class people desert the city and life there becomes economically poorer and even more dangerous. On the other hand there is much ethnically, religiously, educationally, and occupationally, that makes the city valuable. There is much positive human interaction which can be experienced in the neighborhood and downtown. The very density and heterogeneity of the city provide its assets and positive insights into mankind. This course will include a required, three-day bus tour of Chicago and a Grand Rapids experiment as well as a short paper. Readings and class presentations. Satisfies departmental concentrations. *Mr. R. Vander Kooi.*

I-11. VIOLENT CRIME. The course focuses more on violent personal criminal behavior than on collective forms of violence such as riots. Thus, criminal homicide, aggravated assault, and forcible rape are discussed. The treatment of these forms of criminal behavior is couched in discussions of the

nature of violence and the enculturation of violence via both the home and the mass media. Possible means of social control are reviewed. The course is taught through lectures by the instructor, student presentations, small group discussions, guest lectures, films, and assigned readings. Each student is responsible for either a term paper or a class presentation. *Mr. P. De Jong.*

I-12. **THE CRIMINAL JUSTICE SYSTEM: A STUDY OF DIVERSE EXPECTATIONS.** An analysis of the roles of police officers, judges, and correctional officers, especially the strains and conflicts that are brought about by historically changing and currently diverse social expectations. An attempt will be made to clarify the legitimate roles of criminal justice personnel by considering such basic questions as the nature of law and the role of enforcement in promoting social justice. Attention will be paid not only to the varying perceptions of what criminal justice personnel do and don't do but also to what they should do and shouldn't do. Thus, ethical and moral considerations necessarily apply. Consideration will also be given to opportunities and obstacles to career development in criminal justice. Lectures and assigned readings will be supplemented by classroom presentations of criminal justice personnel. Field observations will also be required. Satisfies departmental concentrations. *Mr. T. Rottman.*

I-13. **SEMINAR IN SOCIAL ISSUES.** A survey from a Christian perspective of some basic issues in sociology. These issues will include, among others, sociological determinism, cultural relativism, social inequality, the institutional view of the church, the changing family, the changing city, and zero population growth. Most classroom time will be spent in an analysis of papers presented by various members of the sociology department. Additional background reading will also be assigned. *Mr. W. Smit.*

I-15. **THE PLANNED FAMILY.** The course begins with an introduction to the notion of the planned family. This involves a look at its historical development, the current family planning movement, survey findings on attitudes toward family planning, and various ethical and religious views. The major

part of the course is structured around selected contemporary issues related to family planning, such as contraception, abortion, sterilization, artificial insemination, genetic consequences, voluntary childlessness, adoption, and foster homes. Ethical, religious, legal, social, and psychological considerations are explored for each selected issue. Considerable reading is required and small-group discussions are held regularly. Films and other media are used and a number of guest speakers from the community are asked to present various sides of the issues. *Mr. R. Rice.*

I-50. **GERONTOLOGY.** This course will involve analysis of the developing field of gerontology. There will be a detailed discussion of the physiological and psychological characteristics of the aging process. In addition there will be a study of substantive issues related to the needs of the elderly, such as social security, home and personal safety, housing, nutrition, legal information, recreation, transportation, tax rebates, and death and dying. There will also be a discussion of the institutional interrelationships that affect the elderly and an analysis of the changes needed in American society to aid senior citizens. Prerequisite: 151. *Mr. H. Holstege.*

I-51. **UPDATING THE CREATION/EVOLUTION CONTROVERSY.** The last twenty-five years have seen an ever-expanding body of literature, written by Christians, on the topic of Creation and/or Evolution. This course will survey this literature and evaluate the various views represented including the views of the ultra-literalists, Teilhard de Chardin, and others. Prerequisites: 210 and permission of instructor. *Mr. D. Wilson.*

I-52. **CRISIS INTERVENTION IN DISASTER RELIEF PROGRAMS.** A study of crisis intervention skills and problems designed to prepare students to work as volunteers in disaster relief training programs. The areas to be covered will include: interviewing skills, crisis intervention theory and practice, emotional reactions to disaster; volunteer "burn out," supervision of volunteers, related governmental agencies, and cultural conflict. Field experience away from campus. Prerequisites: junior or senior standing, permission of instructor and of representative of Christian Reformed World Relief Committee. *Mr. D. Smalligan.*

# Spanish

Professor R. Wevers (acting chairman, Department of Romance languages)

Associate Professor D. Dunbar

Assistant Professors B. Class, E. Cortina (program coordinator)

Instructor E. Greenway

Assistant Instructor S. Ariza

**STUDENTS** may declare for a program of concentration in Spanish after having completed two units of college Spanish with a minimum grade of C (2.0). The program of concentration includes ten regular courses. The regular courses are 201-202, 217-218, 303-304, and four courses chosen from 305, 306, 307, 308, 321, 322. The teacher education major consists of 201, 202, 217, 218, 321, 322, and three from 303, 304, 305, 306, 307, 308, 309, 310. The minor program for prospective secondary teachers requires 201, 202, 217, 218, 321, and 322. Programs for students beginning Spanish in college, including prospective secondary teachers, which require only nine courses, should be worked out with the chairman or the program adviser. Cognates in another foreign language through the 200-level, European history, English literature, philosophy, history of music, or history of art are recommended. A year-abroad program is available in Spain. All courses above 102 meet core requirements in foreign language; all courses numbered 217 and higher, except for 321 and 322, meet core requirements in the fine arts.

101 **ELEMENTARY SPANISH. F.** An introductory course in the use and comprehension of oral and written Spanish. *Staff.*

102 **ELEMENTARY SPANISH. S.** Continuation of Spanish 101. *Staff.*

121-122-123 **INTRODUCTORY AND INTERMEDIATE SPANISH. F-I-S.** A closely integrated sequence involving two semesters and the interim for students who have completed two years of high school Spanish with less than a C average or for students who studied Spanish in the tenth and eleventh grades. Students in the teacher education programs who have had no foreign language in high school may register for this course if they have the permission of the department. Students who have previously studied Spanish are assigned to this class on the basis of a placement test administered at the time of fall registration. *Staff.*

201 **INTERMEDIATE SPANISH. F.** Review of essential grammatical structures and further training in spoken and written Spanish. Readings from significant Spanish authors. Prerequisites: 101 and 102 or their equivalent. *Staff.*

202 **INTERMEDIATE SPANISH. S.** Continuation of 201. *Staff.*

321 **ADVANCED SPANISH I.\* F.** A course for the advanced student who wishes to improve his facility in the language to an exceptional degree, or who is preparing for graduate study or for the teaching of Spanish. A variety of exercises and compositions of progressive difficulty are designed to enable the student to increase his understanding and skill in reading, writing, understanding, and speaking idiomatic Spanish. Thorough study of advanced grammar, idiomatic expressions, and vocabulary. Conducted in Spanish. Prerequisite: 202 or equivalent. *Mrs. E. Cortina.*

322 **ADVANCED SPANISH II.\* S.** A continuation of 321, with additional extensive work on independent oral expression and written composition. A major paper in Spanish is required. Conducted in Spanish. Prerequisite: 321 or equivalent. *Staff.*

## LITERATURE

217 **INTRODUCTION TO SPANISH LITERATURE I. F.** An introduction to the major writers and movements in Spain during the

Medieval, Renaissance, Golden Age, and Neo-classical periods. Literary terminology and method of analysis are studied in detail. Conducted in Spanish. Prerequisite: 202 or equivalent. *Mr. B. Class.*

218 INTRODUCTION TO SPANISH LITERATURE II. S. An introduction to the major writers and movements in Spain involved in Romanticism, Realism, The Generation of 1898, and the Contemporary period. Conducted in Spanish. Prerequisite: 202 or the equivalent. *Mr. B. Class.*

303 THE SPANISH NOVEL I. F. A study of the novel from 1500 to 1800. Emphasis is on *La Celestina*, *Lazarillo de Tormes*, and the novels of Cervantes—*Don Quijote* and the *Novelas Ejemplares*. Selected chapters from other novelists are included as well as a study of the chief characteristics of the various types of novels such as the Novels of Chivalry and the Picaresque Novel. Conducted in Spanish. Prerequisite: 202 or the equivalent. *Mr. D. Dunbar.*

304 THE SPANISH NOVEL II. S. A study of the novel from 1800 to the present. Emphasis is on the regional Realistic novels of Valera, Galdós, Blasco Ibáñez, and other more modern novelists. Prerequisite: 202 or the equivalent. *Mr. D. Dunbar.*

305 SPANISH AND LATIN AMERICAN POETRY.\* F. A study of the history and characteristics of Spanish poetry by means of extensive readings and detailed examination of major poets. Special emphasis will be placed on the themes, forms, and techniques of poets of the last two centuries. Conducted in Spanish. Not offered 1977-78.

306 SPANISH AND LATIN AMERICAN POETRY.\* S. A study of the history and characteristics of Latin American poetry, by means of extensive readings and detailed examination of major poets. Special emphasis will be placed on the themes, forms, and techniques of poets from the Modernist generation to the present day. Conducted in Spanish. Not offered 1977-78.

307 THE LATIN-AMERICAN NOVEL.\* F even years. A study of the novels of Latin America with particular emphasis on the last two centuries. Attention will be paid to the conditions that gave rise to the different types of novels, as well as to the intrinsic literary value of the novels themselves. Conducted in Spanish. *Mr. D. Dunbar.* Not offered 1977-78.

308 THE LATIN-AMERICAN NOVEL.\* S even years. A continuation of 307. *Mr. D. Dunbar.* Not offered 1977-78.

309 THE SPANISH DRAMA.\* F even years. A study of the dramatic expression of Spain's Golden Age of literature. Particular emphasis will be placed on the drama of Lope de Vega, Tirso de Molina, Calderón, and Alarcón. Conducted in Spanish. Prerequisite: 202 or equivalent. Not offered 1977-78.

310 THE SPANISH DRAMA.\* S even years. A study of the dramatic expression of Echegaray, Benavente, Lorca, Casona, and Buere Vallejo. Conducted in Spanish. Prerequisite: Spanish 309. Not offered 1977-78.

372 LATIN AMERICAN CIVILIZATION. This course introduces the student to the culture of Latin America. Material covered includes historical backgrounds of the various countries; political, social, and religious institutions and values; and non-literary expressions. Reading materials include literary and non-literary sources. Conducted in Spanish. Prerequisite: 202 or the equivalent. *Staff.*

390 READINGS AND RESEARCH.\* F, I, S. Prerequisite: permission of the chairman.

395 SEMINAR.\*

#### JANUARY 1978 INTERIM

I-10. THE CULTURE OF SPAIN (IN ENGLISH). A study of Spanish culture from a non-literary standpoint. This course seeks to give the student a better understanding of the origins, life, social institutions, ideas, cultural problems, and needs of Spain. The course is designed for students with an interest in Spain but who may not be competent to undertake such a study in the Spanish language. Classes will consist of lectures, audio-visual presentations, classroom discussions, and a paper. This course constitutes a civilization core course for professional programs. *Mrs. S. Ariza.*

I-50. STREET SPANISH. An intensive course in colloquial Spanish for students who, having completed 102 or its equivalent, want to develop ready ability to communicate in Spanish with the Latinos and Chicanos. Because of its practical emphasis this course is particularly appropriate for students who plan to work in community-related jobs which require the ability to use street Spanish, such as social work, teaching, volunteer field experience working

with churches, volunteer agencies, and branches of the government, and in the area of each student's particular interest. Daily classes and drills with five to ten hours weekly of off-campus involvement. Films and local speakers. Prerequisite: 102 or its equivalent. Mr. D. Dunbar.

I-51. SPANISH INTERIM IN MEXICO. An intensive program in Mexico involving travel, lectures, and reading. A special fee will be charged. Prerequisites: 201 or its equivalent and the approval of the instructor. May be applied to a Spanish concentration. Mrs. E. Cortina.

# Speech

Professors M. Berghuis, A. Noteboom, T. Ozinga, M. Vande Guchte (chairman)

Associate Professor D. Nykamp.

Assistant Professors E. Boevé, D. Holquist, J. Korf.

**PREREQUISITE TO A MAJOR** is a minimum average of C (2.0) in one and one-half speech courses, one of which must be from the courses offered in Public Address. The major requires 200, 203, an interim, and five and one-half additional courses selected in consultation with a departmental adviser. Recommended cognates for students interested in oral interpretation and drama include aesthetics, history of art, introduction to musical literature, Shakespeare, and non-Shakespearean drama of the Renaissance; for those interested in speech education or speech correction, child psychology, psychology of exceptional children, descriptive statistics for the social sciences, and anatomy and physiology; for those interested in public address, political behavior, psychology of emotion and motivation, social psychology, and logic.

The departmental honors program requires honors registration in three speech courses other than 100 and 200 and the completion of 390 and 395 beyond the minimum eight and a half course major.

A secondary school teaching major consists of 200, 203, 211, 215, 219, 230, 240 plus two and a half other courses. The elementary school teaching major includes 203, 214, 215, 219, plus five other courses. A six-course secondary school teaching minor should include 200, 203, 211, 215, 219, 230, or 240, plus a half course elective. The elementary school minor is 203, 214, 215, 219, and two electives.

The core requirements in spoken rhetoric may be met by 100; 214, if the student is in an elementary education program; 240; 200; or by an examination, which presupposes formal and practical speech training in high school. The fine arts core requirement may be met by 203, 219, 304, 317, 318, 325, and 326.

## COMMUNICATION AND PUBLIC ADDRESS

100 **FUNDAMENTALS OF ORAL RHETORIC.** F and S, half course, competency core. The primary aim of this course is to increase competence in oral communication, which includes a number of ways through which persons send and receive messages. Designated sections emphasize public speaking while others use a variety of approaches.

Students in elementary teacher education programs should take 214 instead of this course. Staff.

150 **INTRODUCTION TO COMMUNICATION THEORY.** S. An introduction to the nature of human communication. Fundamental aspects of communication, representative communication theories, and a Christian perspective on communication theory. The relationship between communication

theory and common communication acts as well as between communication theory and the other disciplines will be examined. *Mr. D. Nykamp.*

200 **ADVANCED ORAL RHETORIC.** F and S, competency core. Composition and presentation of types of speeches, readings in rhetorical theory and criticism of selected contemporary speeches, types of discussion, and parliamentary law. Prerequisite: 100 or equivalent. *Mr. M. Berghuis.*

211 **DEBATE.** F, half course. The forms and procedures of academic debate. Knowledge and competence in debating, judging, and coaching are course goals. Designed for debaters and prospective coaches. *Mr. J. Korf.*

230 **MASS COMMUNICATION.** F. Examination of television, radio, film, newspapers, magazines, and books. Emphasis on why and how mass media report events and the resultant effects on public attitude formation and change. Major topics include history of mass media; control and method of control of media; competition for the mass market; extent and quality of news coverage; and effects of mass media on society. *Mr. T. Ozinga.*

240 **GROUP COMMUNICATION.** F and S, competency core. Communication in the small group. Major topics include role development, cohesiveness, and group norms. Emphasis is on the task-oriented small group. Participation in experimental group situations, reading in group communication theory, and analysis of group communication are required. *Mr. D. Nykamp.*

250 **SEMANTICS.** S. Study of verbal and nonverbal symbols used in communication. Primary emphasis is on the effect of symbols. Major topics include relationships between symbols and referents, and problems in human communication. *Mr. D. Nykamp.*

305 **PERSUASION.\*** S. Communication as influence at intrapersonal, interpersonal, group, mass, and cultural communication levels. Emphasis on increased understanding and competence. Prerequisite: 100 or equivalent. *Mr. T. Ozinga.*

311 **ARGUMENTATION.\*** F. Study of rational discourse and its uses. Methods of investigation, analysis, and the use of evidence and logic. Regular application of theory to the student's own communication is required. *Mr. D. Nykamp.*

325 **HISTORY OF RHETORICAL THEORY.\*** S, fine arts core. Major issues in the history of oral rhetoric and communication. Classical, medieval, and early modern theories will be compared to twentieth century approaches. Theorists studied include Plato, Aristotle, Bacon, McLuhan, Burke, Goffman, and representatives of various contemporary schools. Seminar papers and discussions. Not offered 1977-78.

326 **HISTORY OF PUBLIC ADDRESS.\*** F, fine arts core. Significant speeches are analyzed as communication arising out of a dynamic historical context. The role of speakers in the movements and controversies of their day. Included are orators of the Bible such as Moses and Paul; speakers of Greece and Rome, such as Demosthenes and Cicero; preachers such as Chrysostom, Luther, Calvin, Beecher, Fosdick, Marshall, and Graham; political spokesmen such as Webster, Lincoln, Roosevelt, Hitler, and Churchill; and speakers for social reform such as Susan B. Anthony and Martin Luther King, Jr. *Mr. M. Berghuis.*

#### **SPEECH EDUCATION AND SPEECH CORRECTION**

214 **SPEECH FOR THE ELEMENTARY TEACHER.** F and S, competency core. Designed to familiarize the prospective teacher with the speech arts used in the elementary classroom and to improve the prospective teacher's use of voice and articulation. *Staff.*

215 **PRINCIPLES OF SPEECH CORRECTION.** F and S. A study of the child's speech development and the types of speech defects that may occur. The course is designed to help the classroom teacher understand and correct minor defects and to handle speech improvement in the classroom. The course will also serve to introduce the student to the profession of speech pathology and audiology. *Mr. M. Vande Guchte.*

307 **FUNDAMENTAL OF SPEECH PATHOLOGY.** S. A study of the anatomy and physiology of the speech mechanisms, the involvement of the nervous system in the control of speech, and the acoustic characteristics of speech production. Prerequisite: 215. *Mr. M. Vande Guchte.* Not offered 1977-78.

308 **BASIC AUDIOLOGY AND AUDIOMETRY.** F. A study of the fundamental aspects of hearing: the physics of sound, the anatomy



of the ear, the nature of hearing and hearing impairment, and the testing of hearing. Prerequisite: permission of instructor. Mr. M. *Vande Guchte*. Not offered 1977-78.

## ORAL INTERPRETATION AND DRAMA

203 INTERPRETATIVE READING. F and S, fine arts core. A study of the history, principles, and techniques of interpretation. Analysis and oral interpretation of prose, poetry, and drama. Mr. D. *Holquist*, Mrs. A. *Noteboom*.

219 PRINCIPLES OF DRAMATIC PRODUCTIONS. S, fine arts core. A study of the theory and principles of drama as revealed in representative plays from the Greek through the modern period. With a view to training the prospective coach, attention will be given to the technical aspects of production. Students will be trained in acting and in directing by means of classroom presentations of dramatic scenes. Mr. J. *Korf*.

220 THESPIAN PRODUCTIONS. Half course for the year. Membership in the Thespian group is limited and is determined annually by tryout. The members will be given training in the various practical aspects of the production of drama. Students may participate more than one year. Mrs. E. *Boevé*.

304 ADVANCED INTERPRETATION. S, fine arts core. Continuation of 203. Application of its principles to the novel and drama. Intensive study in preparation for a reading program. Prerequisite: 203. Mrs. A. *Noteboom*.

317 HISTORY OF THEATER AND DRAMA.\* S, fine arts core. A historical and analytical study of theater and drama from its origins to 1800. Mrs. E. *Boevé*. Not offered 1977-78.

318 HISTORY OF THEATER AND DRAMA.\* F, fine arts core. A continuation of 317. An historical and analytical study of theater and drama from 1800 to the present. Mrs. E. *Boevé*.

390 READINGS AND RESEARCH.\* F, I, S. Independent study of topics of interest to particular students, under the supervision of a member of the department. Prerequisite: permission of the department. Staff.

395 SEMINAR.\* Research of an approved topic or topics under the supervision of a member of the department, and presentation of the results in a departmental semi-

nar. Prerequisite: permission of the department. Staff.

## JANUARY 1978 INTERIM

I-10. THEATER INTERIM—LONDON AND STRATFORD. London and Stratford are two cities which hold a special appeal for students who are interested in the theater. London has over fifty theaters producing plays simultaneously. Stratford is not only the birthplace of Shakespeare but also the home of the Royal Shakespeare Company. During the twenty-three days in England the class will attend fourteen performances ranging in style from classical to modern. It will attend lectures dealing with Constantin Stanislavski's three books on acting; discussions; excursions around London and to Oxford, Coventry, Canterbury; and an over-night stay in Stratford. The goal of the course is to expose interested students to a wide range of theatrical styles, and at the same time discuss how applicable Stanislavski's theories of acting are to these styles. Written evaluations. An appropriate fee to cover travel and expenses in England. Mr. J. *Korf*.

I-11. LIFE WITH ROBERT FROST. This course will attempt to understand how Robert Frost, America's most popular New England poet, views people and issues as students study his poetry through the avenue of oral interpretation. The content of the course will be the poems of Robert Frost. The class will get at an intellectual and emotional grasp of the poems in their aesthetic entirety through reading them aloud and discussing them. Assignments will include solo readings and group readings; the group readings explore possibilities of both "chamber theater" and "choral reading" styles. The readings will culminate in a program towards the end of interim giving opportunity to share Robert Frost with an audience. Mrs. A. *Noteboom*.

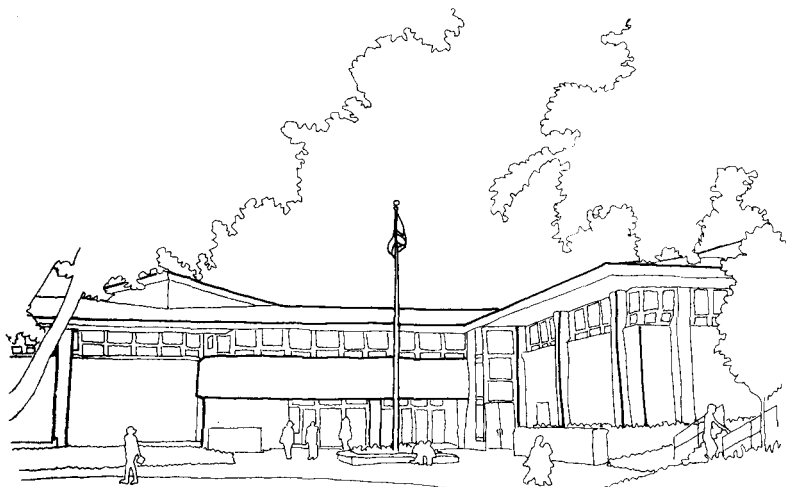
I-12. ORGANIZATIONAL COMMUNICATION. This course will be run largely as a simulated organization. Each student will have a specified position and duties in that organization. Through this simulation students will explore typical problems and benefits of working in formal and informal organizational structure when making decisions and solving conflicts. In addition, there will be readings in communication theory as it applies to communication in organizations such as business, political, educational, religious, and community organizations. Ap-

plications for positions in the simulated organization will be available in early December. *Mr. D. Nykamp.*

**I-50. DEVELOPING ROLE-TAKING AND COMMUNICATION SKILLS IN CHILDREN.** A teacher scolds a student in front of the entire class; a parent refuses to listen to his son's reason for missing curfew; a college athlete ignores his less talented friends; and a young coed finds suicide the answer to her interpersonal problems. All of the above examples illustrate problems which are in part the result of poorly developed role-taking skills. An exciting dimension is added to the Christian life when a person can view the world from other people's perspectives as well as his own. Indeed the Golden Rule commands us to do so. A striking characteristic of prisoners is their

lack of understanding about other people. Because many children and adults are unable to understand the ideas, intentions, attitudes, traits, emotions and/or purposes that are inside other people, communication is difficult. This course will study social science research that describes these problems and suggests possible solutions. From these readings students will create activities and rules that can be used to develop role-taking skills. Written work for this course will include preparation of abstracts of the readings and accurate descriptions of the role-taking activities. Prerequisite: junior or senior standing or permission of instructor. *Mr. D. Holquist.*

**Idis I-54. CHILDREN'S LANGUAGE DEVELOPMENT.** *Mr. M. Vande Guchte.*



# Directories

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 Theodore Wiersma, D.D.S., *Eastern District*

#### EXECUTIVE COMMITTEE—SEPTEMBER 1977

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## Administration

#### PRESIDENTS

John H. Hiemenga, M.A., B.D., 1919–25  
 Johannes Broene, M.A., 1925–30  
 Rienk B. Kuiper, M.A., B.D., 1930–33  
 Ralph Stob, Ph.D., 1933–39  
 Johannes Broene, M.A., 1939–40  
 Henry Schultze, B.D., 1940–51  
 William Spoelhof, Ph.D., LL.D., Litt. D., L.H.D., 1951–1976  
 Anthony J. Diekema, M.A., Ph.D., 1976–

#### ACADEMIC AFFAIRS

John Vanden Berg, Ph.D., *Vice President for Academic Affairs, Dean of the College*  
 Charles J. Miller, Ph.D., *Assistant Dean for Academic Affairs, Director of Graduate Studies*  
 Ernest Van Vugt, M.A., *Registrar*  
 Marvin Monsma, M.A.L.S., *Director of the Library*  
 Herbert J. Brinks, Ph.D., *Curator of the Colonial Origins Collection*  
 Madge Strikwerda, M.A., *Director of Teacher Certification and Placement*  
 Henry Baron, Ph.D., *Coordinator of Freshman Rhetoric*

## BUSINESS AFFAIRS

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Lester Ippel, *Controller*  
George Harmsen, *Chief Engineer*  
A. Dean Van Bruggen, M.B.A., *Manager of the College and Seminary Stores*  
Gordon Lewis, *Operations Manager and Director of Administrative Computer Services*  
Sanford C. Leestma, Ph.D., *Director of Academic Computer Services*  
Harry Faber, *Conference Coordinator*

## COLLEGE ADVANCEMENT

Peter Vande Guchte, M.B.A., Ed.D., *Vice President for College Advancement*  
Wayne Kenneth Hubers, M.A., *Director of Scholarships and Financial Aid*  
Robert Van Stright, B.A., *Financial Aid Counselor*  
Peter M. Harkema, B.A., *Admissions Development Director*  
Donald Lautenbach, M.A., *Director of Admissions*  
Roseanne G. Lopers, B.A., *Admissions Counselor*  
Timothy Steenstra, B.A., *Admissions Counselor*  
Rosemary Van Noord, B.A., *Admissions Counselor*  
Donald G. Distelberg, B.A., *Director of Annual Giving*  
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Judith D. Mullins, M.Ed., *Dean of Women*  
William K. Stob, B.D., Th.M., Ed.D., *Dean of Student Life*  
Larry Teitsma, M.Div., M.A., Ph.D., *Director and Counselor in the Broene Center*  
Joan Laarman, M.A. *Counselor in the Broene Center*  
George W. Zuiderveen, M.A., *Counselor in the Broene Center*  
William B. Monsma, Ph.D., *Chaplain's Assistant*  
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John Rupke, M.D., *College Physician*  
Clarence Beets, M.D., *College Physician*  
Annette Steenwyk, R.N., *College Nurse*  
David E. Erickson, B.A., *Coordinator, Knollcrest East Residence Center*  
David H. Beelen, B.A., *Resident Director, Beets-Veenstra Halls*  
Carol J. Bosch, B.A., *Resident Director, Boer-Bennink Halls*  
Linda S. Bosch, B.A., *Resident Director, Rooks-Van Dellen Halls*  
Dana E. Sommers, M.A., *Resident Director, Bolt-Heys Halls*  
Carol Ten Brink, B.A., *Resident Director, Noordewier-Vander Werp Halls*  
James R. Van Wingerden, B.A., *Resident Director, Schultze-Eldersveld Halls*

# Committees

## ACADEMIC AFFAIRS COMMITTEES

*Academic Standards Committee*, T. Dirkse (1978), J. Hamersma (1978, chairman), G. Harper (1979), D. Lautenbach, J. Tiemstra (1980), E. Van Vugt (secretary), and one student.

*College-Seminary Library Committee*, J. Beebe (1978), C. Bult, M. Monsma (secretary), G. Spykman (1979), D. Van Kley (1980), one college student, and five representatives from the seminary.

*Computer Services Committee*, R. De Kock (1980), H. De Wit, L. Nyhoff (1978), J. Penning (1979), J. Vanden Berg, R. Wevers (1978, chairman).

*Educational Policy Committee*, A. Diekema, G. Marsden (1980), J. Primus (1980), T. Rottman (1978), E. Runner (1979), J. Vanden Berg (chairman), J. Van Zytveld (1978), and one student.

*Interim Term Committee*, D. Jellema (1980), C. Miller (secretary), A. Otten (1978), G. Van Harn (1979, chairman), M. Walters (1979), P. Zwier (1978), and one student.

*Professional Programs Committee*, H. Broene (1980), A. Gebben (1978), K. Kuipers (1979), P. Oppewal (1978), D. Smalligan (1980, chairman), J. Vanden Berg, E. Van Vugt (secretary), and one student.

*Teacher Education Committee*, G. Besselsen (1980), P. Boonstra (1978, chairman), W. Hendricks (1978), H. Hoeks (1979), C. Miller (secretary), C. Orlebeke (1980), P. Tigchelaar (1979), and a student enrolled in a teacher education program.

#### BUSINESS AFFAIRS COMMITTEES

*College Store Committee*, P. Henry (1980), H. Holstege (1978, chairman) D. Van Bruggen (secretary), and two students.

*Special Projects Committee*, A. Bratt (1980), H. Faber, C. Miller (secretary), M. Zuidema (1978, chairman), and one student.

#### COLLEGE AFFAIRS COMMITTEES

*College Relations Committee*, C-M Baldwin (1979), A. Diekema, H. Geerdes (1978, chairman), J. Hoekenga (secretary), R. Hoekstra, D. Nykamp (1980), T. Ozinga, P. Vande Guchte, and one student.

*Priorities Committee*, Ed Boeve (1980), J. De Borst (1980), H. De Wit, A. Diekema, D. Holwerda (1978), H. Ippel (1978, chairman), B. Pekelder, C. Sinke (1979), J. Vanden Berg, P. Vande Guchte, and the Student Body President.

*Special Events Committee*, J. Benthem (1980), H. Bonzelaar (1978, co-chairman), K. Hoesch (1980), G. Huisman (1979), J. Korf (1979), A. Kromminga (1978), S. Lambers (1980), G. Monsma (1980), C. Stapert (1978), D. Tunk (1978), M. Vande Guchte (1979, co-chairman), G. Weaver (1979), and one student.

#### CULTURAL AFFAIRS COMMITTEES

*Cultural Affairs Coordinating Council*, M. Berghuis (1980, chairman), Ervina Boevé (1979), S. De Haan (1978), W. Stob (secretary), two students, non-voting representatives from Communications Board, Film Arts Committee, Homecoming Committee, Lectures Committee.

*Communications Board*, K. Kuiper (1978, *Dialogue*), A. Noteboom (1978, secretary), T. Ozinga (1978, *Chimes*), L. Van Poolen (1978, *WCAL*), H. Van Till (1978, *Prism*), five students (one as chairman).

*Film Arts Committee*, I. Kroese (1979), D. Oppewal (1980), L. Sweetman (1978, mentor), four students (one as chairman).

*Fine Arts Guild*, D. Diephouse (1978, mentor), S. Wiersma (1978), fine arts editor of *Dialogue*.

*Homecoming Committee*, W. De Boer (1978), J. Hoekenga (secretary), W. Stob, three students (one as chairman), one representative from the Alumni Board.

*Lectures Committee*, K. Piers (1979, mentor), R. Wells (1980), three students (one as chairman).

#### FACULTY AFFAIRS COMMITTEES

*Committee on Committees*, J. De Borst (1978), A. Diekema (chairman), R. Griffioen (1978), H. Ten Harmsel (1978), C. Vos (1978), P. Zwier (1978), one student.

*Professional Status Committee*, R. Bolt (1980), A. Diekema (chairman), B. Klooster (1979), A. Plantinga (1979), R. Rice (1980), J. Vanden Berg, C. Walhout (1978).

## STUDENT AFFAIRS COMMITTEES

*Athletics Committee*, W. Bratt (1980), R. Honderd (1979), S. Leestma (1978, chairman), U. Zylstra (1978), two students.

*Chapel Committee*, W. Lagerwey (1979), B. Pekelder (secretary), L. Vos (1978, chairman), six students.

*Resident Services Committee*, D. Boender, H. De Wit, D. Hageman (1978, secretary), J. Mullins, four students (one as chairman).

*Scholarships and Aids Committee*, W. Hubers (secretary), T. Jager (1979), D. Lautenbach, C. Miller, R. Otten (1978), R. Stouwie (1980), R. Tiemersma (1978, chairman), two students.

*Student Conduct Committee*, P. De Jong (1979), E. Greenway (1979), B. Pekelder (secretary), B. Ten Broek (1978, chairman), J. Wiersma (1980), four students.

*Student Development Committee*, K. Blok (1978), D. Boender, W. Joosse (1980, chairman), T. Hoeksema (1979), J. Mullins, B. Pekelder (secretary), W. Sanderson (1978), W. Stob, L. Teitsma, two students.

*Student Life Committee*, M. Bolt (1980), W. Stob (secretary), J. Timmer, (1978, chairman), C. Vos (1979), three students.

*All-Campus Discipline Committee*, R. Albers (1979), H. Bengelink (1978, chairman), J. Brink (1980), G. De Blaey (1978), J. Kuipers (1980), W. Stob (secretary), M. Vander Goot (1978); R. Jensen, alternate.

## AD HOC COMMITTEES

*Governing Board, Calvin Center for Christian Scholarship*, P. De Jong (1978), M. De Kruyger (1979), A. Diekema, R. Griffioen (1980), C. Plantinga (1979), H. Rienstra (1979, chairman), E. Rols (1979), J. Vanden Berg, N. Wolterstorff (1979), and a representative of the Alumni Board.

## DEPARTMENTAL AND DIVISIONAL ORGANIZATION

The various departments are related as divisions: Division I, education, physical education, philosophy, and religion and theology (C. Orlebeke, *chairman*); Division II, language, literature, and the arts (R. Wevers, *chairman*); Division III, the natural sciences and mathematics (R. Griffioen, *chairman*); Division IV, the social sciences (H. Holstege, *chairman*).

Art (II), Edgar Boevé, *chairman*

Biology (III), Al Bratt, *chairman*

Chemistry (III), William Van Doorne, *chairman*

Classical Languages (II), Richard Wevers, *chairman*

Economics and Business (IV), George Monsma, *chairman*

Education (I), Peter De Boer, *chairman*

Engineering (III), James Bosscher, *chairman*

English (III), Henrietta Ten Harmsel, *chairman*

Germanic Languages (II), James Lamse, *chairman*

History (IV), Edwin Van Kley, *chairman*

Mathematics (III), Paul Zwier, *chairman*

Music (II), Dale Topp, *chairman*

Philosophy (I), Clifton Orlebeke, *chairman*

Physical Education (I), Marvin Zuidema, *chairman*

Physics (III), Roger Griffioen, *acting chairman*

Political Science (IV), Johan Westra, *chairman*

Psychology (IV), William Sanderson, *chairman*

Religion and Theology (I), Gordon Spykman, *chairman*

Romance Languages (II), Richard Wevers, *acting chairman*

Sociology (IV), Henry Holstege, *chairman*

Speech (II), Marten Vande Guchte, *chairman*

# Faculty

Faculty members on leave of absence for the academic year are indicated by a dagger (†), those on leave for the first semester are indicated by an asterisk (\*), and those on leave for the second semester are indicated by double asterisks (\*\*).

## EMERITI

- Josephine Baker, M.A., M.A.L.S.  
*Librarian, Emerita*
- Clarence Boersma, M.A., M.A., Ph.D.  
*Professor of Germanic Languages, Emeritus*
- Bert Peter Bos, M.A., Ed.D.  
*Director of Teacher Certification, Emeritus*
- John Harold Bratt, Th.B., Th.M, S.T.M., Th.D.  
*Professor of Religion and Theology, Emeritus*
- John Thomas Daling, M.A., Ph.D.  
*Professor of Psychology, Emeritus*
- John Lester De Beer, M.A., Ed.D.  
*Professor of Education, Emeritus*
- John De Bie, M.A.  
*Assistant Professor of History, Emeritus*
- James John DeJonge, M.S., M.Mus.  
*Associate Professor of Music, Emeritus*
- Harry G. Dekker, M.S.  
*Registrar, Emeritus*  
*Professor of Chemistry, Emeritus*
- Bernard Jay Fridsma, Sr., M.A., Ph.D.  
*Professor of Germanic Languages, Emeritus*
- Winifred H. Holkeboer, M.A.  
*Associate Professor of English, Emerita*
- William Harry Jellema, M.A., Ph.D.  
*Professor of Philosophy, Emeritus*
- Martin Karsten, M.S.  
*Associate Professor of Biology, Emeritus*
- Cornelius A. Plantinga, M.A., M.Ed., Ph.D.  
*Professor of Psychology, Emeritus*
- Tunis Prins, M.A., Ph.D.  
*Professor of Philosophy, Emeritus*
- William Thomas Radius, M.A., Ph.D.  
*Professor of Classical Languages, Emeritus*
- Gertrude Slingerland, M.A.  
*Assistant Professor of English, Emerita*
- William Spoelhof, M.A., Ph.D., LL.D., Litt.D., D.H.L.  
*President, Emeritus*
- Seymour Swets, M.A.  
*Professor of Music, Emeritus*
- John Johnson Timmerman, M.A., Ph.D.  
*Professor of English, Emeritus*
- John Henry Tuls, M.A.  
*Associate Professor of Mathematics, Emeritus*
- Gertrude Vander Ark, M.A., Ed.S.  
*Assistant Professor of Education, Emerita*
- Helen Van Laar, M.A.  
*Assistant Professor of Education, Emerita*
- Harry J. Wassink, B.S.  
*Professor of Engineering, Emeritus*
- Enno Wolthuis, M.S., Ph.D.  
*Professor of Chemistry, Emeritus*



- G. Roderick Youngs, Th.B., M.A., Ed.D.  
*Professor of Psychology, Emeritus*
- Sydney T. Youngsma  
*Assistant to the President, Emeritus*  
*Consultant, Development Office*
- Mildred Reitsema Zylstra, M.A.L.S.  
*Assistant Professor of English, Emerita*

ACTIVE

- Robert J. Albers, Ph.D. (Connecticut, 1962)  
*Professor of Chemistry*
- Sandra Kay Ariza, M.A. (Michigan State, 1974)  
*Assistant Instructor in Romance Languages*
- Claude-Marie Baldwin, B.A. (Calvin, 1971), M.A. (Michigan State, 1977)  
*Visiting Instructor in Romance Languages*
- Henry James Baron, M.A. (Michigan, 1966), Adv. Cer., Ph.D. (Illinois, 1968, 1972)  
*Associate Professor of English*  
*Coordinator of Freshman English*
- John D. Beebe, M.A. (South Dakota, 1966), Ph.D. (Chicago, 1970)  
*Professor of Biology*
- James Alan Benthem, Ph.D. (Wayne State, 1976)  
*Assistant Professor of Psychology*
- Henry Bengelink, M.S. (Michigan, 1940)  
*Assistant Professor of Biology*
- Melvin Earl Berghuis, M.A. (Michigan, 1949), Ph.D. (Michigan State, 1964)  
*Professor of Speech*
- Gilbert Besselsen, M.A., Ph.D. (Michigan, 1963, 1969)  
*Professor of Education*
- \*Nicholas Henry Beversluis, Th.B. (Calvin Theological Seminary, 1943), Th.M. (Westminster Theological Seminary, 1944), M.A. (Columbia, 1950), Ed.D. (Columbia—Teachers College, 1966)  
*Professor of Education*
- Ronald Lee Blankespoor, Ph.D. (Iowa State, 1971)  
*Associate Professor of Chemistry*
- Kathryn Blok, M.A., Ed. Sp. (Michigan State, 1967, 1975)  
*Visiting Assistant Professor of Education*
- Donald L. Boender, M.A. (Michigan, 1965)  
*Dean of Men*
- Edgar Gene Boevé, J. Franklin School of Professional Arts, M.S.D. (Michigan 1954)  
*Associate Professor of Art*  
*Chairman of the Department of Art*
- Ervina Boevé, M.A. (Michigan, 1954)  
*Assistant Professor of Speech*  
*Director of Drama*
- Martin Bolt, M.A., Ph.D. (Michigan State, 1967, 1969)  
*Associate Professor of Psychology*
- Robert Bolt, M.A., (Michigan, 1953), Ph.D. (Michigan State, 1963)  
*Professor of History*
- Helen Bonzelaar, M.A. (Western Michigan, 1964)  
*Assistant Professor of Art*
- Paul H. Boonstra, M.A. (Michigan, 1958), M.S. (Purdue, 1963), Ph.D. (Michigan State, 1970)  
*Professor of Mathematics*
- Bette DeBruyn Bosma, M.A. (Michigan State, 1972)  
*Instructor in Education*

- James Peter Bosscher, M.S. (Purdue, 1957), Ph.D. (Michigan 1968)  
*Professor of Engineering*  
*Chairman of the Department of Engineering*
- Al Dirk Bratt, M.S. (Michigan State, 1957), Ph.D. (Cornell, 1964)  
*Professor of Biology*  
*Chairman of the Department of Biology*
- Kenneth Dale Bratt, M.A. (Princeton, 1973)  
*Instructor in Classical Languages*
- Wallace Henry Bratt, M.A., Ph.D. (Michigan, 1956, 1966)  
*Professor of Germanic Languages*
- Daryl Myron Brink, M.A. (Western Michigan, 1968), Ph.D. (Michigan State, 1972)  
*Visiting Assistant Professor of Mathematics*
- John Harvey Brink, M.S., Ph.D. (Purdue, 1972, 1974)  
*Assistant Professor of Psychology*
- Herbert John Brinks, M.A., Ph.D. (Michigan, 1961, 1965)  
*Professor History*  
*Curator, Colonial Origins Collection*
- Herman H. Broene, Ph.D. (Purdue, 1947)  
*Professor of Chemistry*
- Conrad John Bult, M.A., M.A.L.S. (Michigan, 1962, 1965)  
*Assistant Library Director for College Related Matters*
- Barbara Carvill, Ph.D. (Toronto, 1977)  
*Assistant Professor of Germanic Languages*
- Bradley Mellon Class M.A. (Oregon, 1967), Ph.D. (New Mexico, 1974)  
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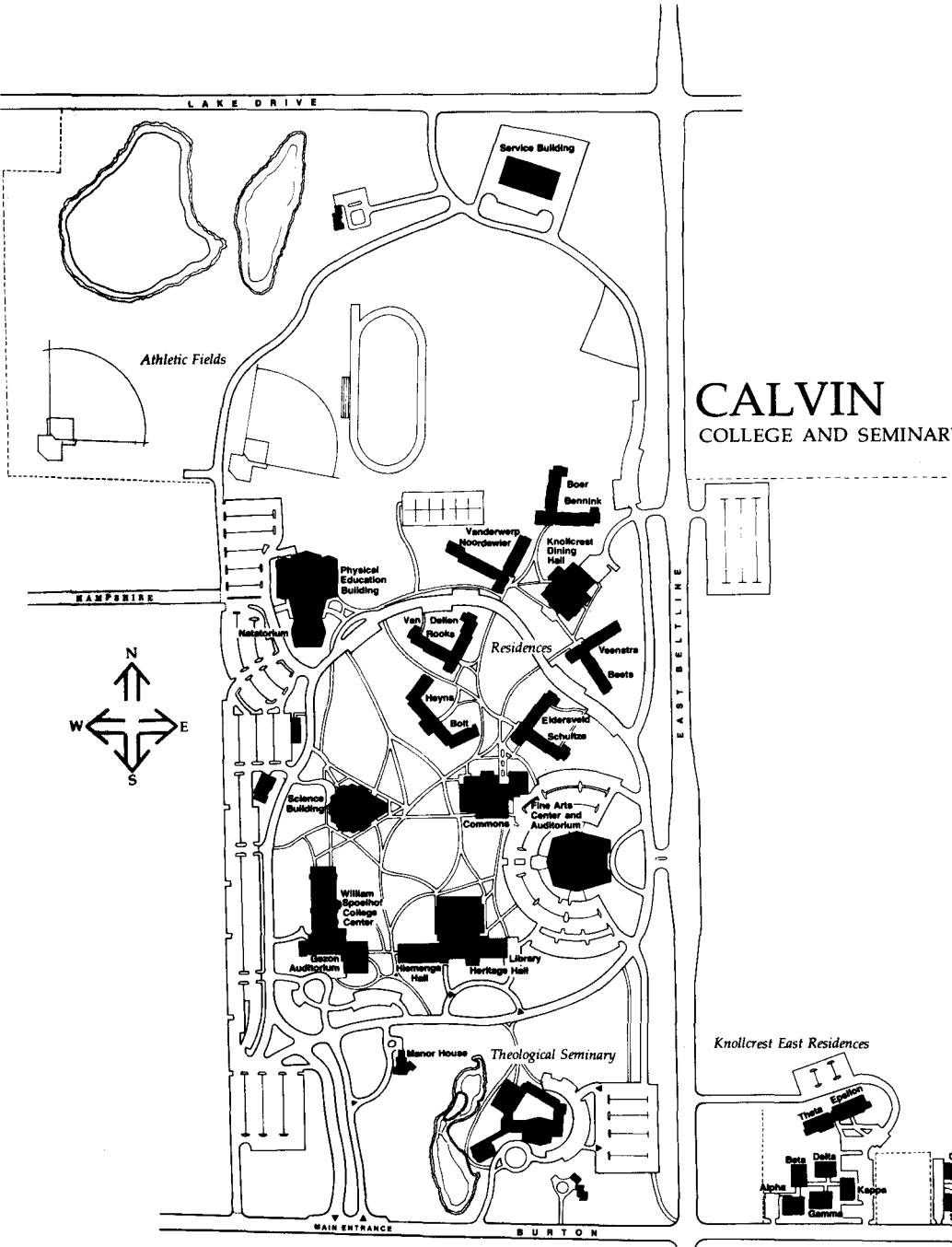
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# CALVIN

COLLEGE AND SEMINARY

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