

# Calvin College



The college of the Christian Reformed Church  
The catalog for 1981-82

---

# CONTENTS

<i>The college year</i>	3
I <i>The history of the college and its objectives</i>	5
II <i>Student life and services</i>	11
III <i>Admission and academic regulations</i>	17
IV <i>Expenses and financial aid</i>	27
V <i>The academic programs</i>	
<i>Bachelor of Arts, Bachelor of Science</i>	39
<i>Special academic programs</i>	43
<i>Other degree programs: B.F.A., M.A.T., M.A. in C.S.</i>	46
<i>Teacher education</i>	48
<i>Other professional and preprofessional programs</i>	53
<i>Departmental programs and courses</i>	65
VI <i>The directories</i>	
<i>The board of directors</i>	161
<i>The administration</i>	162
<i>Faculty committees</i>	163
<i>The faculty</i>	166
<i>The index</i>	179
<i>The campus map</i>	<i>Inside back cover</i>

1981

SEPTEMBER						
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

OCTOBER						
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

NOVEMBER						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

DECEMBER						
S	M	T	W	T	F	S
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

1982

JANUARY						
S	M	T	W	T	F	S
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

FEBRUARY						
S	M	T	W	T	F	S
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28						

MARCH						
S	M	T	W	T	F	S
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

APRIL						
S	M	T	W	T	F	S
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

MAY						
S	M	T	W	T	F	S
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

JUNE						
S	M	T	W	T	F	S
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

JULY						
S	M	T	W	T	F	S
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

AUGUST						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

SEPTEMBER						
S	M	T	W	T	F	S
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

OCTOBER						
S	M	T	W	T	F	S
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

NOVEMBER						
S	M	T	W	T	F	S
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

DECEMBER						
S	M	T	W	T	F	S
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

---

# CALENDAR

## The Fall Semester 1981

SEPTEMBER	8	Tuesday	Faculty Conference
	9	Wednesday	Residence halls open
	10-12	Thursday-Saturday	Orientation and registration
	14	Monday	First semester classes begin 8 a.m.
			Convocation 9:45-10:40 a.m.
OCTOBER	26	Monday	Reading Recess
NOVEMBER	13-24	Friday-Tuesday	Registration for Interim and spring semester
	24	Tuesday	Thursday class schedule in effect
	25	Wednesday	Friday class schedule in effect
	25	Wednesday	Thanksgiving Recess 5 p.m.
	30	Monday	Classes resume 8 a.m.
DECEMBER	16	Wednesday	Classes end 10 p.m.
	17	Thursday	Examinations begin 9 a.m.
	22	Tuesday	Examinations end 9:30 p.m.
			Christmas vacation begins

## The Interim 1982

JANUARY	6	Wednesday	Interim term begins 8:00 a.m.
	27	Wednesday	Interim term ends 5:00 p.m.

## The Spring Semester

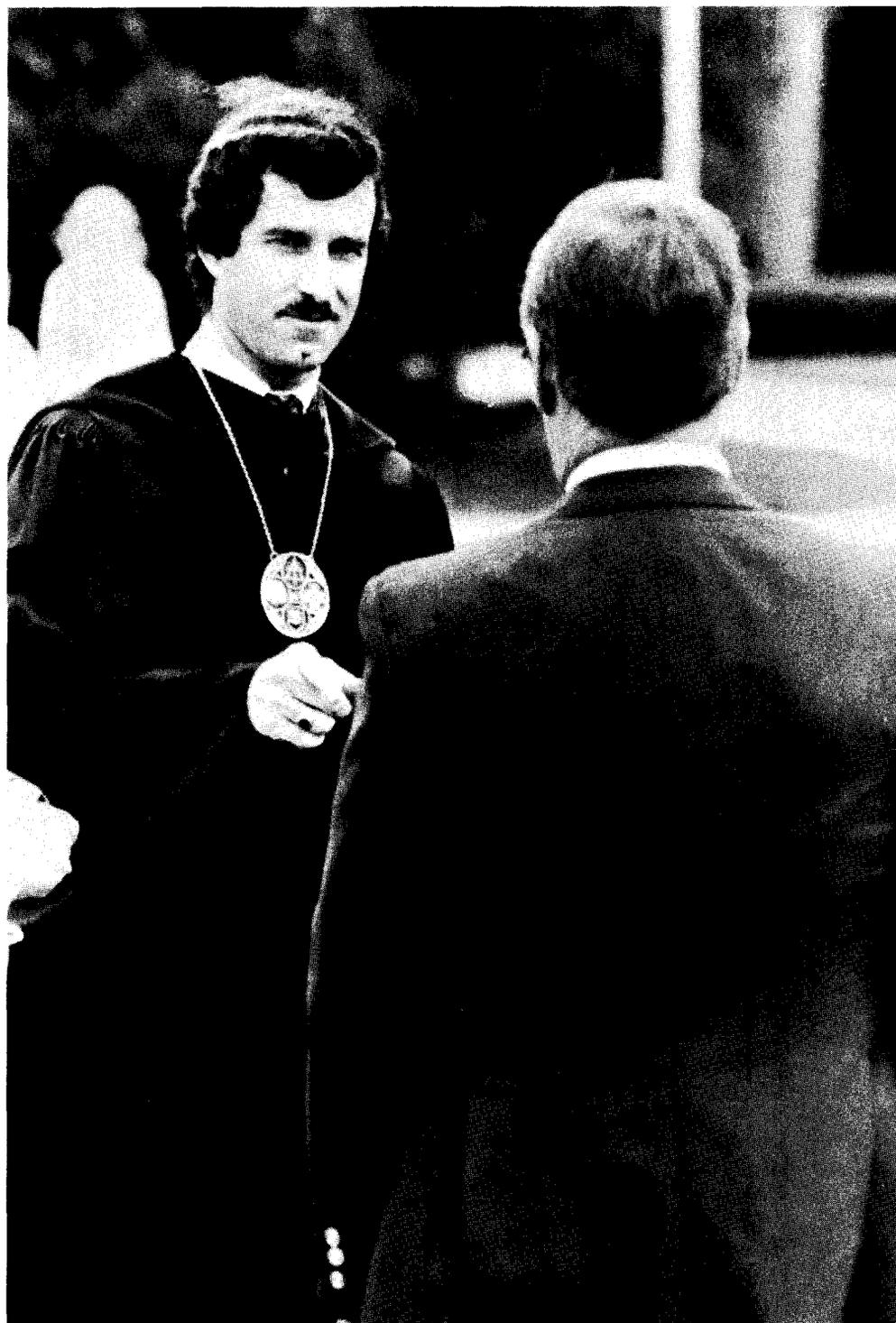
FEBRUARY	1	Monday	Spring semester classes begin 8 a.m.
MARCH	26	Friday	Spring vacation begins 10 p.m.
APRIL	6	Tuesday	Spring vacation ends 8 a.m.
MAY	12	Wednesday	Reading Recess
	13	Thursday	Examinations begin 9 a.m.
	19	Wednesday	Examinations end 4:30 p.m.
	22	Saturday	Commencement 3 p.m.

## The Summer Sessions 1982

JUNE	1	Tuesday	First session begins 8:30 a.m.
	23	Wednesday	First session ends
	28	Monday	Second session begins 8:30 a.m.
JULY	21	Wednesday	Second session ends
	22	Thursday	Third session begins 8:30 a.m.
AUGUST	13	Friday	Third session ends

## The Fall Semester 1982

SEPTEMBER	9-11	Thursday-Saturday	Orientation and registration
	13	Monday	First 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, a century-old denomination 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 Apostles 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 Brés in 1561; and the Canons of Dordt.

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 1,270 and last year was approximately 4,000.

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. The William Spoelhof College Center, the Bergsma Natatorium, the Knollcrest East apartment complex, and the recent addition to the Commons have been added, thereby providing for the potential of 4,000 students with over half living on campus. The Johanna Timmer residence hall will be opened in September, 1981.

## **Library**

The Calvin Library, at the center of the campus, serves students of both the college and the seminary. Its 330,000-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 2,060 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 20,000-item collection of microfilm, microfiche, and microcards. The library, which is air conditioned, can seat 1,100 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 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 120,000 items. The Cayvan Room with its many recordings and tapes is available for both the study and enjoyment of music.

## **Computer Center**

The Calvin College Computing Center is located in the William Spoelhof College Center. The center provides computing services to support instruction and research at the college as well as services to administrative offices of the college and the agencies of the Christian Reformed Church. The principal installations are PRIME 750 and PRIME 400 computer systems.

The PRIME 750 system consists of a central processing unit with 1.5 million bytes of error-correcting memory and 600 million bytes of disk storage. The system also includes two 1,000 line-per-minute printers, a 1,000 card-per-minute card reader, and two 9-track tape drives. It also has communications hardware to support more than 40 remote terminals. This system provides service for college administrative offices and is also connected by a communications link to the denominational headquarters of the Christian Reformed Church.

The PRIME 400 system consists of a central processing unit with one and a half million bytes of memory and 160 million bytes of disk storage. It provides service to Calvin students and faculty. Twenty-five remote terminals are available at various locations on campus. Languages supported include FORTRAN, COBOL, BASICV, and PASCAL. Several special software packages are also available including SPSS and Minitab.

### **Instructional Resources Center**

The college maintains an Instructional Resources Center in Hiemenga Hall, which serves the instructional programs of the entire college. It includes audio-visual services, the audio-visual laboratory, a graphics production center, a television studio, the language laboratory, cable distribution service, and the Curriculum Center, which contains a wide variety of textbooks and demonstration teaching material useful to teachers and prospective teachers.

### **Aim and Purpose**

Calvin College aims to give young people an education that is Christian and is shaped by the Christian faith as reflected in the Reformed standards. This finds its broadest expression in the study of the various liberal arts where students are encouraged to develop value judgments which are grounded in the knowledge of man's relationship to God, to himself, to his fellowman, and to the world, and to acknowledge the Lordship of Christ overall. It is in this setting of Christian commitment that the college seeks to promote sound scholarship, earnest effort, and an obligation to use one's talents fully in response to a divine calling.

The end of such Christian commitment is the Christian life. Informed and mature Christian 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 one's 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, Calvin College provides many opportunities 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 involve participation in local churches.

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 not only students 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.

### **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. The administration, the

staff, the student body, and the physical facilities of the college and the seminary are largely separate and independent. The membership of the board is constituted of representatives elected by the various classes and approved by synod, and regional trustees 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.

### **Compliance with Legal Requirements**

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. Calvin College also provides equal opportunity for qualified handicapped persons in accordance with the requirements of Section 504 of the Rehabilitation Act of 1973. Instructional and other physical facilities are readily accessible to handicapped students and special rooms in the residence halls are designed for barrier-free living. Mr. Thomas Hoeksema of the Department of Education is the adviser for handicapped students. Inquiries and appeals regarding compliance with these federal requirements should be directed to Mr. Henry De Wit, Vice President, Calvin College Business Office, as Civil Rights, Title IX, and Section 504 coordinator. Student appeals will be heard by the Academic Standards Committee.

### **Accreditation and Affiliation**

Calvin College and all the programs it offers are fully accredited by the North Central Association of Colleges and Secondary Schools. It is also accredited by the American Chemical Society. 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. It is a member of the Christian College Coalition.

### **Calendar, Summer School**

The academic calendar at Calvin College forms the typical 4-1-4 plan, consisting of two semesters, each approximately four months in length, plus a one-month interim term in January. Normally, 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 consecutive three and a half week sessions; a student is permitted to register for one regular course during each session.

### **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 Calvin Seminary for one year and those who teach at the college or seminary are also considered members of the association. There are currently nearly thirty thousand Calvin alumni around the world.

The purpose of the association is to support Christ-centered education through service to Calvin and its alumni and friends.

The Calvin Alumni Association is governed by a board of sixteen persons who serve for three years. The board meets five times during the year. 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 carried out by the Director of Alumni Relations.

The association sponsors an alumni magazine, services to alumni chapters, numerous programs, including Summerfest (the alumni vacation college), and contributes to faculty research projects. The alumni-financed program of freshmen grants and upper-division scholarships is of special interest to students. Information concerning all of these may be obtained from the Alumni Office.



---

# STUDENT LIFE AND SERVICES

## 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 service is held in the Fine Arts Auditorium, but a variety of other services such as Fellowship chapel, 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.

### Student Conduct and Regulations

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* booklets describe the regulations and their implementation.

The *Discipline Code*, approved by the Faculty, the Student Senate, and the Board of Trustees, is the official document which spells out college regulations and judicial processes. A copy of this code is available at the Student Affairs Office.

While the *Code* does not seek to develop a detailed and exhaustive summary of what a student may or may not do, it does contain, in addition to Christian principles of behavior, a list of proscribed conduct. Among those proscribed actions are all kinds of dishonesty, acts of violence, disruption of institutional activities, theft, unauthorized entry, sexual misconduct, use of alcoholic beverages and drugs on campus and at institutionally sponsored activities, and profane and obscene language. Sanctions for misconduct range from verbal warning to expulsion.

The judicial processes require a hearing before the Dean of Men or Women or before the All-Campus Discipline Committee, guarantee student rights to testify, to examine evidence, and to enlist counsel at the hearings, and provide for appeal to higher judicial bodies.

## Housing

Freshman and sophomore students under 21 years of age not living at home 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 or married 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 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 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. 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 Association for Intercollegiate Athletics for Women (IAIW) 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 it also 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. All organized clubs and similar groups must have a faculty sponsor and must have formal approval through the dean of student life.

In addition, the Student Senate sponsors the Student Volunteer Service (SVS), a volunteer service group rooted in Christian social responsibility, which is directed by Sharon Berghuis. It provides assistance to local schools, to non-profit agencies, to senior citizens, and to the community in general and provides a great variety of experience for the students involved. Students tutor children and adults, assist in special education, serve as big brothers and sisters, support art and recreational therapy programs, provide transportation for those who need it, and offer moving and home maintenance services for those in need.

## **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 outpatient 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. Family plans for married students are also available. Information is available in the Business Office.

The Calvin College Blood Donor Club, sponsored by the SVS program and chartered by the Grand Valley Blood Program, conducts four blood drives each academic year in the college community. Through it any member of this community is entitled to receive blood free of charge.

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.

### **Broene Counseling Center**

The Broene Counseling Center offers counseling in the areas of career and personal concerns and life enrichment. The staff provides assistance for students searching for careers by helping them recognize their own resources and talents, and by exploring with them the variety of careers available and appropriate for them. The career resource area contains a wide selection of career information including a computerized career data file. The staff also offers individual and group counseling and provides enrichment programs in such areas as interpersonal relationships, self-understanding, Christian self-image, communication skills, stress management, and career planning. Student concerns are kept confidential.

### **Counseling, Advising, and Orientation**

Shortly after registration each freshman is assigned to one of his instructors as his adviser. This faculty 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.

After his freshman year a student 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 career and personal problems.

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.

### **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 Placement Office assists graduates and alumni in securing employment. All seniors and graduates are eligible for this service and are encouraged to establish a credential file in the Placement Office. There is a \$10 fee for the service.

Seniors in education are assisted in developing credentials early in their final year. At their request credentials are forwarded to school officials who are considering candidates for teaching positions. The Placement Office lists 1,500 teaching vacancies annually and hosts administrators who desire to interview candidates on campus.

The Placement Office also assists seniors and alumni in finding post-graduation employment in fields other than teaching. Job opportunities are posted, and through a monthly publication, *Placement Profiles*, information is publicized that is of interest to those seeking employment. The *Intra-Campus Bulletin* and *Placement Profiles* list the times when prospective employers will conduct interviews. Personal counsel is given in job-search techniques such as resume writing and interviewing skills. The Placement Office maintains a Placement Resource Center which makes available information on employers and employment in various parts of the United States, in Canada, and in foreign countries, as well as in federal and state governments. Seniors who will be seeking the assistance of the Placement Office are asked to register for placement services early in their final year at Calvin.

Various graduate school and graduate fellowship programs are supervised by the dean for academic program administration. 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 dean. These include 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 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.

Prospective students requesting application material will be sent the forms necessary to apply for both admission and financial aid. They will be notified concerning admission as soon as the Office of Admissions receives the following documents:

1. *A completed application form*
2. *Academic transcripts from high schools and colleges previously attended*
3. *Entrance examination results, either ACT or SAT*
4. *The recommendation of a pastor or spiritual counselor*

Candidates applying for scholarships should take their entrance examinations not later than December. All application forms received later than July 1 must be accompanied by a \$10 late registration fee.

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 (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 at least one additional three-unit major sequence and two two-unit minor sequences chosen from a single foreign language, the mathematics-physics area, the natural sciences (typically chemistry, biology, and physics), and the social science area. The remaining units may be selected from those which count toward graduation in an accredited high school.

Applicants with high school averages of C+ or higher in their college preparatory courses whose ACT-Composite is 16 or higher or whose SAT-Verbal is above 370 and SAT-Mathematics above 390 are normally given regular admission. Applicants with lower grades and scores are reviewed individually by the Committee on Admissions and may be admitted on the condition that they participate in the Academic Support Program. Each year approximately 8 percent of the freshman class is admitted conditionally.

Candidates with strong backgrounds are often able to earn advanced college credit in certain subjects. This may be secured in any of four ways:

1. *A grade of 3 or higher on an Advanced Placement (AP) Examination conducted by the College Entrance Examination Board, subject to departmental approval.*
2. *A satisfactory score on any of the Subject Examinations of the College-Level Examination Program (CLEP) of the College Entrance Examination Board.*
3. *The completion of college-level work while in high school,*
4. *The passing of special departmental examinations at Calvin College.*

Furthermore, students who have completed appropriate courses in high school are excused from certain college graduation requirements. This is most common in foreign language, mathematics, literature, and the sciences. Consult pages 40 and 41 for a description of the ways high school courses satisfy college requirements.

Because student applications are not considered until entrance examination results have been received, prospective freshmen are advised to take the entrance examination during the spring semester of their junior year or in the fall of their senior year. Canadians may substitute the Preliminary Scholastic Aptitude Test (PSAT) if the ACT or the SAT is not conveniently available. Candidates for entrance examinations must apply for them at least a month prior to the testing dates.

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 1981-82 academic year are October 17, December 12, February 20, April 3, and June 12.

The Scholastic Aptitude Test will be given this academic year on October 10, November 7, December 5, January 23, March 27, May 1, and June 5. 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.

Although low test scores are seldom used to bar admission to students who demonstrate a desire for a college education, average scores have remained steady in recent years. In 1980 the average high school grade was B (3.08); the average SAT-V was 483 and the SAT-M was 526; and the average ACT-E was 20.7 and the average ACT-M was 22.1.

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

## **Transfer Students**

Students transferring from other colleges or universities must follow the same procedures of applying for admission as freshmen, they should have a cumulative grade point average of C (2.0) or higher, but are not required to sit for

entrance examinations. 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 and at least one upper-level course in his major 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.

---

#### 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 40-41).

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. Chemistry and physics are recommended for prospective nurses.
History	2 units	
Typing		
Electives	3 units	
	16 units	Additional units are desirable for students with special interests.

---

#### Admission Under Special Conditions

The college is eager to serve students, including those with irregular academic histories, who show promise of benefiting from a college education. Applicants who are at least nineteen 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-

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 and/or low ACT or SAT test scores may be admitted on condition because of other evidence of academic promise. Such students will receive special counsel, may enroll for no more than three regular courses, are required to participate in the Academic Support Program, 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.

### **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 authorized under Federal law to enroll nonimmigrant alien students.

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 for whom English is a second language must have an adequate command of English as demonstrated by their performance on either the English Test administered by the English Language Institute of the University of Michigan (ELI) or on the Test of English as a Foreign Language (TOEFL), administered periodically throughout the world by the Educational Testing Service. Students admitted with grades of at least 85 on the ELI or 500 on the TOEFL are permitted to carry a regular load while those admitted with lower scores are required to carry a reduced load and to take appropriate non-credit courses in English as a Second Language along with regular courses. All such students are admitted on condition and must take English courses each semester until they have successfully completed English 100 and an English literature course, courses required of all students for graduation. (Such students usually can satisfy the graduation requirements in a foreign language with their native language.) The ELI is administered during the fall orientation week to all students for whom English is a second language and the results are used to place them in appropriate English courses.

### **Admission to the Diploma Nursing Program at Blodgett Medical Center**

Students wishing to enroll in the diploma school of nursing at Blodgett Memorial Medical Center must apply for admission to both the college, as out-

lined above, and to the school of nursing, and must be accepted by both. Inquiries concerning the nursing program should be addressed: Director, Blodgett Memorial Medical Center School of Nursing, 1840 Wealthy Street, Grand Rapids, Michigan, 49506 or by telephone, (616) 774-7898

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

Students interested in Bachelor of Science in Nursing programs should consult the section on Nursing on page 63.

### **Visitors and Auditors**

Members of the community who are not enrolled as students in any college are invited to register as visitors in most lecture classes. Admission to the college is not required, but each visitor must register with the Registrar's Office before attending class. The fee for each course visited is \$15, which includes campus parking privileges. Courses in accounting, applied art, computer science, English composition and creative writing, foreign language, applied music, speech, and courses in which a laboratory experience is an integral part of the classroom activity are not open to visitors but only to credit-seeking students and auditors.

Those who wish to participate in courses not open to visitors without receiving credit must register as auditors. Admission to the college is required prior to registration. The audit fee is one half the credit fee per course, although full time students may audit courses without additional charge. Auditors are expected to attend all classes and participate in the assigned activities of the class. They may take all tests and submit assigned papers for evaluation, but they are not required to do so. Auditors may change their registration from audit to credit only during the first four weeks of the semester.

### **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 to four and one quarter course units a semester. The normal course load, however, may range from three to four and three-quarter course units, permitting students to register for quarter courses in applied music, basic physical education, and drama in addition to a typical load. Non-credit remedial courses are counted as part of a normal load, and students on probation or condition may be required to limit their load to three credit course units. In exceptional cases a student may apply for permission from the registrar

to carry more than four and three-quarter course units. Such an application requires the recommendation of the student's academic adviser or department chairman and the approval of the registrar. To be eligible for consideration the student must have a cumulative grade point average of 3.0, must have received no grades of incomplete during the previous two semesters, and is expected to limit outside employment.

Not more than two units of applied arts courses, except for music majors in certain applied music concentrations, and no more than one course unit of basic physical education may be applied to graduation.

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, Dropping Courses**

Grades given during the regular semester are designated by letters A, excellent; B, good; C, average; D, just passing; and F, failure. An honor student taking a fifth course may elect to have it graded as satisfactory or unsatisfactory.

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 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 by December 1 of the first semester or by 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 and will then be given a grade of W in all courses. A student who

discontinues classes without notification or permission is not entitled to a grade of W but will be given an F in each course.

A student may repeat any course by properly registering for it but must inform his instructor that he is repeating it. Only the latest 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 by May 1 of the next spring semester; if given an I during the spring semester or summer session, he must make up the deficiency by 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.

### **Honors, Eligibility**

Full-time students with an average grade of A - (3.50) or higher for any semester and a cumulative average of 3.3 or higher will be placed on the Dean's List. 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 desiring to graduate with an honor's designation must participate in the honors programs. Consult page 43 for details.

### **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 students access to their records, are available in the Office of the Registrar.

At the end of each term a grade report will be mailed to the home address of

each student unless he files a written request with the registrar that this not be done. A student may obtain a copy of his complete academic record at any time.

Official transcripts are released only when requested by the student. The first transcript is free, but each additional copy costs \$1.00. Transcripts will not be released for students who have failed to meet their financial obligations to the college.

Any student found guilty of dishonesty in any examination or test or in written work of any character is subject to disciplinary action. The normal sanction is a failing grade on the piece of work involved, but a failing grade in the course is also a permissible sanction.

### Academic Probation and Dismissal

Each student admitted to Calvin College is assumed to have the training, the desire, and the ability to make satisfactory progress toward a degree. In practice, some students do not make the expected progress, either because they are not willing to devote the necessary time to their studies or because they are unable to make up for deficiencies in their previous academic training. Such students are warned, offered special assistance and vocational counseling, and given an opportunity to improve their records. Failing that, however, they will be dismissed.

Applicants whose test scores or past records indicate the likelihood that they will experience academic difficulty will be given conditional admission, limited to three and one-half course units, and required to participate in the Academic Support Program.

The records of all students are reviewed after each semester, and the academic status of full-time students determined according to the following schedule. The performance of part-time students is judged on the basis of full-time equivalent enrollment.

<i>Semesters of full-time enrollment<sup>1</sup></i>	<i>Minimum cumulative grade point average needed for continuation</i>	<i>Minimum cumulative grade point average needed for good standing</i>	<i>Minimum credit units completed needed for good standing</i>
1	1.0	1.50	2
2	1.0	1.65	5
3	1.3	1.75	8
4	1.45	1.85	12
5	1.60	1.90	15.5
6	1.75	1.95	20
7	1.85	2.00	23.5
8	1.90	2.00	28
9	1.95	2.00	31.5
10	2.00	2.00	36

1. Interims are considered a part of the spring semesters for the purpose of determining academic status. Summers may be used to make up deficiencies. If a student discontinues prior to December 1 of the first semester, or prior to May 1 of the second semester, or at any time because of illness, that semester will not be counted.

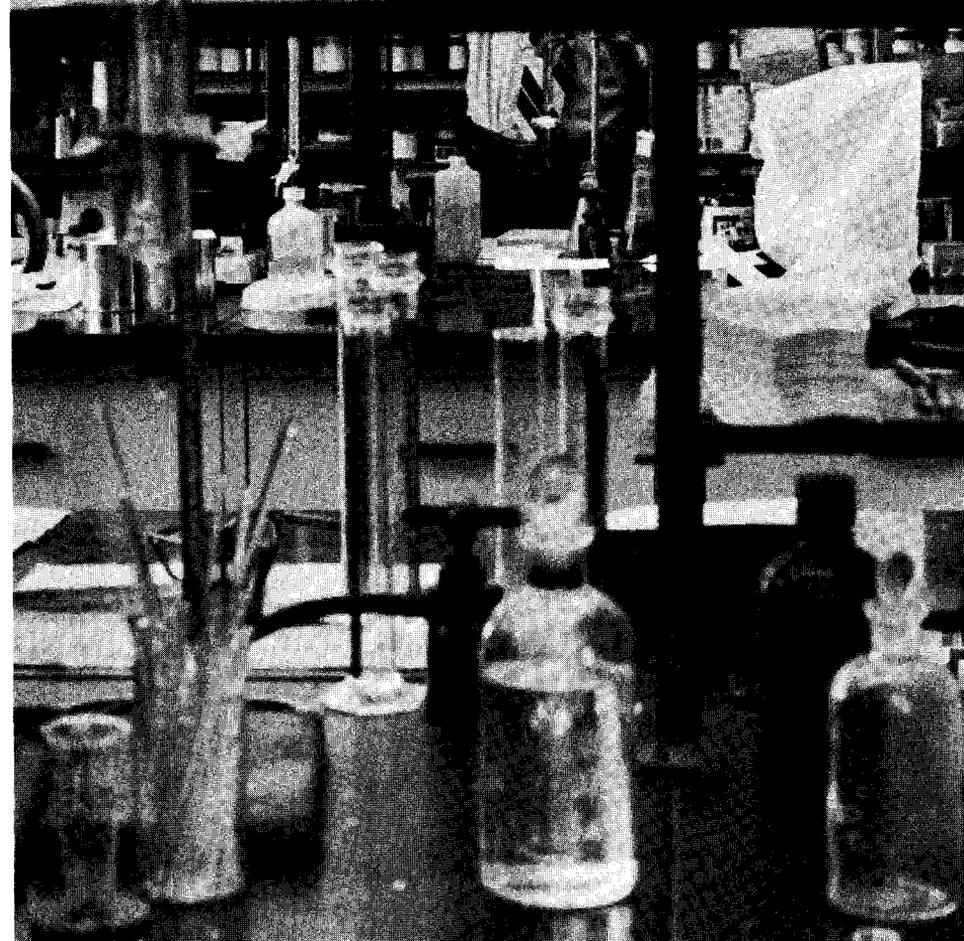
Any student whose average falls below the minimum required for continuation is subject to dismissal. All students permitted to continue but not meeting the requirements for good standing are placed on probation. Freshmen placed on probation are limited to three and one-half course units and required to participate in the Academic Support Program. All students on probation are expected to limit extracurricular activities and part-time employment and to seek help in developing their academic skills either from a faculty adviser or from the staff of the Academic Support Program.

A student not permitted to continue may appeal his academic dismissal to the Academic Standards Committee, whose decision is final. One year must elapse before a student dismissed for poor academic performance is eligible to petition for readmission. A request for readmission will be reviewed by the Admissions Committee; readmission following academic dismissal will be based upon evidence that the difficulties previously encountered can be overcome and that eventual completion of degree requirements can reasonably be expected.

### **Application For Degrees and Certificates**

In addition to the formal requirements for degrees described in the section on "The Academic Programs" beginning on page 39, students must satisfy certain technical requirements. Normally, they must have completed their last year in residence at Calvin. They must also have completed a Major Concentration Counseling Sheet and have had it signed by their departmental adviser and have met all of the conditions specified in that sheet. (These sheets normally are completed during the sophomore or junior year.) Finally, they must have filed a formal application for a degree at the Office of the Registrar not later than the beginning of the semester in which they expect to graduate. If they are completing teacher education programs, they must also file an application for Michigan certification at the same time they apply for a degree or not later than a semester before they complete the certification requirements.

Students desiring to graduate with an honors designation must have applied for admission to a departmental honors program and have met those requirements and must have met the general honors program requirements. Consult page 43 for details.



# EXPENSES

## Tuition and fees

TUITION FOR THE ACADEMIC YEAR is \$3,480; room and board on campus is \$1,720; and the estimated cost for textbooks and classroom supplies is \$200.

Students taking fewer than four course units of credit in any semester may be charged on a per-course basis. Those registered for more than 4.75 course units in any semester will be charged for the overload at the per-course tuition rate. The interim is considered a separate course for which there is no additional charge if the student pays full tuition either semester or pays for at least six course units during the academic year.

Most students at Calvin College receive some sort of financial support from grants-in-aid, scholarships, or other programs. Special grants-in-aid based on direct support through the churches are available to members of the Christian Reformed denomination.

### BASIC CHARGES

Tuition, up to 4.75 course units a semester	\$1,740
Tuition, per course-unit rate	<del>450</del>
Tuition, auditing, per course unit	225
Room and board, academic year	1,720

### SPECIAL FEES AND DEPOSITS

Visitor fee, per course	\$ 15
Art materials fee	20
Directed teaching fee (Educ 345,346)	10
Examination fee (course credit)	20
Examination fee (exemption)	5
Late application fee	10
Late installment payment fee	5
Individual music instruction	
One hour weekly lesson per sem.	220
Half hour weekly lesson per sem.	110
For concentrates, per sem.	165
Vehicle registration fee	10
Residence hall social fee	20
Housing deposit	50
Physical education locker deposit	5

*Full-time tuition covers student activities such as the Student Senate and student publications.*

Students are encouraged to pay their tuition, fees, room, and board in full at the time of registration each semester. Payment schedules are available at registration for those students who need to make payments over a period of time. These schedules call for a down payment at the beginning of each semester with 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 \$1,185 for tuition, room, and board; the minimum for non-resident students paying tuition only is \$900. Denominational Grants and other financial aid are applied at the beginning of the semester and may be used to reduce the down payment. Accounts not paid on time are subject to a \$5 late

payment fee, and those not paid by the end of the semester will be charged an additional 1 percent per month on the unpaid balance. A penalty fee of \$10 is charged students who have not paid their bills in full, unless arrangements are made with the Business Office by December 15 in the first semester and May 11 in the second. Transcripts are not issued for students owing money.

If a student withdraws from the college his charges for the semester (tuition, room, board, etc.) will be prorated from the beginning of the semester until his official withdrawal at the Registrar's Office. A student who withdraws from a single course will have his charges reduced only if he withdraws at the Registrar's Office within the first six weeks of the semester, and his charges will be prorated according to the portion of the six weeks completed. The financial aid of such students is reviewed and may be reduced.

## Grants, scholarships, and awards

CALVIN COLLEGE PARTICIPATES in all federal and state student financial aid programs for which our students are eligible. In addition, the college sponsors a number of its own programs which are coordinated with and used to supplement federal and state programs. Programs sponsored by the College include: (1.) academic scholarships designed to recognize students with excellent academic ability and to encourage superior academic work, (2.) Denominational Grants which recognize regular contributions to the college through denominational quotas, and (3.) need-based grants for students who are not eligible for state or federal grants or who need more grant assistance than state and federal programs provide.

Information about application procedures for financial aid is included with all admission forms for prospective students and is made available to current students in January of each year.

The Office of Scholarships and Financial Aid assists students in working out programs to cover the college costs. Those who apply for need-based financial aid and qualify, receive an award letter indicating the aid for which they are eligible including grants, scholarships, loans, and income from student employment. Students should determine before registration how they will meet their costs and, if intending to carrying a full academic load, should plan to work no more than twelve to fifteen hours per week.

Specific information about financial aid programs is given in the following pages. Questions or requests for additional information should be directed to the Office of Scholarships and Financial Aid at the address or telephone number given inside the front cover of this catalog.

### TUITION REDUCTION PROGRAMS

**Michigan Differential Grants.** The State of Michigan funds a grant program of aid to Michigan students at private colleges in the state which offsets part of the difference in tuition between public and private colleges. To be eligible for the grant, a student must be a Michigan resident, an undergraduate, enrolled at least

half-time, and must meet the academic progress standards of the college. For 1981-82, grants are expected to be \$500 per year for full time students, and \$250 per year for half-time students.

**Denominational Grants.** Students whose families are members of the Christian Reformed Church and who thus contribute regularly to Calvin College through denominational quotas receive a Denominational Grant. The amount of this grant is determined in part by the distance between the student's home and the college as measured in a direct line. For purposes of this grant, the home of an unmarried student is considered to be that of his parents; that of a married student to be his residence before enrolling at Calvin. However, out-of-state students who meet the residency requirements of the Michigan Competitive Scholarship, Tuition Grant, or Differential Grant Program must also be considered Michigan residents for purposes of the Denominational Grant. If a student's parents are not members of the denomination, the grant is based on the location of the Christian Reformed Church of which the student is a member. When the need of a student is met by a State of Michigan Competitive Scholarship or Tuition Grant, the Denominational Grant is reduced to keep the total amount of aid within the maximum permitted by state regulations.

The Denominational Grants for 1981-82 are:

	Grant per semester, if paying full tuition	Grant per course, if paying by course
For Michigan students		
Within 10 miles of the campus	\$130	\$30
From 10 to 150 miles	180	30
Beyond 150 miles	230	30
For out-of-state students		
Within 300 miles	310	40
From 300-1,000 miles	350	50
More than 1,000 miles	400	60
Manitoba, Ontario, Quebec	350	50
Alberta, British Columbia, Saskatchewan	400	60

## ACADEMIC SCHOLARSHIPS

A variety of types of scholarships are available for students of all classes. These are granted on the basis of academic achievement, program of study, other designated conditions, and, in some cases, financial need. More than two hundred fifty scholarships are awarded annually to prospective freshmen and approximately three hundred to upperclassmen.

At the time of admission all students are considered for scholarships. Scholarship review begins in December and students who are selected to receive a scholarship are notified soon afterwards. Those students who wish to be considered for the Freshman Honor Scholarship or similar scholarships should be admitted by February 1 and should arrange to have their ACT or SAT scores available by that time. If students are eligible for more than one scholarship they are granted the larger one.

The general freshman and upperclassman scholarships of \$200 a year are renewable for up to four years, or until the student receives his degree, if the student maintains a 3.5 average or higher. Transfer students and others achieving this average are considered automatically each year. For 1982-83 these scholarships will be increased to \$300. Other special scholarships are awarded on an annual basis and require an annual application, unless the condition of the scholarship specifies otherwise. Students should determine their own eligibility for these scholarships. Students who receive one of the special scholarships usually are not considered for general scholarships as well.

## NEED-BASED FINANCIAL AID

Significant need-based financial aid is available to students from the college, the denomination, the federal government, and the various state and provincial governments. There are opportunities for part-time employment off campus as well.

Applications for need-based aid must be filed each year. To be fair to all students, requests for aid must be supported by a financial statement which provides information about income, expenses, assets, and indebtedness. This statement is reviewed for the college by an independent agency using nationally standardized criteria to determine the degree of need. Information about the criteria used to determine eligibility for need-based aid is given in a brochure entitled, *Do You Qualify?: a guide for estimating your eligibility for financial aid at Calvin College*. This brochure is available from the Office of Scholarships and Financial Aid.

Freshman applications for financial aid should be filed by February 1 (March 1 for Canadians) and upperclassman applications should be filed by March 15. Later applications will be considered if funds are available.

## ACADEMIC PROGRESS REQUIREMENTS FOR FINANCIAL AID

Financial aid recipients must meet minimum academic progress requirements in order to continue to receive aid in the Michigan Tuition Grant and Differential Grant, Calvin's Scholarships and Grants, Basic Educational Opportunity Grant, Supplemental Educational Opportunity Grant, National Direct, Federally Insured and Guaranteed Student Loans, and the College Work-Study Employment Program.

Minimum academic progress for these programs is defined in terms of the number of credits earned in relation to the number of semesters on aid except for part-time students who are evaluated individually. Specifically, the requirements for full-time students are as follows:

<i>Semesters on aid</i>	1	2	3	4	5	6	7	8	9	10
<i>Course units required, including interims</i>	2	5	8	12	15½	20	23½	28	31½	36

The progress of students receiving aid is reviewed at the end of each semester. The continuation of financial aid, however, is determined only after the spring semester. The students who have not earned the number of credits required are not eligible to continue to receive aid in the programs listed until they have earned

enough credits without receiving aid to meet the criteria once again. Students who are denied aid because of insufficient credits should contact the Financial Aid Office if there are extenuating circumstances which should be taken into consideration.

## SCHOLARSHIP AND GRANT DIRECTORY

### *Freshman Scholarships and Awards*

**Freshman Honor Scholarships.** Each year the college awards twenty-five to thirty Honor Scholarships to students of superior academic achievement and potential. The minimum stipend of this scholarship is \$500 for direct educational expenses plus \$50 for books other than textbooks. For 1982-83, the amount will be increased to \$800 plus \$50 for books.

**Valedictorian Freshman Scholarships.** Scholarships of \$400 each are awarded to incoming freshman who rank first in their high school class. For 1982-83, the amount will be increased to \$600.

**Freshman Scholarship for National Merit Semi-finalists.** Calvin College awards a scholarship of \$400 to each prospective freshman who has been selected as a Semi-Finalist in the National Merit Scholarship Program. These scholarships will be increased to \$600 for 1982-83.

**Freshman Scholarships.** Scholarships of \$200 (\$300 for 1982-83) are awarded to entering freshman who have done excellent work in high school and have not been selected to receive one of the other freshman scholarships. These scholarships are awarded on the basis of grade point average and ACT or SAT scores. Ordinarily, a grade point average of 3.5 or higher is required.

**Calvin College National Merit Scholarship.** Calvin College annually sponsors one four-year scholarship for a National Merit Finalist. The minimum amount of the scholarship is \$750. Additional amounts are available based on need. Prospective students who indicate to National Merit that Calvin College is their first choice institution will be considered for this award.

**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 or more scholarships are available each year to prospective

freshmen from the Whitinsville, MA area. The scholarships range from \$300 to \$600 with selection based on the student's academic record, ACT or SAT scores, and, in the case of the \$600 scholarship, on financial need. Scholarships based on need are renewable for up to four years. Selection is made by the Scholarships and Aids Committee of the college in consultation with a representative committee from the Whitinsville area.

**Steelcase Foundation Scholarships.** The Steelcase Foundation of Grand Rapids, Michigan, offers scholarships totalling \$2,000 annually to applicants who are children of Steelcase employees. The recipients are selected by the Scholarship Committee. 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. To be considered, eligible freshmen must write a letter of application to the Office of Scholarship and Financial Aid.

**The Edward D. Vander Brug Memorial Scholarship.** Up to four scholarships are awarded annually from a fund set up by the Vander Brug family of Detroit, Michigan, in memory of Edward D. Vander Brug. The program is designed to recognize academically capable minority students who have demonstrated potential for leadership in high school or college or in previous work experience. The recipient must intend to pursue an education leading to full time service in agencies or institutions related to the Christian Reformed Church. Awards are in the amount of \$2,000 a year and are renewable, if the student's cumulative grade point average is 3.0 or higher, or if the grade point average for the previous year is 3.5 or higher. Need is not a requirement for the scholarship.

**Oratorio Society Applied Music Awards.** A number of awards of \$250 each are pre-

sented by the Calvin College Oratorio Society to prospective freshman for use toward the cost of individual lessons in applied music. 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: band, capella, campus choir, oratorio chorus. The deadline for applying for the Oratorio Society and Vander Heide awards is April 1. Application blanks and additional information are available from the Music Department. Awards are announced by the end of April.

**Vander Heide Voice Award.** An award of \$250 is offered annually by Mr. and Mrs. Jan 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 incoming freshmen are eligible. Applicants will be judged on the basis of evidence of talent and musicianship. See Oratorio Award above for application procedure.

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

**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 need 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.

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

**Upperclassman Scholarships.** Scholarships of \$200 are awarded to upperclassmen each year who have a cumulative grade point average of 3.5 or higher at the end of the first semester of the previous year and who have not been selected to receive one of the other scholarships awarded by the college. Transfer students are considered for this scholarship on the basis of their grade point average at their previous college. The amount will be increased to \$300 in 1982-83.

**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 interviewed by the Alumni Board. There are usually nine scholarships of \$600 each awarded annually.

**Bere Memorial Scholarship.** The college has received a gift from Mrs. Jeanne L. Bere in memory of her late husband, Paul Bere, the income from which is used to award one scholarship of \$300 each year. The scholarship is awarded to a pre-law student entering the junior or senior year, with primary emphasis on an evaluation of academic performance and potential. Financial need is a secondary factor in the selection.

**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.

**The Margaret and Douglas Bush Family Scholarship.** The Bush family has provided the college with funds to encourage worthy students to prepare for positions in business and business education. One or more awards of \$300 each are made each year by the Scholarship Committee of the college on the basis of diligence, character, commitment to service of the Lord and mankind, promise of growth, and, in some cases, financial need. Although the student's academic record is not a primary factor, a grade point average of 3.00 or better is required.

**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.

**Peter and Margaret (Bell) De Haan Chemistry Award.** Mrs. De Haan has established a scholarship fund for the benefit of students in chemistry in memory of her late husband, Peter. Awards of \$400 each are based on Christian character, personality, possible financial need, and promise of growth. Selection is made by the Scholarship Committee.

**Dr. Paul and Mrs. Doris Dirkse Health Care Scholarship.** Dr. and Mrs. Dirkse have provided the college with a fund, the income from which is used to award scholarships of \$400 or more to students pursuing pre-professional courses in medicine, dentistry, nursing, physical therapy, and related professions and para-professions. Pre-nursing students will be considered as freshmen and sophomores. Other students will be considered at the sophomore, junior, and senior class levels. Selection criteria include vocational interest, academic record, character, and need.

**Dow-Employees Scholarship Fund.** The Dow-Employees Scholarship Fund provides Calvin College with one or more scholarships of \$500 each.

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.

**Farmers Insurance Group Scholarship.** Each year the Farmers Insurance Group of Los Angeles, California, provides the college with a gift of \$600. This is to be used to award one or two scholarships to second, third, or fourth year students 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 Mrs. John Spalink, in memory of her 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.

**Steelcase Foundation Scholarships.** The Steelcase Foundation of Grand Rapids, Michigan, offers scholarships totalling \$2,000 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.

**Earl Strikwerda Memorial Scholarship.** Memorial contributions from the relatives and friends of Professor Earl Strikwerda have enabled the History Department to

honor the memory of their former colleague with an annual scholarship of \$400. Junior year history majors should submit applications to the Chairman of the Department of History by March 1.

**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 four 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 scholarships are awarded to a top student in any area. Selection criteria include the student's academic record, character, and need.

**Ruth Zylstra Memorial Scholarship.** Each year Calvin College awards one scholarship of \$200 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 toward the cost of individual lessons in applied music during the junior or senior year. Selection shall be made on the basis of proficiency in performance on the instrument, evidence of sound musicianship, grade point average, especially in music, and participation in the college orchestra and in a chamber music ensemble.

**Alumni Players Upperclassman 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 toward the cost of individual lessons in applied music 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.

**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 toward the cost of individual lessons in applied music 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.

**John Scripps Wind Scholarship.** An annual award of \$200 is given by John Scripps to an outstanding upperclassman performer on a wind instrument. Applicants will be judged by the following criteria: superior performance on a wind instrument as evidenced in recital and ensemble performances, participation in and contribution to instrumental ensembles at Calvin, initiative and leadership in wind chamber ensembles, and grade point average, especially in music.

**Music Department Upperclassman Keyboard Award.** An annual award of \$200 is offered to an outstanding sophomore or junior pianist or organist to be used toward the cost of individual lessons in applied music during the junior or senior year. Applicants will be judged on the basis of proficiency in performance at the keyboard, evidence of sound overall musicianship, and grade point average, especially in music.

#### *Scholarships for Graduate Students*

Graduate students enrolled full time in the Master of Arts in Teaching or the Master of Arts in Christian Studies Program are eligible for scholarships similar to those funded by the college for freshmen and upperclassmen. For 1981-82, scholarship amounts range from \$200 to \$500. In 1982-83, scholarships of \$300, \$600, and \$800 will be available. Generally, a cumulative grade point average of 3.5 or higher is required for consideration.

#### *Need-Based Financial Aid*

**Michigan Competitive Scholarships and Tuition Grants.** The State of Michigan provides awards of up to \$1,300 to Michigan residents attending eligible institutions in the state. Competitive scholarships are awarded on the basis of ACT scores and need and can be used in both public and private colleges in the state. Tuition grants

are awarded solely on the basis of need and can be used only at private colleges. Competitive scholarships are available only to undergraduate students; tuition grants are available for graduate as well as undergraduate work.

**Michigan Differential Grants.** The State of Michigan funds a grant program of aid to Michigan students at private colleges in the state which offsets part of the difference in tuition between public and private colleges. To be eligible for the grant, a student must be a Michigan resident, an undergraduate, enrolled at least half-time, and meeting the academic progress standards of the college. For 1981-82, grants are expected to be \$500 per year for full time students and \$250 per year for half-time students.

**Basic Educational Opportunity (Pell) Grant.** The BEOG or PELL Grant Program, funded by the federal government for U.S. citizens and permanent residents of the U.S., is designed to provide grant assistance of up to \$1,750 per year to students whose parents' income is approximately \$25,000 or less. Since there are factors other than income considered in the evaluation, some with incomes above \$25,000 may qualify for the program, and others with lower incomes may not qualify. Only students in undergraduate programs are eligible.

**Supplemental Educational Opportunity Grant.** This program, funded by the federal government, provides funds to the college for needy students. These grants are awarded to students who qualify for need-based aid but are not eligible for or do not receive enough grant assistance in the BEOG and State Grant programs. Recipients must be U.S. citizens or permanent residents of the U.S. and must be enrolled in an undergraduate program. The maximum grant is \$2,000 per year.

**Freshman Alumni Grants.** Since 1966, the Calvin Alumni Association has provided funds for grants to prospective freshmen. For 1981-82, grants were given to 154 students in amounts ranging from \$100 to \$500. Selection is based on the student's academic record, ACT or SAT scores, and financial need.

**Albert Postman Loan Program.** This program provides loans 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 Canadian students who are not eligible for or cannot receive enough assistance through the Canada Student Loan Program.

**Calvin College Grants.** The college has established a program of grant assistance for students who have financial need but are not eligible for other grant programs or whose need cannot be met with other grant programs. The program is open to graduate as well as undergraduate students; the maximum grant for 1981-82 is \$2,000.

**SCORR Grants.** The Christian Reformed Church has authorized the Synodical Committee on Race Relations (SCORR) to provide need-based grants up to \$1,000 per year to North American students of minority cultures who are within the fellowship of the Christian Reformed Church. The purpose of the program is to encourage the development of multi-racial leadership in the Christian Reformed Church.

**Interim Grants.** The college provides need-based grants to students enrolled in off-campus interim courses when there is an additional cost involved. These funds are made available so that students who need an off-campus course for their academic program are not denied this opportunity because of a lack of financial resources. Criteria used in awarding the grants include an evaluation of the importance of the interim course to the student's academic program and the student's need as determined from a financial statement. The amount of the grant depends on the cost of the interim course and on the student's need. The maximum grant is approximately \$600.

**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 and permanent residents, provides long term loans to students with financial need. There is no interest charge on the loan, and repayment can be deferred as long as the borrower is enrolled in college at least half-time. Repayment begins six months after the bor-

rower ceases to be at least a half-time student, and the interest rate during repayment is 4 percent simple interest. The minimum repayment is \$90 every three months with a maximum repayment period of ten years for loans which require larger payments. Under certain conditions, repayment and interest can be deferred and, in some cases, all or part of the loan may be cancelled.

**Guaranteed Student 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 \$2,500 per year. Repayment of the loan is deferred as long as the student is enrolled at least half-time and until six months after leaving school, during which time there is no interest charge. The repayment period can be as long as ten years, if needed, although a minimum payment of \$30 per month is usually required. 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 \$1,800 per year. Application forms are available from provincial offices of education.

### *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. These awards to seniors are granted for the student's contribution to musical life on campus and academic achievement.

**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.

**Ervina Boeve' Scholarship for Theatre Arts.** Through the generosity of former students and friends this scholarship honors Mrs. Ervina Boeve' for her contribution to the theater and the college while serving as Director of Thespians. Each year a scholarship of \$150, to be applied toward tuition, will be awarded by the Speech Department to a junior speech major with a theater arts concentration on the basis of academic record and proven ability and dedication in performance, production, or scholarly research in theater. Applicants for the scholarship must submit an application portfolio to the Speech Department by April 1.

**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 an interest in humane letters and a 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 \$1,500, 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 are 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, critical, and creative writing among Calvin College students. The \$50 award is administered annually by the English Department.

**O. K. Bouwsma Memorial Award in Philosophy.** Through the generosity of Mrs. O. K. Bouwsma and other benefactors, an annual prize of \$100 will be awarded to one upperclass student for distinguished achievement in philosophy and promise of future contribution to Christian scholarship. The Philosophy Department selects the recipient.

**The Rinck Memorial Award.** A fund of \$4,000 has been subscribed by former students and friends as a memorial to William Rinck, professor of mathematics at Calvin College from 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 \$100 for the

best essay and a prize of \$75 for the second-best essay on a subject bearing on the evangelization of the Jews. The contest is open to all college students and is administered by the Department of Religion and Theology.

### *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 of \$500 to a member of the graduating class of Calvin College. (To be increased to \$800 for 1982-83.) 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 of the college by March 1.

**Competitive National Graduate Fellowships.** Many competitive national fellowships are available to Calvin seniors with outstanding records. These include 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 dean for academic program administration.

**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 consult with the chairman of the Engineering Department before March 1, 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 PROGRAMS

## Christian liberal arts education

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 a 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 this 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, a Master of Arts in Teaching degree in 1976, and a Master of Arts in Christian Studies in 1980. 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 53-63) 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 for four years 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, the designated liberal arts core and an approved concentration, with a minimum average grade of C (2.0) both overall and in the program of concentration. Not more than one course credit of basic physical education or two units in applied music, drama, and speech may be applied to graduation requirements except when such courses are a designated part of a required major or minor 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, computer science, the earth sciences, engineering, mathematics, and physics, he may elect instead to receive a Bachelor of Science degree.

## **I. 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, religion); 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 core courses are described in the various departmental sections. The specific requirements are as follows:

### **1. Six courses are required in history, philosophy, and religion**

One course in history from 101 and 102.

One or two courses in philosophy, either 153 or 151 and 152.

One course in biblical studies from Religion 103, 108, 207, 208, 327, and 328.

One course in historical and theological studies from Religion 206, 301, 303, 304, 308, 311, and 312.

Two additional core courses from history, philosophy, religion, and Interdisciplinary 100 and 234, but not more than two of the required six may be in either history or philosophy or three in religion. Students in teacher education programs should take Philosophy 153 plus either Education 304 or Philosophy 209.

### **2. Three courses are required in mathematics and in the sciences**

One course in mathematics from 107, which is recommended in elementary teacher education programs, 109, 111, and 205.

One course in physical science from 110, 112, which is required in elementary education programs, 124, Astronomy 110, 201, and Geology 103.

One course in biology from 111, 115, which is recommended for elementary education programs, 117, 121, which is required in predoctoral and premedical programs, and 216. A student may also meet this requirement by completing both 105 and 106.

The two requirements in the biological and physical sciences may also be met by a year's

work in Biology 121-122, Chemistry 103-104, 113-114, Geology 151-152, Physics 123-124 when accompanied by 181-182, 126-225, or 221-222.

Students who have completed with a minimum grade of C a course in Senior Mathematics in high school are excused from the mathematics requirement, those who have completed a year of standard high school physics (not physical science) in the eleventh or twelfth grade are excused from the physics requirement, and those who have completed two years in high school biology concluding with Advanced Biology in the eleventh or twelfth grade are excused from the requirement in biology. Students in elementary education programs who are excused from physics or who take a course other than Physics 112 must take 113.

**3. One course is required in economics or political science; one in psychology or sociology**

One course in economics or political science from Economics 151, Political Science 151, 201, 202, 203, and 210; 201 or 210 is recommended for elementary teacher education programs.

One course in psychology or sociology from Psychology 151, Sociology 151, 217, and Education 301, which is required for teacher education programs.

**4. Three courses are required in literature and the other fine arts**

One course in literature taught in English from courses numbered 200 through 321. English 225, 235, 251, and 260 do not meet this requirement.

One course in the other fine arts or in literature taught in a foreign language. These may be from Art 151, 231, 232, 332, 335, 338, 340, Classics 221, 231, Music 103, 231, 232, 233, 234, 236, 238, 241, Speech 203, 217, 304, 317, 318, 325, 326, or foreign literature courses. Art 215 and Music 238 are acceptable only in elementary teacher education programs.

A third course is required of those students who did not take a year's course in literature, art history, or music appreciation during their junior or senior years in high school. English 225 may be taken as this third course.

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

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

A course in speech from 100, 200, 240, or the passing of a competency examination. Speech 214 is acceptable only in elementary education programs.

A course unit in basic physical education from 102, 103, 104, or 105 with the additional credit from 110 through 198; 221 may substitute for one of the additional courses for students in teacher education and physical education. Not more than one course unit of basic physical education may be applied to graduation requirements.

**6. Competency is required in one foreign language**

Students must demonstrate a competency in a foreign language that is equivalent to two year's study in college or four year's in high school. Normally this is demonstrated by completing 123- or 202-level courses or by examination.

Students are advised to continue in languages they have studied previously and will be placed in classes at their level of ability as determined by placement examinations. Special three-course sequences (121-122-123), involving two semesters and an interim, are available in French, German, and Spanish for students whose preparation is weak or who are in teacher education programs without having studied a foreign language previously. 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 but are required to take English core courses each semester until they have met their core requirements.

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

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.

## 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 courses that 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, dean for academic program administration.

## III. PROGRAMS OF CONCENTRATION (MAJORS AND MINORS)

**Majors.** As stated above, every degree-seeking student must fulfill the requirements of a faculty-approved departmental or group major. Although such major concentrations are not normally chosen until the second semester of the sophomore year, most programs do presuppose the completion of specific freshman and sophomore courses. Official admission to a major program requires the formal approval of a department or program adviser and the completion of a counseling form which details the student's remaining academic requirements. If at any time a student changes his major, he must again submit a new counseling form for the new major. Teacher education group majors and some departmental majors for teachers may be applied only to teacher certification programs.

To be admitted to a department's major program a student must have earned a C (2.0) in each course designated as a prerequisite for admission, unless that department stipulates a C (2.0) average in two or more prerequisite courses. To be admitted to a group concentration a student must have met the grade point average required for admission by the primary department within that group. A student not maintaining a minimum grade of C (2.0) in his program of concentration may be permitted to remain in that program for a single semester of probation.

The various programs of concentration are specified in the section of the catalog which describes departmental programs and course offerings, beginning on page 65. Group majors designed for teacher certification programs are described in the section on Teacher Education Programs, on pages 48 and following. Students may also initiate interdisciplinary programs of concentration other than those formally approved by the faculty. Requirements for developing such interdisciplinary programs are available from the registrar's office. Such programs

require the approval of the departmental chairmen concerned as well as of the registrar.

**Minors.** Optional six-course departmental minors and supplementary group concentrations are possible in certain fields. A C (2.0) average is required for admission to such programs and for graduation in them. Most of the minors are described in the departmental sections of the catalog. The supplementary concentrations in church education are included under the Department of Religion and Theology; that in journalism and mass communications, under the Department of English; that in German studies, under the Department of German; and that in social work, under the Department of Sociology.

## Special academic programs

### Exemption and Course Credit by Examination

Regularly enrolled 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 Department 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 apply to their major departments, must have a cumulative grade point average of 3.3 or higher, 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, dean for academic program administration.

### **The Academic Support Program**

The Academic Support Program provides training and support to students who are judged to need them because of past academic performance or because of current difficulties in their academic programs. It offers opportunity for development of college-level study and reasoning skills in a classroom setting through personal academic counseling and from trained tutors.

Special intensive classes are offered in English rhetoric and English as Second Language for students who need systematic review of language skills, and pre-college mathematics review courses are available to liberal arts students as well as science students who have limited preparation in mathematics. Course descriptions can be found on pp. 69.

Participation in the program is required of freshmen with conditional admission or probational status, but its services are available to any student who wishes to do better in any class. Services available upon request include analysis of study efficiency, diagnostic testing, and circulation of materials for independent work in reading, reasoning, spelling, specialized vocabulary, and mathematics.

The Director of the program is Mrs. Evelyn Diephouse.

### **Self-instruction in Languages Not Otherwise Taught at Calvin**

Students may earn credit for foreign languages not otherwise taught at Calvin through a supervised, self-instruction program. Such languages include Chinese, Italian, Japanese, and Russian, and may include others. This program is open to sophomores, juniors, and seniors with cumulative grade point averages of at least 3.0 who have had prior successful language study. Credit may be applied toward the foreign language graduation requirement only if fourth-semester proficiency is achieved. The director of this program for self-instruction in less commonly taught languages is Mr. James Lamse of the German Department.

The program requires ten to fourteen hours a week of independent study, using tape-recorded materials coordinated with a course text, and an additional minimum of three hours of private or small group tutorial drill sessions with a native speaker of the language. The student must commit himself to the schedule established by the program director and must complete the course within a

specified period. Progress of the student is monitored by both the native speaker and the program director, with the final evaluation based on written and oral tests administered by an outside examiner.

Students interested in such instruction should apply to the director at least a month in advance for languages presently being offered or four months in advance for others.

### **Study-Abroad Programs**

In cooperation with Central College, Calvin College offers semester and year study programs in France, Germany and Austria, and Spain which permit students to register for courses in a variety of subjects. Such courses may be applied toward graduation requirements at Calvin. To be eligible for such programs a student must have completed the study of the appropriate language through the second-year level. Month-long intensive review courses in the languages are available in the countries involved before the beginning of the fall semester. Similar programs are available in Wales and England.

In addition to such study programs, language-only programs are available in France and Spain. Through them students may satisfy Calvin's foreign language requirement.

To be eligible for such programs students must be maintaining a cumulative grade point average of 2.5, must have the recommendations of two faculty members, and must have determined how credits earned in the program can be applied to graduation requirements. Such programs are most appropriate for juniors and seniors and may involve financial aid through Calvin College. Students should apply through Mr. Charles J. Miller, dean for academic program Administration.

Information on other overseas programs is available in the office of Dean Miller.

### **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, English, psychology, and sociology. For details consult Mr. Donald Wilson of the Department of Sociology.

### **Washington Semester Program**

Calvin College is a participant in the 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. To be eligible a student must have completed at least one course in American politics and earned a 3.0 grade point average or higher. Mr. Johan Westra of the Department of Political Science is the faculty adviser.

## Other degree programs: B.F.A., M.A.T., M.A. in C.S.

### 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 a prescribed program of concentration. Before applying for admission to the program a student must have completed three studio art courses. Additional requirements for admission and of the program are available from the chairman of the Department of Art.

The required eighteen-course program consists of three basic art courses (205, 209, 210), four from introductory courses to the various media (310, 311, 320, 325, 350); four intermediate and advanced studio courses from 309, 312, 313, 314, 315, 321, 322, 326, 327, and 351; four courses in history of art including 231 and 232 with two others from 332, 335, 338, 340, and Classics 221; two advanced art interims; and two semesters of 395. No more than eighteen courses in art may be applied to the degree. This program is not appropriate for those seeking teacher certification.

The liberal arts core must include:

1. Six courses from the contextual disciplines. (History 101 or 102, Philosophy 153 and 208, Religion and Theology 103 and 301, and an additional core course from history, religion and theology, or Interdisciplinary 100,).
2. One core course from mathematics and the natural sciences,
3. One core course from economics, political science, psychology, and sociology,
4. Three course units from English and American literature, music, and speech with courses in at least two departments and at least one in literature,
5. The basic core requirements in English 100, speech, and physical education,
6. A foreign language through the 202-level or two approved courses in foreign culture.

### Master of Arts in Teaching Degree

The Master of Arts in Teaching (M.A.T.) program serves 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

*must  
rel 206*

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

After students are admitted to the program the dean for academic program administration assigns them to advisers in their declared area of interest. The student and the adviser will work out an appropriate program, subject to the approval of the dean. 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+ (2.3) 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:** Two courses are required. At least one course must be from those approved in psychology or sociology and education (Education 512, 513, 535, Sociology 501) and one must be from approved courses in history or philosophy and education (Education 510, 581, and Philosophy 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, biblical and religious studies, English, history, mathematics, music, fine arts, language arts, reading, school administration, social studies, and science. Additional programs and courses are under consideration. Courses designated with an asterisk and those numbered 500 or higher may be applied to M.A.T. programs.
3. **Methods and Materials:** 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 301, 303, Education 581 or Philosophy 501, and two to four course units of teaching internship and seminar or the equivalent. Prospective elementary teachers must also complete Education 305 and 322. Major, minor, and general education requirements, usually met by undergraduate programs, must also be met. Such combined programs require more than the minimum of nine courses.

## **Master of Arts in Christian Studies Degree**

The Master of Arts in Christian Studies program offers an opportunity to college graduates of any age or profession to spend one year, or the equivalent, in high-level study of the relationship of Christian faith to human understanding of reality. The director of the program is Mr. George Marsden of the Department of History.

### **ADMISSION**

The minimum requirements for admission are a bachelor's degree from an accredited college with a minimum average of B (3.0). Other students may be admitted provisionally for one semester. Candidates with major deficiencies in their undergraduate programs or lacking preparation in areas critical to this program, such as biblical studies or introductory philosophy, may be required to complete prerequisite courses in addition to the minimum courses required for the degree. Normally course work done previously at other institutions may not be applied to degree requirements. Inquiries and applications for admission should be sent to the Office of Admissions.

### **REQUIREMENTS FOR THE DEGREE**

To be eligible for the degree a student must complete with a cumulative average of B (3.0) a ten-course unit (normally twelve month) program worked out with an adviser. Only courses completed with grades of C+ (2.3) or higher may be applied to the degree. Five of the course units must be graduate-only courses, including a two course interdisciplinary sequence on "Christianity, Learning, and Culture"; a structured graduate reading course; and two units for a thesis. In addition the student must complete at least five course units in a specific area involving Christian perspectives on one of the following: the behavioral sciences, the fine arts, the humanities, the natural sciences, the social order, or theoretical thought. Students taking the various upper-level undergraduate college courses that will be suggested in each of these areas, or approved seminary courses, are expected to do work in these courses that is appropriate for graduate credit. In addition to the course requirements, a student must pass a comprehensive examination in his or her program area.

## **Programs for teacher education**

### **Teacher Education Programs**

Students wishing to be teachers should apply for admission to a teacher education program at the Department of Education during the second semester of their sophomore year. At that time they must have completed at least ten course units of college work with a cumulative average of C (2.0) and must provide evidence that they have had at least twenty-five hours of experience working with

school-aged young people. To remain in the program students must maintain a 2.0 average in all of their courses, in their declared major and minor, and in their professional education courses. In addition they must receive the positive recommendation of their instructor in Education 301-303 and, if in special education, their instructor in Education 216.

To be admitted to directed teaching students must, in addition, have completed at least twenty five course units including at least six in their major concentration, must have the approval of the Department of Education and of their major adviser, and must have completed all of their professional education requirements except for Education 304. Formal application must be made by February 1 of the school year preceding the anticipated directed teaching.

To be recommended for certification a student must have earned the appropriate bachelor's degree, including approved teacher education major and minor concentrations, must have earned at least a 2.0 in directed teaching, and must be recommended by his college supervisor.<sup>1</sup>

Students failing to meet these standards will be dropped from the program. Appeals may be made to a review committee through the registrar.

Canadian students can meet all or most of the teacher licensing requirements for any province while attending Calvin College. In addition to completing one of the four-year teacher education programs at Calvin such students must have met the standards required for admission to their provincial universities and must have completed nine courses in education. Because other provinces consider an Ontario Grade 13 certificate to be equivalent to their Grade 12 certificates, advanced credit given for work in Grade 13 is discounted by the ministries of education in the other provinces when evaluating teaching credentials.

Students from Ontario wishing to meet its requirements must complete four years of education (120 semester hours) beyond Grade 13 or five years beyond Grade 12 (150 semester hours). One year of that preparation (30 semester hours) must be in professional education courses, including practice teaching. In addition, students completing their teacher education in another province or state must also earn the teacher credentials of that province or state. At Calvin some students, particularly those with Grade 12 preparation, earn both a bachelor's and a master's degree while completing the requirements.

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, dean for academic program administration.

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 require-

<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.

ments 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 of 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, such students 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 00-00 for the courses recommended for studies 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; 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 or Speech 203, 214, 215, and two others. 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 the language arts adviser, Mr. Henry Baron of the Department of English.

**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, Geology 103 or 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, 202 and two 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 Geology 103 or 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 the social studies adviser, Mr. Samuel Greydanus of the Department of History.

**General Science Studies Group Major.** The three required courses for any concentration in this group are: Biology 111 or 121; Geology 103 or 113; and Physics 112, 123, 222, or 225. The five-course sequence can be met by any of three broad programs or by narrower departmental ones. Programs should be worked out with the approval of the science adviser, Mr. Vernon Ehlers of the Department of Physics.

The five-course biological science sequence requires Biology 107, 111, 115, 117, and 216. Certain interim courses may be substituted for one of these courses. The three course sequence may be chosen from any of the designated courses. The geological studies sequence requires Geology 103 or 113, 152, 312, and two approved electives; the three-course sequence consists of the courses listed. The physical science sequence is Astronomy 110, Chemistry 113, Geology 103 or 113, Physics 112, and one other.

The five-course departmental sequence in biology is 121, 122, 221, 222, and 216 or 340, with certain interim courses being possible substitutes; the three-course sequence is 121, 122, and 216. The five-course sequence in chemistry is 103, 104, and three others; the three-course sequence is 103-104 or 113-114 and one other. The five-course sequence in physics is 126, 225, 226, and two others or 181, 182, 123, 124, 225, 226, and one other; the three-course sequence is 181, 182, 123, 124, 126 or 221, 222, and one other.

**Fine Arts Studies Major.** Art 215, Speech 214, and Music 238 or, if the student is completing a sequence in music, Music 239 are required. Students majoring in this group must complete a five-course departmental sequence from: Art 205, 209, 215, 231, and 232; Music 103, 233, 234, 237, 239, and two semesters of 110, 120, 130, 140, 150, 160, 170, 131, 141, 161, or 171; or in drama, Speech 203, 214, 217, and an elective from 219, 304, 317, 318, or an approved interim course. In addition, a student must complete one of the following three-course sequences: Art 205, 215, 231 or 232; Music 231 or 233, 232 or 234, 238 or 239; Speech 203, 214, and 217. 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 the fine arts adviser, Mrs. Helen Bonzelaar of the Department of Art.

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, 117, or 216, English 100 and any literature course in English or in a foreign language; Geography 101, Geology 103 or 113, History 101 or 102 and any other history course, Mathematics 107, 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 a quarter course of basic physical education. A minor in the Academic Study of Religions is also possible.

**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 40-41 for the courses recommended for students in teacher education); a departmental concentration of at least eight and a 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 and have the approval of 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. Majors in art and music 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, which are 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 Association standards defined in the paragraph below in addition to the standards of Michigan. 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, speech), the sciences (earth science, biology, chemistry, geography, geology, 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 has requirements that differ from state and college requirements. It 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, a course and a 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, five 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.

**Special education.** Calvin College offers a Bachelor of Arts degree in special education, which leads to teacher certification at the elementary or secondary level as well as to endorsement as a teacher of either the mentally impaired or of the learning disabled. Students in the program must complete the liberal arts core, the professional education requirements for elementary education, a ten and a half course concentration in special education, and a six-course planned minor.

Calvin College also offers a Bachelor of Science in Special Education degree in cooperation with Grand Valley State Colleges. This program requires five years and three summers to complete and includes a nine-month paid internship experience. Admission to this program is limited to students who wish to teach the hearing impaired, emotionally impaired, or the physically impaired.

Students in cooperative programs with Grand Valley must complete a designated core of thirteen liberal arts courses, a departmental or group concentration, a six-course planned minor, six professional education courses, and the additional requirements for endorsement in special education.

Students interested in the learning disability program should consult Miss Corrine Kass. Those interested in either the mentally impaired program or in the consortium program with Grand Valley State Colleges should consult Mr. Thomas Hoeksema.

**Bilingual education.** Because bilingual teachers must be prepared to teach all subjects in both English and Spanish, Calvin's bilingual program requires the completion of a typical elementary education program with some modifications. Students should request a bilingual assignment in Education 303 and will do half of their directed teaching in a bilingual classroom. Furthermore, they must be prepared to demonstrate competency in reading, writing, speaking, and listening in both English and Spanish.

The additional course requirements for the seven-course program, which leads to an endorsement minor in bilingual education, are: Interdisciplinary 301, Introduction to Bilingual Education; English 329, Linguistics; Spanish 360, Spanish-English Linguistics; Spanish 371, Hispanic Culture in the United States; and either History 211, Survey of American History, if the student has little background in American history, or 356, Social and Cultural History of the United States.

The adviser for this program is Mrs. Inez Byam of the Department of Spanish. Spanish.

## 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 school if they meet the appropriate requirements.

## Accounting

An accounting emphasis may be added to the Business Economics concentration described under the Economics and Business Department by electing at least six accounting courses (or business law) 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 and, beginning in 1983, will require at least seven business courses including economics, business law, finance, and statistics.

## Agriculture

Students may spend the first two years of their agriculture program at Calvin College before transferring to an agriculture college such as those at Michigan State University, the University of Guelph, or Dordt College. Students interested in such programs should consult Mr. Uko Zylstra of the Department of Biology.

Students wishing to transfer after two years to the College of Agriculture and Natural Resources at Michigan State University are advised to follow its "non-preference" program, postponing until the third year selecting an area of special interest. Michigan State offers more than twenty such areas ranging from agricultural engineering, animal husbandry, horticulture, fisheries and wildlife management, to forestry. The science requirements of the "non-preference" program are met by Biology 121, 122, 221, 222; Mathematics 111 or 205-206; and either Chemistry 103-104 plus a laboratory course in organic chemistry such as 253-254, or Physics 221-222 plus an additional course in physics. The liberal arts requirements are met by one course each in history, philosophy, religion and theology, with an additional course from one of the three; Economics 151 plus one additional course from economics, political science, psychology, or sociology; English 100 plus an additional course in English; Speech 100; and one additional course in the fine arts.

A similar program is also possible at the Ontario Agricultural College of the University of Guelph. Students who enroll at Calvin College after Grade XII can apply to transfer after their sophomore year. The program at Guelph leads to a Bachelor of Science Degree in Agriculture after three additional years. The recommended program for such students is Biology 121, 122, 221, 222; Mathematics 111, 112; Chemistry 103, 104, 253, 254; Physics 221, 222; English 100; Economics 151; and other courses chosen from those that meet core requirements.

Students who plan to transfer to the agriculture program at Dordt College are advised to complete the following courses at Calvin: Biology 121, 122, 221;

Chemistry 103, 104; Economics 151, 207, 318; English 100 plus a course in English literature; one fine arts course; one foreign language course at the 200-level; History 101 plus an additional history course; Philosophy 153; one course in political science, psychology, or sociology; and one course in religion and theology.

### 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 Department of Art or Mr. James Bosscher of the Department of Engineering. The program incorporates a significant portion of the basic core curriculum as well as of the professional requirements of the profession. A typical program would be:

<i>First year</i>	COURSES
Art 231	1
English 100	1
Engineering 103	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 39) 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 88 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>	<b>COURSES</b>
Idis 100 or another elective	1
Economics 151	1
English 100	1
History 101 or 102	1
Foreign language	2
Mathematics 205-206 or appropriate substitutes	2
Physical education	½
Religion and theology	1
Speech 100 or 240	½ or 1
 <i>Second year</i>	 <b>COURSES</b>
Art, music, or 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 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>	<b>COURSES</b>
Chemistry 103	1
Engineering 101	1
Engineering 102	1/2
Mathematics 111, 112	2
Physics 126 and 186	1 1/4
Interdisciplinary 100 (Interim)	1
Economics 151	1
English 100	1
Computer Science 108	1/2
Physical education	1/2
 <i>Second year</i>	 <b>COURSES</b>
Engineering 205	1
Engineering 202 or an engineering elective	1
Engineering 208 or 308	1
Mathematics 211, 212	2
Physics 225	1
Social Science elective	1
Philosophy 153	1
Literature, if needed for graduation, or a non-technical elective (Interim)	1
Speech 100	1/2
 <i>Third year</i>	 <b>COURSES</b>
Engineering elective	1
Technical electives, 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	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 and mathematics, physics, or geology may lead to a bachelor of science degree in four years. Students should discuss these options with Mr. James Bosscher.

### Forestry

Students planning to become certified foresters may pursue either a combined curriculum program in forestry involving study at both Calvin College and an accredited university school of forestry or they may work out transfer arrangements from Calvin College to a forestry school of their own choosing.

Normally, participants in the combined curriculum program in forestry spend three years at Calvin College plus two years at a school of forestry. Graduates from the combined curriculum program receive two degrees. The

Bachelor of Science in Letters and Forestry is granted by Calvin College to students completing twenty-seven courses in the combined curriculum program in forestry at Calvin College plus one full year of academic work toward a forestry degree at an accredited forestry school. Upon completion of forestry school graduation requirements students receive the degree in forestry given by that school.

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 151; and a two-course sequence in the physical sciences from Chemistry 103-104, 113-114, Physics 221-222, or Chemistry 113 with Physics 223. The non-science requirements are: one course each in history, philosophy, and 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; 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.

Calvin College is one of several colleges in Michigan participating in a cooperative program in forestry with the School of Natural Resources at The University of Michigan. The prescribed courses above meet the pre-forestry requirements of that program. Graduates from this program receive a professional forestry degree, the B.S.F. degree, from the University of Michigan. Students planning to attend the University of Michigan are advised to elect Psychology 151 or Sociology 151 as the additional social science course. In addition, Mathematics 205-206 is preferred over Mathematics 111-112; at least one course in chemistry is required, and Computer Science is recommended. Students planning to attend the University of Michigan are expected to enroll in a summer forestry camp session at Camp Filibert Roth following their sophomore or junior year at Calvin College.

Calvin College is also a participant in the Cooperative College Program of the School of Forestry and Environmental Studies of Duke University in Durham, North Carolina. The program is designed to coordinate the education of students from selected undergraduate schools with graduate programs in the broad area of resources and environment offered at Duke and leads to the Master of Forestry (M.F.) or the Master of Environmental Management (M.E.M.). Appropriate undergraduate majors may be in one of the natural or social sciences, pre-engineering or business, natural resources, or environmental science. Students may enter after three years of undergraduate study or after graduation from Calvin, but in either case certain courses need to be completed.

The master's programs at Duke require sixty semester hours beyond the junior year and require an initial summer session plus four semesters of study. The requirements are reduced for students who complete the bachelor's degree with relevant undergraduate work of satisfactory quality.

Forestry schools differ in their program requirements. Students expecting to attend a school other than the University of Michigan are advised to select courses from among the options listed above which best meet the requirements of the school they are considering. Students enrolling in the combined curriculum program in forestry and those seeking advice about transfer arrangements in

forestry should consult Mr. Alan Gebben, pre-forestry adviser, in the Department of Biology.

## **Law**

There is no prescribed program specifically designed for the student planning to enter a law school after graduation. Law school applicants must have a college degree 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 school applicants should complete the requirements for a Bachelor of Arts degree as they are listed on page 39. The pre-law adviser, Mr. Johan G. Westra of the Department of Political Science, can advise students on suitable electives and can help them plan programs which provide good preparation for law school. Since admission to law schools has become very competitive, some students may be advised to plan programs which will also prepare them for alternate careers in other fields such as business, social work, or teaching. Pre-law students should declare they are pre-law at registration time and are advised to consult the pre-law adviser before or during each semester's registration. Juniors and seniors, whatever their field of major concentration, should choose their electives with care and in consultation with the pre-law adviser.

## **Medicine and Dentistry**

All students planning to enter the premedical or pre dental programs should consult Mr. Peter Tigchelaar of the Department of Biology, faculty adviser of the premedical and pre dental programs. Students should also note the general college admission requirements on page 17.

A student may select any major concentration and still meet the entrance requirements for most medical and dental schools. However, for most students a group concentration in biology and chemistry is suggested.

The minimum science requirements for this program 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.

Premedical and pre dental students should take their Medical College Admissions Test (MCAT) or Dental Admissions Test (DAT) in the spring of their junior year and should apply for admission to the medical or dental school during the summer prior to their senior year.

Most medical and dental schools give preference to students who complete a four-year college course. However, students with exceptionally high qualifications who have completed only three years of college may be accepted by dental and medical schools. Such students 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 at least eleven designated core courses in subjects other than foreign language, mathematics, and the sciences. 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 of the Department of Biology. The following courses are prescribed: Biology 121, 122, 221, 324, 334, and 336; Chemistry 103, 104, 253, 254, and one other; one mathematics course from 111 or 205; English 100; Physics 223; 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, 324, 334	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
Physics 223	1
Free elective	1
Interim, biology	1

*Fourth year*  
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 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. The preseminary adviser is Mr. L. Vos of the Department of Religion and Theology.

A student seeking to qualify for admission to Calvin Theological Seminary in the Master of Divinity (M.Div.), the Master of Church Education M.C.E., or the Master of Theological Studies (M.T.S.) programs 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. A grade-point average of 2.67 or higher is required for admission. 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, 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 Master of Divinity program will satisfy the above requirements by including the following courses in their programs; a course in educational psychology, 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 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.

The Master of Church Education program is for persons who do not seek ordination but who wish to prepare themselves for other positions of leadership in the church, particularly in its educational ministry. The courses required for

admission are typically met by the college graduation requirements except for the addition of a requirement that the candidate complete two courses from education and psychology including a course in educational psychology.

The Master of Theological Studies program is designed for those who do not seek ordination but desire a theological education in support of various vocational objectives. Specific requirements beyond those required for graduation from the college include four courses in Greek and competence in a modern foreign language through the second-year college level.

### **Natural Resources**

Students interested in any of the many fields of natural resources can attain their goals in a number of ways. Because of the variety of programs possible, such students should consult with Mr. A. Bratt of the Department of Biology early in their college careers to determine the requirements of the program most appropriate for them.

Professional competence in most areas of natural resources requires work beyond the bachelor's level and graduate degrees are becoming necessary for employment. Students interested in research and management in wildlife or fisheries should follow a program leading to a major in biology at Calvin, followed by specialization at the graduate level. Other opportunities which require less emphasis on biology and related sciences include regional planning, environmental education, outdoor recreation, resource ecology, resource economics and management, resource policy and law, and environmental advocacy. Entry to these fields often requires careful academic preparation that must be worked out with the adviser to meet the requirements of the graduate school selected.

A cooperative five-year program requiring three years at Calvin and two at the University of Michigan is flexible and appropriate for some students. At the end of the first year at the university Calvin awards a Bachelor of Science in Natural Sciences to those who have completed twenty-seven courses at Calvin with a minimum average of C including thirteen designated core courses. At the end of the following year, provided the required courses are taken, the university grants a Bachelor of Science in Natural Resources degree. Most courses in these programs are prescribed.

Students may also plan to transfer to the university after two years. Typically such students take Biology 121, 122, 221, 222, Chemistry 103, 104, Computer Science 108, Mathematics 111-112 or 205-206, and, if interested in fisheries, Chemistry 301, 302. The remaining courses should be in the humanities and social sciences to meet the University of Michigan requirements.

Duke University in Durham, North Carolina, offers a cooperative program with Calvin College in the area of natural resources and environmental studies. Students may enter either after three years at Calvin or after graduation. Master of Forestry and Master of Environmental Management programs are available. These programs are described under forestry on page 57.

Michigan State University also provides training in various sorts of natural resources fields. The two-year "non-preference" program described under Agriculture on page 54 prepares students to enter these programs. Students can transfer to other universities as well. The course requirements listed above are typical and serve as general guidelines.

## **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. They may also follow a four-year program leading to a Bachelor of Science in Nursing degree.

The diploma program with Blodgett Memorial Medical Center School of Nursing offered in cooperation with Calvin College requires thirty months, the first nine months of which involve courses in both the college and the school of nursing. 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 Chemistry 101 at the college; and 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.

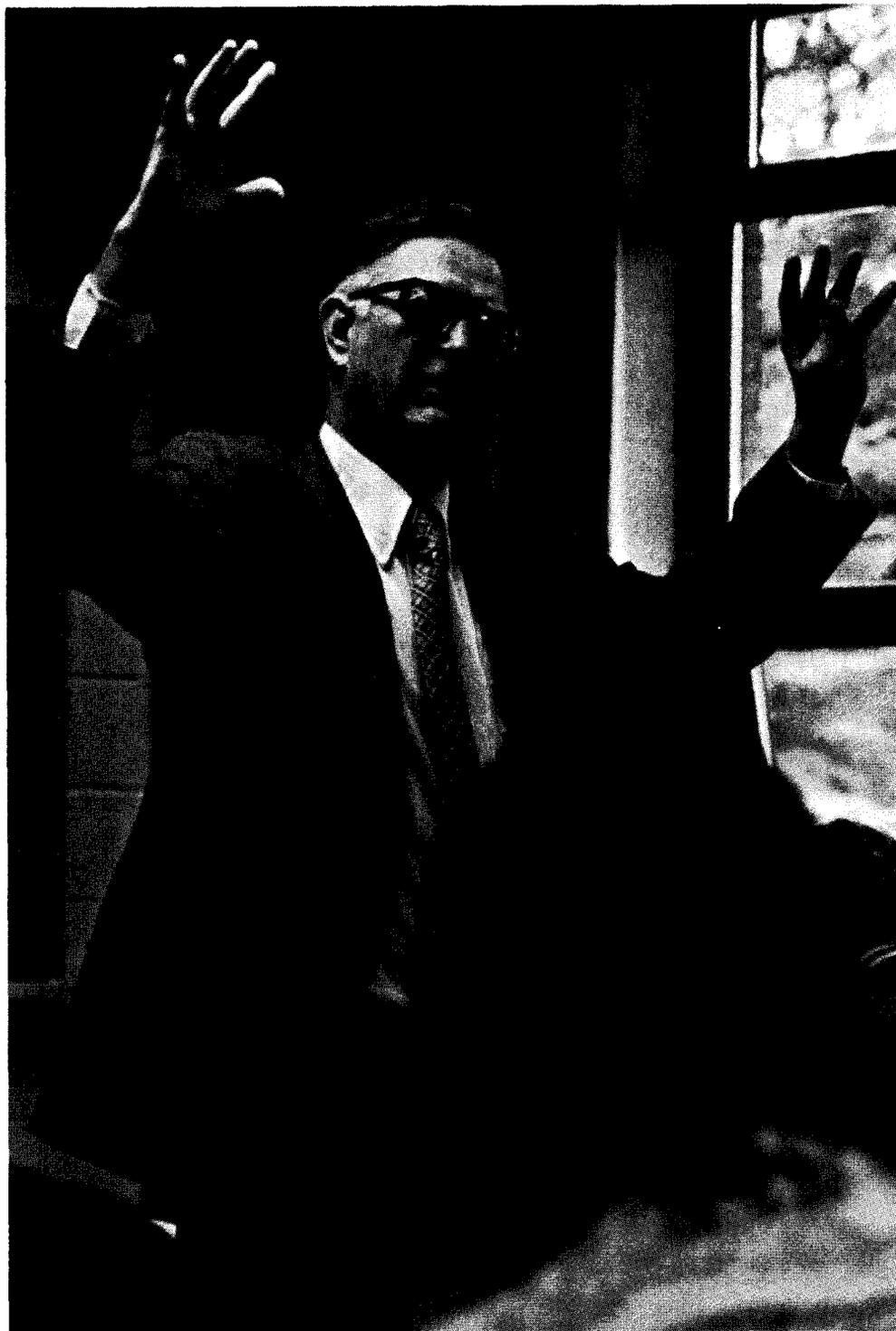
A Bachelor of Science in Nursing program is offered cooperatively by Calvin and Hope colleges. Students in their first two years take a prenursing program including biological and behavioral sciences along with other liberal arts courses required for a college degree. Students successfully meeting departmental requirements are admitted as juniors to the Department of Nursing for the completion of a professional nursing course sequence. Such courses combine theory with clinical nursing experience in a variety of health care settings. The chairman of the Department of Nursing is Miss Cynthia E. Kielinen.

A Bachelor of Science in Nursing program may also be begun at Calvin and be completed at another college or university. Such programs typically are divided into two parts. First, a two-year prenursing program which may be completed at any approved college. Second, a two or three-year clinical or professional nursing curriculum that must be completed at the school which grants the degree. Calvin students have transferred to such programs at the University of Illinois, Eastern Michigan University, Arizona State University, University of New Mexico, University of Arizona, and Rush 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 prenursing sequence. Students are encouraged to communicate, prior to enrolling at Calvin, with schools of their choice which grant a degree in nursing to insure that they will be taking the proper courses to fulfill the requirements for transfer into one of these programs. Students interested in such programs involving a possible transfer to another school should work out their programs with the Director of Health Science Programs, Miss Beverly Klooster of the Department of Biology.

## **Other Professional Programs**

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



---

# COURSES

## Description of courses offered by the various departments

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 1-10 through 1-49 have no prerequisites; those numbered 1-50 through 1-99 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 (+), those on leave for the first semester by an asterisk (\*), and those on leave the second semester by double asterisks (\*\*).

---

## Interdisciplinary<sup>1</sup>

Courses in less commonly taught languages completed through supervised, self instruction are included in this section of the catalog and follow the traditional numbering of foreign language courses, 101, 102, 201, and 202. See page 44 for a description of the program.

### 100 Christian Perspectives on Learning, I

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

<sup>1</sup>This section includes not only courses that are interdisciplinary but others as well that do not fit logically into any single department or which are in disciplines not otherwise offered at Calvin College.

several disciplines and open to freshmen and sophomores. Mr. J. Primus (chairman).

210 **History of Science, S.** An examination of the emergence of modern science in the sixteenth and seventeenth centuries and of the major developments in the natural sciences since then. The focus is on physics, chemistry, natural history, and selected topics in biology. Particular attention is given to the philosophical and religious background of scientific ideas, to the concept of scientific revolution, and to the problems of periodization. Prerequisites: History 101 or 102 (preferred) and two courses in science or the consent of the instructor. Physics 110 or its equivalent should be one of the science courses taken by students not majoring in science. Staff.

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, 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

### 561 **Christianity, Learning, and Culture I.**

F. This course deals both critically and constructively with two broad areas, Christianity and learning and Christianity and culture. It introduces students to the variety of approaches to these questions in the Christian tradition with particular attention to views in the Reformed tradition that have shaped the outlook at Calvin College. Prerequisite: admission to the Master of Arts in Christian Studies program. *Mr. G. Marsden.*

### 562 **Christianity, Learning, and Culture II.**

I. This course is a continuation of the fall course, concentrating on more specialized topics chosen after consultation of professors and students. Prerequisite: 461. *Mr. G. Marsden.*

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

590 **Independent Study.** F.I.S. Students normally register for this course in conjunction with a course in one of the disciplines. Prerequisite: admission to the Master of Arts in Christian Studies program. *Staff.*

594 **Thesis Prospectus.** S. A course for reading, preliminary research, and writing, preparing students for 595. Supervised by the designated thesis adviser. Prerequisite: admission to the Master of Arts in Christian Studies program. *Staff.*

595 **Thesis.** S. Required by the Master of Arts in Christian Studies program and supervised by the designated thesis adviser. *Staff.*

## JANUARY 1982 INTERIM

I-10 **Folklore of Foreign Lands.** The folklore of foreign lands invites you to be with the mountain spirits of Silesia and witness the spring celebrations in the Black Forest and the Alps. A study of tales, local legends, superstitions, traditions, and popular beliefs of Germany, Austria, Switzerland, and parts of Northern Europe. Slides, movies, demonstrations, records, tape recordings, textbooks, lectures, eyewitness reports. Presentations of projects, quizzes. *Mr. C. Hegewald.*

I-12 **Earthkeeping.** God created our planet and its resources, and instructed us to care for it. During the past two centuries we have abused the Earth more often than we have tended it. This course begins with a detailed examination of the current state of Planet Earth and its resources, with special emphasis on energy, minerals, and food. Human attitudes toward nature, particularly those influenced by Christian thought, are reviewed. Current resource-use patterns, projected depletion times, and world population growth patterns are studied and discussed as they relate to the diminution of our resources. Throughout the course, emphasis is placed upon our responsibility as Christians in the stewardly use of the Earth and its resources. *Mr. V. Ehlers.*

I-14 **Pedaling and Pondering with Photography.** A course in documentary photography combined with a bicycle tour of the southern United States from the Pacific to the Atlantic Oceans which teaches the participants to observe, record, and comment on life through photography. Documentary photography is a means of conveying an idea or message which sets it apart from an ordinary snapshot. Students will use their cameras to express significant ideas about life, faith, the world, an experience or social condition that forces others to think about the world in a new way. The bicycle tour

averages ninety miles per day; students are required to take a special section of Physical Education during the first semester. Papers and a final presentation. December 18 through January 30. Fee of approximately \$550. *Mr. R. Jensen.*

**I-15 Christian Perspectives on Parenting (CPOP).** An introduction to parenting in the context of a Christian commitment. The course includes an analysis of family life and the interrelationships between family members throughout their life span as children and parents. Relevant research on approaches to parenting and the behavior and emotional development of children, and discussion of such topics as Biblical perspectives on authority and discipline in the home, parent-child relationships over the course of development, preparing for a child, the working parent, day care, single parenthood, aging parents, parenting an adopted child, choosing the nonparent role, and the role of the school in parenting. Readings, presentations by the instructors and resource persons, supplementary films, case studies, group activities, role playing. No prerequisite but an introductory psychology course is recommended. *Mr. R. S. Stehouwer, Mrs. N. Stehouwer.*

**I-16 Business Ethics.** An examination of moral concepts as they relate specifically to individuals in business organizations. A treatment of basic issues in the theory of normative ethics is followed by lectures and discussions focusing upon a series of specially prepared case studies. The course includes several lectures by distinguished leaders from the Christian business community. *Mr. G. Mellema.*

**I-17 German Cinema and Society.** This course explores main currents in the development of German cinema. Concentrating on the classic era of silent films in the 1920s and the much-discussed New German Cinema of the past decade, the students will attempt to evaluate the significance of film for an understanding of modern German society and culture. Students will view representative works by Murnau, Pabst, Riefenstahl, and Fritz Lang, as well as by such recent figures as Herzog, Schlöndorff, and Fassbinder. Lectures and group presentations relate films to Germany's peculiar historical and political experience since World War I, analyze directors' themes and cinematic techniques, and

discuss the various views of God, man, nature, and society which films express. Research for at least one class presentation and a critical diary of all viewing sessions. Prerequisite: an interest in Germany, history, and/or film is assumed. Fee of approximately \$25. *Mrs. M. J. Lamse and Mr. D. Diephouse.*

**I-18 Contemporary Art and Drama in New York City.** Students will study Abstractionism and the problems related to the arts as displayed in the International Style of Architecture of Le Corbusier and Gropius, the drama of Ibsen and Miller, and the paintings of Picasso and Mondrian. Students will also study Expressionism and the problems of emotional awareness as displayed by such architects, dramatists, and painters as Wright, Beckett, and Pollock. A week will be spent in New York visiting architectural sites, attending plays, and visiting museums. A paper is required. Fee of approximately \$450. *Mrs. E. Boevé, Mr. E. Boevé.*

**I-19 Boarding House, Town House, Bawdy House: History Through Fiction.** A study of the political and social history and literary trends of nineteenth century France as seen in the novels of Balzac, Zola, Stendahl, and others. Readings, lectures, and discussion. A course paper is required. *Mrs. E. Monsma, Mr. D. Van Kley.*

**I-20 For God, Gold, and Glory.** A study of Mexican and Central American history as it relates to the background of the present tensions in Latin America. The student will examine specific topics: the Spanish conquest, the tension between missions and the lust for gold, the French revolution and the Latin American revolutions, capitalism, Protestant missions, American imperialism, ideals of democratic freedom, and the explosive impact of Vatican II. Lecture, discussions, readings, and individual research. *Mr. Derk Oostendorp.*

**I-52 Calvinist Roots: Conservative or Radical?** Is the Calvinist tradition in social, political, and economic thought radical or conservative? What are, and what ought to be, a Calvinist's attitudes towards such questions as the right to revolt against oppression, the proper assessment of capitalism, the class struggle between the rich and poor? Emphasis is placed on Calvin's Geneva and Dutch Calvinism, especially the careers of Groen van Prinsterer

and Abraham Kuyper. Attention is also given to Calvinism in the United States, Canada, and South Africa—and, if time permits, to other places where Calvinism is a presence. Lectures, discussions, readings, guest speakers, and student reports. Prerequisite: sophomore status or above or permission of an instructor. *Mr. D. Jellema, Mr. R. Mouw, Mr. J. Westra.*

**I-53 Poverty: Perspectives on Justice and Stewardship.** What is the proper response of the Christian to the problem of poverty in his own nation and in the world? What is the poverty problem? What is mandated by biblical teachings on stewardship and justice? How did the Old Testament prophets respond to Israel's violation of justice, how did this fit into the socio-economic-political aspects of Ancient Israel's theocracy, and how can this be relevant today? How did the teachings of Jesus and the apostles expand the Old Testament concepts in the formulation of a Christian perspective? The class will debate such issues as a voluntary life of poverty as a response to biblical injunctions, theories of justice, and the various socio-economic-political policies. Readings, writings, and presentations by representatives from various relief and social justice organizations. Prerequisite: sophomore or higher status. *Mr. E. Dykema, Mr. C. Vos.*

**I-54 SPSS: A Computer Language for Social Scientists.** This course is designed for students who have little or no experience with computers or for those who have previously used computer languages but have no knowledge of the SPSS language. The course is divided into three parts. The first concentrates on statistical techniques, the philosophical basis of data analysis, and the logic of measurement. The second focuses on key-punching data cards, accessing existing data sets, and modifying the coding of existing data sets. The last and largest part of the course concentrates on creating new data files from raw data and on successfully performing various data analytical techniques using SPSS. Students will complete several data analysis projects as well as a final exam project based upon their newly acquired skills. A course in statistics would be helpful but is not required. *Mr. A. Shoemaker.*

**I-55 Noise—The Harmful Intruder.** Noise annoys, but it also can be harmful to your health and well-being. Students explore the physiological and psychological effects of

noise on man. A study of the hearing process, the science of sound, and audiometric tests provide background for a definition of "noise damage" and an understanding of instruments used in noise surveys and analysis. The effects of noise in home and office, in industry, in concerts (rock vs. classical), at airports, on the highway, in urban and rural settings will be studied, and methods of reducing noise explored. Guest lecturers and field trips to agencies and industries practicing noise abatement procedures. Readings, a mid-term examination on terminology and concepts, reports on field trips, and participation in a research project about noise. Travel fee: approximately \$10. *Mr. M. Vande Guchte, Mr. H. Geerdes.*

**I-56 The Feeding Web.** All of us know that leaving our sandwich crusts will not directly contribute to starvation in India; nevertheless, our diets are connected to the diets of people in other countries. Examine the complex web of relationships between nutrition and agribusiness, advertising, the medical establishment, United States' domestic and foreign aid programs, and you will find that if North Americans ate the diets that were nutritionally best for them, Third World people might be able to share in the world's food resources to a greater extent. Lectures, assigned readings, films, discussions, simulation games, and quizzes will outline the feeding web that connects nutrition and world hunger. A paper, project, and possibly a class project will be required. *Mrs. J. Huyser-Honig.*

**I-57 Conducting the Helping Interview: Theory and Technique.** A basic course in teaching interviewing skills for those who wish to enter a helping profession. The emphasis is on building a theoretical foundation but there will be practice as well. Attention is given to relationship building, empathy training, enhancement of listening skills, and appropriate types of interview techniques for various client populations. Lectures, role plays, videotapes, films, and speakers from the community. Appropriate for those interested in psychology, nursing, teaching, social work, medicine, personnel, and the ministry. Some academic work in psychology or sociology is desirable but not required; junior or senior status is preferred. *Mrs. S. Verwys, Miss S. De Waard.*

**562 Christianity, Learning, and Culture II, Mr. G. Marsden.**

---

# Academic Support

E. Diephouse (director), J. Heerspink, E. Greydanus, K. Kingma, B. Morrison, P. Wilson

ACADEMIC SUPPORT PROGRAM courses provide supplementary training and assistance in English, mathematics, and college-level study and reasoning skills. Class size and schedule are designed to give ample opportunity for individual instruction and personal conferences with instructors. All courses include training in study methods appropriate to the subject being studied.

Courses designed to review pre-college work, designated with numbers below 010, do not carry credit for graduation. They are, however, recognized by the registrar and the Office of Financial Aid as registered units, which count toward full-time status and toward financial aid eligibility. Students normally register for a non-credit unit as one-fourth of their academic load, i.e., in addition to three credit courses. Students who do this as a condition of admission or probation are generally eligible for a fifth year of financial aid.

Interim courses (I-21 and I-22) carry credit and are graded. Non-credit courses appear on student transcripts with grades of CR (*credit*) or NC (*no credit*) as an indication of whether or not coursework has been completed satisfactorily.

ASP courses are open to all students, with the permission of the instructor or the program director. Freshmen admitted on condition or returned on probation are normally required to enroll, so that instructors can provide academic counseling, course advising, and diagnostic testing. Other students can obtain any of these services or permission to take a review course by request at the ASP Office.

**001 English as Second Language I.** F, non-credit. This course along with ASP 002 and IDIS I-21 provide a systematic review of the comprehension and use of spoken and written English for students whose native language is other than English. Students are assigned to this class on the basis of a placement test administered at the time of registration. *Staff*

**002 English as Second Language II.** S, non-credit. Continuation of 001. *Staff*.

**003 Review of Written English as Second Language.** F and S, non-credit. This course provides extensive practice in written English for students whose native language is other than English. It includes study of grammar, vocabulary development, and instruction in writing. Students are assigned to this class on the basis of a placement test administered at the time of registration. *Staff*.

**004 Pre-College Mathematics for the Liberal Arts Student.** F and S, non-credit. A

review of high school mathematics, from fractions and decimals to basic algebra and geometry, with intensive practice in mechanics. Materials are taught with particular emphasis on the development of mathematical thinking and problem-solving. The course is designed to bring students whose mathematics background is weak to the level of competence needed for Mathematics 109, Economics 151, Astronomy 110, Biology 111, and other core courses. Not intended for students in mathematics-oriented majors. Open by permission only. *Staff*.

**005 Pre-College Mathematics for the Science Student.** F and S, non-credit. This course is an intensive study in the mechanics of algebra, manipulation of algebraic expressions, and graphing. Materials are presented with an emphasis on development of problem-solving skills and mathematical reasoning. The course is intended as preparation for Mathematics 205 or 110 for students in mathematics-oriented

majors whose previous experience in mathematics is inadequate. Open by permission only. *Staff.*

**006 Methods and Motivation for College Study.** F and S, non-credit, half-course. This course presents methods of classroom and textbook study skills for college coursework, and considers problems of self-motivation and self-discipline, with reference both to principles of the Christian faith and to resources within the college community. Students are required to complete individual projects applying these principles to their other course work. Prerequisite: concurrent registration in a history or religion course. Open by permission only. *Staff.*

**007 Pre-College Grammar Review.** F and S, non-credit, half-course. This course, taught concurrently with certain sections of English 100, provides supplementary instruction and exercises in grammar. Open by permission only. *Staff.*

#### JANUARY 1982 INTERIM

**I-21 American English and Its Cultural Context.** This is a course for students whose native language is other than English and

who need to increase their skills in speaking and understanding English. Students will attend lectures, plays, and films to cultivate their listening and note-taking skills as well as to analyze cultural content. Discussion groups and speeches will provide intensive practice in both formal and conversational English, and will consider problems of cross-cultural misunderstanding which arise from American customs and attitudes. Students will be required to demonstrate improvement in oral proficiency as well as mastery of lecture content and vocabulary. The class meets both morning and afternoon. Open by permission only. *Staff.*

**I-22 Principles and Techniques for Effective Study.** An analysis and application of the principles of learning involved in analytical reading, notetaking, and organization of materials for memorization or written examination. The course is intended to help students develop techniques for clear thinking and concise writing. It includes training in analysis of course texts and lectures, as well as exercises in vocabulary development and logic. Several individual projects and at least one paper applying the lecture material to the student's own study methods are required. Open by permission only.

---

## Art

*Associate Professors E. Boevé, C. Huisman, R. Jensen, C. S. Overvoorde (chairman)*  
*Assistant Professors H. Bonzelaar, J. Kuiper, R. Pederson*  
*Instructors M. Bolt, B. Van Halsema*

THE ART DEPARTMENT of Calvin has been conceived within the framework of the liberal arts tradition and offers three distinct programs of concentrations for students with different interests. It also offers minors in art and in art history. Students must have earned a grade of at least C (2.0) in 205 before applying for admission to any concentration.

The minimum major program in art is 205, 209, 210, 231, 232, 310 or 311, 320 or 325, and three courses from 309, 312, 313, 321, and 326. All art majors are required to participate in a senior exhibition during the spring semester of their senior year. The six course minor in art history requires 231 and 232 with the remaining courses from 332, 335, 338, 340, Classics 221, or a designated art history interim.

The ten and a half course major for teachers, k-12, must include 205, 209, 215,

216, 231, 232, 310 or 311, 320 or 325, and 210 or 340. The seven course teacher education minor is 205, 209, 215, 216, 231, 232, and one studio course from 310, 311, 320, 325, 350. All art education students are required to participate in the senior exhibition during the spring semester of their senior year. The advisers for these programs are Mrs. H. Bonzelaar and Mr. J. Kuiper.

The Bachelor of Fine Arts (B.F.A.) program, which has a greater professional emphasis, is described on page 46. This program is not a preparation for teacher certification.

The core requirements in the fine arts may be met by 151, 231, 232, 332, 335, 338, 340, and, for students in elementary education programs, 215.

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

**205 Design.** F and S. A course that teaches two and three-dimensional design through the use of basic art elements and principles. *Mr. R. Jensen, Mr. R. Pederson.*

**208 Three-Dimensional Design.** F and S. A course that teaches three-dimensional design through the use of basic art elements and principles. Materials fee. Prerequisite: 207. Will not be offered after 1981-82. *Mr. C. Huisman.*

**209 Introduction to Drawing.** F and S. Students are taught composition while being introduced to drawing media and to the basic proportions of the human figure. The course includes the historical development and terminology of drawing. Prerequisite: 205 or 208. *Mr. M. Bolt.*

**210 Intermediate Drawing.** S. A continuation of 209 further developing skills in the drawing media and the understanding of the proportion and volume of the human figure. Prerequisite: 209. *Mr. R. Jensen.*

**215 Principles of Elementary Art Education.** F and S, core for students in elementary education only. A course emphasizing methods and techniques of organizing and encouraging art instruction on the elementary school level. It includes lectures, demonstrations, and art teaching experiences in the school situation. Research paper required. Not open to freshmen. *Mrs. H. Bonzelaar, Mr. J. Kuiper.*

**216 Principles of Secondary Art Education.** F. A course emphasizing methods and techniques of organizing and encouraging art on the secondary school level. Media in-

clude clay, enameling, jewelry-making, weaving, batik, printmaking, and painting. Prerequisites: 205, 209. *Mrs. H. Bonzelaar.*

**231 An Introduction to the History of Art.** 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 Art.** S, core. Continuation of 231. The study of painting from 1500 to the present. *Mr. E. Boevé, Miss B. Van Halsema.*

**309 Advanced Drawing.\*** A more advanced course in drawing providing an opportunity for students to search and experiment with new ideas and forms and to develop personal ideas and themes. Prerequisite: 210. *Mr. R. Jensen.*

**310 Introduction to Sculpture.\*** F and S. An Introduction to massive sculptural forms using subtractive techniques such as carving and modeling. Typical materials used are plaster, wood, clay, and plastic. The course includes an introduction to the historical development and terminology of sculpture. Materials fee. Prerequisite: 209. *Mr. R. Pederson.*

**311 Introduction to Ceramics.\*** S. An introduction to clay and glazes and their use. Emphasis is on hand-building techniques as a means of discovering the expressive and functional possibilities of the medium. Readings on the history of ceramics are required. Materials fee. Prerequisite: 209. *Mr. C. Huisman.*

**312 Intermediate Sculpture.\*** F and S. An introduction to volumetric sculptural forms

using additive techniques such as welding, brazing, and wood construction. Typical materials used are steel, copper, wood, and plastic. A continued study of the historical development and terminology of sculpture is included. Materials fee. Prerequisite: 310. *Mr. R. Pederson.*

**313 Intermediate Ceramics.\*** S. A continued exploration of the medium, including the use of the potter's wheel, emphasizing personal expression. Technical readings and batch formula testing of one or more glazes is required. Materials fee. Prerequisite: 311. *Mr. C. Huisman.*

**314 Advanced Sculpture.\*** A more advanced study of sculpture with the opportunity for students to concentrate in one area and to develop personal ideas and themes. Materials fee. Prerequisite: 312. *Mr. R. Pederson.*

**315 Advanced Ceramics.\*** S. A continuing study of the historical and technical aspects of ceramics and glazes allowing students to develop competency and personal expression through the study and use of stoneware and porcelain clay bodies. A historical or technical paper is required. Materials fee. Prerequisite: 313. *Mr. C. Huisman.*

**320 Introduction to Printmaking.\*** F and S. An introduction to the four basic printmaking media—relief, intaglio, serigraphy, and lithography—through slide presentations, lectures, readings, and demonstrations. Each student will choose one basic medium to explore during the semester. Materials fee. Prerequisite: 209. *Mr. M. Bolt, Mr. C. S. Overvoorde.*

**321 Intermediate Printmaking.\*** F and S. Continued exploration of the printmaking media with an emphasis on the development of visual ideas. The student may continue with the medium chosen during the first semester or experiment with another. Materials fee. Prerequisite: 320. *Mr. M. Bolt, Mr. C. S. Overvoorde.*

**322 Advanced Printmaking.\*** A further investigation of the printmaking media allowing students to develop the unique qualities of a particular medium or combination of media in relation to their own visual ideas. Materials fee. Prerequisite: 321. *Mr. M. Bolt, Mr. C. S. Overvoorde.*

**325 Introduction to Painting.\*** F and S. An introduction to the use of the paint medium,

primarily using acrylic paints, emphasizing techniques, materials, and visual communication. The course includes a history of the media and of its technical development. Prerequisite: 209. *Mr. M. Bolt, Mr. J. Kuiper.*

**326 Intermediate Painting.\*** F and S. A further study of painting technique and its practice, placing an emphasis on the relationship between concept and process. Students will study twentieth century art in relation to their own production. Prerequisite: 325. *Mr. M. Bolt, Mr. J. Kuiper.*

**327 Advanced Painting.\*** F and S. A continuation of 326 with a primary concern for developing each student's skills and individual approach to painting. Prerequisite: 326. *Mr. M. Bolt, Mr. J. Kuiper.*

**332 Northern Baroque.** F, core. A study of seventeenth-century Dutch and Flemish painting, including an historical survey of the art produced in Antwerp, Haarlem, Leiden, Utrecht, Amsterdam, and Delft, tracing the rise and development of specialists in genre, religious, still-life, portrait, and landscape painting. Emphasis is on the works of the major masters of the time, Rubens and Rembrandt. *Mr. C. Overvoorde.*

**335 Renaissance Art.\*** F, core. A study of the painting, architecture, and sculpture of the fifteenth and sixteenth centuries, with a focus on the Renaissance of Italy. The course presents an historical survey of the art produced in the centers at Florence, Rome, and Venice from the late Gothic period to the High Renaissance, followed by a study of the Mannerism of the sixteenth century. *Miss B. Van Halsema.*

**338 Nineteenth Century Art.\*** S, core. A study of the sculpture, painting, and architecture of nineteenth-century Europe, with an emphasis on the artistic developments of Northern Europe. The course traces the successive stylistic movements of Neo-Classicism, Romanticism, Realism, Impressionism, Symbolism, and Expressionism as they emerge against the background of the official Academy of Art. *Miss B. Van Halsema.*

**340 History of Modern 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, mate-

rials, and site, beginning with Sullivan, Eiffel, and Gaudi, and continuing into the twentieth century with Wright, Le Corbusier, Mies vander Rohe, and Saarinen. Mr. E. Boevé.

**350 Introduction to Graphics.\*** An Introduction to graphic design and reproduction involving layout, typography, the use of photography, and illustration. The course introduces the student to the various printing processes. Projects include posters, brochures, pamphlets, and advertisements. Prerequisite: 210 or permission of instructor. Mr. R. Jensen.

**351 Intermediate Graphics.\*** A continuation of 350 with an emphasis on the production of illustrations and on the use of photography as they apply to specific problems of information and promotion. Prerequisite: 351. Mr. R. Jensen.

**390 Independent Study.\*** F, I, S. A student wishing to register for this course must submit a written proposal to the chairman for his approval. Staff.

**395 Seminar and Exhibition.\*** F and S, half course. An opportunity from a Christian perspective to integrate the study of art history, aesthetics, and the other liberal arts as well as to 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. R. Pederson.

*The following classics course may be included in art concentrations.*

**221 Graeco-Roman Art and Architecture,** Mr. K. Bratt.

*The following art courses may be part of supplementary concentrations in journalism and mass media:*

**350 Introduction to Graphics,** Mr. R. Jensen

**351 Intermediate Graphics,** Mr. R. Pederson.

## 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 1982 INTERIM

**1-11 Parisian Cubism.** This course traces the development of Cubism as an art form from its origin in the post impressionist era in France through its culmination in various twentieth-century movements. Particular focus on Picasso, Braque, Gris, Apollinaire, and other vanguard artists and theorists who were working together in Paris in the early 1900's. The concentration is on painting and sculpture but the impact of cubist theory on the other arts is included. Written reports and assigned readings. Miss B. Van Halsema.

**1-50 Enameling.** A craft course in which students learn to employ basic enameling techniques from lectures, slide presentations, demonstrations, and studio experiences and discover another mode of artistic expression. Participants explore the historical uses of grisaille, limoges, cloisonné, bas-taille, champlevé, and apply their learning to two and three dimensional forms. Participants are expected to create five works of art in enamel, and present a paper on enamel masters or masterpieces. Grade is based on students' art, presentations and class participation. Seven hours of class work daily. \$25 fee. Prerequisite: 209 or its equivalent. Mrs. H. Bonzelaar.

**1-51 Special Problems in Ceramics.** While studying advanced glaze theory, students learn how to make adjustments in firing temperatures to maintain the characteristics of a glaze. Glazing requires a thorough understanding of batch, limit, unity, and empirically-derived formulas, the use of the holscher and watts, oxygen ratio, neutral contents and molecular limits charts, and testing the theories by preparing and firing test tiles. Theoretical and practical experience in kiln repair, construction of a 15 to 20 cubic foot, gas-fired kiln and rebuilding of

an existing kiln. Lectures, assigned readings, problems, supervised projects and discussion. Prerequisite: 315 or permission of the instructor. *Mr. C. Huisman.*

**I-53 Collage.** This course covers the history of collage in primitive, modern, and contemporary modes. It involves the collecting of collage materials and grounds, and the construction of collages. Using a wide range of media and grounds, the student develops groups of collages centered around singular ideas. Critiques and reports. Prerequisite: 207. *Mr. J. Kuiper.*

**I-54 Connection-Making, or What do you get when you cross a feather with a foghorn?** Carl Sandburg once defined poetry as the achievement of the synthesis of hyacinths and biscuits. By freely associating normally unrelated objects and ideas, learning to look for unanticipated connections between them which causes each to be seen in a new way and creates a new whole greater than the sum of its parts, the student forges new sculpture. Historical antecedents such as Surrealist Assemblage clarify and generate ideas for studio assignments. A short paper and a fee of \$15 for a bus trip to the Art Institute of Chicago. Limit: 15 students. Prerequisite: a 300-level art studio course, English 333, Music 317, or permission of the instructor. *Mr. R. Pederson.*

**I-55 An Architectural Experiment.** The intent of the course is to expose students to the

architectural process and to allow each student to experiment in the different two and three dimensional graphic aspects of architectural space planning process through slides, lecture, and field trip. In Part Two, each student develops and presents a solution to a design problem. Quiz on lecture material and evaluation of the design solution. *Mr. C. Posthumus.*

**I-56 Current Issues in the Visual Arts.** Art is changing rapidly. Never before has such a wide variety of artistic interests occupied visual artists and received critical attention as within the past ten years. New approaches to art-making have expanded aesthetic limits and posed new questions for both the artist and the viewer. This course is devoted to examining some of these stylistic developments along with the critical commentary of such writers as: Robert Pincus-Witten, Carter Ratcliff, Donald Kuspit, and others. Special attention is given to Minimalism, Conceptual Art, New Realism, Neo-Expressionism (both figurative and non-figurative), and New Image Painting. Slide lectures, discussion, films, assigned readings and student presentations. Prerequisite: 232 or 340. *Mr. M. Bolt.*

**Idis I-14 Pedaling and Pondering with Photography.** *Mr. R. Jensen.*

**Idis I-18 Contemporary Art and Drama in New York City.** *Mr. E. Boevé.*

---

# Astronomy

*Professors R. Griffioen (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 Department. The sixteen-inch telescope in the observatory and portable telescopes are available for student use through the director of the observatory, Mr. Howard Van Till.

**110 Planets, Stars, and Galaxies.** F and S, 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. Offered in the fall semester only in 1981-82. *Mr. H. Van Till.*

201 **Contemporary Astronomy.** S alternate years, 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. Lectures, laboratory exercises, and observing

projects. Prerequisites: Mathematics 111 and one course in college physics other than 110 or 112. *Mr. H. Van Till.* Not offered 1981-82.

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, A. Gebben (chairman), B. Klooster, B. Ten Broek, P. Tigchelaar, G. Van Harn*

*Associate Professor U. Zylstra*

*Assistant Professor H. Bouma*

*Instructor R. Van Dragt*

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. Computer science is recommended. Cognates should be completed by the end of the sophomore year.

The secondary school teaching major is the same as the program of concentration in biology except that one additional 300-level biology course is required. The 300-level courses must include 340 and either 341, 346, or 352. The interim course, Teaching Investigations in Biology, is recommended. Juniors planning their directed teaching during their senior year must pass a screening test in biology not later than February 1 of their junior year. The approved teaching minor is 121, 122, 211, 222, 340, plus an additional 300-level course or an approved interim course. The adviser for elementary teacher education programs is Mr. Vernon Ehlers of the Department of Physics; the advisor for secondary programs is the chairman.

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 cognate 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 core requirement in biological science is usually met by 111, 115, 117, or 121, but may also be met by 105-106 when taken as a unit and by any other course in the department. The requirement may also be met by completing two year-long courses in biology in high school with the concluding course being Advanced Biology.

#### GENERAL COLLEGE 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.*

**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. Cell, gene, and evolution theory are emphasized. Topics in ecology are discussed. Lectures and laboratories. Prerequisites: none, but Mathematics 109 and Physics 110 are recommended. *Staff.*

**115 Human Biology.** F and S. A study of topics selected from human physiology, anatomy, genetics, development, ecology, and evolution. Emphasis is on current concepts in these topics, their historical development, and how they relate to health and other disciplines. The nature of biological science is studied through these topics. Lecture and laboratory. Normally a student should take the core courses in mathematics and physics before this course. *Staff.*

**117 Plant Biology.** F. An introduction to the principles and concepts of plant biology for the general college student. Seed plant structure, function, development, and reproduction are emphasized. Topics include plant classification, diversity, and ecology. The historical development of selected current theories is presented. Lectures and laboratory. Normally students should take the core courses in mathematics and physics before this course. *Staff.*

**216 Field Biology.** F. The study of organisms in their natural environment. Emphasis is on concepts of ecology relevant to field biology, field and laboratory examination and identification of organisms, and the study of major ecosystems. Lectures and laboratories. Prerequisite: 111 or equivalent. *Mr. A. Bratt.*

**240S Field Botany.** Taxonomy and ecology of vascular plants as components of natural communities. On site examination of plants in bogs, dunes, marshes, meadows, forests, and swamps. Assigned readings, field trips, and laboratory. Offered as a summer course at Au Sable Institute of Environmental Studies. Prerequisite: 117, 121, or an introductory botany course. *Mr. A. Gebben.*

#### PROGRAM OF CONCENTRATION COURSES

##### Basic Courses

**121 Cell Biology.** F. The structure and function of prokaryotic and eukaryotic cells are examined at the molecular, subcellular, and whole cell levels. The plant cell is emphasized in the discussion of eukaryotic cells and the laboratory work includes plant cells as units of structure and function within multicellular plants. Honors recitation sections for qualified students. *Staff.*

**122 Animal Structure and Function.** S. An introduction to the anatomy, development, and physiology of the vertebrate animal. Honors recitation sections for qualified students. 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: 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: 121, 122, 221. *Staff.*

### Investigative Courses

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

**351 Investigations in Genetics and Development.\*** S. Laboratory studies of genetic and developmental phenomena of selected organisms. *Mr. J. Beebe, Mr. B. Ten Broek.*

**352 Investigations in Ecology.\*** F. Laboratory and field studies of biological populations and communities. *Mr. A. Gebben, Mr. R. Van Dragt.*

**353 Investigations in Cell Biology.\*** S. Laboratory studies with discussions of cellular, organelle, and molecular topics in cell biology including the techniques for preparing and observing materials for studies of structure and function. Additional prerequisite: Chemistry 253 or 301. *Mr. H. Bouma, Mr. U. Zylstra.*

### Advanced Courses

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

**323 Comparative Vertebrate Anatomy.\*** F. A study of the comparative anatomy of vertebrates. *Mr. P. Tigchelaar.*

**324 Hematology.\*** S, half course. A study of the components of blood and the blood-forming tissues. Course topics include blood cell morphology, development, hemostasis, plasma composition, and methods of blood analysis. Additional prerequisite: Chemistry 253 or 301. *Mr. H. Bouma.*

**331 Comparative Animal Physiology.\*** F. A comparative study of basic functional mechanisms of animals. Additional prerequisite: Chemistry 254 or equivalent. *Mr. G. Van Harn.*

**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 253 or equivalent. *Mr. J. Beebe.*

**334 Immunology.\*** S, half course. An introduction to the study of immunology and

serology. Course topics include innate, cellular, and humoral immunity, theories on the origin of antibody diversity, and the application of antigen-antibody specificity to serological assays. Additional prerequisite: Chemistry 253 or 301. *Mr. H. Bouma.*

**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.\*** S. A systematic study of the classifications, morphological patterns, and evolution of plants and animals. *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.\*** F and 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.*

*The following interdisciplinary course may be included in concentrations in this department:*

**210 History of Science, 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. Prerequisites: 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 1982 INTERIM

I-10 **Investigations in Biology**. Core. A liberal arts course in biology which emphasizes laboratory investigation. Students work on laboratory exercises until they get consistent results. They will discuss the results as they relate to the concepts under investigation. They will also attack experimentally any questions raised by their investigations. Background readings will give students the factual and theoretical base they need for the areas of biology being investigated. Mr. B. Ten Broek.

I-50 **Mammalian Anatomy**. A course in mammalian anatomy including both lecture and laboratory sessions. The lecture period is devoted to a discussion of the organ systems of the mammal. The laboratory includes the 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. G. Van Harn.

I-51 **Introduction to Plant Diseases and Pathogens**. An introduction to plant diseases, with emphasis on diseases of plants grown in Michigan, caused by viruses, mycoplasmas, bacteria, fungi, and nematodes. Discussion of chemical and biological control, lectures, films, slides, and laboratory work, including study of aspects of pathogen life histories, identification of diseases and pathogens, and culture of certain pathogens. In addition to reserving time during the day for study of available materials in the laboratory, the student is required to report orally and in writing on a disease or diseases that attack a given plant. Quizzes and tests. Prerequisite: 221 or permission of the instructor. Mr. J. Beebe.

I-52 **Symbiosis**. The study of symbiosis—the close physiological relationship of different species—as a biological phenomenon. Emphasis is on parasitism as a type of symbiosis with stress on host-parasite in-

teractions, study of life cycles, dissections, and identification of medically important parasites. Intended mainly for those interested in the health sciences. Lectures, films, and laboratories. Prerequisite: one year of biology. Mr. A. Bratt.

I-53 **Health**. Without sufficient knowledge of the science of health, a person cannot adequately prevent disease or make full use of our health care system. Designed for the general college student, this course presents the basic components of health. Some of the topics to be discussed are drugs, tobacco, alcohol, nutrition, weight control, epidemiology and disease, accidents and health risks, genetic diseases and counseling, ethics and the law, the delivery of health care, and dilemmas in our health care system. This course includes outside speakers, films, and reading. Prerequisite: one course in biology. Mr. P. Tigchelaar.

I-54 **Teaching Investigations in Biology**. This course will give experience in teaching beginning students in biology in a laboratory setting. Students will be involved in the preparation of laboratory materials, in assisting in the laboratory, in leading discussions, and helping students with their background reading. Members of the class will also be able to try out some of their own ideas concerning the teaching of laboratory work to beginning students. Satisfies ninth course requirement for secondary education students in biology and the methods course requirement for M.A.T. students in science studies. Prerequisites: junior or senior biology major in secondary education or enrollment in the M.A.T. science studies concentration. Mr. B. Ten Broek.

I-55 **Human Nutrition**. The student investigates the relationships between nutrients and the growth and maintenance of the human body, as well as some of the psychological, social, and economic factors that influence food choices. Students evaluate their own food consumption patterns and those of the population of the United States as a whole. Tests and written reports on assigned projects and outside reading. Prerequisite: a year of high school biology or a college course. Miss B. Klooster.

I-56 **Electron Microscopy Techniques**. This course concentrates on fixation, embedding, and ultramicrotome techniques for the preparation of specimens suitable for electron microscopy. Proper use of the elec-

tron microscope, darkroom techniques essential to photoelectronmicrography, and the interpretation of electron micrographs are included. Brief daily lectures, considerable hand-on experience, and an ultrastructure research project. Prerequisites: 222, Chemistry 253 or 301, and the written permission of the instructor. *Mr. U. Zylstra.*

**I-57 Animal Behavior.** Based on the perspective that an animal's behavior is integrally related to other aspects of its biology, this course introduces the student to a variety of current topics in animal behavior including perception, motivation, communication, instinct, learning, social behavior, and behavioral ecology. The conceptual groundwork for the study of behavior will be laid during the morning sessions by means of lectures, films, and discussion. Afternoon laboratory sessions will be used to demonstrate certain types of behavior in representative species and to develop the skills and techniques necessary for the accurate observation, description, and quantification of behavior. As part of the laboratory work each student will conduct an analysis of the behavior of a particular species and

submit a paper based on that analysis. In addition to this paper, two examinations will be given. Prerequisite: 111, 121, or permission of the instructor. *Mr. R. Van Dragt.*

**I-58 Plants and Civilization.** Examination of the role of plants, such as King Cotton, their origin and development as crops, their economic role in the establishment and development of world centers of civilization as well as the medicinal, religious, and drug uses of plants through lectures, assigned readings, reports, visits to the Matthei Botanical Garden in Ann Arbor and the Field Museum of Natural History in Chicago. A term paper on a plant species or plant group which has had a significant role in human history is required. Non-science students are encouraged to pursue a topic which combines readings in both botanical literature and the literature of their own specialization. Although a background in botany is helpful, necessary botanical concepts and terminology are learned as the course progresses. A high school course in biology or 111, 117, or 121 is recommended. *Mr. A. Gebben.*

---

# Chemistry

*Professors R. Albers, R. Blankespoor, H. Broene, R. De Kock, A. Leegwater, K. Piers (chairman), W. Van Doorne*  
*Assistant Professor L. Mehne*

**PREREQUISITE** to a concentration in chemistry is a minimum average of C (2.0) in 104 and in 201, 253, or 301.

The major program for students who do not plan to pursue graduate study in chemistry is 103, 104, 277, 278, 301, 302, and 201, 303, or 310. 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 103, 104, 201, 277, 278, 301, 302, 309, 310, and two from 303, 305, or 306; Mathematics 111, 112, 211, 212; Physics 126 and 225 or 123, 124, and 225. A reading knowledge of German or French is strongly 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 six course minor concentration consists of 103, 104, 201, 253 or 301, 204 or 277, and one course from 254, 278, 302, 309, 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.

The elementary teacher education adviser is Mr. Vernon Ehlers of the Department of Physics; the secondary education adviser is the chairman.

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.

**100 Preliminary College Chemistry.** F. A special course in the introductory concepts of chemistry that is open only to students who have not studied chemistry previously or who have departmental permission. Students who successfully complete this course and I-59, Introductory Chemistry, during the Interim may register for 104 during the spring semester. Laboratory. *Mr. L. Mehne.*

**101 Chemistry for the Health Sciences.** S. A one-semester survey of inorganic, organic, and biological chemistry as applied in the field of medicine. Laboratory. Prerequisite: one year of high school chemistry or permission of department. *Mr. H. Broene.*

**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. Prerequisite: one year of high school chemistry or permission of the department. *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. Laboratory. Prerequisite: 103 or I-59. *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. Prerequisite: one year of high school chemistry or permission of the department. *Mr. R. De Kock, Mr. W. Van Doorne.*

**114 Introduction to Organic and Biochemistry.** S, core. 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. Blankespoor.*

**201 Quantitative Analysis.** F. A study of the theory and practice of titrimetric and gravimetric methods of analysis. Laboratory. Prerequisite: 104. *Mr. W. Van Doorne.*

**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. R. Blankespoor.*

**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. Prerequisites: 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: 201 and 277. *Mr. L. Mehne.*

**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. Prerequisites: 104 and preferably 201. *Mr. A. Leegwater, M. K. Piers.*

**302 Organic Chemistry.** S. A continuation of 301. Laboratory. Prerequisite: 301. *Mr. A. Leegwater, Mr. K. Piers.*

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

**305 Advanced Organic Chemistry.\*** 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. De Kock.*

**309 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. *Mr. L. Mehne.*

**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 Independent Study.\*** F, I, S. Directed readings or projects. Admission by permission of the chairman and instructor under whom the work will be done. *Staff.*

**395 Research-Seminar.** F, I, S, full or half course. Library and laboratory research on an assigned problem. In addition, each student will be required to present a seminar in the departmental seminar series. Open to juniors and seniors by permission of the chairman and instructor under whom the work will be done. *Staff.*

*Interdisciplinary 210, History of Science, may be included in concentrations in this department.*

## JANUARY 1982 INTERIM

**I-10 Chemistry, Man, and Society.** A general course designed to explore the role of chemistry (and its resulting technologies) in contemporary society. Students discuss the basic ideas and methodologies of chemistry as they analyze the stewardship of natural resources and the way these resources are used as synthetic materials and chemicals.

Satisfies physical science core. Six afternoon laboratory sessions are required. *Mr. A. Leegwater.*

**I-50 The Chemistry of Polymers.** Rocks, wood, plastics, human skin, and almost all familiar materials are macromolecular, or polymeric in nature. The correlation between the molecular structure, the physical and chemical properties, and the usefulness of materials can be seen more clearly in the study of polymers than almost anywhere else. Students study polymers from the points of view of synthesis, structure, and properties, with strong emphasis on the interrelation of these factors. Lectures and laboratory experiments. Prerequisite: Chemistry 253 or 301, or permission of the instructor. *Mr. W. Van Doorne.*

**I-52 Water—An Essential Chemical.** Water is a very interesting chemical substance and also a medium for chemical reactions. Moreover, a steady supply of relatively pure water is essential to life. It appears that successful development of many areas in the United States and the world will be severely limited by the availability of

fresh pure water. This course examines water resources, water pollution and its abatement, and the chemical and physical properties of this unique substance. Lectures, readings, reports, and approximately four sessions of laboratory work. Prerequisite: one course in either high school or college chemistry. *Mr. H. Broene.*

**I-53 Laboratory Investigations in Chemistry.** Students are assigned a laboratory project from the literature of organic chemistry. Projects may be synthetic, analytical, or mechanistic. Emphasis is on reproducibility of results, evaluation of data in the light of conceptual expectations, and on independent planning of experiments. Each student prepares a report on the assigned project and participates in daily seminars where progress on the projects is discussed. Laboratory times are flexible but at least six to seven hours are required daily. Prerequisite: 253 or 301. *Mr. K. Piers.*

**I-59 Introductory Chemistry.** A continuation of 100, including the rest of the material covered in 103. Laboratory. Prerequisite: successful completion of 100 or permission of the department. *Staff.*

---

## Classical Languages

*Professors G. Harris,\*\* R. Otten,\* R. Wevers (chairman)  
Assistant Professor K. Bratt*

THE DEPARTMENT OFFERS FOUR programs of concentration: in Classical Civilization, in Classical Languages, in the Greek language, and in the Latin language. The program in Classical Civilization or Classical Studies combines some study of one of the languages with a broad study in the culture and civilization of the Greek and Romans and of the later influence of that culture. The Classical Languages program is designed for graduate studies, the Greek language program is for preseminarians and for 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 and for any others wishing to concentrate in Latin language and literature. Modified concentrations are available to other students.

The Classical Civilization program consists of ten courses and one interim, all selected in consultation with a member of the department. The course require-

ments, besides the approved interim course, include: two courses, at the 200 level or above, in Greek language (one of which may be in New Testament Greek) or in Latin language; Classics 211, 221, 231; Philosophy 210; either Classics 311 and 312 or History 301 and 302; and two courses selected from: Art 231, History 201, History 302 (if not elected above), History 303, Philosophy 220, Philosophy 312, Political Science 305, Religion 302, Religion 312, Speech 325, Speech 317, or additional courses (at 200 level or above) in the selected language.

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 pre-seminarian 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. Ernest Van Vugt, the registrar.

The Greek minor requires five language courses and one Classics course. Not more than one language course may be in New Testament Greek. The Latin minor, which also fulfills the minimum requirements for state teacher certification, requires five language courses beyond the 100-level and one Classics course. The specific courses for either the Greek or Latin minor should be chosen in consultation with a department member.

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, 231, 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 var-

ious art forms, but with the main emphasis upon works of literature which express distinctive features of the mind of the Greeks

## GREEK

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 Graeco-Roman Art and Architecture.** S, 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.** F, core. A study of the major themes in Classical mythology via the literature and art of Greece and Rome. Major literary sources 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. Lectures, discussions, and written reports. *Mr. K. Bratt.*

**311 Greek History.\*** F. The political, social, and cultural history of Ancient Greece from the Bronze Age to the beginnings of Christianity. Special attention is given to such problems as the emergence of the city-state, the civilization of the Periclean period, the great intellectual movements of the fourth century B.C., and the features of Hellenistic civilization which exerted a shaping influence on Roman society and early Christianity. This course may substitute for History 301 in any history concentration. *Mr. G. Harris.*

**312 Roman History.\*** S. The history of Rome from the foundation of the city to A.D. 565, the death of Justinian. The emphasis is 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 are 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. *Mr. B. DeVries.*

**101 Elementary Greek.** F. Text: Crosby and Schaeffer, *An Introduction to Greek.* *Staff.*

**102 Elementary Greek.** S. Continuation of 101. Completion of the text and the reading of the selected prose passages. *Staff.*

**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. Not offered 1981-81.

**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. Not offered 1981-82.

**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. *Mr. R. Wevers.*

**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. *Mr. R. Wevers.*

**205 New Testament Greek: The Gospels.** F. The Gospel according to St. Mark is read with some attention to 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 emphasized. Prerequisite: 102. *Mr. R. Otten.*

**206 New Testament Greek: The Epistles.** S. A study is made of some of the Pauline Epistles. Prerequisite: 205. *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 especially as presented 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. *Mr. G. Harris.*

## 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.** I and 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 years of high school Latin or two courses of college Latin. *Staff.*

202 **Intermediate Latin.** S, core. A study of the *Aeneid* and of selected poetry and prose in Latin. Prerequisite: three years of high school Latin or three courses of college Latin. *Staff.*

205 **Latin of the Late Republic and Early Empire,** F, core. Readings in the prose and poetry of the major writers, selected to survey the development of classical Latin literature and to serve as an introduction to the advanced genre courses. Prerequisite: 202, three years of high school Latin, or permission of the instructor. *Mr. R. Otten.*

206 **Late Latin Literature.** S, core. Readings in the prose and poetry of Latin literature from the Late Empire to the early Medieval period in both Christian and non-Christian authors. Prerequisite: 202, 205, or permission of the instructor. *Staff.*

301 **Latin Epistolary Literature.** Core. Readings from the letters of Cicero and Pliny. The letters are read as social and political documentation for issues, movements, and conditions of the Late Republic and Early Empire and as commentaries on the careers and personalities of their authors. Prerequisite: 205 or 206. Offered in alternate years. Not offered 1981-82. *Mr. R. Wevers.*

302 **Latin Philosophical Literature.** Core. Texts selected from such authors as Lucretius, Cicero, Seneca, Lactantius, and St.

Augustine to illustrate the Latin contribution to Western culture, particularly in ethical and social thought. Prerequisite: 205 or 206. Offered in alternate years. *Mr. R. Otten.*

303 **Latin Epic and Lyric Poetry.** F, core. Selected readings from such authors as Vergil, Catullus, Horace, and from the elegiac poets, with some attention to metrics and the Greek heritage in epic and lyric. Prerequisite: 205 or 206. Offered in alternate years. Not offered 1981-82. *Mr. K. Bratt.*

304 **Latin Historical Literature.** S, core. Intensive reading in the major Roman historians of the Late Republic and Early Empire. Emphasis is placed upon the proper interpretation of these writers as sources for our understanding of the political movements of the period. Collateral reading and reports. Prerequisite: 205 or 206. Offered in alternate years. Not offered 1981-82. *Mr. G. Harris.*

## JANUARY 1982 INTERIM

I-10 **Heroes and the Ideal of Excellence.** A study of the great epic poems of Greece and Rome—the *Iliad*, the *Odyssey*, and the *Aeneid*—as masterpieces of art and comprehensive testimony to the character of the societies which produced them. An analysis of selections from Dante's *Purgatorio* and Milton's *Paradise Lost* illustrate the enduring influence of the ancient epics. All assigned readings are in English, and no prior knowledge of Classical civilization is required. Lectures, reports, discussion, and examination. *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.*

102 **Elementary Latin.** Students completing 102 during the Interim may proceed with 202 in the second semester provided they have achieved the minimum grade of B - or have the recommendation of the instructor. Prerequisite: 101 or its equivalent. *Mr. R. Wevers.*

---

# Computer Science

Professors †S. Leestma, L. Nyhoff, C. Sinke (chairman, Department of Mathematics)

Assistant Professor G. Hoekema

Instructors M. Bultje, D. Wolthuis

IN ADDITION TO THE THREE introductory programming courses for students who plan to use the computer in their disciplines, the Department of Mathematics offers a concentration in computer science consisting of Computer Science 108, 251, Mathematics 111, 112, 211, two semesters of 391, and six additional courses selected from Computer Science 243, 252, 370, Mathematics 341, 343, 352, Physics 285, and 385. A minor consists of 106, 107, or 108 plus six courses selected from Mathematics 111 or 205, Mathematics 206, 341, 343, or 352, and Computer Science 243, 251, 252, 370. Physics 285, and 385.

**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-orientation solutions of problems in elementary numerical methods, computational algorithms, systems simulation, statistical calculations, and string variable manipulation. *Staff.*

**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, physics. Intended for students majoring in mathematics and science. Prerequisite: Mathematics 111, which may be taken concurrently. *Mrs. D. Wolthuis.*

**243 Computer Organization and Assembly Language Programming.** A study of the structure and organization of the basic components of a computer system. Topics covered include binary representation of data, arithmetic and logical operations, principal

machine instruction types and their formats, addressing schemes, and assembly language programming. Prerequisites: 107 or 108 and Mathematics 111 or 205. *Staff.*

**251 Discrete Structures.** F. An introduction to various discrete mathematical structures. Topics include sets and binary relations, graphs, algebraic structure, lattices, and Boolean algebras. Combinatorics, algorithms, and abstract computers (Turing machines) are also considered. *Mr. L. Nyhoff.*

**252 Data Structures.** An analysis of structures for storing data and of algorithms for manipulating these structures. Data structures studied include lists, stacks, queues, and trees. Various algorithms for sorting, searching, and updating these structures are developed and analyzed. Prerequisite: 251. *Staff.*

**370 Language Structures and Compiler Design.** An introduction to the basic constructs of modern programming languages and to the techniques for implementing these in the machine language of a typical computer. Topics include grammatical structure, syntax, semantics, parsing, storage allocation, error detection, and object code generation. Prerequisites: 243 and 252. *Staff.*

**390 Independent Study.\*** F, I, S. *Staff.*

*The following courses in mathematics are part of the computer science program:*

**341 Numerical Analysis.** S.

- 343 **Probability and Statistics.** F.  
 352 **Advanced Linear Algebra.** S.  
 391 **Colloquium.** F and S, quarter course.

*The following courses in physics are part of the computer science programs:*

- 285 **Introduction to Digital Electronics.** F.  
 385 **Introduction to Microprocessors.** F.

#### 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 language 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 ap-

plications in secondary education. Prerequisite: some knowledge of calculus and linear algebra. *Staff.*

#### JANUARY 1982 INTERIM

I-53 **Algorithms.** The invention of machines that perform basic mathematical operations has led to a study of what can be computed and how it can be done well. This study, inspired by the computer, has led to the discovery of many important and clever algorithms. In fact, the study of algorithms, their design, analysis, and implementation has become an important area of computer science. The major emphasis of the course will be on implementation of algorithms. Implementing a specific algorithm is often facilitated by special features of the computer language being used. For example, some algorithms can be most easily described using recursion and thus are most easily implemented in languages such as PASCAL and LISP which have recursive capabilities. These languages will be considered in this course, and students will be expected to write structured programs to implement certain algorithms. Prerequisite: a 200 or 300 level computer science course or permission of the instructor. Acceptable for a computer science minor. *Mr. L. Nyhoff.*

---

## Dutch

*Professors W. Lagerwey, Queen Juliana Chair of Language and Culture of the Netherlands (program coordinator)*

*Associate Professor M. Bakker, C. Hegewald (chairman, Department of Germanic Languages)*

**PREREQUISITE** to a 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 one. 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. *Staff.*

102 **Elementary Dutch.** S. Continuation of 101. *Staff.*

201 **Intermediate Dutch.** F. Selected

readings of modern Dutch prose and poetry. Review of grammar and syntax. *Staff.*

202 **Intermediate Dutch.** S. Continuation of 201. *Staff.*

203 **Intermediate Dutch.** F. A course in-

tended to serve students who already have some knowledge of the Dutch language but who are deficient in the ability to speak, comprehend, and write the language. *Staff.*

**204 Intermediate Dutch.** S. 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. Because the literature studied is varied from year to year, the course may be repeated for credit. *Mr. W. Lagerwey.*

**306 Dutch Classics.\*** Core. A continuation of 305. *Mr. W. Lagerwey.*

**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. *Mr. W. Lagerwey.*

**308 Readings in Dutch Church History.\*** S. A continuation of 307 for the period 1700-1945. *Mr. W. Lagerwey.*

**309 Netherlands Civilization.\*** A study conducted in the English language of several important aspects of Netherlandic civilization: language, literature, history, religion, art, architecture, social structure, and education. Readings in English. Students

reading in Dutch may apply this course to Dutch concentration. *Mr. W. Lagerwey.*

**390 Independent Study.** F, I. S. *Staff.*

## JANUARY 1982 INTERIM

**I-10 Netherlandic Interim Abroad.** An introduction to the civilization of the Netherlands and Belgium. Students will live with Dutch and Belgian families in several cities which are cultural centers, giving the student an opportunity to develop listening and speaking competence in the Dutch language as well as an acquaintance with significant aspects of Dutch and Flemish life and culture, both historical and contemporary. A one-week tour through Belgium to visit the major cultural centers such as Antwerp, Bruges, Ghent, Louvain, and Brussels, and a tour of the Netherlands of approximately one week will enable the student to visit the principal cities of the provinces ranging from Maastricht to Leeuwarden to Amsterdam. They will also be introduced to the important churches in the history of the Seccession out of which the Christian Reformed Church developed. Upon completion of the interim program, students will have approximately one week for personal travel. Prerequisite: one and a half years of Dutch or equivalent. Cost of approximately \$1250. *Mr. W. Lagerwey.*

---

# Economics and business

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

*Professors G. Monsma (chairman), D. Pruis*  
*Associate Professors E. Beversluis, E. Dykema, K. Kuipers, J. Tiemstra.*  
*Assistant Professors L. De Lange, D. Ebels, D. House*  
*Instructors J. Dodge, D. Rietberg, S. Roels*

appropriate major concentration must be selected from the four listed below: the economics concentration provides thorough coverage of economic theory and analysis, the business economics concentration is the usual business administration program, an economics-mathematics concentration joins the study of mathematics and economics and business, and a group concentration involves eco-

nomics and another social science. Either of the first two concentrations is appropriate for teacher certification.

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 plus 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 emphasis may be added to this concentration by electing six courses from 209, 307, 308, 309, 310, 311, and 312.

A twelve course interdisciplinary group concentration in economics and mathematics is 151, two courses from 207, 321, 322, and three others chosen with the departmental adviser and Mathematics 111, 112, 211, 212, and two additional 300-level courses. Economics 207 is recommended for those interested in business and both 321 and 322 for those interested in economic theory. Mathematics 343 and 344 or 352 are also recommended.

Economics group concentration requirements are 151, 207, 321 or 322, four other economics courses and four courses in either history, political science, psychology, or sociology in a coordinated program approved by the department.

One approved interim course may be included in a program of concentration.

The mathematics cognate requirements is 205 or 111 plus 206 or 343, which requires 211 as a prerequisite. 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, 343, and 344 are recommended.

The chairman will assist students in working out appropriate teacher education minors. The minimum requirements are 151, 321 or 322, and four additional courses, which may include two interims. An economics minor requires 151, 321, 322, and three courses from 207 and 331-342. A business minor requires 151, 207, 313, and three from 212, 309, 316, 318, 321, 322. An interim course may be substituted for an elective course with the adviser's approval.

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. E. Beversluis, Mr. J. Dodge, Mr. E. Dykema, Mr. D. Ebels, Mr. G. Monsma, Mr. J. Tiemstra.*

**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. L. De Lange, Mr. K. Kuipers, Mr. D. Pruis.*

**209 Income Tax.** S. 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. A continuation of 207. After a review of consolidated financial statements the student is introduced to cost accounting and reporting to management, budgets, controls, and analysis for managerial decision making. Prerequisite: 207. *Mr. L. De Lange, Mr. D. Pruis, Mrs. S. Roels.*

**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. D. Buter, Mr. T. Waalkes.*

**310 Advanced Accounting.\*** F. 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 307. *Mr. D. Pruis.*

**311 Auditing.\*** S. 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. K. Kuipers.*

**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. J. Mellema.*

**313 Business Organization and Management.** F and S. A study of the principles and problems of organizing and managing the firm, with emphasis on organization goals, structure, and the effective use of human resources. Prerequisite: 151. Not open to freshmen. *Mr. D. House, Mrs. S. Roels.*

**314 Personnel Management.\*** S. A study of the principles and problems involved in personnel management in an organization, including recruitment, selection, training, evaluation, motivation, compensation, human resource planning, career develop-

ment, and collective bargaining. Prerequisite: 313 or permission of the instructor. *Mr. D. House.*

**316 Financial Principles.** F and S. A study of the principles and problems of the financial management of the firm, including such topics as stock and bond valuation, working capital management, cost of capital and capital budgeting, capital structure, and dividend policy. Prerequisite: 207. *Mr. J. Mellema, Mr. D. Rietberg.*

**317 Financial Instruments and Markets.\*** S. An extension of 316 into topics such as leasing, mergers, and multinational finance; application of the theory of finance to investment instruments, including stocks, bonds, options, futures markets, and commodities, and to financial markets and institutions, including investment companies and the stock exchanges. Prerequisite: 316. *Mr. D. Rietberg.*

**318 Marketing.** F and 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. Not open to freshmen. *Mr. D. House, Mr. D. Rietberg.*

**321 Intermediate Macroeconomics.\*** F and S. 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 Intermediate Microeconomics.\*** F and S. 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. J. Dodge, Mr. G. Monsma.*

**331 Money and Banking.\*** 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. Dodge.*

**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. Tiemstra.*

**335 Labor Economics.\*** A study of labor markets and their relationship to the economy as a whole, with an emphasis on wage theory, the impact of trade unions, unemployment, income distribution, human capital formation, labor force participation, and public policies concerning such topics. Prerequisite: 151. Not offered 1981-82.

**336 Comparative Economic Systems.\*** F. A comparison of various forms of economic organization, such as capitalist and socialist types, and an evaluation of their performance in theory and practice. Prerequisite: 151. *Mr. E. Beversluis.*

**337 World Poverty and Economic Development.\*** S. A study of the causes of wide-spread poverty in many nations and regions of the world, and a study and evaluation of policies designed for its alleviation. Prerequisite: 151. *Mr. E. Dykema.*

**338 International Economics.\*** F. 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. *Mr. J. Tiemstra.*

**339 Public Finance.\*** F. The effects of government spending and taxation on resource allocation and on the distribution of income. Students will consider current policy issues and will analyze major programs at the national, state, and local level. Prerequisite: 151. *Mr. D. Ebels.*

**342 History of Economic Thought.\*** An examination of the development of economic ideas with an emphasis on the emergence of main historical themes, issues, and controversies. Prerequisite: 151 or permission of the instructor. Not offered 1981-82.

**390 Independent Study.\*** F, I, S. Prerequisite: permission of the chairman.

**395 Economics Seminar.\*** 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. Not offered 1981-82.

**396 Business Policy Seminar.\*** An integrative study of business goals, strategies,

and administration. Case studies, readings, reports, and a management simulation. Open to senior business economics majors with the consent of the instructors. *Mr. J. Mellema, Mr. D. Pruis.*

#### JANUARY 1982 INTERIM

**I-10 Economics and Education.** The world of education provides a case study to introduce the economic way of thinking and the nature of an economic society. Within a supply and demand framework, students will discuss questions such as: Why does not the private "market" provision of education suffice in modern society? What are the causes of the current crisis in public school finance? Has education really become more expensive? What are the economics of Christian schools? What light can economic analysis of education shed on issues of equal educational opportunity? What are the relations between education and "macro" concepts such as unemployment rates, inflation, and growth of GNP? What is the relation between education and development, particularly in the Third World? Readings, lectures, class discussions, and tests. *Mr. E. Beversluis.*

**I-11 Managing Not-for-Profit Organizations.** A survey of management principles and problems common to most not-for-profit organizations. Specific attention is given to systems of planning, organizing, budgeting, accounting, personnel, and fund raising. Case examples taken from educational institutions, hospitals, community agencies, and a few governmental units are analyzed for individual case and group presentations. The course, which is appropriate for students with any major, involves background reading and rudimentary financial calculations. Open to freshmen only with permission of the instructor. *Mrs. S. Roels.*

**I-50 Financial Institutions and Markets in a Rapidly Changing Economy.** This course presents an overview of the financial system and the role it plays in our economy. Students explore recent innovations, major trends, and current problems (such as equity and efficiency) in the performance of financial institutions. They will pay particular attention to investment instruments in order to understand how prices are determined and how a balance is achieved between risk and return. Includes a week visit to New York to meet with financial execu-

tives and to visit the stock exchanges, the Commodities Exchange, the Federal Reserve Bank, the Conference Board, the New York Society of Security Analysts, etc. Fee of approximately \$400. Prerequisites: 151 and permission of instructor. *Mr. K. Kuipers.*

**I-51 Economics of Energy Policy.** Energy, as a non-renewable resource, is of special interest to economists and to the world. There are three aspects of the interaction of government and private enterprise related to energy: general policy regarding security of supply and conservation; anti-trust policy regarding the size and practices of large/conglomerate companies; and regulatory policy exemplified in utility regulation. These aspects are interrelated and raise such questions as: Are large "energy" companies best able to supply the energy needs of the United States? What role does regulation play in energy conservation? What is the appropriate response to a sudden shortfall in energy supply? Students prepare papers on topics in one of these policy problem areas. Prerequisite: 151, or the permission of the instructor. *Mr. J. Dodge.*

**I-53 Econometrics and Forecasting.** Computerized econometric models have recently entered into contention with crystal ball-gazing and astrology as the most credible method of prediction. Students survey econometric methods and consider the usefulness of economic predictions and the design and limitations of prediction models. The methods are then used to evaluate models of world growth, macroeconomic forecasting models, and market forecasts for individual products. The latter are derived from models of the participant's design.

Prior computer experience is not required. Prerequisites: 151 and Math 206. *Mr. D. Ebels.*

**I-54 Economics: Sacred and Profane.** This course is based on the work of the Calvin Center for Christian Scholarship research team of 1980-81. Students study the economic theory developed by the team and contrast it with other bodies of economic theory, especially the dominant neo-classical approach. The different implications these theories have for the analysis of current economic problems (for example, inflation and unemployment, extremes of wealth and poverty, pollution, lifestyles, organization and goals of firms) and their solutions are discussed. A paper on some aspect of the theory or its application is required. Prerequisite: 151. *Mr. G. Monsma.*

**I-55 Government Regulation of Business.** Students study a number of issues which have sparked public debate in the last few years, particularly prices and investment in energy production, and the deregulation of the transportation and communication industries. Examination of the "new social regulation," especially product quality and safety, occupational safety and health, and the rights of employees and consumers. Evaluation of the total social benefits and costs of various forms of regulation as well as a review of the histories of some regulatory agencies and regulated industries. Two examinations and for honors, a term paper. Prerequisites: 151 or permission of the instructor. *Mr. J. Tiemstra.*

**Idis I-53 Piety and Poverty: Perspectives on Justice and Stewardship.** *Mr. E. Dykema.*

---

# Education

*Professors G. Besselsen, P. De Boer (chairman), C. Kass, P. Lucasse, D. Oppewal, D. Westra, J. Wiersma*

*Associate Professors T. Hoeksema, C. Mulder, L. Stegink*

*Assistant Professors K. Blok, B. Bosma, W. Hendricks*

THE VARIOUS TEACHER EDUCATION PROGRAMS are described in detail on pages 48-53. Prospective elementary teachers should consult Mr. William Hendricks, coordinator of elementary education. Those interested in secondary education should initially consult the teacher education adviser of the department in which they expect to major. Mr. Philip Lucasse is the coordinator of secondary education. Students intending to enter special education should consult either Mr. Thomas Hoeksema, coordinator of special education: mentally impaired, or Miss Corrine Kass, coordinator of special education: learning disabilities.

The elementary teacher education program requires nine course units: 301, 303, 304, 305, 322 and, during the directed teaching semester, 345 and 355. The secondary teacher education program requires seven courses: 301, 303, 304, and, during the directed teaching semester, 346 and 356. Students in special education must also complete the elementary education requirements.

**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 and a laboratory experience to develop competence in the classroom use of audio-visual equipment. Prerequisite: concurrent registration in 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. Prerequisites: 301, 303, and Philosophy 153. *Mr. P. De Boer, Mr. D. Oppewal.*

**305 Elementary Teaching Methods.\*** F and S. A study of the methods of teaching religion, language arts, social studies, science studies, and mathematics as taught in the elementary school. Prerequisite: 303. *Staff.*

**307 Teaching Reading Skills in Content Areas.** F and S. A study of the reading process as it relates to the secondary school

curriculum; an analysis of the problems encountered by students reading typical textbooks; and a presentation of techniques that can be used to meet the wide range of reading levels found in many secondary classrooms. Required of all secondary teacher education students completing their programs after July, 1983. *Mrs. K. Blok.*

**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. Prerequisite: Speech 214 is recommended. *Mrs. B. Bosma, Mrs. K. Blok.*

**345 Directed Teaching: Elementary.\*** F and S, one to three course units. Students participate in full-time supervised practice teaching. Those in regular elementary education programs teach in two different schools and may, if their certification program requires it, have one experience in their major field. Prerequisites: good standing in the teacher education program and appropriate recommendations. *Staff.*

**346 Directed Teaching: Secondary.\*** F and S, one to three course units. Students participate in a full-time supervised practice-teaching experience in their major or minor field. Prerequisites: good standing in the teacher education program and appropriate recommendations. *Staff.*

**355 Seminar in Elementary Teaching Methods.\*** F and S. A seminar taught in conjunction with 345 involving the practical problems of pedagogy in the elementary classroom, including those related to the student's directed teaching experience, as

well as elementary teaching methods initiated in 305. Large and small discussion groups led by the college supervisors of directed teaching. *Staff*.

**356 Seminar in Secondary Teaching Methods.\*** F and S. A seminar taught in conjunction with 346 by the supervisors of secondary directed teaching involving general problems of pedagogy at the secondary level as well as of the methods of teaching the specific subject of the student's classroom. The seminar provides a forum for the discussion of problems that develop during directed teaching. *Staff*.

**390 Independent Study.** F, I, S. *Staff*.

### SPECIAL EDUCATION

**216 Education of Exceptional Children.** F. 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 of 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. Prerequisite: 216. *Mr. T. Hoeksema*.

**310 Diagnosis and Prescription in Special Education.** F. This course is designed to acquaint students with the basic terminology and theory of assessing specific learning problems. Skill will be developed in the selection, administration, and interpretation of formal and informal, standardized and non-standardized assessment devices for the purpose of determining educational prescriptions. Prerequisite: 216. *Staff*.

**320 Theories of Learning Disabilities.** F. As an introduction to the field, this course seeks to acquaint students with the major theoretical models of learning disabilities and with the academic, social, and motor

characteristics of learning disabled children. Approaches to the education of learning disabled children which have been based on the theoretical models examined are also studied. Prerequisite: 216. *Miss C. Kass*.

**323 Teaching of Reading: Methods, Diagnosis, and Prescription.** F. A study of the nature of reading as a cognitive and developmental process, the basic skills needed in learning to read, and various approaches to the teaching of reading. This course also includes a study of the various kinds of problems which children exhibit when learning to read, the use of common diagnostic tests with an emphasis on the strengths and weaknesses of each, and a clinical experience involving both the diagnosis of reading problems and the use of appropriate corrective measures. Prerequisites: 301, 303, 310. *Mrs. B. Bosma*.

**330 Curriculum and Instruction: Mentally Impaired.** S. A study of the curricula, materials, and methods appropriate to the instruction of the mentally impaired. Attention is given to the problems of organizing classes, making curricular decisions, and selecting methods and materials. A field experience with mentally impaired students is an integral part of this course. Prerequisites: 301, 303, 306; 305 is recommended. *Mr. T. Hoeksema*.

**332 Curriculum and Instruction: Learning Disabilities.** S. A study of the curricula, methods, and materials appropriate to the education of learning-disabled children. Attention is given to the problems of organizing classes, adapting learning environments, making curricular decisions, and selecting materials and instructional methods. Special emphasis is on the development of language. A field experience with learning disabled students is an integral part of this course. Prerequisites: 301, 303, 320; 305 is recommended. *Miss C. Kass*.

**347 Directed Teaching: Mentally Impaired.** S. Two course units. *Mr. T. Hoeksema*.

**348 Directed Teaching: Learning Disabilities.** F and S. Two course units. *Miss C. Kass*.

**357 Directed Teaching Seminar: Mentally Impaired.** One half course unit. *Staff*.

**358 Directed Teaching Seminar: Learning Disabilities.** One half course unit. *Staff*.

## 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. *Mr. P. De Boer.*

**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. *Mr. J. Wiersma.*

**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. Prerequisites: at least one course in reading and one in psychology. *Miss C. Kass.*

**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 studied. Individual projects and construction of teaching units. *Mr. D. Oppewal.*

**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. *Mr. T. Hoeksema, Miss C. Kass.*

**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. *Mr. P. Lucasse.*

**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. *Mr. P. Lucasse.*

**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. *Mr. C. Mulder.*

**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 approaches 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.*

**538 Staff Supervision and Development.**

An examination of the supervisory responsibilities and functions of school administrators with an emphasis on staff evaluation and staff development. Units of study include: a survey of the research on teacher effectiveness; models of supervision; peer, student, supervisor, and self-evaluation; models and methods for analyzing teaching; pre- and post-conferences; and the creation and implementation of staff development programs. Prerequisite: 534 or permission of the instructor. *Mr. C. Mulder.*

**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. *Mrs. K. Blok, Mrs. B. Bosma.*

**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. *Mrs. K. Blok, Mrs. B. Bosma.*

**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 programs 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: 513, 540, 541, or permission of the instructor. *Mrs. B. Bosma, Miss C. Kass.*

**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. Prerequisite: at least one course in philosophy or philosophy of education. *Mr. D. Oppewal.*

**590 Independent Study.** 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 1982 INTERIM**

**I-10 Teaching Reading Comprehension.**

A study of ways for developing reading comprehension at primary, intermediate, and secondary levels. Students will examine the results of current research on comprehension as well as the theoretical literature in psycholinguistics and cognitive psychology, and on the basis of this study will develop and evaluate various instructional

strategies. Classroom observations will be scheduled. *Mrs. B. Bosma.*

**I-11 Mainstreaming Children with Disabilities.** This course, designed for prospective elementary teachers, explores the integration of mildly handicapped students into regular school programs through a study of existing models, observations in schools, interaction with local personnel, and through a variety of simulation activities in class. Students will gain an overview of handicapping conditions and learn strategies for dealing with diverse learners in the regular school context. Implications of the mainstreaming model for Christian schools are considered. *Mr. T. Hoeksema.*

**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 serve as teacher aides three days a week in a mountain community school and 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 of approximately \$270. Exact dates to be announced. Prerequisite: permission of the instructor. *Miss D. Westra.*

**I-13 The Adolescent and the High School.** Because adolescence tends to be coincidental with high school years, teaching must be accommodated to the developing process of maturing. In this course potential teachers will learn how. They will examine the nature of adolescence and the way it produces a subculture of its own and the effect both have on the curriculum and methods of teaching that are appropriate in a high school. Readings, lecture, discussion, and projects using local high schools as a resource. Prerequisite: interest in secondary education. *Mr. L. Stegink.*

**I-14 Teaching Reading: The Language-Experience Approach.** Students in this class study the Language-Experience Approach to the teaching of reading. This technique is particularly appropriate for volunteer tutors and prospective elementary teachers. Students learn the theory through lectures, demonstrations, films, and assigned readings and will apply it in field experience as teacher aides in a reading program in a

community school. Report on readings, preparation of materials for tutoring, and a concluding paper describing and evaluating the experience. *Mrs. K. Blok.*

**I-15 Writing to Grow.** In this course prospective teachers will discuss ways to nurture the creative expression of children and to stimulate them to write. They will work with individual children, watch films and presentations, participate in discussions, study theories of writing, and examine their own writing. Required reading and activities suited to each student's needs and interests. Each one will be required to develop and construct a writing center. Preference given to juniors and seniors in elementary education. *Mrs. P. Oostenink.*

**I-50 Building Integrated Teaching Units.** This workshop on the idea of integrated education will involve readings, lectures, and discussion and will culminate in a student-constructed unit which demonstrates how various skills and subject matter taught in the elementary school can be closely and effectively integrated. Attention is given to integrated models being developed in the Canadian Christian schools. Extensive use is made of the Curriculum Center. Prerequisite: senior status in teacher education. *Mr. P. De Boer and Mrs. Y. Van Ee.*

**I-51 Educating Gifted and Talented Students.** A study of the ways gifted students can be identified and taught. Topics include the definition and testing of such students, the classroom climate which encourages their development, appropriate teacher strategies, and model curricula. Students will meet in a workshop format involving demonstrations, readings, observation, and a project. *Mr. G. Besselsen.*

**I-52 Multi-Cultural, Alternative School Experience.** Students will be placed at Dawn Treader School in Paterson, New Jersey. Dawn Treader is an inner-city, alternative school with a majority/minority culture mix. Special emphasis is given to using the cultural diversity and the urban setting to enhance the motivation and self-esteem of the pupils. The course includes lesson planning, tutoring, required reading, and a daily journal. The classroom teachers and principal will give daily supervision and conduct weekly seminars. Mr. Lucasse will lead a concluding seminar during the first week of second semester. Fee of approximately

\$150. Prerequisite: permission of the coordinator. *Mr. P. Lucasse.*

**I-53 Curriculum and Methods of Multi-Grade Classrooms.** Students will be placed in an off-campus multi-grade classroom where they will be able to use the spread of pupil ability for individualization and peer tutoring. Special attention is given to management skills for both curriculum and scheduling in the class. The course includes lesson planning, tutoring, teaching, required readings, and a daily journal. The classroom teacher and principal will give daily supervision and conduct weekly seminars. Mr. Lucasse will lead a concluding seminar during the first week of second semester. Fee of approximately \$260. Prerequisite: permission of the coordinator. *Mr. P. Lucasse.*

**I-54 Effective Use of Small Group Strategies in Regular Classrooms.** Even though there are many ways to teach a class, traditionally teachers have either lectured or used some sort of individualized instruction. Students in this course will be introduced to a number of alternative teaching styles that are appropriate in small and large groups and will examine the theories on

which they are based. Special attention is given to competitive/cooperative and to homogeneous/heterogeneous groups and to developing guidelines for the implementation of the various group styles. Observing group teaching, preparing lesson plans, videotaping various styles in elementary and secondary classrooms. For education students, persons interested in church education, social work, etc. Prerequisite: sophomore standing. *Mr. P. Lucasse and Mr. C. Mulder.*

**I-56 Education in the Inner City.** Students will have a first hand experience in a multicultural, inner-city school situation, explore wider aspects of the problems through group visits and special speakers representing various cultural perspectives, and investigate various dimensions of such education through readings and seminar discussions. During daily morning sessions students will be placed as an assistant in a multicultural, inner-city classroom or school-related agency. Monday, Wednesday, and Friday afternoons will be used for group visits, special speakers, films, and discussion groups that deal with books and issues related to multicultural, inner-city education. Prerequisite: sophomore status or above. *Mr. W. Hendricks.*

---

# Engineering

*Professors J. Bosscher (chairman), L. Van Poolen*  
*Instructors R. Hoeksema, K. Peterson*

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 56 and 57.

A group major in engineering and physics or geology may be appropriate for some students. The group major in engineering and geology consists of Engineering 101, 202, 205, and 305; Geology 151, 152, 261, and 312; plus four approved electives. The group major in engineering and physics consists of twelve courses. Ten of these must be from the engineering and physics departments, with no fewer than four from either. The remaining two cognate courses must be chosen from a third department.

**101 Graphical Communication and Concept Design.** F. Graphical techniques for spatial analysis; a study of basic topics in engineering 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 engineering projects. Readings are also assigned in design-related areas of creative thinking, aesthetics, models, economics, and human satisfaction. *Staff.*

**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. Prerequisite: 101, Mathematics 111, and enrollment in Computer Science 108. *Mr. J. Bosscher, Mr. L. Van Poolen.*

**103 Architectural Communication and Concept Design.** F. Graphical techniques for spatial analysis; a study of basic topics in architectural drawing to provide facility in the transmission of ideas through accepted graphical means. Areas covered include orthographic projection, free-hand sketching, pictorial representation (including perspective), sections and conventions, basic dimensioning, shade and shadows, and charts and graphs. The student is introduced to the design process by means of lectures and assigned architectural projects. Readings are also assigned in design-related areas of creative thinking, aesthetics, economics, and human satisfaction. *Mr. J. Bosscher.*

**202 Statics and Dynamics.** S. A 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. Prerequisites: Physics 126, 182, and concurrent registration in 211. *Mr. J. Bosscher, Mr. R. Hoeksema.*

**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, Mr. R. Hoeksema.*

**208 Introduction to Circuit Analysis.** S. An introduction to basic circuit concepts. Elementary applications of diodes and transistors. Introduction to dynamic circuits. Included are analog systems and digital logic elements and circuits. Computer analysis is utilized. Individualized laboratory stations are utilized to emphasize basic concepts. Students taking 208 should not also take 308. Prerequisite: concurrent registration in Mathematics 212. *Mr. K. Peterson.*

**305 Mechanics of Materials.** F. Application of principles of mechanics to the 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. R. Hoeksema.*

**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. *Mr. K. Peterson.*

**309 Fluid Mechanics.** F. Basic properties of real and ideal fluids. Fluid statics. Lag-

rangian 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. Dimensional analysis and laboratory experiments utilized to determine significant flow parameters. Prerequisites: Mathematics 212 and Physics 225. *Mr. L. Van Poolen.*

**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 nonlinear differential equations. Includes introduction to iterative analog computation using the AD-256 computer. Prerequisite: Mathematics 212 or permission of the instructor. *Mr. K. Peterson.*

**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. *Mr. J. Bosscher.*

**316 Heat Transfer.** I, 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. *Mr. J. Bosscher.*

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

## JANUARY 1982 INTERIM

**I-51 Engineering Instrumentation.** An introductory study of engineering measurement and instrumentation. The course allows two-track specialization, either toward mechanical implementation and application or toward electrical signal characteristics and processing. Extensive laboratory work for both groups to investigate transducer uses and characteristics including physical measurement, accuracy, and reliability. Prerequisites: 208 or 308 and, for those in the mechanical track, 305. *Mr. J. Bosscher, Mr. K. Peterson.*

**I-52 Finite Element Analysis.** The finite element method is a design tool widely used in many areas of engineering. Students will consider historical development, fundamental principles, and the various applications of the method. They will be expected to write computer programs and to use existing general purpose programs to solve analysis and design problems. Prerequisite: 305. *Mr. R. Hoeksema.*

**316 Heat Transfer.** *Mr. L. Van Poolen.*

---

# English

Professors H. Baron, E. Ericson, G. Harper, I. Kroese, K. Kuiper, P. Opperwall, C. Otten, H. Ten Harnsel (chairman), R. Tiemersma, S. Van Der Weele, C. Walhout, M. A. Walters, S. Wiersma

Associate Professor J. H. Timmerman

Assistant Professors G. Bordewyk, J. Snapper, W. Vande Kopple

THE ENGLISH DEPARTMENT offers a major in English, a minor in English, and a major in English education. Prerequisite to any of these concentrations is a minimum grade of C (2.0) in 100.

The recommended program for a major requires one course from 202, 305, 306, and 307; one from 203, 308, and 309; one from 313, 314, 315, and 321; and one from 302, 329, 330, and 331. In addition, the major program requires 303, 310, 311, and three other courses, including not more than one interim course and excluding 100, 212, 225, 235, and 251.

The recommended program for secondary education requires one course from 220, 251, and 326; one course from 329 and 330; and one course from 313, 315, 319, and 321. In addition, the secondary education major requires 202, 203, 303, 310, and 311. For this program students 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 is 100, 200, 202 or 303, 203, 212, 225, 329 or 330, 235 or 336, 313 or 315. The advisers are H. Baron (elementary) and K. Kuiper (secondary).

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.

An interdisciplinary supplementary concentration in journalism and mass communication requires Speech 230, English 260, English 360 (or 332); in addition, the student must choose three courses from English 332, Art 350, Art 351, an internship, and from such interim courses as Speech I-10 (Technical Aspects of the Media), Legal and Ethical Aspects of the Media, Television and Behavior, and Mass Media and American Politics. The adviser for this program is Mr. Steve J. Van Der Weele.

The core requirement in written rhetoric is met by 100 or by examination. The first literature core requirement is typically taken from 220, 200, 202, 203, 212, 240, and 303, but any course in literature (as distinguished from language, composition, and film) except 225 and 260 may fulfill this requirement. Any literature course will satisfy additional core requirements in the fine arts.

100 **Written Rhetoric.** F and S, core. 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 **Understanding 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.*

220 **World Literature.\*** F and 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. Van Der Weele.*

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: 100 or its equivalent. *Mrs. P. Tigchelaar, Mrs. M. Zylstra.*

**235 Practice in Composition.** F and S. A second course in rhetoric and composition designed for students who wish additional practice in basic writing skills but who do not qualify for 332. Includes readings, a review of basic principles of rhetoric, and extensive practice in writing a variety of short papers. *Staff.*

**240 Modern Canadian Literature.** F. A study of selected works, principally twentieth-century fiction from English Canada, with some attention to major poets and French Canadian writers in translation. Emphasis is placed on the social and historical context of Canadian literature. *Mr. H. Baron.*

**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.*

**260 Basic Reporting.** F. An introduction to the basic practices of journalism with primary emphasis on news gathering methods, interviewing techniques, and news writing style. Writing assignments are based on coverage of campus and community events. Prerequisite: 100. *Mr. P. Oppewall.*

**302 Medieval English Literature.\*** F. A study of Chaucer's *Canterbury Tales* and *Troilus and Criseyde* as reflecting his 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. J. H. Timmerman.*

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

**304 Literature of the English Renaissance.** F. A study of the poetry of the sixteenth century and the drama of the sixteenth and early seventeenth centuries exclusive of Shakespeare, with an emphasis on drama. Not offered 1981-82.

**305 English Literature of the Seventeenth**

**Century.\*** F. A study of poetry and prose in England from 1600 to 1660, with emphasis on the religious lyric, especially the poetry of Donne and Herbert. *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.\*** F. 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. Van Der Weele.* Not offered 1981-82.

**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.* Not offered 1981-82.

**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.\*** 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: 200. *Miss H. Ten Harnsel.*

315 **Modern 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; or Melville, Hemingway, O'Neill. Prerequisites: 310, 311. *Staff.*

319 **Literature since 1945.**\* S. A study of the fiction and poetry of America and England since World War II. Not offered 1981-82.

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, and Pinter. *Miss M. A. Walters.* Not offered 1981-82.

326 **Adolescent Literature.**\* S. A study of adolescent literature, including intensive reading in the best of this literature and application of literary standards to the reading. Not offered 1981-82.

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. W. Vande Kopple.*

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. An introduction to contemporary theories and methodologies of literary criticism with investigations into their historical origins and development. The course includes illustrations of the various methods as well as

some practical criticism. *Mr. C. Walhout.* Not offered 1981-82.

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. *Mr. S. Van Der 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. Prerequisite: a grade of B(3.0) in 100. *Mr. J. H. Timmerman.*

336 **Teaching of Writing.**\* F. A course in the principles, practice, and pedagogy of composition, especially as these apply to junior high and high school writing programs. 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.*

360 **Advanced Reporting.** Further work in features stories, investigative reporting, and in adapting material for radio and television. *Staff.*

390 **Independent Study.**\* F, I, S. Prerequisite: permission of the chairman.

395 **Seminar: Thomas Hardy.**\* F. An examination of selected fiction and poetry of Thomas Hardy (1840-1928), with special attention given to the relations between the life and the art. Weekly papers with discussions by the group. *Mr. G. Harper.*

## 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.*

**526 Recent Literature for Children.** A survey and evaluation of children's literature, with emphasis on the more recent literature; consideration of criteria for selecting children's literature; examination of reference tools, recent trends, issues, and approaches to the teaching of children's literature; and critical study of several representative works. *Staff.*

**531 Language and the Elementary Classroom.** A study of some aspects of traditional grammar and an introduction to the history of English and current linguistic theory and concerns. Special emphasis is placed on the implications of this knowledge for classroom teaching. *Staff.*

**537 Teaching of Writing in Elementary and Middle Schools.** A course in the principles and practice of writing, including the study of techniques appropriate for teaching elementary and middle school students to write well. *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 practices 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.*

**581 Methods and Materials in the Language Arts.** A study of programs and techniques of effective teaching of language arts in the elementary school plus a review of current materials in relationship to improvement of instruction. *Staff.*

**590 Independent Study.** 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 1982 INTERIM

**I-11 Nathaniel Hawthorne: The Shadowy Scope of Time.** One of the greatest Ameri-

can authors of the nineteenth century, Nathaniel Hawthorne, created a fictional world in which conflicts abound. His novels and tales examine the opposing forces of time and eternity, illusion and reality, idealism and practicality, good and evil. Readings include novels, short stories, a biography of Hawthorne, and critical essays. Through classroom discussion, quizzes, and a brief library report, the student will gain an understanding of a writer who looked "beyond the shadowy scope of time, and living once for all in eternity, [found] the perfect future in the present." This course is designed for students, regardless of their major, who would appreciate the opportunity to become acquainted with Hawthorne's work. *Mr. G. Bordewyk.*

**I-12 Messianism in Several Novels of Bellow, Malamud, and Roth.** A course in selected novels and stories of Saul Bellow, Bernard Malamud, and Philip Roth, authors in the Jewish tradition. Students examine some of the novels and stories to identify the possible messianism in the structure and characterizations. A reading list will be available before Christmas. Paper, discussions, and final examination. *Mr. G. Harper.*

**I-13 The Black American Experience Through Literature.** An exploration of the uniqueness of the black American experience as interpreted by its most gifted literary representatives. Students will read and discuss poetry, fiction, and autobiographies by W. E. B. DuBois, Claude McKay, Langston Hughes, Richard Wright, James Baldwin, Malcolm X, Eldridge Cleaver, Ralph Ellison, Gwendolyn Brooks, and others. *Mr. P. Oppewall.*

**I-14 The Fiction-Film Connection: How the Medium Matters.** A study of good fiction and equally good films as they give different narrative form to similar story material. The aim is to bring about a better understanding of both art forms by examining their necessarily different—but also similar—elements and techniques in the light of each other. Students view approximately twelve classic and contemporary films, read related fiction, and engage in critical analysis. Besides films and short presentations, there are daily discussions and demonstrations. *Mr. I. Kroese and Mr. C. Walhout.*

**I-15 Great Short Stories of North America.** Students read stories by Canadian

and United States authors, Margaret Laurence, Margaret Atwood, Hugh Hood, Nathaniel Hawthorne, Herman Melville, and John Updike, which are grouped under such themes as The West, The Small Town, The City, The Depression, and Race. Lectures and discussions focus on historical geographical, and literary aspects of the stories. Films and dramatics supplement the reading experience. Daily quizzes, short papers, group writings of a story, and a review test. *Mr. H. Baron.*

I-16 **Ernest Hemingway Revisited.** A sprightly course designed for the general student as well as for the English major. Students focus on Hemingway's major themes, his writing style, and his lifestyle. They will read five of his novels, many short stories, a biography, and several critical essays. Daily discussion, some lectures, films. There will be regular assignments, frequent quizzes on the reading, as well as opportunities to take part in various class projects. *Mr. K. Kuiper.*

I-50 **Religion and Modern Literature.** Literature has its roots in the religious impulse. The twentieth century has seen a resurgence of religious reflection in literary works. Students explore some of the difficult issues in the burgeoning "field" of religion and literature, then go on to examine religious backgrounds of modern literature, paying special attention to bringing a Christian perspective to bear on modern literary texts. Most reading is from primary sources—Kafka, Conrad, Camus, Faulkner, Hemingway, Greene, Golding, Beckett, and Solzhenitsyn. Because of the amount of reading, students are strongly urged to obtain the reading list from the English Department office before Christmas and to do some of the reading before the course begins. A paper is required. Prerequisite: a college course in literature or the approval of the instructor. *Mr. E. Ericson.*

I-51 **Six Shakespeare Plays.** This course is designed for those students who cannot fit a regular Shakespeare course into their schedules but who will consider themselves culturally deprived if they do not read Shakespeare in college. By studying film and television performances, recordings, and histories of famous stage productions, students will feel something of the extraordinary impact that Shakespeare continues to make on an audience through his dramatic art and will catch a glimpse of his

imagination and "apprehend some joy." The course includes six plays covering comedy, tragedy, history, and romance. Lectures, films, recordings, discussions, reports, and possibly guest lecturers and/or a trip to a performance. Prerequisite: 100. *Mrs. C. Otten.*

I-55 **American English: Barbarizing the King's English.** Since the English language was brought to America by the colonists it has changed in many ways. Speakers have altered the meanings of many words, borrowed words from Indians and immigrants, invented words for unfamiliar landscape features, animals, and institutions, and developed new systems of slang and argot. Using lectures, readings, exercises, records, and short papers, students will examine the English of the colonists, the changes since the seventeenth century and current variations from region to region, the sociocultural factors which caused those changes, and American English as it will be in the future. This process will also demonstrate some general principles of sociohistorical and structural linguistics. Prerequisite: 100. *Mr. W. Vande Kopple.*

I-52 **Brave New Worlds.** This course introduces the student to a number of historically and literarily significant fictional accounts of a man's search for the ideal society. Using Chad Walsh's *From Utopia to Nightmare* as a guide, the course deals with representative "utopias" from various ages of Western civilization. In addition, students read six or seven of the more famous "utopias," beginning with Plato's *Republic* and working chronologically to contemporary depictions (Huxley's *Brave New World*, for example) of society that could more properly be called "dystopias." Lecture, explication of the text, class discussion, and a paper based on some "utopia" not included in the general reading for the course. Further written work includes quizzes on the daily reading and a final examination. Prerequisite: 100. *Mr. R. Tiemersma.*

I-53 **The Fiction of John Steinbeck.** The American Nobel prize-winner John Steinbeck has been acclaimed for his ability to capture graphic portraits of American life in his literature. This course explores his major novels in the context of American social, political, and religious thought of the 1930's and 40's. Works include the comedy, *Sweet Thursday*, the social protest novels, *Grapes of Wrath*, *In Dubious Battles*, and *Of Mice and*

*Men*, the novellas, *The Red Pony* and *The Pearl*, and *The Collected Short Stories*. All novels should be read before the course begins to facilitate seminar presentations and discussion. The reading list will be available before Christmas and students should plan to read substantially before the course begins. Course requirements include testing and research. Prerequisite: at least one English course at the 200 level. *Mr. J. Timmerman*.

I-57 **Christopher Fry and the Comic Truth**. An examination of Fry's major plays in the light of his influences, his ideas, and his place in the history of drama. Three major projects required: a written analysis of a play, a selection from Fry's text for oral presentation to the class, and a written assessment of Fry's work as a whole. Daily individualized assignments in addition to the required reading. Prerequisite: 100 and a course in literature. *Mr. S. Wiersma*.

---

# French

*Professor A. Otten (chairman)*

*Associate Professor C.-M. Baldwin*

*Assistant Professor E. Monsma*

PROGRAMS FOR STUDENTS wishing to major in French are worked out for them individually by the chairman. To be eligible a student must have completed at least two courses in French with a minimum grade of C (2.0) and must have completed 101-102, 121-122, or the equivalent.

The program of concentration includes 201-202 or the equivalent, 215, 216, 217, 218, 311, 312, 313, and 314. The major program for prospective teachers requires 201, 202, 215, 216, 217, 218, and three from the following: 311, 312, 313, 314, 372, and the Quebec interim. The minor program for prospective secondary teachers requires 201, 202, 215, 216, 217, 218. Programs for students beginning French in college, including prospective secondary teachers, should be worked out with the chairman. 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. The instructor and student assistants guide students in determining their needs and abilities as well as in the best ways for each to learn French. The course includes both larger and smaller class sessions. *Mr. A. Otten*.

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

122-122-123 **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. Further training in spoken and written French, study of the structure of the language, and reading of important literary texts. Conducted in French. *Mrs. E. Monsma.*

**202 Intermediate French.** S. Continuation of French 201. *Mrs. E. Monsma.*

**215 Advanced French.** F. For the advanced student who wishes to improve facility in the language, or who is preparing for graduate study or for the teaching of French. Work 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. Work 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. E. Monsma.*

**216 Advanced French.** S. Continuation of 215. *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. 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. *Mrs. E. Monsma.*

**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 1981-82.

**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 1981-82.

**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 1981-82.

**390 Independent Study.\*** 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

**272 Introduction to French Culture and Civilization.** An introduction to the cultural traditions of France and to the way these are reflected in its social, political, and religious institutions and in its literature, art, and music. The course is taught in English; no knowledge of French is required. Satisfies the foreign culture option for students in designated programs. *Staff.*

**372 French Civilization.** F odd years. A study of examples of non-literary artistic ex-

pressions 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. Not offered 1981-82.

#### JANUARY 1982 INTERIM

**I-50 Québec Live: Interim in "La Belle Province"**. Students will spend three weeks in Jonquières and in Québec City studying language and culture. Each student will stay with a québécoise family, attend French classes in the morning and visit cultural institutions and historical points of interest in the afternoon along with skiing, skating, and other sports. There will be a two-day

visit to Montréal at the end of the stay. Prerequisite: 201 or the equivalent and permission of the instructor. Fee of \$650. Mrs. C.-M. Baldwin.

**I-51 From Fiction to Film**. Students read a number of recent works of fiction and then view the feature films which these works inspired. Exercises in conversation, vocabulary building, oral comprehension (by means of recordings from film and sound tracks), some study of techniques in writing and in film. Conducted in French and in English. For intermediate, advanced, and former students of French who like *la lecture* and *le cinéma*. Prerequisite: 201 or equivalent. Mr. A. Otten.

**Idis I-19 Boarding House, Town House, Bawdy House: History through Fiction**. Mrs. E. Monsma.

---

## Geology, geography

Professors R. Griffioen (chairman, Department of Physics), †C. Menninga  
Associate Professor D. Young

COURSES in geology and geography are offered to serve the needs of teachers, of students wishing to broaden their perspective and strengthen their general science knowledge, and of those wishing a minor concentration in the area. A major program of concentration is being planned for 1982-83.

The six-course minor consists of Geology 151 or an appropriate alternative, 152, 261, 312, plus additional courses approved by the adviser. Group majors involving geology and chemistry, engineering, or physics are also available.

A group major in science and mathematics meets the needs of some students, particularly those in professional 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 chairmen of the three departments involved must approve such programs.

Prospective elementary and secondary teachers may minor in geology and geography. Elementary science studies group majors require either Geology 103 or 113 and social studies group majors require Geography 101 or a three-course sequence involving Geology 103 or 113, Geography 201, and 210. The teacher education adviser is Mr. Vernon Ehlers of the Department of Physics.

The core requirement in the physical sciences may be met by Geology 103 or in the natural sciences by 151 and 152.

## GEOGRAPHY

**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.*

**201 Introduction to Cultural Geography.** F alternate years. 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: 103 or 113. Not offered 1981-82.

**210 Geography of North and South America.** F alternate years. 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. Prerequisite: 103 or 113. *Mr. G. Oosterman.*

## GEOLOGY

**103 Man and the Earth.** F and S, core. An introduction to geology. A study of the materials and processes of the Earth leading to a responsible Christian appreciation for and use of the Earth. The principles of geology are explored through a survey of the history of the ideas about the Earth. Basic insights of chemistry, biology, physics, and mathematics are applied to the solution of practical geological problems, with emphasis on such geological hazards as earthquakes, volcanic eruptions, floods, marine erosion, and mass wasting and on the nature and distribution of fossil fuels, metals, ground water, and other mineral resources. Laboratory. *Mr. D. Young.*

**105 Introductory Field Geology.** Summer. An introduction to geology through intensive field study. Students learn the basic principles of geology and become familiar with important earth materials and processes by means of first-hand observation of such features as the Cascade Range volcanoes, the Pacific Ocean coast, the Klamath Mountains, and the rivers and lakes of southern Oregon. Students live for about four weeks at a base camp located east of Ashland, Oregon, near the crest of the Cas-

cade. Not open to students who have taken 103 or 151. Prerequisite: permission of instructor. *Mr. D. Young.*

**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, atmosphere, oceans, and processes giving rise to changes in earth's crustal and surface features. Laboratory. *Staff.*

**151 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; and the earth as a representative planetary body in space. Includes laboratory. *Staff.*

**152 Historical Geology.** S, core. 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: 151. *Staff.*

**261 Mineralogy.\*** F. 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. Prerequisites: Geology 151 and Chemistry 103. *Mr. D. Young.*

**312 Structural Geology.\*** S. An analysis of common geological structures such as folds, faults, joints, and foliation; inquiry into the nature of stresses producing these structures; and discussion of the regional structures of North America and Europe with particular reference to the geology of the Appalachians. Laboratory, field trip. Prerequisite: completion of or concurrent registration in 152. *Mr. D. Young.*

**371 Petrology I.\*** F, alternate years. A study of the mineralogy, chemistry, structure, and texture, field associations, tectonic setting, and genesis of the earth's major rock types. Emphasis is placed on the description and theory of formation of igneous rocks. The petrographic microscope is extensively used in rock identification and interpretation. Laboratory. Prerequisite: 261. *Mr. D. Young.*

372 **Petrology II.\*** S. A continuation of 371 involving the study of the earth's major rock types. Emphasis is on the description and theories of formation of the metamorphic and sedimentary rocks. Laboratory, field trip. Prerequisite: 371. *Staff.*

390 **Independent Study.\*** F,I,S. Full or half course. Prerequisite: permission of department. *Staff.*

#### GRADUATE COURSES

520 **Advanced Earth Science.** 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 relationship 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 topics and concepts which can be incorporated into elementary,

middle, and secondary school materials and activities. Prerequisite: Earth Science 113 or permission of department. *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 1982 INTERIM

I-10 **Grand Junction, Grande Prairie, Grand Rapids.** Three out of four North Americans live in metropolitan areas. Are cities reflections of the City of God or cesspools of collective wickedness? Or both? Or neither? A study of urban geography addresses these questions and enables students to analyze the origins and growth patterns of cities and to project their possible further development. Lectures, readings, films, guest speakers, possible field trips, and a paper. *Mr. G. Oosterman.*

---

## German

*Professors W. Bratt, J. Lamse*

*Associate Professors C. Hegevald (chairman, Department of Germanic Languages), M. J. Lamse*

*Assistant Professor B. Carvill*

PROGRAMS FOR STUDENTS wishing to major in German are worked out for them individually by departmental advisers who should be consulted early. To be eligible a student must have completed at least two courses in German with a minimum grade of C (2.0) and must have completed 101-102, 121-122, or the equivalent.

The typical major requires ten courses in addition to the elementary courses and must include 123, 202, or the equivalent, 215, and at least two courses at the 300-level. Six-course minors are possible; education minors must include 215. The nine-course teacher education major must include 215, 216, 250, and two 300-level courses. Students in this program must pass a German grammar test prior to the teaching internship, which is offered only during the spring semester. The teacher education adviser is Mrs. B. Carvill.

Calvin-sponsored programs are available in Germany and Austria for the

interim, a semester, or an academic year. Students interested in such programs should work out the details with the chairman and the registrar.

The fine arts core may be met by German literature courses numbered 217 and above.

## LANGUAGE

101 **Elementary German.** F. A beginner's 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 but who, on the basis of a placement test, are not prepared for 201. The course is also open with the permission of the department to students in teacher education programs who have had no foreign language in high school. *Staff.*

201 **Intermediate German.** F, core. Selected readings, with a continued emphasis on the development of spoken and written German. Prerequisite: 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: 123 or 202. *Mr. J. Lamse.*

216 **Advanced Oral and Written Composition.** S. Continuation of 215. *Mrs. B. Carvill.*

## LITERATURE

217 **Readings in Major German Authors.** F, core. Basic introduction to German literature. Selected readings in major German authors from 1750 to 1850. Prerequisite: 123 or 202. *Mrs. B. Carvill.*

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, 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: 123 or 202. *Mr. C. Hegewald.*

301 **Classicism.\*** F, even years. 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 1981-82.

303 **Romanticism.\*** S, odd years. The literary theory and philosophical-religious basis of the German romantic movement as reflected in representative works of both earlier and later Romanticists. Prerequisite: 217, 218, or permission of the instructor. *Mr. J. Lamse.*

304 **Realism.\*** S, even years. 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 1981-82.

305 **Nineteenth Century Drama.\*** S, even years. 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. *Mrs. B. Carvill.* Not offered in 1981-82.

306 **Literature of the German Democratic Republic.** F. A survey of East German literature from its beginnings in the late 1940's to the present. The course includes an analysis of the relationship of the literature to the literary theories of Socialist Realism as well as to the political and social structure of the German Democratic Republic. Prerequisite:

sites: 217, 218, or permission of the instructor. *Mrs. M. J. Lamse*. Not offered 1981-82.

**307 Early Twentieth Century Literature.\*** F, odd years. Selected readings in German and Austrian literature from 1890 to 1940, with special emphasis on the works of Schnitzler, 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. Readings in German literature from 1945 to the present from such writers as Andersch, Frisch, Böll, and Grass. Lectures, discussions, and assigned papers. Prerequisite: 217, 218, or permission of the instructor. *Mrs. M. J. Lamse*.

**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.\***

#### CIVILIZATION

**361 Introduction to Modern German Culture.** S. 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 1982 INTERIM

**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 a week 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 \$1,100. *Mr. W. Bratt*.

**Idis I-10 Folklore of Foreign Lands.** *Mr. C. Hegewald*.

**Idis I-17 German Cinema and Society.** *Mrs. M. J. Lamse*.

---

## Greek

SEE THE DEPARTMENT OF CLASSICAL LANGUAGES for a description of courses and programs of concentration in Greek.

---

## History

*Professors R. Bolt, H. Brinks, B. De Vries (chairman), H. Ippel, D. Jellema, G. Marsden, H. Rienstra, F. Roberts, D. Van Kley, E. Van Kley, R. Wells*  
*Associate Professor D. Diephouse*  
*Assistant Professor S. Greydanus*

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, 102, or 102 Honors, the departmental seminar (395), and a program emphasizing either American, European, or World History concentrations. One upper-level interim course may be included in the required nine courses. 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. The 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, 312 (or 211 plus either 355 or 356); 360, and two others. 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. One upper-level interim course may be applied to a minor concentration. Students seeking special advice on teacher education programs, including group majors for middle school teaching, should consult Mr. S. Greydanus.

The core requirement in history must be met by one course from 101, 102, or 101 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.*

101 **Honors Western Civilization.** F, core. A study of the twelfth century in Europe. The emphasis is on the emergence of Humanism and the discovery of the Individual. Readings in classical secondary accounts and in original sources are the basis for writing four papers. No examination.

Enrollment limited to students with a 3.3 cumulative grade point average. *Mr. H. Rienstra.*

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.*

201 **Ancient Near East.\*** F. A cultural history of the ancient Near East from prehistory to Alexander, based on evidences from archaeology and cultural anthropology as well as on ancient texts in translation, Biblical accounts, and contemporary historical rec-

ords. Special consideration is given to geographical setting, artistic and linguistic traditions, and cultural contacts with European civilizations. *Mr. B. De Vries.*

**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 modernist movements in Islam, and the problems of the contemporary states. *Mr. B. De Vries.*

**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 civilizations 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. *Mr. 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. S. Greydanus.*

**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 France.\*** S. 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 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, and 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. Not offered 1981-82. Either Classics 311 or 312 may substitute for this course in history concentrations.

**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. F. Roberts.*

**303 Renaissance and Reformation Europe.\*** F and S. Studies in topics in European history from 1300 to 1650. Attention is given 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. The history of Europe from the French Revolution to World War I. Special attention is paid to social and cultural developments, including the rise of industrial society, ideologies and protest movements, nation-building, mass politics, materialism, and the *fin de siècle* revolution in art and thought. *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 355. *Mr. D. Armour, 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.\*** S. A topical analysis of twentieth century history, stressing Europe's place in a global civilization. Major themes include the growth of collectivism; the impact of mass democracy; the "international civil war"; the emergence of Third World societies; and the character of contemporary art, thought, and popular culture. *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 1981-82.

**351 English Constitutional History.\*** S. A study of the origins and subsequent developments of English law, legal institutions and constitutional usage 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.\*** S. An analysis of the changing intellectual patterns in American society 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. *Mr. S. Greydanus.*

380S **Field Work in Middle East Archaeology.** 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 nonliterary 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 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 which students will relate to the curriculum and philosophy of social studies teaching from a Christian perspective. *Mr. S. Greydanus.*

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. *Staff.*

590 **Independent Study** 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 1982 INTERIM

I-10 **"Our Dancing Has Turned to Mourning:" Native Americans in Canada and the United States.** Students examine the clash of two civilizations on both sides of the forty-ninth parallel and explore white attitudes and governmental policies which resulted in unjust treatment of the Native Americans in the mosaic Canadian society and in the integrative society of the United States. Readings, films, and a research paper. *Mr. S. Greydanus.*

I-11 **The City in History.** An introduction to the study of urban history based on a reading of Lewis Mumford's *The City in History*. Cities are studied historically as they emerge from prehistoric village sanctuaries to the classical polis of Greece and Rome, and from the early industrial cities to the contemporary megalopolis. Each student will be required to write a short paper on the history of a particular world city. There will be an examination on Mumford's text. *Mr. H. Rienstra.*

I-50 **The Voice of the Past—Oral History.** Oral history is a form of research which has broad usefulness for teaching history in elementary and high schools and for gathering data for family, school, church, and community histories. From a do-it-yourself approach supported by readings, lectures, audio-visual materials and visits to oral history centers, students will become aware of the possibilities, challenges, problems, and results of this method. Paper. Prerequisite: sophomore standing. *Mr. H. Ippel.*

I-53 **Progressive Presidents and Their Age: Roosevelt, Taft, and Wilson.** A study

of the first three American presidents of the twentieth century and of the Progressive Era with which they are associated. This course concerns itself with the American politics, society, and diplomacy of that time and utilizes the work of writers such as Richard Hofstadter, Eric Goldman, Gabriel Kolko, George Mowry, and Arthur Link. Two or three books on the Progressive Era will be prescribed as well as individual oral reports and written reviews on periodical literature and books. Mid-term and final examinations based on reading and class presentations. Prerequisite: 101 or 102. *Mr. R. Bolt, Mr. C. Bult.*

**I-55 The Irish in Ireland and America.** Both the population explosion and Irish union with Britain in the nineteenth century serve as a backdrop to the famine and subsequent mass emigration to the United States. This course considers the resulting social dysfunction and adaptation patterns

of Protestant and Catholic Irish in both the United States and Ireland during the "modernization" of the nineteenth and twentieth centuries. Students will also focus on the impact of events in Ireland on Irish-Americans and their contribution to the resolution of the ethno-religious conflict in Ireland. Some knowledge of modern history is assumed. Readings, class discussions, and a short paper. *Mr. R. Wells.*

**Idis I-17 German Cinema and Society.** *Mr. D. Diephouse.*

**Idis I-19 Boarding House, Town House, Bawdy House: History through Fiction.** *Mr. D. Van Kley.*

**Idis I-50 Christianity, Learning, and Culture II.** *Mr. G. Marsden. (M.A. in C.S.)*

**Idis I-52 Calvinist Roots: Conservative or Radical?** *Mr. D. Jellema.*

---

# Latin

SEE THE DEPARTMENT OF CLASSICAL LANGUAGES for a description of courses and programs of concentration in Latin.

---

# Mathematics

*Professors \*P. Boonstra, T. Jager, †S. Leestma, L. Nyhoff, C. Sinke (chairman), G. Van Zwalenberg, P. Zwier*

*Associate Professor †J. Kuipers*

*Assistant Professors D. Brink, G. Hoekema, D. Reber, M. Stob, G. Venema*

*Instructors M. Bultje, J. Dersch, D. Wolthuis*

A MINIMUM GRADE of C (2.0) in 211 is required for admission to a program of concentration in the department. The program includes 111, 112, 211, 212, 351, two semesters of 391, three additional courses numbered 300 or above, Computer

Science 108, and one upper-level interim course. Students with deficiencies in algebra or trigonometry should take 110 before enrolling in 111.

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. During the spring of their junior year students should take 321 or 331 and, ordinarily, they will do their directed teaching in the spring semester of their senior year. The six-course minor for prospective teachers consists of 111, 112, 211, 321, 351, and one additional 300-level course. The adviser for secondary teacher education programs is the chairman; the adviser for elementary education programs is Mr. Vernon Ehlers of the Department of Physics.

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 concentrations involving economics, philosophy, and other departments are possible on an individual basis.

The core requirements in mathematics may be met by two semesters of Senior Mathematics in high school or by 107, 109, 111, or 205.

**109 Elements of Modern Mathematics.** F and S, core. An introduction to the content, methodology, and history of mathematics. Among the topics which may be covered are cardinal numbers and set theory, axiomatic systems, probability theory, computer programming, groups and fields, and number theory. Prerequisites: a year of high school algebra and geometry. *Staff.*

**110 Elementary Functions.** F. A course in elementary functions to prepare students for the calculus sequence. Topics include the properties of the real number system, inequalities and absolute values, functions and their graphs, solutions of equations, polynomial functions, trigonometric functions, exponential and logarithm functions. Prerequisite: two years of high school mathematics. *Staff.*

**111 Calculus and Analytic Geometry I.** F and S, honors 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 II.** F and S, honors section. Transcendental and

hyperbolic functions, formal integration, analytic geometry, polar coordinates, vectors, 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; not open to those who have completed 111. Prerequisite: two years of high school mathematics. *Staff.*

**206 Finite Mathematics, Probability, and Statistics.** S. 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 Fundamental Concepts in Mathematics: Geometry.\*** S. The principal focus of this course 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. Acceptable in non-mathematics MAT concentrations. Prerequisite: 107 or 109. *Staff*. Not offered 1981-82.

**211 Calculus and Analytic Geometry III.** F and S, 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: 211. *Staff*.

**241 Elementary Statistics.** F and S. An introduction to the concepts and techniques of statistics, designed for students with limited mathematical background. Topics include descriptive statistics, elementary probability theory, random variables and probability distributions, binomial and normal distributions, sampling distributions, estimation, hypothesis testing, regression and correlation, analysis of variance, non-parametric methods. The student is also introduced to use of the computer in statistical computations and simulations by means of statistical packages such as MINITAB and SPSS. No prior knowledge of computing is required. Prerequisite: two years of high school mathematics. *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: 212. *Mr. G. Van Zwalenberg*.

**314 Complex Variables.\*** S. Complex numbers, complex functions, integration and the Cauchy integral formula, power series, residues and poles, conformal mapping. Prerequisite: 211. *Staff*.

**321 Foundations of Geometry.\*** S. Consideration of Euclidean geometry as an

axiomatic system, introduction to non-Euclidean geometry, the Poincaré model. Prerequisite: 112. *Mr. P. Boonstra*.

**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. *Staff*. Not offered 1981-82.

**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: 211. *Mr. P. Zwier*.

**344 Mathematical Statistics.** A continuation of 343 including theory of estimation, hypothesis testing, nonparametric methods, regression analysis, and analysis of variance. Prerequisite: 343. *Mr. P. Zwier*.

**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. M. Stob*.

**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. *Staff*.

**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. *Mr. G. Venema*.

**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. Not offered 1981-82.

**381 Advanced Logic.\*** S. Topics include the formalization of propositional and quantificational logic. Taught jointly with the Philosophy Department and also listed as Philosophy 381. *Mr. T. Jager.*

**390 Independent Study.\*** 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.*

**391 Colloquium.** F and S, quarter course. Meets weekly for an hour for the presentation of various topics in mathematics, computer science, and related disciplines by students, faculty, and visiting speakers. Majors in mathematics and computer science must register for two semesters of this course. Prerequisite: 212, Computer Science 251, or 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: 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 Advanced Methods and Materials in 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.** 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 1982 INTERIM

**I-10 Elementary Functions: An Algorithmic Approach.** This course introduces the definitions, properties, calculations, and applications of elementary functions and includes algebraic functions, trigonometric functions, exponential functions, and logarithmic functions. After the theory has been developed, the class will study approximations suitable for use in computing in order to understand how functions are evaluated in practice. Students will be introduced to the BASIC programming language in order to be able to calculate some of these approximations. Some numerical procedures for estimating functional values will also be developed. Students will be required to work together in groups on computer projects which illustrate the use of the techniques. Prerequisite: two years of high school algebra or its equivalent. Not open to students who have had 111. *Mr. D. Brink.*

**I-11 Games and Decisions.** Various mathematical models of rational decision making are presented in this course but the primary model will be game theory, a model for decision making in competitive situations. The mathematics of game theory is presented, possible applications are suggested, and the adequacy of the theory as a psychological theory is discussed. Other topics include voting, bargaining, and group decision making. The mathematics prerequisite is high school algebra and students will work with problem sets. They will develop projects that

may be mathematical, experimental, or philosophical in nature. *Mr. M. Stob.*

**I-12 Gödel, Escher, and Bach.** Artificial intelligence is the focus of an excitingly clever Pulitzer Prize winning book by Douglas R. Hofstadter. The course is centered around this book, *Gödel, Escher, Bach: An Eternal Golden Braid*, which is a challenging statement of the author's religion. Lewis Carroll-style dialogues parodying Bach fugues introduce each chapter in a way which makes reading utterly delightful. Zen Buddhism, genetics, logic, Escher, Fermat's Last Theorem, Bach, beauty, brains, non-Euclidean geometry, the soul, and Gödel's Theorem are just a few of the topics interwoven into this exquisite blend of ideas. The course will be especially suited for those with backgrounds in mathematics, philosophy and/or computer science, although a motivated person lacking such qualifications can also learn much from and enjoy the course. In class: discussions, lectures, music by Bach and Cage, computer demonstrations, student presentations. Out of class: reading *GEB* and researching topics of interest. *Mrs. D. Wolt-huis.*

**I-50 Where Did Calculus Come From?** This course is a survey of the origins, uses, and abuses of the calculus in mathematical and scientific thought and traces the development of the calculus from its humble beginnings in Greek mathematics to the present day frontier of non-standard analysis. Major emphasis is placed on the men, problems, and schools of thought which either contributed to or detracted from the birth and growth of the calculus. Students will be encouraged to solve a variety of interesting, non-routine problems, and will be asked to write a course paper. A fascinating course for anyone who has an interest in the history of mathematics and science, and particularly useful to those who

plan to teach high school mathematics. Prerequisite: 111. *Mr. J. Dersch.*

**I-51 Transform Methods.** The purpose of the course is to study the Z-transform, which associates a Laurent series with a given sequence. The Z-transform plays the same role in the solution of linear difference equations as the Laplace transform does in the solution of linear differential equations. Following the development of the properties of the Z-transform, applications are given in engineering and operations research. A short basic treatment of complex variables provides a background for this study and is followed by an introduction to the Laplace transform. Similarities between the Laplace transform and the Z-transform are exploited. The participants are expected to study, work problems, and present solutions to the class. Prerequisite: 211. *Mr. G. Van Zwalenberg.*

**I-52 Calculus on Manifolds.** This is a course in that part of differential geometry and analysis which is centered around Stokes' theorem. Stokes' theorem and its companions, Green's theorem and the divergence theorem, are important in classical mathematics and essential in many areas of engineering and physics. The goal of the course is to give a unified, modern treatment of the mathematics which goes into them and, through that, a better understanding of the classical results themselves and an appreciation of the power and elegance of a modern approach. The first part of the course is devoted to multivariate calculus: functions on Euclidean spaces, differentiation, and Riemann integration; the remainder to the study of curves, surfaces and higher-dimensional analogues (manifolds). Prerequisite: 212 or 352. *Mr. G. Venema.*

**111 Calculus I.** *Mr. T. Jager, Mr. P. Zwier.*

---

## Music

*Professors J. Hamersma, H. Slenk (chairman protem, second semester), \*\*C. Stapert, \*\*D. Topp (chairman), J. Worst*

*Associate Professors D. De Young, G. Huizenga, C. Kaiser*

*Assistant Professors M. Mustert, R. Rus*

STUDENTS MUST COMPLETE 103, 104, 114, and 124 with a minimum grade of C (2.0) in each for admission to a music major concentration. Applicants will be informed of the department's action within a month after completing these courses. Various concentrations are offered by the department.

*Programs for students preparing for graduate work in music*

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, 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.

*Programs for students preparing to teach in the schools*

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, 213, 223, 224, 237, 239, 303, and 304; 180 each semester; six semesters of 131 or 141 for vocal music or six semesters of 161 or 171 for instrumental music; plus four and a quarter additional courses from one of the following concentrations: *instrumental music*, 197, 198, 315, 337, five semesters of 140, 150, 160, or 170; and one half course elective; *vocal music*, 311 or 312; 313, or an approved interim; 338; two semesters of 120; and five 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, one course elective, 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 fewer 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.

*Programs for students interested in church music*

Students preparing for work in church music must take 103, 104, 113, 114, 123, 124, 180, 203, 213, 214, 223, 224, 237, 238, 304, 319, one course from 204, 241, or 303, and six courses from one of the following areas: *organ*, 110 (two semesters), 210 (six semesters), 130 (two semesters), 131 or 141 (four semesters) and an interim in church organ music; *choir*. (The program for church choir directors is being developed for the 1982-83 academic year.)

A six-course minor in church music includes 103, 113, 123, 236, 237, and three

additional course units in organ or choir. The organ group requires six semesters of 110; 130; 131 or 141; and an interim in church organ music. The choir group requires four semesters of 130, two semesters of 131 or 141, two semesters of 110 or 120, and an interim in church choral music.

#### *Programs for students with a liberal arts interest in music*

A nine-course general education program is available for students not expecting 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.

#### *General regulations and advisers*

The adviser for applied music majors is Mrs. R. Rus and the adviser for music education programs is Mr. D. Topp. 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. Such students during their first semester at Calvin must validate their transfer credits in keyboard harmony and aural perception with Mrs. R. Rus. Those not meeting minimum standards will be required to enroll in 113 or 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, 238, or 241. 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 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. *Mr. C. Kaiser.*

**232 An Introduction to Music Literature.\*** S, 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. *Mr. C. Kaiser.*

**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.*

**234 History of Music.\*** S, core. A study of the art of music from Bach to the present. Score studies, listening repertory, and reading. *Staff.*

**235 Chamber Music.\*** F odd years, core. A general course designed to provide the his-

torical and musical background necessary 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 1981-82.

**236 Church Music.\*** F and S. 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. Recommended for pre-seminary students. *Mr. J. Hamersma.*

**237 Conducting,** S, half course. A course in basic, general conducting, normally taken in the sophomore year. Prerequisite: 103 or its equivalent. *Mr. D. De Young.*

**241 American Popular and Traditional Music.** F and S, core. A survey of four basic genres of popular American music showing their roots in European art music and in American folk music, particularly in country music, folk music, blues and jazz, and rock. *Mr. J. Worst.*

#### 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. *Mrs. G. Huizenga, 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. *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. The student is required to play all the major, minor, and modal scales as well as easy chord progressions using all the diatonic triads in root position and some in first and

second inversion. To be taken concurrently with 103. Prerequisite: piano skills. Others will be required to take remedial piano. *Mrs. R. Rus.*

**114 Keyboard Harmony II.** S, quarter course. A continuation of 113. The student is required to play progressions involving seventh chords in their various inversions, to demonstrate the ability to use secondary dominants at the keyboard, and to modulate to closely related keys by means of common chord and chromatic modulation. *Mrs. R. Rus.*

**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. Rhythmic perception involves all note values and rests in various combinations, with an emphasis on duplet and triplet contrasts. Melodic perception involves all intervals smaller than an octave above and below a given note. Harmonic perception involves the major and minor triads in root position, first inversion, and second inversion as well as augmented and diminished triads. To be taken concurrently with 103. *Mrs. R. Rus.*

**124 Aural Perception II.** S, quarter course. A continuation of 123. Rhythmic perception in this course involves the use of ties and syncopation, melodic perception involves the intervals between the octave and the twelfth including one and two-part melodic dictation, and harmonic perception involves the dominant seventh chords as well as harmonic dictations using the chords and triads studied in 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. *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. *Mr. J. Worst.*

**213 Keyboard Harmony III.** F, quarter course. A continuation of 114. To be taken concurrently with 203. Prerequisite: 114. *Mrs. R. Rus.*

214 **Keyboard Harmony IV.** S, quarter course. A continuation of 213. *Mrs. R. Rus.*

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 Materials of Music V\*.** F. A continuation of 204. A study of Western music prior to 1500. Prerequisite: 204. *Mr. C. Stapert.*

304 **The Literature and Materials of Music VI\*.** S. A continuation of 303. A study of the Western music of the late Renaissance and early Baroque eras. Prerequisite: 303. *Staff.*

### ADVANCED COURSES

311 **Vocal Polyphony of the Renaissance\*.** S. A study of the vocal style of Palestrina. Exercises in modal counterpoint. Listening repertory of compositions. Prerequisite: 303. Not offered 1981-82.

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. Prerequisites: 304 or 104 and 233. *Mr. H. Slenk.*

313 **Studies in Music History: Classic and Romantic.** F. A study of musical style and thought in the late eighteenth and early nineteenth centuries. Ideas about the nature of Classicism and Romanticism in the various arts are examined for their relevance to the understanding of the music of the period. Readings in the musical, literary, and philosophical sources of the period as well as in more recent writers about the period. Analytical score study of representative works; listening repertory of compositions; several short papers or oral reports. Prerequisite: 203. *Mr. C. Stapert.*

315 **Arranging, Orchestration, and Scoring\*.** F. 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 and S. Writing in contemporary forms and according to contemporary practice. Prerequisite: 104 or permission of the instructor. *Mr. J. Worst.*

319 **Advanced Church Music\*.** 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 1981-82.

337 **Instrumental Conducting.** F, half course. A course in advanced conducting techniques appropriate to bands and orchestras. Prerequisite: 237. *Mr. D. De Young.* Not offered 1981-82.

338 **Choral Conducting.** F, half course. A course in advanced conducting techniques appropriate to choirs. Prerequisite: 237. *Mr. H. Slenk.* Not offered 1981-82.

390 **Independent Study\*.** F, I, S. *Staff.*

### 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.) Only open to freshmen with permission of instructor. *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

*Not more than two course units of credit in applied music and drama may be applied to the minimum requirements for graduation unless the*

addition is part of a designated major or minor music concentration.

#### INDIVIDUAL LESSONS

At least twelve lessons a semester are required and students taking individual lessons must also register for 180.

**110 Organ.** Quarter course. Individual lessons in organ emphasizing skills for the church organist. *Mrs. S. Boomsma, Mr. J. Hamersma.*

**120 Piano.** Quarter course. Individual lessons in piano. *Mrs. T. Hoekman, Miss S. Kleinhuizen, Mrs. B. Mustert, Mrs. R. Rus, Mrs. M. Vanden Berg.*

**130 Voice.** Quarter course. Individual lessons in voice. *Mrs. T. Haan, Mrs. G. Huizenga, Mr. C. Kaiser, Mrs. M. Winter.*

**140 Brasses.** Quarter course. Individual lessons in cornet, horn, baritone, trombone, or bass horn. *Mr. F. Baker, Mr. D. De Young, Miss M. Gage.*

**150 Percussion.** Quarter course. Individual lessons in snare drum, tympani, and other percussion instruments. *Mr. B. Pulk.*

**160 Strings.** Quarter course. Individual lessons in violin, viola, violoncello, bass viol, or classical guitar. *Miss D. Mc Elfish.*

**170 Woodwinds.** Quarter course. Individual lessons in flute, clarinet, bassoon, saxophone, or recorder. *Mr. R. Anderson, Mrs. R. Bylsma, Mr. C. King, Mr. L. Lieberson, Mr. B. Weinstein.*

**200 Recital Coaching.** F and S, no credit. This course is required of all recitalists who will use keyboard accompaniment. *Mrs. R. Rus.*

**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.*

**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. *Mr. D. De Young.*

**260 Advanced Strings.** Half course. Individual lessons for the music major concentrating in violin, viola, violoncello, bass viol, or classical guitar. *Staff.*

**270 Advanced Woodwinds.** Half course. Individual lessons for the music major concentrating in flute, oboe, clarinet, bassoon, saxophone, or recorder. *Staff.*

#### 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, half course. 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. D. De Young.*

**198 Woodwinds and Percussion.** F even years, half course. Class lessons in woodwind and percussion instruments for the music major concentrating in instrumental music education and others wishing to learn a secondary instrument. *Staff.* Not offered 1981-82.

#### ENSEMBLES

**101 Men's Choir.** F and S, no credit. Open to general college students. *Mr. A. Armstrong.*

**111 Women's Choir.** F and S, no credit. Open to general college students. *Mr. A. Armstrong.*

**121 Collegium Musicum.** F and S, quarter course. A series of honors ensembles open to singers and instrumentalists who also participate in the choir, band, or orchestra. Music from all periods is studied and performed. The Old Instrument Consort is an ensemble open to keyboard, woodwind, brass, and string instrumentalists who meet the demands of musicianship and who are interested in performing on old instruments. A Flute Choir and a Trombone Choir are open to players of those instruments. *Mr. D. De Young, Mr. C. Stapert.*

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. M. Mustert.*

151 **Studio Lab Band.** Quarter course. 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. *Mr. M. Colley.*

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. *Mr. D. De Young.*

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. *Staff.*

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. *Mr. H. Slenk.*

## GRADUATE COURSES

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.*

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.*

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.*

580 **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.** 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 1982 INTERIM

I-10 **Music Appreciation—Cafeteria Style.** 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 requires the purchase of a paperback or record and consists of three days of classroom presentation and discussion, a fourth day for individual con-

fine  
art  
core

ferences and a 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. D. De Young, Mr. J. Hamersma, Mr. C. Kaiser, Mr. H. Slenk.

**I-11 Basic Music Theory.** The elements of music are studied with an emphasis on rhythm, melody, and harmony. Includes

lectures, class discussions, 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 skills who have little or no theory background; for students considering a music major or a major involving music; and for students who did poorly in first semester music classes but wish to continue in some form of music major. Prerequisite: ability to read music in at least one clef. Mrs. G. Huizenga.

---

# Philosophy

Professors P. De Vos, K. Konyndyk (chairman), R. Mouw, C. Orlebeke, A. Plantinga, †N. Wolterstorff

Associate Professors G. Mellema, D. Ratzsch

Assistant Professors J. Cooper, T. Plantinga

Instructor L. Hardy

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, core. 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 perspec-

tives. It also aims to give the student some sense of the history of philosophy. 151 is a prerequisite to 152. Mr. E. Runner.

153 **Introduction to Philosophy.** F and S, core. 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. *Staff.*

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. G. Mellema.*

### INTERMEDIATE SYSTEMATIC COURSES

*All intermediate courses presuppose one course in philosophy.*

202 **Philosophy of Law.** A consideration of such topics as: the nature and types of law; sources of law; and the basis of a legal system, of legal and political authority, of obedience to law, and of human rights. *Mr. P. De Vos.*

203 **Philosophy of Science.** F and S. During the fall semester this course focuses on philosophical problems arising out of the methods and results of the *physical* sciences and will be taught by Mr. D. Ratzsch. During the spring semester the course deals with philosophical problems arising out of the methods and results of the *social* sciences and will be taught by Mr. L. Hardy.

204 **Philosophy of Religion.\*** F. A study of some philosophical questions arising from religious belief. *Mr. A. Plantinga.*

205 **Ethics.\*** F and S. A course designed to deal both historically and situationally with the persistent problems of the moral life. *Mr. R. Mouw.*

206 **Philosophy of History.\*** An examination of several topics in both the speculative and analytical philosophy of history. *Mr. T. Plantinga.*

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. H. Woldring.*

208 **Aesthetics.\*** S. A study of the nature of art and aesthetic judgments. *Mr. C. Walhout.*

209 **Philosophy of Education.\*** S. A study of the nature, aims, and principles of education. *Mr. G. Mellema.*

### INTERMEDIATE HISTORICAL COURSES

*All intermediate courses presuppose one course in philosophy.*

210 **History of Ancient Philosophy.** F. A history of philosophy from Thales to Aristotle. *Mr. C. Orlebeke.*

220 **History of Medieval Philosophy.** S. 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. K. Konyndyk, Mr. T. Plantinga.*

240 **History of Contemporary Philosophy.** F. A study of major movements in recent and contemporary Anglo-American philosophy. Preparation in the history of philosophy is recommended. *Mr. K. Konyndyk.*

243 **American Philosophy.\*** S. Not offered 1981-82.

### 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.* Not offered 1981-82.

322 **Thomas Aquinas.** F. A course in Thomistic thought which includes an analysis of portions of the *Summa Theologiae*. Not offered 1981-82.

331 **Kant.** F. A study of the *Critique of Pure Reason*. *Mr. L. Hardy.*

332 **Hegel.** S. A study of Hegel's philosophy. *Mr. T. Plantinga.* Not offered 1981-82.

333 **Kierkegaard.** S. Not offered 1981-82.

334 **Marx and Marxism.** F. A critical study of the thought of Karl Marx and his most

important interpreters, including Lenin and contemporary Marxist humanists. *Mr. J. Cooper.*

335 **Nineteenth Century Philosophy.** F. A study of the major figures in nineteenth century continental European philosophy. Not offered 1981-82.

340 **Twentieth Century Continental Philosophy.** S. A study of major figures in recent phenomenology and existentialism. *Mr. T. Plantinga.*

#### 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. J. Cooper.*

381 **Advanced Logic.\*** S. Topics include the formalization of propositional and quantificational logic. Taught jointly with the Mathematics Department and also listed as Mathematics 381. *Mr. T. Jager.*

390 **Readings and Research.\*** F, I, S. Prerequisite: permission of chairman. *Staff.*

395 **Ontology.\*** S. A study of selected topics of ontology. *Mr. A. Plantinga.*

#### 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. *Mr. G. Mellema.*

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 1982 INTERIM

I-10 **Heresy and Apologetics: Contending**

**for the Faith.** Students will deal with the issues involved in doctrinal, political, and scientific orthodoxy by examining Socrates, Luther, Voltaire, Spinoza, Nietzsche, Freud, Trotsky, Solzhenitzen, Hans Küng, and other rebels against political, scientific, and theological traditions. Such potential sources of authority as revelation, reason, history, and community are considered in an effort to determine appropriate ways to defend the faith (apologetics) and to define unacceptable teaching (heresy). Lectures, assigned readings, presentations by students. *Mr. T. Plantinga.*

I-12 **"By the Sweat of Thy Brow."** Most people would agree: work is no fun! In fact, in our culture, most people work like dogs fifty weeks a year in order to have fun the other two. However, there are those who find personal fulfillment only through the dogged pursuit of a professional career. In this course, students will examine the nature of human work and the biblical notion of "vocation" by reading and reflecting on philosophical and non-philosophical texts, and will examine contemporary attitudes toward work, play, money, entertainment, leisure, and "labor-saving" devices for possible distortions of the meaning and place of work in God's creation. Reading will range from Plato and Aristotle to Goudzwaard and Turkel. Open to all students who intend to get a job after graduation. No prerequisites. *Mr. L. Hardy.*

I-51 **A Seminar in the Philosophy of Logic.** Logic is usually presented in introductory logic courses as a cut-and-dried affair. Beneath the surface, however, lurk a number of lively issues—the nature and kinds of conditionals, necessity and possibility, propositions and sentences, the proper treatment of existence, famous logical paradoxes, etc. This seminar, which will consider such issues in both contemporary and historical settings, is oriented toward philosophical issues rather than toward logical formalism. Students will investigate and will be required to do research on a particular question or problem and report the results to the class. Prerequisite: a course in logic or consent of the instructor. *Mr. K. Konyndyk.*

Idis I-16 **Business Ethics.** *Mr. G. Mellema.*

Idis I-52 **Calvinist Roots: Conservative or Radical?** *Mr. R. Mouw.*

---

# Physical education

*Professors B. Steen, J. Timmer, M. Zuidema (chairman)*

*Assistant Professors R. Honderd, J. Pettinga, D. Tuuk, G. Van Anandel, D. Vroon, K. Wolters, D. Zuidema*

*Instructors E. Driesenga, N. Meyer, †N. Van Noord*

THE DEPARTMENT SERVES a number of functions—it provides a required but flexible sequence of physical education courses for all students; it offers professional training for physical education teachers, coaches, and recreation leaders; and it directs an extensive program of intramural, recreational, and intercollegiate sports for men and women.

Admission to any of the major concentrations requires the approval of the department chairman. The ten-and-a-half course teacher education major must include three quarter courses from 100-199, 201, 212, 215, 221, four courses from the 230 series, 301, 302, and 380 for one course unit of credit. Contingent on the appropriate directed teaching experience, a student may be certified at the elementary, secondary, or k-12 levels. The general major requires nine courses and must include 201, 212, 215, two course units from 230, 301, 302, and one course unit from 380. The seven-course teaching minor must include three quarter courses from 100-199, 201, 212, 221, 302, and 380 as a half course. With the approval of the department, 220, 221, or 312 may substitute in major programs for a course from the 230 series.

The program in recreation can lead to either a Bachelor of Arts degree or, if the student wishes, to a Bachelor of Arts in Recreation degree. Students in this program must complete a liberal arts major as well as a concentration in recreation. The adviser for this program is Mr. Glen Van Anandel.

The concentration in recreation consists of nine courses providing the context for the program (Biology 115, Psychology 151 and 211, Physical Education 215 and two course units from 220, 221, 230-239, or 312, Religion 301, and Sociology 151 and 310 or Psychology 310) and five to seven courses in the professional aspect of recreation (Recreation 304, 305, 310, and either two course units of 345 or four course units of 346.)

The liberal arts major may be either interdisciplinary or in a single department, depending on the interests of the student. An interdisciplinary group concentration requires five courses in one department and three in another and needs the approval of the adviser, of the chairmen of the departments concerned, and of the registrar. Departmental majors, generally following the requirements of the teacher education concentrations, are available in art, economics and business, music, physical education, psychology, sociology, religion and theology, and speech. Such programs are described in the departmental sections of the catalog.

## BASIC PHYSICAL EDUCATION COURSES

The total of one course unit in basic physical education is required as part of the liberal arts core. Normally students meet this requirement with four quarter

courses in four semesters but a three course option is available. Although students may take courses in addition to this, only one course unit of credit may be applied to the minimum graduation requirements.

The initial core course for all students should be 102, 103, 104, or 105. Subsequently, students must select activities courses from the 110-198 sequence until they have completed the required one course unit of credit. Older and handicapped students may satisfy the requirement with courses from 193, the Adaptive Program. Elementary education students as well as majors and minors in physical education may substitute 221, Elementary School Activities and Programs, for one of the courses in the 110-198 sequence.

Students entering Calvin College prior to September, 1979 must complete 199, Physical Fitness, as the final course in their basic physical education sequence.

**102 Weight Reduction.** F and S, quarter course. This is a specialized course for students needing and desiring to lose weight. It begins with a body weight and fitness evaluation and includes a study of nutritional and health fitness. Students are placed on a scientific program of weight loss and exercise. *Staff.*

**103 Therapeutic Fitness.** F and S, quarter course. This is a course for students with special medical problems or in need of specific cardio-respiratory fitness development. The college or family doctor is consulted in cases where a medical history is necessary. Fitness and medical needs are evaluated and prescriptive exercise programs are developed. *Staff.*

**104 Physical Conditioning.** F and S, quarter course. This course aims at building cardio-respiratory and muscular fitness. Various forms of aerobic fitness options are presented, students are told how to make intelligent exercise decisions, and they are introduced to the idea that health fitness maintenance is a Christian responsibility. The course includes readings, lectures, and guided exercise sessions. *Staff.*

**105 Health Fitness Dynamics.** F and S, half course. This course involves the study of positive health practices in health fitness, including cardio-vascular physiology, nutrition, and exercise. The course includes lectures, laboratories, and discussions along with three exercise sessions a week. This option is for students seeking a total health fitness building experience. *Staff.*

**110-189 Guided Instructional Program.** F, I, and S, quarter courses. Various play and sport options are offered in this program.

Students are introduced to the techniques and tactics of each sport and are given an opportunity to participate. Courses include: swimming, senior life saving, diving, archery, badminton, bowling, golf, handball, racquetball, tennis, gymnastics, weight training, basketball, volleyball, soccer, softball, folk and square dance, aerobics dance, orienteering, ice skating, cross-country skiing, and downhill skiing. Beginning and advanced skill classes are offered in most activities. Students should select courses that correspond to their skill levels. *Staff.*

**191 Specialized Instructional Program.** F, I, and S, quarter course. Individual activity options are available through this program. Approved options have included: aerobic fitness, individual and group experience in creative movement expression, and programmed learning in self-defense, skiing, cycling, and mountain climbing. Such programs can be arranged by individuals or groups. A staff member evaluates the requests and supervises the program when approved. *Staff.*

**193 Adaptive Program.** F, I, and S, quarter course. This is a specialized program for older students and those with physical handicaps. Such students should enroll in 103 as their first course and should complete three semesters of 193. Students who are eligible for this course should consult the physical education representative at registration. *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

initial personal inventories, aims to give each student a basis for maintaining life-long physical fitness. Will not be offered after 1981-82. *Staff.*

**221 Elementary School Activities and Programs.** See description under Professional Courses.

### PROFESSIONAL COURSES IN PHYSICAL EDUCATION

**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: a biology core course. *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: a biology core course. *Mr. J. Timmer.*

**220 Motor Learning and Skill Performance.** F. This course in the psychology of learning, particularly motor learning, emphasizes theory formation and empirical strategies and includes an examination of the various characteristics of the learner, an attempt to develop specific theories of how motor skills are acquired, and a review of teaching strategies that are appropriate for teaching them. The focus is on the learner, the learning process, and methods of instruction and includes an evaluation of growth and the developmental factors influencing learning. Concepts in integrative learnings such as perceptual-motor development, cognitive-motor development, and affective-motor learnings are examined. This course substitutes for one course unit in the 230 series. *Mr. M. Zuidema.*

**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. *Mrs. K. Wolters, Mr. M. Zuidema.*

**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.

230 Field Hockey. F. *Miss D. Zuidema.*

231 Basketball. F. *Mr. D. Vroon.* Not offered 1981-82.

232 Baseball/Softball. S. *Mr. J. Pettinga.* Not offered 1981-82.

233 Track and Field. S. *Mr. R. Honderd.*

234 Soccer. F. *Mr. M. Zuidema.* Not offered 1981-82.

235 Volleyball/Tennis. S. *Mr. D. Vroon, Mrs. K. Wolters.*

236 Football. F. *Mr. J. Pettinga.*

237 Gymnastics. S. *Staff.* Not offered 1981-82.

238 Wrestling. F. *Mr. J. Pettinga.* Not offered 1981-82.

**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.*  
Not offered 1981-82.

**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: a biology core course. *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. Students must complete at least 200 points before being approved for directed teaching. *Mr. B. Steen.*

**390 Independent Study.** F, I, S. *Staff.*

#### PROFESSIONAL COURSES IN RECREATION

**304 Systems and Structures of Recreation.** I. F. Modern recreation programs and their organization are identified and studied in this course with particular emphasis on administrative and leadership functions, recreational needs of social groups, and the design of recreational programs, including the problems of finances and facilities. Students observe recreational programs and facilities in therapeutic centers, churches, industry, and the community. Prerequisites: completion of the non-professional courses in the major. *Mr. G. Van Andel.*

**305 Systems and Structures of Recreation** II. S. Continuation of 304. *Mr. G. Van Andel.*

**310 Theories of Play.** F. A basic course in the theory of recreation. Professionals in

recreation need to understand the basic concepts, definitions, and theories of play and recreation to be able to carry out their professional responsibilities. An understanding of the history and theories of play provides a framework for students working toward a Christian perspective on play and recreation and toward their own theories, programs, and practices. Prerequisites: completion of the non-professional courses in the major. *Mr. G. Van Andel.*

**345 Field Instruction in Recreation.** F and S. Students are assigned to work with field instructors in recreational agencies enabling them to understand the specific agencies and the types of services provided. Individual programs are worked out by the college supervisor, the field instructor, and the student to enable the student to achieve his professional goal. May be repeated once. Prerequisites: 304, 305, 310. *Mr. G. Van Andel.*

**346 Field Internship in Recreation and Seminar.** F and S, four course units. Students electing this course are involved full time in a semester's field experience in a recreational agency. An accompanying seminar on campus focuses on the problems of relating theory to practice. Prerequisites: 304, 305, 310, a minimum cumulative average of C (2.0), and the approval of the department. *Mr. G. Van Andel.*

#### JANUARY 1982 INTERIM

**I-11 The Dance Then and Now.** This course deals with dance through the ages, from primitive through twentieth-century forms, and its relationship to the culture and art of its time. Special attention is given to the use of dance in a religious context and its history as a liturgical form. Readings, films, and studio presentations. No previous dance experience required. *Mrs. E. Van't Hof.*

**I-13 Lifetime Sports in Physical Education.** This course is designed for physical education majors or minors and recreation majors who are interested in the teaching of lifetime or carry-over sports such as bowling, orienteering, cross country skiing, badminton, and racquetball. Emphasis is placed on how to teach a variety of such sports through lecture, demonstrations, and limited participation. Students will be expected to do research, write abstracts, and

take a final examination. *Miss D. Zuidema and Mrs. K. Wolters.*

**I-51 Laboratory Testing in Exercise Physiology.** This course provides students with objective stress testing experience and exhaustive exercise conditioning. Testing

includes oxygen consumption, blood pressure, ECG readings, heart rate, etc. in a pre-exercise setting and after three weeks of heavy aerobic endurance conditioning. Reading, laboratory reports, and an examination. Prerequisite: 215. *Miss N. Meyer, Mr. J. Timmer.*

---

# Physics

*Professors V. Ehlers, R. Griffioen (chairman), A. Kromminga, †C. Menninga (Geology), \*\*H. Van Till, J. Van Zytveld*  
*Associate Professor D. Young (Geology)*  
*Assistant Professor D. Van Baak*  
*Instructor J. Lillis*

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 master of engineering degree (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, a minimum of a half course credit of 382, 365 or 379, 395 and 396 or an interim course in research, and Mathematics 313.

The nine-course unit secondary education concentration requires Interdisciplinary 210 or Philosophy 203, Physics 123, 124, 181, 182, 225, 226, 380, one advanced theory course from 335-379, a half course unit of 382, a half unit of 390 involving a study topic appropriate for students planning to teach high school physics, and approved electives from advanced physics courses, Astronomy 201, or Geology 312. The adviser for secondary teacher education programs is the chairman.

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 of approved electives. Courses recommended for such electives include Physics 380, 382, Chemistry 201, 277, and 278. The adviser for such programs and for elementary teacher education programs is Mr. Vernon Ehlers.

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 in physics 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.

A six-course minor concentration, which is also appropriate for teacher education, consists of 123, 124, 181, 182, 225, 226, 382, plus one and a half course units approved by the department chairman.

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 103, 152, or interim courses in physics and chemistry which are designated as satisfying 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) 112, 123, 126, or 221. Laboratory. Prerequisites: high school algebra and Mathematics 107, 109, or the equivalent. *Mr. J. Lillis.*

**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. Emphasis is placed on the processes and structure of science. The course is intended for future elementary school teachers and makes use of elementary school science programs and materials but is open to all students interested in a laboratory-oriented course. Not open to those who have taken or plan to take 110, 123, 126, or 221. Prerequisites: high school

algebra and Mathematics 107 or 109 or their equivalent. *Mr. V. Ehlers, Mr. J. Van Zytveld.*

**113 Scientific Processes and Science Teaching.** F and 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. *Mr. V. Ehlers.*

**123 Introduction to Modern and Classical Physics.** F, half course. This course, along with 124, 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 123-124 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 comple-

tion of 181, Mathematics 111, and, if possible, Computer Science 108. *Mr. R. Griffioen.*

**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. *Staff.*

**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. Prerequisites: Mathematics 111 and concurrent registration in Mathematics 112 and Physics 186. *Staff.*

**195 Physics Student Seminar.** F and S, no credit. An introduction in a seminar format to recent developments in physics. Both readings and laboratory topics are available for study and discussion. Junior and senior physics majors must attend each semester; freshmen and sophomores intending to major are encouraged to attend. *Mr. D. Van Baak.*

**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. *Mr. J. Lillis.*

**222 General Physics.** S, core. One and one-quarter course. A continuation of 221, which is a prerequisite. Laboratory. *Mr. J. Lillis.*

**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. Not open to those who have taken or plan to take 221. *Mr. R. Griffioen.*

**225 Introductory Physics: Electricity, Magnetism, and Waves.** F, core. A study of the properties of electric and magnetic fields and of the integral form 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. A. Kromminga, Mr. D. Van Baak.*

**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.*

**285 Introduction to Digital Electronics.** F, alternate years. An introduction to digital electronics for students with little or no background in physics or electronics. Topics include: basic circuit elements and laboratory instruments, discrete circuits for digital functions, Boolean algebra for circuit design, logic circuit analysis and design, and integrated circuits. Not intended for students who have taken or plan to take 380 or Engineering 208 or 308. Laboratory. Prerequisite: Mathematics 111 or 205. Not offered 1981-82.

**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: 225. *Mr. K. Peterson.*

**385 Introduction to Microprocessors.\*** F, alternate years. An introduction to microprocessors, including the following topics: technology of microprocessor development, microprocessor architecture, programming, systems design, interfacing, and peripherals. Laboratory. Prerequisite: 285 or its

equivalent and programming experience. *Mr. J. Van Zytveld.*

### ADVANCED THEORY 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. *Mr. R. Griffioen.*

**345 Electromagnetism.\*** S. The basic equations of classical electromagnetic 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. Static field theory is considered in 345 while dynamic field theory and special relativity are developed in 346. Prerequisite: 225. *Staff.*

**346 Electromagnetism.\*** F. A continuation of 345, which is a prerequisite. *Mr. A. Kromminga.*

**365 Thermodynamics and Statistical Mechanics.\*** S. 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. D. Van Baak.*

**376 Quantum Mechanics.\*** S. A continua-

tion of 375, which is a prerequisite. *Mr. D. Van Baak.*

**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: 375. *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. D. Van Baak.*

### 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. R. Griffioen.*

**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. *Staff.*

**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. Concurrent registration is required in 126 or the permission of the instructor. *Staff.*

**382 Modern Physics Laboratory.\*** F and S. 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. Prerequisites: 380, 381, Engineering 308, or a year of college physics and permission of the instructor. *Mr. D. Van Baak.*

**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. Prerequisites:

382 and the approval of the department. *Mr. D. Van Baak.*

### GRADUATE COURSES

**510 Physical Science and Contemporary Society.** This course is designed to show the elementary or middle school teacher 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: 112 or its equivalent. *Staff.*

**590 Independent Study.** *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 1982 INTERIM

**I-11 The Life and Times of Albert Einstein.** Albert Einstein is the most widely known scientist of all time. This course will

investigate several facets of his life beginning with his education as a youth. It will also consider his contributions to physics with emphasis on special relativity and the photoelectric effect and the underlying philosophical basis for his dissatisfaction with quantum theory. Students will discuss the causes he supported (pacifism, Zionism, and intellectual freedom) and the contributions he made to each. They will also consider Einstein as a folk hero, his reaction to that situation, and his disinterest in material possessions. *Mr. A. Kromminga.*

**I-51 Energy in the United States.** Students will consider in this course questions of production, distribution, and consumption of energy in the United States and will become sufficiently well acquainted with principles of physics to discuss the energy budget of the United States, the possibilities of energy conservation, the costs and risks associated with energy use, the questions of energy policy, and the justification for opposition to various forms of energy production. Quizzes and a project report on the likely consequences of suggested changes in energy use patterns in the United States. Prerequisite: one college science or mathematics course. *Mr. D. Van Baak.*

**I-12 Earthkeeping.** *Mr. V. Ehlers.*

---

# Political Science

*Professors J. De Borst, J. Westra (chairman)*  
*Associate Professors R. De Vries, J. Penning*  
*Assistant Professors C. Smidt, C. Strikwerda*

To be admitted to a major program in political science a student must have completed one of the core credit courses (151, 201, 202, 203, or for Canadians, 210) with a minimum grade of C (2.0). The major program requires: 201, 203 or 303, 207, 305 or 306, and five additional courses in the department. Cognate courses required of majors are Economics 151 plus an approved three course sequence in one of the following departments: economics, history, psychology, or sociology. Canadian students should take Political Science 210. Students planning to pursue graduate work 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, so far as possible, the cognate requirements. A teacher education minor requires 151, 201, 202 and three additional courses approved by the departmental adviser for teacher education, Mr. Robert De Vries.

A general departmental minor consists of a course in American politics from 201, 202, 209, 310, 312, 313, or 315, a course in comparative and international politics from 203, 207, 210, 303, 308, or 309, a course in political theory from 151, 305, or 306, and three additional courses, one of which may be an interim course.

Although the core may be satisfied by 151, 201, 202, 203, or 210, Canadians are advised to take 210 and prospective elementary teachers either 201 or 210.

**151 Introduction to Politics.** F and S, core. A general survey course which introduces students to the nature and study of politics and includes some of the enduring questions of conflict and cooperation within and between nation-states. *Staff.*

**201 American Politics.** F and S, core. 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.** F, core. 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.** F and S, core. A study of the government and politics of: Great Britain, France, Germany, and other Western European states. *Staff.*

**207 Introduction to International Politics.** F. A study of power relations among nation-states analyzing different theoretical approaches to the study of international politics, describing the state system and its basis in the doctrine of sovereignty, and examining the phenomena of nationalism, imperialism, and war. Included are the problem of war and peace and how states try to resolve conflicts peaceably through diplomacy. *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.** S. 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 Public Opinion and Electoral Behavior.** F. Analysis of American public opinion and electoral behavior. Particular attention is given to such topics as the formation and change of public opinion, stability and change in American patterns of political participation, and the role that elections and public opinion play in making public policy. In addition, attention is given to the theory and methods of the behavioral orientation in political science. *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. Not offered 1981-82.

**305 History of Political Thought to the Reformation.** F. The development of political thought from ancient Greece to the sixteenth century. *Mr. J. Westra.*

**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; the process of formulating policy; the 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.\*** F. An examination of regional and universal international organizations; their processes, functions, and impact on the international system. The United Nations system is examined, as well as economic and political integration within the North Atlantic area, among Communist states, and in the Third World. *Mr. R. De Vries.* Not offered 1981-82.

**310 The Judicial Process and Civil Liberties.\*** S. A study of the judicial process in American politics. Special attention is given to the role of the Supreme Court, the power and practice of judicial review, and the Court's interpretations of the Constitution, especially in the area of freedom of expression and defendant rights. *Mr. J. De Borst.*

**312 Legislative Behavior.\*** S. A study of legislatures, legislators, and the legislative process including the impact of institutional structures, political parties, interest groups, and personal norms on the legislative process in democratic political systems. The emphasis is on the federal Congress, but non-American legislatures are considered for comparative purposes. *Mr. C. Strikwerda.*

**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; different patterns of leadership, membership, organization. Emphasis will be on parties in Western democratic systems with special attention given to American political parties. *Mr. C. Smidt.* Not offered 1981-82.

**315 The American Presidency.\*** F. An historical and critical study of the American presidency including an analysis of the growth of the office, the selection process, the nature of presidential power, the domestic and international pressures and constraints on the office, and the relationship of the presidency to other agencies and branches of government. *Mr. J. De Borst.*

**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.\***

**I-11 The Americans in Vietnam.** This course examines and reflects upon the Vietnam War; a general historical review provides the background necessary for an examination of the events, attitudes, and individuals who contributed to the buildup of American military presence in Southeast Asia. Students will discuss the effects of American presence on the Vietnamese, on American domestic politics, and on the role of the United States in international politics. They will also discuss the moral and ethical questions raised by American involvement and study the manner in which various groups confronted or supported Vietnam policy. Books, articles, films, and a paper. *Mr. C. Strikwerda.*

**I-50 Land Use Politics in the United States.** A study of the politics of land use planning, zoning, and growth management at the state and local levels of government. The course is designed to trace the history of land use planning and to analyze current controversies over efforts to limit state and urban growth. Students will examine the basic structural features of America's land use regulatory system and discuss the motivations and concerns of the various individuals and groups seeking to influence land use policy. Lectures, films, possible guest speakers, and student papers. Prerequisite: one course in political science or permission of instructor. *Mr. J. Penning.*

**I-51 The Constitutional Rights of Women.** Students will examine women's rights from the perspective of American constitutional law and discuss the Supreme Court's role as an agent of social change. Court opinions are used to uncover the role that legal argument plays in the interpretation of the fundamental law of the land. Students will also analyze changing societal mores and assumptions and the impact of organized interest groups on the shaping of public policies. Under the due process and equal protection clauses, students will consider sex as a classification, legislative discrimination against women, protection from discrimination, sterilization, contraception, abortion, and penalties for pregnancy. Library research and extensive reading. Community resource persons will be used in class and a limited number of films will be shown. Prerequisite: one course in political science. *Mr. J. De Borst.*

I-52 **Mass Media and American Politics.** A survey of the relationships between the operation of mass communications and the functioning of American politics. Major topics include: the processes by which news is created and transmitted; the effects of mass media in structuring political attitudes and opinions; the impact of the mass media on the conduct of electoral politics; and the ethical and legal considerations concerning the need for governmental secrecy and the public's right to know. Prerequisite: 201 or permission of the instructor. *Mr. C. Smidt.*

I-53 **Interim in Washington, D.C.** Calvin College is a member of the Christian College Consortium/Coalition which conducts a January interim in Washington, D.C. This interim involves an in-depth study of a current public policy issue or a series of issues and provides opportunities for students to explore the rich resources of the nation's capital. Students attend classes five mornings each week, with periodic afternoon field experiences and small group discussions. Only a limited number of Calvin students can be accommodated. Applications, accompanied by a \$100 deposit, must be made by October 15, 1981. The deposit is refunded if a student is not accepted for the

program. Additional information about the program can be obtained from Mr. C. Strikwerda. *Mr. C. Strikwerda.*

I-54 **Interim in Washington, D.C.** For students who cannot be accommodated in the January Interim of the Christian College Consortium/Coalition, there is an alternative program conducted by the Washington Center for Learning Alternatives. This Washington Winterim, held during three weeks in January, involves a concentrated examination of the national political scene which combines lectures, briefings, site visits and small group discussions. The 1982 Winterim will focus on The Reagan Administration and the Ninety Seventh Congress: One Year Later and participants will analyze and discuss problems and processes as they relate to foreign affairs, the economy, party politics, energy, political news reporting, business-government relationships, and human/civil rights. Costs include \$445 in fees plus travel. Applications must be made by November 1, 1981. Additional information about the WCLA can be obtained from Mr. C. Strikwerda. *Mr. C. Strikwerda.*

Idis I-52 **Calvinist Roots: Conservative or Radical?** *Mr. J. Westra.*

---

# Psychology

*Professors M. Bolt, W. Joosse, A. Reynolds, R. Stouwie, R. Terborg*  
*Associate Professors †J. Benthem, J. Brink, W. Sanderson (chairman), D. Snuttjer, M. Vander Goot,*  
*\*\*G. Weaver*  
*Assistant Professors C. Bennink, A. Shoemaker, S. Stehouwer*

STUDENTS INTENDING TO MAJOR in the department must complete 151 with a minimum grade of C (2.0). The nine course major consists of 151, 250, 306, three 300-level electives, one of which must be chosen from 330 through 334 (or 308), and three additional courses from the department, excluding 313. Not more than one interim may be included in the nine-course major nor may 390 be counted as a 300-level elective.

Students intending to do graduate work in psychology or related fields should include 395 in their program of concentration and should plan their programs with a departmental adviser.

The teacher education minor consists of six courses: 151, 212, 306, 311, one course from 330-334 or 308, and one elective.

The general psychology minor consists of six courses: 151, 250 or 306, one course from 330-334, and three electives including one additional 300-level course. One elective may be an interim course.

The core requirement in psychology is best met by 151. Education 301 satisfies the core requirements for students in teacher education programs and serves as a prerequisite for 200-level courses only.

**151 Introductory Psychology.** F and S, core. An introductory course intended to give an orientation to the field of psychology. 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: Lifespan.** 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. Not open to students who have taken or plan to take 204 or 207. 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. A. Shoemaker, Mr. S. Stehouwer, 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. Prerequisite: 151 or Education 301. *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: 151. *Mr. W. Joosse.*

**212 Psychopathology.\*** F and S. A study of the wide range of abnormal behaviors. Em-

phasis is on causes, dynamics, and classification, with some attention to treatment approaches. Prerequisite: 151. *Mr. L. Vande Voort, Mr. G. Weaver, Miss M. Zuiver.*

**216 Psychology of the Exceptional Child.\*** S. A basic overview of children who differ physically, mentally, or behaviorally from "normal" children. Emphasis on causal factors, characteristics, and diagnosis. Prerequisite: 151. *Mr. R. Stouwie.*

**250 Statistics and Research Design.\*** F and S. An introduction to scientific research in psychology including the formulation of hypotheses, the design and execution of experiments, the analysis and interpretation of data through statistical procedures, and the communication of results. Two-hour laboratory each week. Prerequisite: 151. *Mr. C. Bennink, Mr. D. Snuttjer.*

**306 History and Systems 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 Experimental Psychology.\*** S. A continuation of 250 with an emphasis on general research methodology at both the conceptual and applied levels. Consideration is given to topics such as the scientific study of human behavior, the formulation of research problems and hypotheses, research design, statistical inference, decision making, and the writing of research reports. For major and others interested in the social, behavioral, and health sciences. Prerequisite: 250 or permission of instructor. *Mr. C. Bennink.*

**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: 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. Brink, 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 emphasized. Prerequisite: 250, Mathematics 241, or Mathematics 343. *Mr. A. Reynolds.*

**313 Mental Health and the Classroom.\*** F and S. An introduction to the developmental needs and common developmental crises of school age children. Emphasis is on the methods of communication and classroom management which allow the teacher to promote healthy adjustment. (Previously 335.) *Mr. A. Shoemaker.*

**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, 312. *Mr. J. Benthem, Mr. W. Kooistra.*

**315 Practicum in a Clinical Setting.\*** S. 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, 311. *Mr. J. Benthem.*

**322 Perspectives of Psychology.\*** S. The purpose of this course is to explore the relationship of psychology to—or its involvement in—such areas as literature, religion,

art, and morality. 322A will be taught by Mrs. M. Vander Goot and will develop a Christian view of the theological and philosophical roots of psychology; 322B will be taught by Mrs. M. Van Leeuwen and will deal with cross-cultural research from a perceptual-cognitive-personality orientation.

**330 Psychology of Motivation.\*** F. 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. Two-hour laboratory each week. Prerequisite: 151. *Mr. G. Weaver.*

**331 Psychology of Sensation and Perception.\*** F. A detailed examination of the theories and research pertaining to various sensory and perceptual processes in human beings. Methodological, physiological, and pretheoretical issues are addressed. Two-hour laboratory each week. Prerequisite: 151. *Mr. D. Snuttjer.*

**332 Psychology of Learning Processes.\*** 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. C. Bennink, 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.*

**334 Cognitive Psychology.\*** F. A survey of research and theory in the study of human thinking. The course covers the acquisition, representation, and use of knowledge with emphasis on the process of attention, memory, language, and problem solving. Prerequisite: 151. *Mr. C. Bennink.*

**390 Independent Study.\*** F, I, S. Prerequisite: permission of the chairman.

**395 Research Seminar.\*** F and S. The preparation, presentation, and discussion of papers based on current psychological literature and upon individual empirical research on selected topics. Prerequisite: 250. *Mr. C. Bennink, Mr. D. Snuttjer.*

## 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. *Mr. A. Reynolds.*

**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. *Mr. J. Benthem.*

**590 Independent Study.** 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 1982 INTERIM

**I-50 The Psychology of Consciousness.** Consciousness is a dimension of the human psychological experience that has received little attention in psychological literature. Students examine the historical causes for this lack of attention, cross-cultural views of consciousness and altered states, and current approaches within psychology to the study of consciousness. Several topics will be considered within this context: meditation techniques, drugs, split-brain research, brain stimulation investigations, mind-brain relationships, information processing abilities of individuals, and biofeedback. Assigned readings, student reports, and class discussions. Prerequisite: 151. *Mr. D. Snuttjer.*

**I-51 Cognitive Aspects of Television Viewing.** A cognitive psychological approach to understanding television viewing and its effects. The student will explore the form/content attributes of television programming and their relationship to viewer responses at the cognitive and psychological levels. The emphasis throughout is on

theory and research leading to the development of a conceptual model of the television-viewer interaction, which will be used to evaluate critically some of the popular ideas about how television affects viewers. Lectures and readings will be supplemented by a series of laboratory exercises and experiments. Prerequisite: 151. *Mr. C. Bennink.*

**I-52 Knowing Yourself: The Psychology of Self Understanding.** An introduction to contemporary theories and research about how people come to know and evaluate themselves and how self judgments influence our emotions, desires, and behaviors. What are the limits and distortions of self understanding? Can one's self concept be measured? What are the effects of stereotypic labels on self understanding? How do people learn to be assertive—or helpless? How does self understanding contribute to the way we deal with anxiety, depression, and pain? Class lectures, discussions of research, and student reports on various facets of self understanding. Prerequisite: at least two courses in psychology. *Mr. J. Brink, Mr. G. Weaver.*

**I-53 The Psychology of Close Personal Relationships.** An investigation of our most personal relationships, those that are one-to-one, their initiation, their development, and their structure. This study of dyads involves lectures and discussions, the exploration of psychological literature and artistic media, and small group dynamics. Written work. Prerequisite: 151 or permission of the department. *Mr. L. Vande Voort.*

**I-57 The Effects of Television on Children.** What are the effects of television on children? The question has been a topic of heated debate in the lay population and an area of increasingly intensive investigation in the scientific community ever since TV became a medium of mass communication some thirty years ago. This course addresses such issues as television violence, advertising, sex-role stereotyping, cartoons, and educational programs, seeking to determine how they influence the cognitive and social development of children and adolescents. Theory and research papers, viewing and analysis of programs, surveys of viewing habits. Students will also be required to participate in a research project. Prerequisite: two courses in psychology. *Mr. R. Stouwie.*

**I-58 Psychology of Groups.** An examina-

tion of the structure, processes, and performance of social groups. Attention is given to group problem-solving, decision-making, communication, leadership, cooperation, and conflict. Lectures, group exercises, and films. Prerequisite: 151. Mr. M. Bolt.

Idis I-15 **Christian Perspectives on Parenting (CPOP)**. Mr. S. Stehouwer, Mrs. N. Stehouwer.

Idis I-54 **SPSS: A Computer Language for Social Scientists**. Mr. A. Shoemaker.

---

# Religion and theology

*Professors W. De Boer (chairman), H. Hoeks, D. Holwerda, J. Prinus, G. Spykman, C. Vos, L. Vos*  
*Associate Professors D. Oostendorp, L. Sweetman, H. Vander Goot*  
*Assistant Professor P. Holtrop*  
*Instructor J. Bolt*

THE DEPARTMENT offers a major in Religion and Theology, a minor in Church Education, and a teaching minor in the Academic Study of Religions. For each major 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 103 or 108, 206, 207, 208, 301, 303, 308, and 396. An approved four-course sequence in another department is also required. The adviser for this program is the chairman.

The minor program in Church Education is for students preparing for the leadership of educational programs in churches. It requires Art 231 or Music 236, Psychology 151 and 201, 204, or 207, Religion 245, 246, and 319, and Sociology 311. This minor program may be taken with a major in Religion and Theology. Students who plan to serve as directors of education in churches should do graduate work in Church Education. The adviser for this program is Mr. Henry Hoeks.

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 for this program is Mr. Henry Hoeks.

The core requirements in religion and theology are 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 Religio-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.

## 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. *Staff.*

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, and 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.*

327 **Old Testament Interpretation.\*** F, 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 and its 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. *Mr. G. Spykman.*

313 **Roman Catholic Theology.\*** F. 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 1981-82.

## 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 Euro-

pean 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

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**.\* S, 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.*

*The following interdisciplinary course may be applied to certain concentrations in the department:*

234 **The Contemporary American Religious Situation**. *Mr. J. Primus, Mr. W. Smit.*

#### MISSIONS AND WORLD RELIGIONS

203 **Theology of Mission**. F. A survey of biblical material pertaining to mission. These materials are used in evaluating the contemporary problems of mission: i.e., re-nascent non-Christian religions, ecumenism, mission in the ferment of social revolution. Not open to freshmen. *Mr. L. Sweetman.* Not offered 1981-82.

204 **History of Missions**. S. 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. L. Sweetman.*

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

151 **Introduction to Religion Studies**. S. An introductory course appropriate to prospective teachers and required of those 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. L. Sweetman.* Not offered 1981-82.

245 **Field Work in Church Education I**. F, half course. An introduction to the educational ministry of the church through field observations and practical experiences in a local Christian congregation through readings which relate educational theory to the student's practical field experiences and through weekly class sessions in which students report on their field experiences and integrate them with their readings. Not open to freshmen. *Mr. H. Hoeks.*

246 **Field Work in Church Education II**. S, half course. A continuation of 245, which is a prerequisite. *Mr. H. Hoeks.*

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 **Independent Study**.\* F, I, S. *Staff.*

395 **Seminar: Religion and Education.\* F.** A course for seniors in the Academic Study of Religions minor. It includes practical and bibliography work and concludes with a major research paper. *Mr. H. Hoeks.*

396 **Seminar: Religion and Theology.\* S.** A course for senior majors in Religion and Theology which provides a focus on significant theological issues and on theological bibliography. A major research paper is required. *Mr. Henry Vander Goot.*

## GRADUATE COURSES

510 **Wisdom Literature.** An inquiry into the nature of wisdom literature with a major emphasis on Proverbs, Job, and Ecclesiastes with an introduction to the various approaches that have been taken in the interpretation of these books that is appropriate for teachers. Prerequisite: two courses in biblical studies beyond the 100-level or permission of the instructor. *Mr. C. Vos.*

580 **Perspectives, Programs, and Practices in Bible and Religion Curriculum.** A study of various approaches in the schools to curriculum and teaching in biblical studies, church history, Reformed thought, and world religions. Consideration is given to the way fundamental differences of perspective on biblical Christianity influence the selection and use of curriculum designs, materials, and teaching techniques. Course content is adapted to the various grade levels of particular interest to enrollees. *Mr. H. Hoeks.*

590 **Independent Study.** 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 adviser. *Staff.*

## JANUARY 1982 INTERIM

I-11 **Between the Testaments.** Turning just one page in the Bible turns over four hundred years of silence. This four hundred years was a period of political tumult for Palestine but it brought forth considerable theological development and literary production from the Jews. This course will study Jewish history, theology, and literature (apocryphal and other writings) of this period and will seek to lay the background

for understanding the New Testament. Readings, lectures, discussions, research in special areas, and short papers. *Mr. W. De Boer.*

I-12 **Children in the Church's Worship.** How can our young children be meaningfully involved in public worship services? Should we insist that the whole family pray, praise, and listen together or should the youngsters worship separately "on their own level?" Is there a better middle way? The course will explore certain corporate worship practices regarding children in the biblical, Reformation, and contemporary eras and will include theological, developmental, and pedagogical reflection on this issue. Members of the course will observe and reflect upon two or three children's church activities in local Protestant Christian churches, write liturgies for children, and engage in readings, lectures, and reports. *Mr. H. Hoeks.*

I-13 **"The Women Should Keep Silence . . ."** A course in Biblical interpretation using the single issue of women in church office as a case study. Biblical material is studied and interpretations are analyzed. Students will make critical evaluations of all aspects of Biblical interpretation from translation to application. *Mr. L. Vos.*

I-50 **From Calvin to Calvinism.** A study of what went right and what went wrong in the development of Calvin's theology. The course concentrates on Calvin and the revision of his thought by his successor, Theodore Beza, and seeks to shed light on why we are where we are in current Reformed discussions. Calvin's "creation orientation" is contrasted with "predestination orientations" in later Calvinism. Assigned and optional readings in Calvin, Beza, Ames, Edwards, Hoeksema, Barth, Berkouwer, James Daane, and Harry Boer. References to current discussions in *The Banner*, *The Reformed Journal*, *The Outlook*, and other periodicals. Prerequisite: 206 or permission of the instructor. *Mr. P. Holthrop.*

I-51 **The Politics of Jesus.** Was Jesus a social and political revolutionary? A liberator of the oppressed? Was he executed as a political criminal? What is the New Testament understanding of the Christian attitude toward and involvement in the state? The course examines these and related questions and the varied answers that have been given to them in the history of Christian

thought. An attempt is made to formulate a Reformed political Christology. Lectures, readings, class discussions, and a research paper or major book review. Prerequisite: 103 or another course in Biblical studies. *Mr. J. Bolt.*

**I-52 Theology Via Biography.** How we theologize is closely related to our total life experience. This thesis holds for great Christian theologians, too. Accordingly, this course is about theology—but even more, it is about theologians. How do a man's life and times help shape his theology? And

how is his theology an index to his world of experience? What made Bonhoeffer the theologian he was—and Barth, and Calvin, and Kuyper, and Machen, and Hoeksema, and others? This course requires extensive biographical reading, some theological research, class reports and discussions, and a culminating paper. Prerequisite: one course in theology. *Mr. G. Spykman.*

**Idis I-20 For God, Gold, and Glory.** *Mr. D. Oostendorp.*

**Idis I-53 Piety and Poverty: Perspectives on Justice and Stewardship.** *Mr. C. Vos.*

---

# Sociology

*Professors G. De Blaey, \*P. De Jong, \*\*H. Holstege, R. Rice, T. Rottman, W. Smit, D. Wilson (chairman)*

*Associate Professors R. Houskamp, \*D. Smalligan, J. White*

COURSES IN BOTH SOCIOLOGY and in social work are taught by the sociology department. The departmental offerings are consequently divided into sociology courses and social work courses. The sociology courses, excluding 210, may be applied to a sociology major. The social work courses may be applied toward a supplementary concentration in social work, which is open to both sociology and non-sociology majors.

The major concentration in sociology consists of 151, 318, 320, Mathematics 241, and five additional sociology courses, excluding 210. One interim course may be included among these five additional courses. Students who spend a semester at the Chicago Metropolitan Study Center may apply some of that work to a departmental major. For admission to the major program, a student must complete 151 with a minimum grade of C (2.0).

The supplementary concentration in social work consists of six courses, five of which are drawn from the departmental offerings in social work. The supplementary concentration includes three types of courses: social work theory courses, field work courses, and other courses which most nearly complement the practice of social work. The program consists of 300, 301, 303, two courses from 307, 380, 381, plus one additional course from selected psychology or sociology courses. An interim course may satisfy the elective requirement if approved by the social work advisor. A fuller description of the supplementary concentration in social work is available in the departmental office.

The core requirements 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.

## SOCIOLOGY COURSES

**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 demonstrate its use by showing how a sociological perspective offers a rational interpretation of issues current in our society. *Staff.*

**210 Physical Anthropology.** F. A critical analysis and evaluation of the areas of primate paleontology, human variation, 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.*

**302 Urban Sociology and Community Organization.\*** 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 community development and planning. *Mr. H. Holstege, Mr. J. White.*

**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, Mr. J. White.*

**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. P. De Jong, Mr. T. Rottman.*

**308 Population and Society.\*** F. This 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; a 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 an analysis of the causes and consequences of population size, distribution, and composition for human society. *Mr. R. Rice.*

**309 Sociology of Education.\*** 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. *Mr. G. De Blaeij.*

**310 Social Psychology.\*** F. Human behavior is 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. *Mr. G. De Blaeij.*

**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.*

**312 The Sociology of Community.\*** S. A cross-cultural analysis of the changing nature of the community as a human ecological 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. D. Lyon.*

**314 Contemporary Social Problems: Cultural and Social Responses to Death and Dying.\*** S. 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 sur-

rounding death and dying are functional in their own terms and compatible with biblical norms. *Mr. T. Rottman.*

**315 Sociology of Sport.** S. A study of the social and social-psychological dynamics of sports in modern society. Areas receiving special attention are youth sports, interscholastic sports, and professional sports. Emphasis is put on describing and understanding sports participants and observers and the relationship of sport as an institution to the rest of social structure. *Mr. G. De Blae.* Not offered 1981-82.

**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. Students are guided 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, 318. *Staff.*

**390 Independent Study.\*** F, I, S. Prerequisite: permission of the chairman and of the instructor. *Staff.*

**395 Seminar.\***

#### SOCIAL WORK COURSES

**300 Social Welfare Policy and Services.** F. An analysis of the social welfare system. The institutions in which social welfare policy is carried out and specific policy areas which influence current social work services are examined. The application of specific policies to income maintenance, mental health, poverty programs, and corrections are some of the areas covered. Students who have taken 300 prior to September, 1980, should not take this course. Prerequisite: 151 or permission of instructor. *Mr. R. Houskamp.*

**301 Social Work Practice.** S. Students are taught the techniques of social work with an emphasis on how basic social work concepts are related to professional practice. Prereq-

uisite: 300 or permission of instructor. *Mr. R. Houskamp.*

**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. *Mr. J. Decker.*

**307 The History of Social Welfare and Social Work.** F. A historical overview of the development of social welfare and social work, primarily in the United States. Included in the overview is a study of the social, cultural, political, and economic factors which have influenced the development of social welfare and the professionalization of social work. Prerequisite: 151 or permission of instructor. *Mr. R. Houskamp.*

**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.*

**381 Practicum in Clinical Social Work.** S. This course provides an opportunity for the student to relate social work knowledge to a clinical setting. Various roles and modes of clinical social work are studied from a Christian perspective. The social worker's role is related to those of other professionals such as the psychiatrist, the clinical psychologist, the adjunctive therapist, the psychiatric nurse, and the rehabilitation therapist and to the part each plays in the clinical team. Each student is assigned to a staff social worker who will supervise his direct work with patients. A student may not receive credit for this course and 380 or Psychology 315. Prerequisites: junior-senior standing,

300 and 301, and departmental approval. *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. *Staff.*

590 **Independent Study.** 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 1982 INTERIM

I-10 **The Social Psychology of Inter-School Athletics: Leadership and Christian Values.** Various theories of inter-school athletics have been developed and some are much more appropriate for Christians than others. Students will study the social-psychological literature on leadership that has been applied to inter-school athletics and sports events and will evaluate it theoretically and practically in terms of a Christian psychology of leadership. Field observations and classroom interviews will consider the various types of sport, level of competition, participants (junior high through college), and type of schools (e.g., public, Christian). Students will take primary responsibility for developing and carrying out field observations and for reporting their observations and conclusions to the class. Students should anticipate spending several hours at various times during the week for observations and data collection in addition to regular class time. *Mr. T. Rottman, Mr. G. De Blaey.*

I-15 **The Planned Family.** A study of some important decisions faced by people planning the size and composition of their families. Students will consider contraception, abortion, sterilization, artificial in-

semination, voluntary childlessness, adoption, and foster care. Readings and small group discussions on each topic and guest speakers from the community. *Mr. P. De Jong, Mr. R. Rice, Mr. W. Smit.*

I-52 **Radical Resocialization—A Social-Psychological Perspective.** A study of the social-psychological components of resocialization as they relate to a variety of formal organizations and informal groups which specialize in such activity. Students will examine a cross-section of material dealing with the process of resocialization including secular-humanistic groups, religious and quasi-religious groups, and political groups, all of which offer the promise of a new life (conversion). Examples of such groups are Synanon, Teen Challenge, the Unification Church, the Patty Hearst kidnapers, and the People's Temple. Students will also question the reasons for joining such groups, the techniques or methods used to "convert" the person who has joined, and the ways in which groups maintain a commitment to the "faith." How does the Christian address such group efforts? What similarities or differences exist between these groups and the more mainline, societally sanctioned agents of behavior change? Prerequisite: 151 or Psychology 151. *Mr. R. Houskamp.*

I-54 **Church and Culture in Liberia.** This course examines the culture of Liberia, the nature of the Christian church, and the relationship between the church and the culture. The four weeks spent in Liberia will be divided between a modern African city (Monrovia), a small town presently being influenced by a large multinational corporation, a village under missionary influence, and a village essentially untouched by outside forces. The course includes lectures by Liberians on various topics relating to their cultures as well as visits to significant cultural places and events. Fee of approximately \$1,700. Permission of the instructor. *Mr. D. Wilson.*

Idis I-57 **Conducting the Helping Interview: Theory and Technique.** *Mrs. S. Verwys, Miss S. De Waard.*

---

# Spanish

Associate Professors B. Class, E. Cortina (chairman)

Assistant Professors S. Ariza, Y. Byam, †E. Greenway

PROGRAMS FOR STUDENTS wishing to major in Spanish are worked out individually by departmental advisers. To be eligible a student must have completed at least two courses with a minimum average of C (2.0) and must have completed 101-102, 121-122, or the equivalent.

The typical major includes in addition to the introductory courses: 123 or 201-202, 215, 216, 217, 218, and four 300-level literature courses. The nine course teacher education major requires 217, 218, 371 or 372, and 360. The six course teacher education minor must include 123 or 201-202, 215, 216, 217, and 218. Cognates are recommended in other foreign languages, European history, literature, philosophy, history of music, and history of art.

Calvin-sponsored programs offered in conjunction with Universidad Iberoamericana are available in Mexico for the interim or a semester and similar programs are offered in Spain. Students interested in such programs should work out the details with the chairman and the registrar before making commitments.

The fine arts core may be met by 217, 218, and 300-level literature courses.

## LANGUAGE

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 but who, on the basis of a placement test, are not prepared for 201. The course is also open with the permission of the department to students in the teacher education programs who have had no foreign language in high school. *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 other equivalents. *Staff.*

202 **Intermediate Spanish.** F and S. Continuation of 201. *Staff.*

215 **Advanced Grammar and Conversa-**

**tion.\*** F. A course for the student who wishes to improve his facility in the language, who is preparing for graduate study, or who expects to teach Spanish. The course includes the intensive study of grammar, vocabulary, and idioms as well as intensive use of drills and exercises to develop competence in speaking and writing idiomatic Spanish. The emphasis is on improved pronunciation and fluency through conversation, debates, and oral presentations. Prerequisite: 202 or its equivalent. *Mrs. Y. Byam.*

216 **Advanced Composition and Translation.\*** S. Extensive work in composition and translation to develop skill in written communication for students interested in teaching or in continuing their studies in graduate school. Reading selections by well known writers from various genres serve as models. A major paper in Spanish is required. Prerequisite: 215 or approval of instructor. *Mrs. E. Cortina.*

## LITERATURE

217 **Readings in Spanish Literature.** F. An introduction to the major writers and movements in Spanish literature from the

Middle Ages to the present. Conducted in Spanish. Prerequisite: 202. *Mrs. S. Ariza.*

**218 Readings in Latin American Literature.** S. An introduction to the major writers and movements in Latin American literature from the New World conquest to the present day. Conducted in Spanish. Prerequisite: 202. *Mrs. S. Ariza.*

**303 The Spanish Novel.** F. A study of the Spanish novel from *La Celestina* to the present requiring the reading and interpretation of selected chapters from outstanding novels as well as of complete works. The emphasis is on the chief characteristics of the various types of novels. Conducted in Spanish. Prerequisite: 217. *Mrs. S. Ariza.* Not offered 1981-82.

**305 Spanish Poetry.** F. A study of the characteristics of Spanish poetry by means of extensive readings and detailed examination of the works of the major poets from the Middle Ages to the present. Conducted in Spanish. Prerequisite: 217. *Mr. B. Class.* Not offered 1981-82.

**306 Latin American Poetry.** S. A study of the history and characteristics of Latin American poetry from the colonial period to the present. Conducted in Spanish. Prerequisite: 218. *Staff.* Not offered 1981-82.

**307 The Latin American Novel.** S. A study of the novels of Latin America with particular emphasis on those written during the last two centuries. Attention is given to the historical setting and to the intrinsic literary value of each novel. Conducted in Spanish. Prerequisite: 218. *Mr. B. Class.*

**309 Spanish Drama.** F. A study of the dramatic expression of Spain in the Golden Age and through the post-Civil War era. Conducted in Spanish. Prerequisite: 217. *Mrs. E. Cortina.*

### CIVILIZATION

**360 Spanish-English Linguistics.** An examination of the differences between the English and Spanish languages, particularly those involving sound, spelling, structure, and vocabulary. Students will investigate stress, pitch, juncture, rhythm, phoneme, allophone, morpheme, and the diagramming of grammatical constituents in order to improve their own communication skills in both languages and to understand the errors made by those learning a second language.

Testing and assessment of language skills is discussed. The course is planned primarily for those interested in bilingual education but it is useful for others wanting to understand linguistics. Prerequisite: 202. *Staff.* Not offered 1981-82; students needing this course should consult the chairman.

**371 Civilization of Spain.** S. A study of the non-literary expressions of the Spanish mind and culture, of the history of Spanish social, political, and religious institutions, and of current problems in Spanish life. The course complements and enriches literary studies. Conducted in Spanish. Prerequisite: 202 or the equivalent. Not offered 1981-82.

**372 Latin American Civilization.** This course introduces the students 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. *Mrs. E. Greenway.* Not offered 1981-82.

**373 Hispanic Culture in the United States.** A study of the history and culture of Hispanic groups in the United States, their political, social, and religious institutions, and their value systems. The course is planned to assist students in understanding the cultural contributions of each Hispanic group within the broader American culture. Reading materials include literary and non-literary sources. Prerequisite: 202. *Mrs. Y. Byam.*

**390 Independent Study.\*** F, I, S. Prerequisite: permission of the chairman.

**395 Seminar.\***

### JANUARY 1982 INTERIM

**I-11 The Social Consciousness in Latin American Poetry.** Latin American poets have been, by and large, the spokesmen of the political and spiritual values of their peoples. Since the independence period the poets have served to mirror, to suggest, and to call for changes in the established order and in the power structure. Their themes echo the larger question of injustice in Latin America and find expression in criticisms of Spanish and Portuguese colonialism, Latin American tyrants, economic dependency on the United States, political

meddling by multinational corporations, internal political dissension, anti-Semitism, racial discrimination, and the sexual double standard. Common alternatives are Marxism, Feminism, and Liberation Theology. Students explore possible ways in which Reformed Christian political theory, particularly that of Abraham Kuyper, may speak to the issue of injustice in Latin America. All readings are in English. Speakers and films complement reading and lectures. A project paper is required. *Mr. B. Class.*

**I-50 Spanish Interim in Spain.** Students will spend four weeks in Spain. The first two and a half weeks they will live with Spanish families and will study language and culture at the University of Caceres, Extremadura. The remaining time will be spent touring Seville, Madrid, Toledo, and Avila, visiting

the major museums, galleries, and historic sites. A fee of approximately \$1,300. Satisfies departmental concentrations. Prerequisite: 201 or the equivalent and the approval of the instructor. *Mrs. E. Cortina.*

**I-52 La Novela Picaresca Española.** This course is devoted to the genre of the Spanish picaresque novel, how it is to be defined, its origins, its unity and how it fits into the historical and social conditions of sixteenth and seventeenth century Spain. Selections, principally from *Lazarillo de Tormes*, *Guzmán de Alfarache*, and *El Buscón*, are examined through careful reading and interpretation of texts. Satisfies departmental concentrations. Prerequisite: 217 and 218 or permission of the instructor. *Mrs. S. Ariza.*

**122 Introductory or Intermediate Spanish.** *Mrs. Y. Byam*

---

## Speech

*Professors A. Noteboom, M. Vande Guchte*  
*Associate Professor D. Holquist (chairman)*  
*Assistant Professors E. Boevé, 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 Communication and Rhetoric. 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 communications and rhetoric, cognate courses are chosen with the student's adviser.

Students wishing to concentrate in the theater program should take 200, 203, 217, 219, 317, an approved interim course, plus three courses selected from 304, 318, 319, and 220. Only one course credit of 220 may be counted toward a major.

The secondary school teaching major consists of 200, 203, 211, 217, 219, 230, plus three and a half other courses. The elementary school teaching major includes 203, 214, 215, 217, 219, plus four other courses. The six-course secondary school teaching minor should include 200, 203, 211, 217, 219, 230, plus a half

course elective. The elementary school minor is 203, 214, 215, 219, and two electives. Only one course credit of 220 may be counted toward a concentration.

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.

The college is a member of the Michigan Intercollegiate Speech League and students participate in debate tournaments, forensic contests, and an interpretative reading festival sponsored by the league.

The core requirements in spoken rhetoric may be met by 100, 200; 214, if the student is in an elementary education program; 240; or by an examination, which presupposes formal and practical speech training in high school. The fine arts core requirement may be met by 203, 217, 304, 317, 318, 325, and 326.

## COMMUNICATION AND RHETORIC

**100 Fundamentals of Oral Rhetoric.** F and S, half course, core. The primary aim of this course is to increase competence in oral communication. The major emphasis is on the composition and delivery of speeches. Students in elementary teacher education programs should take 214. *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 between communication theory and the other disciplines is examined. Not offered 1981-82.

**200 Advanced Oral Rhetoric.** F and S, 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. *Staff.*

**211 Debate.** S, 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. *Staff.* Not offered 1981-82.

**230 Mass Communication.** S. 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. D. Holquist.*

**240 Group Communication.** F and S, core. Communication in the small group. Major topics include role development, cohesiveness, and group norms. Participation in experimental group situations, reading in group communication theory, and analysis of group communication are required. *Staff.*

**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 on problems in human communication. *Staff.*

**305 Persuasion.\*** S. Communication as influence at intrapersonal, interpersonal, group, mass, and cultural communication levels. Emphasis is on increased understanding and competence. Prerequisite: 100 or equivalent. Not offered 1981-82.

**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. Not offered 1981-82.

**312 Intercollegiate Debate.** F and S, half course for the year. Students involved in intercollegiate debate throughout the year should register for this course. Not more than two units of credit for such applied speech and music courses may be applied to the graduation requirements. *Staff.*

**325 History of Rhetorical Theory.\*** F, 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. *Staff*.

**326 History of Public Address.\*** F, 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 is studied. 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. *Staff*. Not offered 1981-82.

#### SPEECH EDUCATION AND SPEECH CORRECTION

**214 Speech for the Elementary Teacher.** F and S, core. Designed to familiarize the prospective teacher with the speech arts used in the elementary classroom and to increase competence in oral communication. *Staff*.

**215 Introduction to Communication Disorders.** 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 Structures and Functions of the Speech Mechanisms.** F. 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 1981-82.

**308 Basic Audiology and Audiometry.** S. 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 1981-82.

#### THEATER, DRAMA, AND ORAL INTERPRETATION

**203 Interpretive Reading.** F and S, 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*.

**217 An Introduction to the Theater.** F, core. An introduction to the study of theater. Lectures focus on forms, genres, performance space, and the artistic principles of production. Selected readings, discussions, attendance at plays, and critiques of performances are required. *Mrs. E. Boevé*.

**219 Principles of Dramatic Productions.** S. A study of the theories and principles of acting and directing. Students will read plays, attend lectures, make demonstrations, and be required to show their competence in acting and directing. Prerequisite: 217 or permission of the instructor. *Mr. J. Korf*.

**220 Thespian Productions.** F and S, quarter course. 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 but not more than two course units of credit in Thespians and applied music may be applied to the minimum requirements for graduation. *Mr. J. Korf*.

**304 Advanced Interpretation.** S, 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*. Not offered 1981-82.

**317 History of Theater and Drama.\*** F, core. A historical and analytical study of theater and drama from its origins to 1800. *Mrs. E. Boevé*. Not offered 1981-82.

**318 History of Theater and Drama.\*** S, core. A continuation of 317. An historical and analytical study of theater and drama from 1800 to the present. *Mrs. E. Boevé*. Not offered 1980-81.

**319 Design for Theater.** S. A study of the theories and principles of theater design. This course builds on the principles taught in 219 and includes lectures, demonstrations, reading of plays, and the development of competence in set, light, costume, make-up, property, and publicity design.

Prerequisites: 217, 219, or permission of instructor. *Mr. J. Korf*. Not offered 1981-82.

**390 Independent Study.\*** 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 seminar. Prerequisite: permission of the department. *Staff*.

#### JANUARY 1982 INTERIM

**I-10 Technical Aspects of the Media.** Instruction and training in the use of basic mass media tools. The class will be divided into three-man production teams composed of cameraman, technician, and on-camera subject. Using the team as crew, each member of the class will produce and edit in the studio a ten minute program—an interview, documentary, etc.—for class critique

of the finished segments. Final examination based on the course text. Prerequisite: permission of the instructor. *Mr. J. Korf*.

**I-11 Chamber Theater.** Students in this course will first analyze various short stories in order to understand the theme, the style, and the structure as they are related to each other and then they will work in small groups to present various stories as chamber theater productions. Such "chamber theater" productions tell the story through a narrator working closely with the actors, using the available space, recreating for the audience the ideas, emotions, and aesthetic dimensions of the story. Students will read approximately twenty short stories and will participate in classroom performances of at least five of them. Short analysis papers of the stories performed and a final examination. *Mrs. A. Noteboom*.

**Idis I-18 Contemporary Art and Drama in New York City.** *Mrs. E. Boevé*.

**Idis I-55 Noise—The Harmful Intruder.** *Mr. M. Vande Guchte, Mr. H. Geerdes*.



---

# DIRECTORIES

## Board of Trustees

### CLASSICAL TRUSTEES

Walter Ackerman, B.D., *Classis Pacific Northwest*  
Barry Blankers, B.D., *Classis Hudson*  
Roger Brummel, Ph.D., *Classis Holland*  
James Bultman, B.D., *Classis Minnesota, South*  
Robert De Bruin, Ph.D., *Classis Cadillac*  
Edward Den Haan, M.Div., *Classis Huron*  
William Dykstra, Th.M., *Classis Quinte*  
Henry Eshuis, B.D., *Classis Chatham*  
Martin Geleynse, Th.M., *Classis Eastern Canada*  
Sidney Greidanus, Th.D., *Classis Alberta, North*  
Richard Grevengoed, M.Div., *Classis Chicago North*  
Alan Groen, B.D., *Classis Minnesota North*  
Harold Hiemstra, B.D., *Classis California South*  
John Hoeksema, Th.B., *Classis Wisconsin*  
Harry Holwerda, M.D., *Classis Illiana*  
John M. Hofman, B.D., *Classis Grand Rapids South*  
Jerry J. Hoytema, B.D., *Classis Hamilton*  
John Joldersma, B.D., *Classis Grand Rapids North*  
Peter M. Jonker, B.D., *Classis British Columbia*  
Henry Karsten, B.D., *Classis Florida*  
Edward Knott, B.D., *Classis Sioux Center*  
Siebert Kramer, B.D., *Classis Pella*  
Leslie Kuiper, B.D., *Classis Northcentral Iowa*  
John W. Kuipers, B.A., *Classis Atlantic Northeast*  
John Medendorp, B.D., *Classis Thornapple Valley*  
Dirk Mellema, B.A., *Classis Central California*  
John Meppelink, M.Div., *Classis Chicago South*  
Herman Minnema, Th.M., *Classis Kalamazoo*  
Dick Pierik, B.D., *Classis Toronto*  
Audrey Schuurmann, M.S., *Classis Rocky Mountain*  
John Sittema, M.Div., *Classis Orange City*  
Arthur Stienstra, B.D., *Classis Hackensack*  
Robert Swierenga, Ph.D., *Classis Lake Erie*  
Donald Van Beek, M.Div., *Classis Muskegon*  
John Vander Beek, M.D., *Classis Columbia*  
Leonard Van Drunen, Jr., Th.B., *Classis Grandville*  
Wilbert M. Van Dyk, Th.M., *Classis Grand Rapids East*  
Jay Wesseling, B.D., *Classis Zeeland*

### DISTRICT TRUSTEES

Robert J. Baker, M.D., *Central District*  
Harry J. Bloem, B.A., *Central District*  
Barbara Bradley, M.D., *Eastern District*

Stanley Konynenbelt, O.D., *Central District*  
Jack De Korne, B.A., *Central District*  
Jay Morren, M.A., *Central District*  
Alan Pauw, Ph.D., *Farwest District*  
H. Everett Van Reken, M.D., *Central District*  
Loren Veldhuizen, J.D., *Midwest District*

#### EXECUTIVE COMMITTEE

Harry Bloem, Henry Eshius, John M. Hofman, Harry Holwerda, Jerry J. Hoytema, John Joldersma, John Medendorp, Jr., Donald Van Beek, Everett Van Reken, plus two district trustees to be elected in September.

## 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-

#### DEAN OF THE FACULTY

Peter Allen De Vos, Ph.D., *Dean of the Faculty*

#### ACADEMIC ADMINISTRATION

John Vanden Berg, Ph.D., *Vice-President for Academic Administration*  
Charles J. Miller, Ph.D., *Dean for Academic Program Administration*  
Ernest Van Vugt, M.A., *Registrar*  
Martin Monsma, M.A.L.S., *Director of the Library*  
Conrad J. Bult, M.A.L.S., *Assistant Library Director, College-Related Matters*  
Peter De Klerk, M.Div., M.Ln., *Assistant Library Director, Seminary-Related Matters*  
John Lester De Beer, Ed.D., *Director of Instructional Resources Center*  
Larry Ray Nyhoff, Ph.D., *Director of Computing Services*  
Evelyn Jean Diephouse, M.Ed., *Director of the Academic Support Program*  
Madge Strikwerda, M.A., *Director of Teacher Certification*  
Samuel J. Anema, *Computer Center Director*  
Herbert J. Brinks, Ph.D., *Curator of the Colonial Origins Collection*

#### BUSINESS AFFAIRS

Henry De Wit, M.B.A., *Vice-President for Business and Finance*  
Lester Ippel, *Controllor*  
Edward Timmer, *Chief Accountant*  
Jay Timmer, *Director of Physical Plant and Security*  
Keith Johnson, B.A., *Manager of the College and Seminary Stores*  
Robert Struyk, *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*  
David E. Erickson, M.A., *Assistant Director of Financial Aid*

Peter M. Harkema, M.A., *Admissions Development Director*  
 Donald Lautenbach, M.A., *Director of Admissions*  
 Jeannette De Gier, B.A., *Admissions Counselor*  
 William J. Alphenaar, Jr., M.S., *Admissions Counselor*  
 Karen L. Bode, B.A., *Admissions Counselor*  
 Jeanne M. Nienhuis, B.A., *Admissions Counselor*  
 James R. Van Wingerden, B.A., *Admissions Counselor*  
 Donald G. Distelberg, B.A., *Director of Annual Giving*  
 Richard J. Eppinga, Ph.D., *Director of Alumni Relations*  
 Thomas J. Ozinga, M.A., Ph.D., *Director of College Relations*  
 John C. Heerspink, M.Mus., *Director of Planned Giving*

## STUDENT AFFAIRS

Bernard E. Pekelder, B.D., M.A., *Vice-President for Student Affairs*  
 Donald L. Boender, M.A., *Dean of Men*  
 Marilyn De Boer, M.S.W., *Dean of Women*  
 William K. Stob, B.D., Th.M., Ed.D., *Dean of Student Life*  
 Dale Jay Cooper, B.D., *College Chaplain*  
 John W. Verwolf, M.Ed., *Director of Placement*  
 Warren J. Boer, B.D., M.A., D.M., *Director and Counselor in the Broene Center*  
 Anamarie Joesse, Ed.S., *Counselor in the Broene Center*  
 James M. Hollebeek, M.A., *Counselor in the Broene Center*  
 John Rupke, M.D., *College Physician*  
 Clarence Beets, M.D., *College Physician*  
 Robert La Fleur, M.D., *College Physician*  
 David Kreuze, M.D., *College Physician*  
 Annette Steenwyk, R.N., *College Nurse*  
 Anne Hein, M.A., *Coordinator, Knollcrest East Residence Center*  
 Marsha Lundy, M.A., *Residence Director, Bolt-Heyns-Timmer Halls*  
 Ronald Chlasta, M.A., *Residence Director, Schultze-Eldersveld Halls*  
 Ronda Boss, B.A., *Residence Director, Beets, Veenstra Halls*  
 Timothy Schultz, M.A., *Residence Director, Boer-Bennink Halls*  
 Judith Hofman, B.A., *Residence Director, Rooks-Van Dellen Halls*  
 Carole Clay, B.A., *Residence Director, Noordewier-Vander Werp Halls*

## Committees

### ACADEMIC AFFAIRS COMMITTEES

*Academic Standards Committee*, E. Van Kley (1984, chairman), H. Broene (1984), E. Dykema (1983), P. Oppewall (1982), D. Lautenbach, E. Van Vugt, Robert Berkompas.  
*Academic Support Committee*, T. Jager (1982, chairman), K. Blok (1984), C. Walhout (1983), E. Diephouse, E. Van Vugt, Thomas Berkompas.  
*College-Seminary Library Committee*, W. De Boer (1984), A. Gebben (1983), W. Lagerwey (1982), C. Bult, M. Monsma, J. Vanden Berg, Charles Blake, and five seminary representatives.  
*Computer Services Committee*, R. De Kock (1983, chairman), L. Nyhoff (1984), C. Smidt (1984), W. Smit (1982), H. De Wit, J. Vanden Berg.  
*Continuing Education Committee*, D. Oppewal (1982, chairman), H. Bonzelaar (1984), R. Honderd (1982), C. Strikwerda (1984), M. Vande Guchte (1983), J. Vanden Berg.  
*Educational Policy Committee*, P. De Vos (chairman), D. Holwerda (1983), B. Klooster (1983), G. Monsma (1984), D. Snuttjer (1984), R. Wevers (1982), A. Diekema, J. Vanden Berg.  
*Interim Term Committee*, A. Otten (1982, chairman), Edgar Boevé (1984), J. Penning (1983), T. Plantinga (1984), G. Van Zwahlenberg (1982), C. Miller, Marselle Moore.

*Master of Arts in Christian Studies Supervisory Committee*, G. Marsden (1982, chairman), E. Beversluis (1982), H. Hoeks (1984), A. Leegwater (1984), T. Rottman (1983), J. Vanden Berg.

*Professional Programs Committee*, G. Van Harn (1982, chairman), J. Bosscher (1984), D. Ebels (1983), G. Van Andel (1984), S. Van Der Weele (1983), P. De Vos, E. Van Vugt, J. Smalligan.

*Teacher Education Committee*, R. Griffioen (1983, chairman), H. Baron (1982), P. De Boer (1984), S. Greydanus (1984), G. Mellema (1984), C. Mulder (1983), U. Zylstra (1982), C. Miller, Richard Bernath.

#### BUSINESS AFFAIRS COMMITTEES

*College Store Committee*, R. Bolt (1983, chairman), W. Hendricks (1983), K. Johnson, Merri Oosting, Douglas De Vries.

*Special Projects Committee*, H. Van Till (1983, chairman), K. Kuipers (1982), B. Steen (1982), C. Miller, Peter Kiemel.

#### COLLEGE AFFAIRS COMMITTEES

*College Relations Committee*, R. Houskamp (1983, chairman), C. Kaiser (1984), W. Vande Kopple (1982), D. Distelberg, P. Harkema, R. Eppinga, T. Ozinga, P. Vande Guchte, Dirk Pruis.

*Priorities Committee*, C. Otten (1983, chairman), J. Beebe (1982), K. Konyndyk (1984), F. Roberts (1984), A. Diekema, P. De Vos, H. De Wit, B. Pekelder, P. Vande Guchte, J. Vanden Berg, Robert Jonker.

*Special Events Committee*, D. Holquist (1982, co-chairman), M. J. Lamse (1983, co-chairman), J. Bolt (1982), B. Class (1983), D. Brink (1984), E. Driesenga (1984), G. Harper (1983), G. Harris (1983), C. Huisman (1984), C. Overvoorde (1982), D. Rietberg (1984), C. Stapert (1982), Patti Navis.

#### CULTURAL AFFAIRS COORDINATING BOARD

*Cultural Affairs Coordinating Council*, C.-M. Baldwin (1984, chairman), H. Slenk (1983), G. Bordewyk (1982), W. Stob, secretary, Marlene De Groot.

*Communications Board*, C. Bennink (1982, WCAL), J. Korf (1982, Prism), J. Timmer (1984, secretary), J. Timmerman (1982, Chimes), K. Kuiper (1982, Dialogue). Gregory Simoncini, Lori Hooyer, Paul Karsten, Randy Krause (business manager).

*Film Arts Committee*, D. Diephouse (1983, mentor), I. Kroese (1982), W. Stob (1982), D. Van Baak (1984), Maarten Pereboom (co-chairman), Susan Van Laar (co-chairman), Lars Hamilton, Mary Jo Blackport, Margaret Dijkhuis.

*Fine Arts Guild*, J. Kuiper, mentor, and eight students.

*Homecoming Committee*, P. Lucasse (1984), R. Eppinga (secretary), W. Stob, Todd Kingma (chairman).

*Lectures Committee*, H. Bouma (1983, mentor), G. Harper (1984), David Kromminga (co-chairman), Robert Wolterstorff (co-chairman), Ann Faber, Peter Vanderveen, Steven Wiersma.

#### FACULTY AFFAIRS COMMITTEES

*Committee on Committees*, A. Diekema (chairman), W. Bratt (1982), R. De Vries (1982), K. Konyndyk (1982), K. Kuiper (1982), J. Primus (1982), Eric Hobbs.

*Multicultural Lectureship Committee*, L. Sweetman (1984, chairman). W. Van Doorne (1983), D. Van Kley (1983), D. Wilson (1982), J. Vanden Berg, Charles Blake.

*Professional Status Committee*, A. Diekema, (chairman), J. De Borst (1984), C. Kass (1983), J. Lamse (1982), C. Sinke (1984), R. Tiemersma (1983), P. De Vos, J. Vanden Berg.

## STUDENT AFFAIRS COMMITTEES

- All Campus Discipline Committee*, R. Terborg (1982, chairman), C. Hegewald (1984), G. Huizenga (1982), A. Reynolds (1983), D. Smalligan (1983), D. Zuidema (1984), W. Stob, (secretary), Shelli Stob, Patti Navis, Thomas Jipping, Esther Voss.
- Athletics Committee*, E. Ericson, (1984, chairman), A. Bratt (1982), B. De Vries (1984), K. Wolters (1983), Patti Navis, Dirk Pruis.
- Chapel Committee*, L. Vos (1984, chairman), Er. Boevé (1982), D. Cooper (secretary), Esther Voss, Edward Visser, Shelli Stob, Karin Okma.
- Resident Services Committee*, B. Bosma (1984, secretary), D. Boender, M. De Boer, H. De Wit, David Lacey, Jeffrey De Vries, Julie De Jonge.
- Scholarships and Aids Committee*, M. Bolt (1983, chairman), P. Boonstra (1982), J. Van Zytveld (1984), D. Westra (1984), W. Hubers (secretary), D. Lautenbach, C. Miller, Robert Berkompas.
- Student Conduct Committee*, H. Rienstra (1983, chairman), B. Carvill (1982), J. Snapper (1982), B. Ten Broek (1984), B. Pekelder (secretary), David Prince, Esther Voss, Gary Timmerman, Daniel Ackerman.
- Student Life Committee*, C. Vos (1982, chairman), R. Blankespoor (1982), H. Ippel (1983), W. Stob (secretary), D. Cooper, T. Hoeksema.

## AD HOC COMMITTEES

- Governing Board, Calvin Center for Christian Scholarship*, P. Zwier (1983, chairman), W. Joosse (1982), S. Roels (1983), H. Vander Goot (1983), J. Bratt (1982), B. Johnson (1982), A. Diekema, P. De Vos, J. Vanden Berg.
- Committee on International Affairs*, J. Westra (chairman), K. Bratt, B. Carvill, S. Greydanus, K. Piers, L. Sweetman, G. Van Zwalenberg, D. Wilson.

## DEPARTMENTAL AND DIVISIONAL ORGANIZATION

The various departments are related as divisions: Division I, education, physical education, philosophy, and religion and theology; Division II, language, literature, and the arts; Division III, the natural sciences and mathematics; Division IV, the social sciences.

- Art (II), Chris Overvoorde, *chairman*  
 Biology (III), Alan Gebben, *chairman*  
 Chemistry (III), Kenneth Piers, *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 (II), Henrietta Ten Harsmel, *chairman*  
 French (II), Arthur Otten, *chairman*  
 Germanic Languages (II), Cornelius Hegewald, *chairman*  
 History (IV), Bert DeVries, *chairman*  
 Mathematics (III), Carl Sinke, *chairman*  
 Music (II), Dale Topp, *chairman*  
 Nursing (III), Cynthia Kielinen, *chairman*  
 Philosophy (I), K. Konyndyk, *chairman*  
 Physical Education (I), Marvin Zuidema, *chairman*  
 Physics (III), Roger Griffioen, *chairman*  
 Political Science (IV), Johan Westra, *chairman*  
 Psychology (IV), William Sanderson, *chairman*  
 Religion and Theology (I), Willis De Boer, *chairman*  
 Sociology (IV), Donald Wilson, *chairman*  
 Spanish (II), Elsa Cortina, *chairman*  
 Speech (II), David Holquist, *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*
- Henry Bengelink, M.S.  
*Assistant Professor of Biology, Emeritus*
- Melvin E. Berghuis, M.A., Ph.D.  
*Professor of Speech, Emeritus*
- Nicholas Henry Beversluis, Th.B., Th.M., M.A., Ed.D.  
*Professor of Education, Emeritus*
- 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*  
*Director of the Instructional Resources Center*
- John De Bie, M.A.  
*Assistant Professor of History, Emeritus*
- James John De Jonge, M.S., M.Mus.  
*Associate Professor of Music, Emeritus*
- Thedford P. Dirkse, M.A., Ph.D.  
*Professor of Chemistry, Emeritus*
- Bernard Jay Fridsma, Sr., M.A., Ph.D.  
*Professor of Germanic Languages, Emeritus*
- Harold Paul Geerdes, M.Ed.  
*Associate Professor of Music, Emeritus*
- James P. Hoekenga, M.A.  
*Executive Director of Alumni Relations, 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*
- William Thomas Radius, M.A., Ph.D.  
*Professor of Classical Language, Emeritus*
- H. Evan Runner, Th.B., Th.M., D.Phil.  
*Professor of Philosophy, 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*
- 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*
- 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 Professor of Spanish*
- Martinus A. Bakker, M.A. (University of South Africa, 1967), Drs. (Utrecht State University, 1977)  
*Visiting Associate Professor of Germanic Languages*
- Claude-Marie Baldwin, M.A. (Michigan State, 1977)  
*Visiting Associate Professor of French*
- Henry James Baron, M.A. (Michigan, 1966), Adv. Cer., Ph.D. (Illinois, 1968, 1972)  
*Professor of English*
- John D. Beebe, M.A. (South Dakota, 1966), Ph.D. (Chicago, 1970)  
*Professor of Biology*
- Carl Douglas Bennink, M.A., Ph.D. (Louisville, 1976, 1978)  
*Assistant Professor of Psychology*
- †James Alan Benthem, M.A., Ph.D. (Wayne State, 1976, 1978)  
*Associate Professor of Psychology*
- Gilbert Besselsen, M.A., Ph.D. (Michigan, 1963, 1969)  
*Professor of Education*
- Eric H. Beversluis, M.A., Ph.D. (Northwestern, 1968, 1970)  
*Associate Professor of Economics*
- Ronald Lee Blankespoor, Ph.D. (Iowa State, 1971)  
*Professor of Chemistry*
- Kathryn Blok, M.A., M.A., Ed.S., Ph.D. (Michigan State 1967, 1975, 1981)  
*Visiting Assistant Professor of Education*
- Donald L. Boender, M.A. (Michigan, 1965)  
*Dean of Men*
- Warren J. Boer, B.D. (Calvin Theological Seminary, 1963), M.A. (Princeton Theological Seminary 1969), D.M. (Fuller Theological Seminary, 1974)  
*Director, Broene Counseling Center*

- Edgar Gene Boevé, J. Franklin School of Professional Arts, M.S.D. (Michigan 1954)  
*Associate Professor of Art*
- Ervina Boevé, M.A. (Michigan, 1954)  
*Assistant Professor of Speech*
- John Bolt, B.D., Th.M. (Calvin Theological Seminary, 1973, 1977)  
*Instructor in Religion and Theology*
- T. Macyn Bolt, M.F.A. (Syracuse, 1981)  
*Instructor in Art*
- Martin Bolt, M.A., Ph.D. (Michigan State, 1967, 1969)  
*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*
- Gordon L. Bordewyk, M.A., Ph.D. (Wayne State, 1977, 1980)  
*Assistant Professor of English*
- Bette DeBruyn Bosma, M.A., Ph.D. (Michigan State, 1972, 1981)  
*Assistant Professor of Education*
- James Peter Bosscher, M.A. (Purdue, 1957), Ph.D. (Michigan 1968)  
*Professor of Engineering*  
*Chairman of the Department of Engineering*
- Hessel Bouma III, Ph.D. (Texas, 1975)  
*Assistant Professor of Biology*
- Al Dirk Bratt, M.S. (Michigan State, 1957), Ph.D. (Cornell, 1964)  
*Professor of Biology*
- Kenneth Dale Bratt, M.A. (Princeton, 1973)  
*Assistant Professor 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)  
*Assistant Professor of Mathematics*
- John Harvey Brink, M.S., Ph.D. (Purdue, 1972, 1974)  
*Associate Professor of Psychology*
- \*Herbert John Brinks, M.A., Ph.D. (Michigan, 1961, 1965)  
*Professor of 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*
- Marjorie J. Bultje, M.S.E. (University of Michigan, 1980)  
*Instructor in Mathematics*
- Ynes M. Byam, M.A. (Michigan State University, 1977)  
*Assistant Professor of Spanish*
- Barbara Carvill, Ph.D. (Toronto, 1981)  
*Associate Professor of Germanic Languages*
- Bradley Mellon Class, M.A. (Oregon, 1967), Ph.D. (New Mexico, 1974)  
*Associate Professor of Spanish*

- Dale Jay Cooper, B.D. (Calvin Theological Seminary, 1968)  
*College Chaplain*
- John W. Cooper, M.A., Ph.D. (Toronto, 1974, 1978)  
*Assistant Professor of Philosophy*
- Elsa Cortina, Doctora en Pedagogia (Universidad Habana, 1951), M.A. (Michigan State University, 1977)  
*Professor of Spanish*  
*Chairman of the Department of Spanish*
- Gordon Lee De Blaey, M.A., Ph.D. (Western Michigan, 1967, 1970)  
*Professor of Sociology*
- Marilyn E. De Boer, M.S.W. (Denver, 1972)  
*Dean of Women*
- Peter Pousma De Boer, M.A., Social Studies (New Jersey State, 1952), M.A., English-American Civilization (Iowa, 1961), Ph.D. (Chicago, 1968)  
*Professor of Education*  
*Chairman of the Department of Education*
- Willis Peter De Boer, Th.B. (Calvin Theological Seminary, 1962), D.Th. (Vrije Universiteit, Amsterdam, 1962)  
*Professor of Religion and Theology*  
*Chairman of the Department of Religion and Theology*
- James Henry De Borst, M.A., Ph.D. (Michigan, 1965, 1972)  
*Professor of Political Science*
- \*Peter Ymen De Jong, M.A., Ph.D. (Western Michigan, 1969, 1972)  
*Professor of Sociology*
- Roger Lee De Kock, Ph.D. (Wisconsin, 1969)  
*Professor of Chemistry*
- Leon W. De Lange, M.B.A. (Central Michigan, 1970), CP.A.  
*Assistant Professor of Economics and Business*
- John A. Dersch, M.S. (Michigan State, 1980)  
*Visiting Instructor in Mathematics*
- Peter Allen De Vos, M.A., Ph.D. (Brown, 1964, 1972)  
*Professor of History*  
*Chairman of the Department of History*
- Bert De Vries, B.D. (Calvin Theological Seminary, 1964), M.A., Ph.D. (Brandeis, 1965, 1967)  
*Professor of History*  
*Chairman of the Department of History*
- Robert Lee De Vries, M.A., Ph.D. (Michigan, 1964, 1974)  
*Associate Professor of Political Science*
- Henry De Wit, M.B.A. (Michigan, 1948), C.P.A.  
*Vice President for Business and Finance*
- Derald Dwight De Young, M.M. (Eastman, 1965), Ph.D. (Minnesota, 1975)  
*Visiting Associate Professor of Music*
- Anthony J. Diekema, M.A., Ph.D. (Michigan State University, 1958, 1965)  
*President*
- David James Diephouse, M.A., Ph.D. (Princeton, 1971, 1974)  
*Associate Professor of History*
- Evelyn J. Diephouse, M.Ed. (Rutgers, 1976)  
*Director of Academic Support Program*
- John W. Dodge, M.A. (Wisconsin, 1974)  
*Visiting Instructor in Economics*
- Esther F. Driesenga, M.S. (Michigan State University, 1979)  
*Instructor in Physical Education*
- Eugene Roy Dykema, M.B.A. (Chicago, 1968)  
*Assistant Professor of Economics*

- Johanna Duyst, M.A.L.S. (Michigan, 1973)  
*Librarian*
- Daniel Marcus Ebels, M.S. (Wisconsin, 1975)  
*Assistant Professor of Economics*
- Vernon James Ehlers, Ph.D. (California, Berkeley, 1960)  
*Professor of Physics*
- Edward E. Ericson, Jr., M.A., Ph.D. (Arkansas, 1963, 1967)  
*Professor of English*
- Alan Irwin Gebben, M.A.T. (George Peabody and Vanderbilt, 1955), M.S., Ph.D. (Michigan, 1959, 1965)  
*Professor of Biology*  
*Chairman of the Department of Biology*
- †Edna Carol Greenway, M.A. (Texas Christian, 1972)  
*Assistant Professor of Spanish*
- Samuel Everett Greydanus, Jr., M.A. (Edinburgh, 1951)  
*Assistant Professor of History*
- Roger Duane Griffioen, Ph.D. (Purdue, 1960)  
*Professor of Physics*  
*Chairman of the Department of Physics*
- John Edward Hamersma, S.M.M., S.M.D. (Union Theological Seminary, New York, 1952, 1961)  
*Professor of Music*  
*College Organist*
- Lee P. Hardy, M.A. (Duquesne University, 1979), M.A. (University of Pittsburgh, 1980)  
*Visiting Instructor in Philosophy*
- George Graham Harper, Jr., M.A., Ph.D. (Northwestern, 1951, 1959)  
*Professor of English*
- George Harris, M.A. (Michigan, 1959), Ph.D. (Northwestern, 1971)  
*Professor of Classical Languages*
- Cornelius Peter Hegewald, M.A., D.A.G. (Michigan State, 1964, 1967)  
*Associate Professor of Germanic Language*  
*Chairman of the Department of Germanic Languages*
- William Cornelius Hendricks, M.Ed. (Western Washington State, 1955)  
*Assistant Professor of Education*  
*Coordinator of Elementary Education*
- Henry Jay Hoeks, B.S.A.E. (Purdue, 1958), M.C.E. (Western Theological Seminary, 1966)  
Ed.D. (Columbia, 1975)  
*Professor of Religion and Theology*  
*Director of the Academic Study of Religions and Religion and Education programs*
- Gerald A. Hoekema, M.S. (Purdue University, 1969)  
*Assistant Professor of Mathematics*
- Robert James Hoeksema, M.S.E. (Michigan, 1978)  
*Instructor in Engineering*
- Thomas Brian Hoeksema, M.A., Ph.D. (Michigan State, 1972, 1975)  
*Associate Professor of Education*  
*Coordinator of Special Education of Mentally Impaired*
- James M. Hollebeek, M.A., M.A. (Western Michigan, 1974, 1976)  
*Counselor in the Broene Center*
- David Jack Holquist, M.A. (Michigan, 1967), Ed.S. (Michigan State, 1974)  
*Associate Professor of Speech*  
*Chairman of the Department of Speech*
- \*\*Henry Holstege, Jr., M.A., Ph.D. (Michigan State, 1958, 1966)  
*Professor of Sociology*

J Heerspijn  
Academisch

- Philip Cornelius Holtrop, B.D. (Calvin Theological Seminary, 1958)  
*Assistant Professor of Religion and Theology*
- David Earl Holwerda, B.D. (Calvin Theological Seminary, 1956), D.Th. (Vrije Universiteit, Amsterdam, 1959)  
*Professor of Religion and Theology*
- Ralph John Honderd, M.A. (Michigan State, 1966)  
*Assistant Professor of Physical Education*
- Donald R. House, M.B.A. (University of Michigan, 1952)  
*Assistant Professor of Economics and Business*
- Richard Edwin Houskamp, M.S.W. (Chicago, 1961), D.S.W. (Tulane, 1976)  
*Associate Professor of Sociology*
- Carl John Huisman, M.F.A. (Michigan State, 1967)  
*Associate Professor of Art*
- Gertrude Ann Huizenga, M.A. (Ohio State, 1963), M.Mus., Ph.D. (Michigan State, 1969, 1980)  
*Associate Professor of Music*
- Henry Peter Ippel, M.A., Ph.D. (Michigan, 1948, 1957)  
*Professor of History*
- Thomas Leigh Jager, M.S., Ph.D. (Chicago, 1967, 1971)  
*Professor of Mathematics*
- Dirk William Jellema, Ph.D. (Wisconsin, 1951)  
*Professor of History*
- Robert Andrew Jensen, M.F.A. (Ohio, 1962)  
*Associate Professor of Art*
- Anamarie L. Joosse, M.A., Ed.S. (Michigan State, 1971, 1972)  
*Counselor in the Broene Center*
- Wayne George Joosse, M.A., Ph.D. (Michigan State, 1965, 1975)  
*Professor of Psychology*
- Carl William Kaiser, M. Mus. (Catholic University, 1961)  
*Associate Professor of Music*
- Corrine K. Kass, M.A. (Michigan, 1955), Ph.D. (Illinois, 1962)  
*Professor of Education*  
*Coordinator of Special Education: Learning Disabilities*
- Cynthia E. Kielinen, M.S. (Boston University School of Nursing, 1972), Ed.D. (Columbia University, 1979)  
*Visiting Associate Professor of Nursing*  
*Chairman of the Hope-Calvin Department of Nursing*
- Beverly Jane Klooster, M.S., Ph.D. (Michigan State, 1961, 1972)  
*Professor of Biology*  
*Director of Health Sciences Programs*
- Kenneth J. Konyndyk, Jr., Ph.D. (Wayne State, 1967, 1970)  
*Professor of Philosophy*  
*Chairman of the Department of Philosophy*
- James Dale Korf, M.A. (Michigan, 1970)  
*Assistant Professor of Speech*
- Irvin Bertus Kroese, M.A., Ph.D. (Ohio, 1964, 1966)  
*Professor of English*
- Albion Jerome Kromminga, Ph.D. (Minnesota, 1961)  
*Professor of Physics*
- Kenneth Wayne Kuiper, M.A., Educ., M.A., English, Ed.D. (Michigan, 1955, 1959, 1963)  
*Professor of English*
- James Alan Kuiper, M.F.A. (Michigan State, 1976)  
*Assistant Professor of Art*

- †Jack Kuipers, M.S.E., Info. and Cont. E. (Michigan 1959, 1966)  
*Associate Professor of Mathematics*
- Kenneth Jay Kuipers, M.B.A. (Michigan State, 1968)  
*Associate Professor of Economics and Business*
- Walter Lagerwey, M.A. (Columbia, 1951), Ph.D. (Michigan, 1958)  
*Professor of Germanic Languages*
- Stephen Lambert Lambers, M.A., M.A.L.S. (Michigan, 1958, 1969)  
*Librarian*
- James Lawrence Lamse, M.A., Ph.D. (Michigan, 1963, 1975)  
*Professor of Germanic Languages*
- Mary Jane Lamse, M.A., Ph.D. (Michigan, 1963, 1969)  
*Associate Professor of Germanic Languages*
- Arie Leegwater, Ph.D. (Ohio State, 1967)  
*Professor of Chemistry*
- †Sanford Clay Leestma, M.A. (Pennsylvania State, 1965), Ph.D., (New Mexico State, 1969)  
*Professor of Mathematics*
- John R. Lillis, M.S. (Air Force Institute of Technology, 1974), M.R.E., M. Div. (Grand Rapids Baptist Seminary, 1980)  
*Visiting Instructor of Physics*
- Philip Roger Lucasse, M.A., Ph.D. (Michigan, 1952, 1971)  
*Professor of Education*  
*Coordinator of Secondary Education*
- David Lyon, Ph.D. (University of Bradford, 1976)  
*Visiting Fellow, Calvin Center for Christian Scholarship*
- George Mish Marsden, B.D. (Westminster Theological Seminary, 1963), M.A., Ph.D. (Yale, 1961, 1965)  
*Professor of History*
- Larry F. Mehne, Ph.D. (Pennsylvania, 1976)  
*Visiting Assistant Professor of Chemistry*
- Gregory Frank Mellema, Ph.D. (Massachusetts, 1974), M.B.A. (Michigan, 1978)  
*Associate Professor of Philosophy*
- \*Clarence Menninga, M.A. (Western Michigan, 1959), Ph.D. (Purdue, 1966)  
*Professor of Physics (Geology)*
- Nancy L. Meyer, M.S. (Arizona, 1979)  
*Instructor in Physical Education*
- Charles J. Miller, Ph.D. (Northwestern, 1947)  
*Dean for Academic Program Administration*
- Ellen Borger Monsma, M.A. (Indiana, 1968)  
*Assistant Professor of French*
- George Norman Monsma, Jr., M.A., Ph.D. (Princeton, 1965, 1969)  
*Professor of Economics*  
*Chairman of the Department of Economics and Business*
- Marvin Eugene Monsma, M.A. (Michigan State, 1961), M.A.L.S. (Michigan, 1967)  
*Director of the Library*
- Richard John Mouw, M.A. (Alberta, 1965), Ph.D. (Chicago, 1971)  
*Professor of Philosophy*
- Carl Thomas Mulder, M.A., Ed.D. (Western Michigan, 1964, 1973)  
*Professor of Education*
- Merle Mustert, M.M. (Michigan State University, 1964)  
*Assistant Professor of Music*
- Ann Janssen Noteboom, M.A., Ph.D. (Northwestern, 1952, 1957)  
*Professor of Speech*

- Larry Ray Nyhoff, M.A. (Michigan, 1961), Ph.D. (Michigan State, 1969)  
*Professor of Mathematics*  
*Director of Computing Services*
- Donald Oppewal, M.A. (Michigan, 1951), Ph.D. (Illinois, 1961)  
*Professor of Education*
- Peter Oppewal, M.A., Ph.D. (Michigan, 1949, 1961)  
*Professor of English*
- Clifton James Orlebeke, B.S.E., M.A. (Michigan, 1947, 1950), Ph.D. (Harvard, 1963)  
*Professor of Philosophy*  
*Fellow, Calvin Center for Christian Scholarship*
- Derk W. Oostendorp, B.D. (Calvin Theological Seminary, 1962), Ph.D. (Virje Universiteit, 1967)  
*Associate Professor of Religion and Theology*
- Arthur James Otten, M.A., D. de l'U. (Laval, 1951, 1969)  
*Professor of French*  
*Chairman of the Department of French*
- Charlotte Otten, M.A. (Michigan, 1969), Ph.D. (Michigan State, 1971)  
*Professor of English*
- \*\*Robert Theodore Otten, M.A., Ph.D. (Michigan, 1951, 1957)  
*Professor of Classical Languages*  
*Secretary of the Faculty*
- Chris Stoffel Overvoorde, M.F.A. (Michigan, 1966)  
*Associate Professor of Art*  
*Chairman of the Department of Art*
- Thomas J. Ozinga, M.A., Ph.D. (Michigan, 1961, 1967)  
*Director of College Relations*
- Ronald Owen Pederson, M.F.A. (Minnesota, 1977)  
*Assistant Professor of Art*
- Bernard Edward Pekelder, Th.B. (Calvin Theological Seminary, 1947), M.A. (Northwestern, 1965)  
*Vice President for Student Affairs*  
*College Chaplain*
- \*\*James Michael Penning, M.A., Ph.D. (Kentucky, 1974, 1975)  
*Associate Professor of Political Science*
- Kirk D. Peterson, M.S.E. (Michigan, 1979)  
*Instructor in Engineering*
- Jeffrey Robert Pettinga, M.A. (Michigan State, 1968)  
*Associate Professor of Physical Education*
- Kenneth Piers, B.Sc. hons., Ph.D. (Alberta, 1963, 1966)  
*Professor of Chemistry*  
*Chairman of the Department of Chemistry*
- Alvin Carl Plantinga, M.A. (Michigan, 1955), Ph.D. (Yale, 1958)  
*Professor of Philosophy*
- Theodore Plantinga, M.A., Ph.D. (Toronto, 1970, 1975)  
*Assistant Professor of Philosophy*
- John Henry Primus, B.D. (Calvin Theological Seminary, 1957), D.Th. (Vrije Universiteit, Amsterdam, 1960)  
*Professor of Religion and Theology*
- Donald E. Pruis, M.B.A. (Michigan, 1953), C.P.A.  
*Professor of Economics and Business*
- Delvin L. Ratzsch, M.A., Ph.D. (Massachusetts, 1974, 1975)  
*Associate Professor of Philosophy*

- Douglas C. Reber, M.S., Ph.D. (Brown, 1976, 1978)  
*Visiting Assistant Professor of Mathematics*
- Alfred John Reynolds, M.A. (Michigan, 1951), Ph.D. (Michigan State, 1965)  
*Professor of Psychology*
- Rodger Reid Rice, M.A., Ph.D. (Michigan State, 1962, 1968)  
*Professor of Sociology*
- M. Howard Rienstra, M.A., Ph.D. (Michigan, 1954, 1963)  
*Professor of History*
- Dale R. Rietberg, M.B.A. (Michigan, 1980)  
*Instructor in Economics*
- Frank Carl Roberts, B.D. (Calvin Theological Seminary, 1965), M.A., Ph.D. (Vanderbilt, 1969, 1973)  
*Professor of History*
- Shirley J. Roels, M.B.A. (Michigan, 1977)  
*Instructor in Economics and Business*
- Theodore Allen Rottman, M.A., Ph.D. (Michigan State, 1955, 1965)  
*Professor of Sociology*
- Ruth K. Rus, M.Mus. (Eastman School of Music, 1951)  
*Assistant Professor of Music*
- William A. Sanderson, B.D., S.T.M. (Faith Theological Seminary, 1950), M.A. (Washington, St. Louis, 1965)  
*Associate Professor of Psychology*  
*Chairman of the Department of Psychology*
- Carl James Sinke, M.S., Ph.D. (Purdue, 1951, 1954)  
*Professor of Mathematics*  
*Chairman of the Department of Mathematics*
- Allen L. Shoemaker, M.S., Ph.D. (Illinois, 1979, 1980)  
*Assistant Professor of Psychology*
- Howard Jay Slenk, M.A., Ph.D. (Ohio State, 1961, 1965)  
*Professor of Music*
- Barbara Betty Sluiter, M.A.L.S. (Michigan, 1956)  
*Librarian*
- \*Donald Henry Smalligan, M.B.A., M.S.W. (Michigan, 1948, 1954)  
*Associate Professor of Sociology*
- Corwin Esdert Smidt, M.A., Ph.D. (Iowa, 1971, 1975)  
*Associate Professor of Political Science*
- J. William Smit, M.A., Ph.D. (Michigan, 1959, 1964)  
*Professor of Sociology*
- John Nelson Snapper, M.A., M.A. (San Diego State, 1971, English, 1974, Education)  
*Assistant Professor of English*
- David Mark Snuttjer, M.S., Ph.D. (Purdue, 1973, 1975)  
*Associate Professor of Psychology*
- Gordon John Spykman, Th.B. (Calvin Theological Seminary, 1952), D.Th. (Vrije Universiteit, Amsterdam, 1955)  
*Professor of Religion and Theology*
- \*\*Calvin Ray Stapert, M.A., Ph.D. (Chicago, 1968, 1973)  
*Professor of Music*
- Barney Steen, B.A., Ed.D. (Columbia—Teachers College, 1947, 1958)  
*Professor of Physical Education*
- R. Scott Stehouwer, M.A., Ph.D. (Wayne State, 1977, 1978)  
*Associate Professor of Psychology*
- LeRoy Dale Stegink, M.A., Ph.D. (Michigan State, 1970, 1979)  
*Professor of Education*

- Michael J. Stob, M.S., Ph.D. (University of Chicago, 1975, 1979)  
*Assistant Professor of Mathematics*
- William K. Stob, B.D., Th.M. (Calvin Theological Seminary, 1955, 1970), Ed.D. (Western Michigan, 1975)  
*Dean of Student Life*
- Roger John Stouwie, M.A., Ph.D. (Wisconsin, 1968, 1970)  
*Professor of Psychology*
- Charles Earl Strikwerda, M.A. (Wisconsin, 1969), Ph.D. (Kentucky, 1977)  
*Associate Professor of Political Science*
- Leonard Sweetman, Jr., Th.B. (Calvin Theological Seminary, 1951)  
*Associate Professor of Religion and Theology*
- Bernard John Ten Broek, M.A., Ph.D. (Colorado, 1955, 1960)  
*Professor of Biology*
- Henrietta Ten Harmsel, M.A., Ph.D. (Michigan, 1958, 1962)  
*Professor of English*  
*Chairman of the Department of English*
- Robert Harold Terborg, M.A., Ph.D. (Michigan State, 1966, 1968)  
*Professor of Psychology*
- Richard Robert Tiemersma, M.A., Ph.D. (Northwestern, 1950, 1962)  
*Professor of English*
- John Peter Tiemstra, Ph.D. (Massachusetts Institute of Technology, 1975)  
*Assistant Professor of Economics*  
*Fellow, Calvin Center for Christian Scholarship*
- Peter V. Tigchelaar, M.S., Ph.D. (Illinois, 1966, 1970)  
*Professor of Biology*
- James R. Timmer, M.A. (Michigan, 1964), Ph.D. (Utah, 1974)  
*Professor of Physical Education*
- John Hager Timmerman, M.A., Ph.D. (Ohio University, 1971, 1973)  
*Professor of English*
- \*\*G. Dale Topp, M.Mus., Ph.D. (Michigan, 1960, 1967)  
*Professor of Music*  
*Chairman of the Department of Music*
- David Bruce Tuuk, M.A. (Michigan, 1950)  
*Assistant Professor of Physical Education*
- Glen E. Van Andel, M.S. (North Carolina, 1969)  
*Assistant Professor of Physical Education*
- David Alan Van Baak, M.A., Ph.D. (Harvard, 1975, 1979)  
*Assistant Professor of Physics*
- Randall Van Dragt, M.S. (Cornell University, 1971)  
*Instructor in Biology*
- Marten Vande Guchte, M.Ed. (Wayne State, 1954), Ph.D. (Michigan State, 1969)  
*Professor of Speech*
- Peter Vande Guchte, M.B.A. (Michigan, 1960), Ed.D. (Western Michigan, 1973)  
*Vice President for College Advancement*
- William J. Vande Kopppe, M.A., Ph.D. (Chicago, 1973, 1980)  
*Assistant Professor of English*
- John Vanden Berg, M.A., Ph.D. (Michigan, 1947, 1958)  
*Vice President for Academic Administration*
- Henry Vander Goot, M.Div. (Princeton Theological Seminary, 1971), M.A., Ph.D. (St. Michael's College, Toronto, 1973, 1976)  
*Associate Professor of Religion and Theology*
- Mary Elizabeth Vander Goot, M.A., Ph.D. (Princeton, 1969, 1971)  
*Associate Professor of Psychology*  
*Fellow, Calvin Center for Christian Scholarship*

- Steven John Van Der Weele, M.S., Ph.D. (Wisconsin, 1950, 1955)  
*Professor of English*
- William Van Doorne, M.S., Ph.D. (Michigan, 1962, 1965)  
*Professor of Chemistry*
- Brenda R. Van Halsema, M.A., (Chicago, 1977)  
*Instructor in Art*
- Gordon Lee Van Harn, M.S., Ph.D. (Illinois, 1959, 1961)  
*Professor of Biology*
- Dale Kenneth Van Kley, M.A., Ph.D. (Yale, 1964, 1970)  
*Professor of History*
- Edwin John Van Kley, M.A., Ph.D., (Chicago, 1959, 1964)  
*Professor of History*
- Mary S. Van Leeuwen, M.A., Ph.D. (Northwestern University, 1970, 1971)  
*Visiting Fellow, Calvin Center for Christian Scholarship*
- †Nancy Lynn Van Noord, M.A. (Michigan State, 1976)  
*Instructor in Physical Education*
- Lambert John Van Poolen, M.S.M.E., Ph.D. (Illinois Institute of Technology, 1965, 1969),  
P.E. (State of Illinois, 1971)  
*Professor of Engineering*
- \*\*Howard Jay Van Till, Ph.D. (Michigan State, 1965)  
*Professor of Physics*
- Ernest Van Vugt, M.A. (Michigan, 1958)  
*Registrar*
- George Van Zwalenberg, M.A. (Florida, 1955), Ph.D. (California, Berkeley, 1968)  
*Professor of Mathematics*
- John Verwolf, M.Ed. (Seattle Pacific, 1972)  
*Director of Placement*
- John Bos Van Zytveld, M.S., Ph.D. (Michigan State, 1964, 1967)  
*Professor of Physics*
- Gerard A. Venema, Ph.D. (Utah, 1975)  
*Associate Professor of Mathematics*
- Clarence John Vos, Th.B. (Calvin Theological Seminary, 1950), Th.M. (Westminster  
Theological Seminary, 1951), D.Th. (Vrije Universiteit, Amsterdam, 1968)  
*Professor of Religion and Theology*
- Louis Arthur Vos, B.D. (Calvin Theological Seminary, 1961), D.Th. (Vrije Universiteit,  
Amsterdam, 1965)  
*Professor of Religion and Theology*  
*Director of Preseminary programs*
- Anthony Donald Vroon, M.A. (Western Michigan, 1965)  
*Assistant Professor of Physical Education*
- Clarence Peter Walhout, M.A. (Michigan, 1956), Ph.D. (Northwestern, 1964)  
*Professor of English*
- †Mary Ann Walters, M.A. (Michigan, 1956), Ph.D. (Northwestern, 1964)  
*Professor of English*
- \*\*Glenn David Weaver, M.Div. (Princeton Theological Seminary, 1972), M.A., Ph.D.  
(Princeton, 1974, 1978)  
*Visiting Associate Professor of Psychology*
- Evelyn June Weidenaar, M.A., M.A.L.S. (Michigan, 1958, 1967)  
*Librarian*
- Ronald Albert Wells, M.A., Ph.D. (Boston, 1964, 1967)  
*Professor of History*
- Dorothy Westra, M.A. (Michigan, 1952), Ph.D. (Michigan State, 1978)  
*Professor of Education*

- Johan Gerard Westra, M.A., Ph.D. (Michigan, 1953, 1972)  
*Professor of Political Science*  
*Chairman of the Department of Political Science*
- \*Richard Franklin Wevers, M.A., Ph.D. (Wisconsin, 1959, 1962)  
*Professor of Classical Languages*  
*Chairman of the Department of Classical Languages*
- James B. White, B.D., M.Div. (Westminster Seminary, 1957), Th.M. (Calvin Theological Seminary, 1969)  
*Associate Professor of Sociology*
- Jack Wiersma, M.S. (Seattle, 1967), Ph.D. (Iowa, 1968)  
*Professor of Education*
- Stanley Marvin Wiersma, M.S., Ph.D. (Wisconsin, 1956, 1961)  
*Professor of English*
- Donald Reid Wilson, M.Div. (Faith Theological Seminary, 1956), M.A., Ph.D. (Chicago, 1962, 1970)  
*Professor of Sociology*  
*Chairman of the Department of Sociology*
- Hendrik Woldring, Ph.D. (Vrije Universiteit, 1976)  
*Visiting Fellow, Calvin Center for Christian Scholarship*
- Karla M. Wolters, M.A. (Michigan State University, 1978)  
*Visiting Assistant Professor of Physical Education*
- †Nicholas Paul Wolterstorff, M.A., Ph.D. (Harvard, 1954, 1957)  
*Professor of Philosophy*
- Dawn M. Wolthuis, M.S. (Michigan State, 1980)  
*Instructor in Mathematics*
- John William Worst, M.A. (Ohio State, 1964), Ph.D. (Michigan, 1974)  
*Professor of Music*
- Davis Alan Young, M.S. (Pennsylvania State, 1965), Ph.D. (Brown, 1969)  
*Visiting Associate Professor of Physics (Geology)*
- Doris Jean Zuidema, M.A. (Columbia—Teachers College, 1963)  
*Assistant Professor of Physical Education*
- Marvin Albert Zuidema, M.A. (Michigan State, 1959), P.E.D. (Indiana, 1971)  
*Professor of Physical Education*  
*Chairman of the Department of Physical Education*
- Paul John Zwier, M.A. (Michigan, 1951), Ph.D. (Purdue, 1960)  
*Professor of Mathematics*
- Uko Zylstra, M.Sc. (Michigan, 1968), D.Phil. (Vrije Universiteit, Amsterdam, 1972)  
*Associate Professor of Biology*

#### COOPERATING STAFF, MEDICAL TECHNOLOGY

- Rita Champion, MT (ASCP)  
*Education Coordinator, St. Mary's Hospital School of Medical Technology*
- Suzanne Tomlison, MT (ASCP)  
*Education Coordinator, Butterworth Hospital School of Medical Technology*
- Laura Stanley, MT (ASCP)  
*Education Coordinator, Blodgett Memorial Medical Center School of Medical Technology*



# THE INDEX

Academic Support Program	44, 69	Correspondence	<i>Inside front cover</i>
Academic programs	39	Counseling	14
Accounting	54, 88	Dean's honor list	23
Accreditation	8	Degrees	39-43
Administration	162	Dentistry	59
Admissions	17	Dismissal	11, 24
Advising	14	Divisions of the faculty	165
Advanced standing	17	Drama	158
Agriculture	54	Dropping of courses	22, 27
Aims of the college	7	Dutch	87
Alumni Association	9	Economics	88
American College Test (ACT)	17	Education	48, 92
Architecture	55	Education program requirements	48
Art	70	Eligibility	24
Astronomy	74	Employment	28
Athletics	13, 131	Engineering	56, 98
Auditing of courses	21, 27	English	100
Audio-visual services	7	Examinations, exemption	17, 43
Automobiles, regulations	15, 27	Examinations, course credit	17, 43
Awards to students	36	Expenses	27
Bachelor of Arts degree	39	Faculty	166
Bachelor of Fine Arts degree	46, 70	Faculty committees	163
Bachelor of Arts in Medical Technology	60	Financial aid programs	28
Bachelor of Science degree	39	Fees	27
Biology	75	Fine arts	12
Board and Room	27	Foreign student admissions	20
Board of Trustees	161	Forestry	57
Broene Center	14	French	106
Business Administration	55, 88	Geography	108
Calendar of the college	3, 8	German	110
Changing of courses	22	Geology	108
Chapel	11	Germanic languages	87, 110
Chemistry	79	Government of the college	7
Chicago Metropolitan Center	45	Grading system	22
Christian Perspectives on Learning	65	Graduate fellowships	15, 37
Classical Languages	82	Graduate placement	15
Classification	21	Graduation requirements	39-43
College Entrance Examination (SAT)	17	Greek	84
Committees of the faculty	163	Health insurance	13
Communications	43, 101, 157	Health center	13
Compliance	8	History of Calvin College	5
Computer Science	86	History	112
Condition, admission on	19	Housing	12, 27
Control and government	7	Honors program	23, 43
Core curriculum	40		

Incompletes	22	Preseminary program	61
Injuries	13	Prizes and awards	36
Instructional Resources Center	7	Professional programs	53
Interdisciplinary courses	65	Probation	19, 22, 24
Interim courses	42	Psychology	142
Interim requirements	8, 42	Readmission	18, 19
Late application	17, 27	Recreation	131
Late registration	17, 27	Religion and Theology	146
Latin	85	Religious instruction, worship	11
Law	59	Residence requirements	18, 25
Library	6	Romance languages	106, 154
Loans	34	Room and board	12, 27
Major concentrations	42	Scholarships	28
Map of campus	<i>Inside back cover</i>	Seminary classes	21, 61
Master of Arts in Christian Studies	48	Sociology	150
Master of Arts in Teaching	46	Spanish	154
Mathematics	117	Speech	156
Medical technology	60	Special education	53, 94
Medicine	59	Special students	19
Ministry	61	Standards of the college	5, 7
Minor concentrations	43	Student financial aids	28
Motor vehicles	15	Student government	13
Music	121	Student load	21, 27
Natural Resource degree	62	Student loans	28
Nursing program	20, 63	Student employment service	28
Orientation for new students	14	Student expenses	27
Parking	15, 27	Study-abroad programs	45
Payment of fees	27	Suggested high school programs	19
Philosophy	128	Summer school	3, 8
Physical Education	131	Supplementary concentrations	43
Physical Education requirements	41	Teacher education programs	48
Physics	135	Teacher certificates	25, 48
Placement bureau	15	Theater	158
Political Science	139	Transfers	18
Postgraduate fellowships	15, 37	Teacher Placements	15
Prearchitecture program	55	Trustees	161
Preidental program	59	Tuition and related fees	27
Preengineering program	56	Visitors	21
Pre-home economics program	53	Washington Semester program	45
Premedical program	59	Withdrawal	22, 27
Pre-occupational therapy program	53	Worship and Christian service	11
Preprofessional programs	53	Year-abroad programs	45